



Corporate Report

NO: C 003

COUNCIL DATE: March 12/07

COUNCIL-IN-COMMITTEE

TO: Mayor & Council DATE: March 9, 2007
FROM: Acting General Manager, Planning and Development FILE: 6520-20
General Manager, Engineering (Surrey City Centre)
SUBJECT: Urban Transportation Showcase Program –
Final Surrey Central Transit Village Plan

RECOMMENDATION

It is recommended that Council:

1. Receive this report as information;
2. Approve the Surrey Central Transit Village Plan (the "Transit Village Plan"), attached as Appendix I to this report, as a means to:
 - (a) Guide and implement transit-oriented redevelopment in the immediate vicinity of the Surrey Central SkyTrain Station and, specifically, redevelopment of the lands bounded by 104 Avenue, King George Highway, 102 Avenue and West Whalley Ring Road; and
 - (b) Guide the implementation of a transit network that will permit the removal of the existing bus loop and the integration of bus routes into the street network; and
3. Authorize staff to refine and expand on initial implementation strategies outlined in this report to support the redevelopment of this area and to provide a report to Council on a Surrey Central Transit Village Implementation Strategy (the "Implementation Strategy").

INTENT

The purpose of this report is to:

- Describe the process that was followed for the development of the Transit Village Plan, following Council's authorization to proceed with a final public open house;
- Outline the key components of the proposed Transit Village Plan;
- Recommend the final and complete Transit Village Plan for Council's approval; and
- Outline preliminary strategies to achieve the objectives of the Transit Village Plan, as a basis to refine and complete an Implementation Strategy for Council's further consideration.

BACKGROUND

On November 29, 2004, Council considered Corporate Report No. C011, regarding the Transport Canada Urban Transportation Showcase Program (the "Showcase Program") and authorized staff to proceed with the Surrey components, including the development of a land use plan for the Surrey Central Station area, based on Transit-Oriented Development ("TOD") principles. The overall objective of the Showcase Program is to encourage Canadian municipalities to adopt more energy-efficient transportation and land use patterns and practices, and to demonstrate, evaluate and promote air quality improvement by encouraging sustainable transportation and land use choices. TOD addresses this objective through creating high-density, mixed-use communities within walking distance of a transit hub, which provides convenient transportation alternatives such as walking, cycling and public transit. The core study area of the Surrey Central Transit Village is shown in Appendix II.

The Showcase Program is supported through a funding partnership between Transport Canada, the City of Surrey and the Greater Vancouver Transportation Authority ("GVTA"). These shared funds have supported the study, to date. The majority of the funds, approximately \$3 million, are to be spent on a capital project in the Transit Village Plan area.

On March 6, 2006, Council considered Corporate Report No. C005, which provided an update on the land use and transportation plans for the Surrey Central Transit Village area. Council authorized staff to hold a public open house to present the preferred plans, preliminary street cross sections, schematic drawings and transportation routes. The public open house was held on March 21, 2006, in the foyer of the Central City tower.

Two alternatives for the civic plaza location (east or west of the SkyTrain Station) were presented at the open house. Since the open house, additional urban design and financial analysis has been conducted to identify the optimal plaza location. Appendix III contains the Transit Plaza Evaluation Results. This analysis determined that the east civic plaza was favoured due to lower initial costs, urban design considerations, the ability to provide more direct transfers between all transit modes, better retail frontage opportunities, and

better opportunities for informal surveillance and safety. The final Transit Village Plan was, therefore, developed, based on an east side civic plaza.

Initial implementation strategies have been identified in the Transit Village Plan. Additional refinement is required and is being developed in consultation with the GVTA and the Engineering Department. The final proposed Implementation Strategy will be forwarded to Council at a later date.

DESCRIPTION

The main components of the proposed Transit Village Plan are summarized below.

1.0 The Vision

The Transit Village Plan proposes the integration of land use and transportation strategies to create a vibrant downtown centre for Surrey that fuses a distinctive public space strategy of high quality streets and a major civic square. This new urban "heart" for Surrey will include finely scaled streets with an enhanced public realm, a broad mix of urban land uses, attractive public open spaces and greenways that will encourage residents, students, workers, and visitors to choose green modes of transportation. The proposed land use plan is illustrated on page 5 of the Transit Village Plan, which is attached as Appendix I. The Key Elements of the Transit Village Plan are listed on page 2 and the Planning Principles are on page 22, as part of the same attachment.

2.0 Market and Financial Analysis

The market and financial analysis was initially completed in September 2005 and updated in January 2007. The issues identified as part of this analysis have been addressed in the other components of the Transit Village Plan and inform the formulation of implementation strategies. The key issues raised as part of the market analysis are summarized below:

2.1 Proposed Density - The Official Community Plan ("OCP") currently provides for a floor area ratio ("FAR") of 3.5 times the lot area. This density will not encourage redevelopment as most of the properties in the core area already have a viable economic use. An FAR of about 6.0 would make approximately 50% of the properties in the core area attractive for redevelopment in the short term. Additional density over 6.0 FAR may be required to make the remaining properties in the area attractive for redevelopment in the short term, but overall market demand is not great enough for the entire area to redevelop all at once. The use of minimum density provisions could be used to achieve higher valued uses in the core area, such as office space.

2.2 Residential Market – Residential apartment demand in the larger City Centre area is expected to be approximately 300-500 units per year between 2006-2016. Measures, such as limiting higher density to within

the Transit Village area, could help direct some of this residential development to within the Surrey Central Transit Village area.

2.3 Retail Market - Low vacancies in retail space, anticipated increases in residential units in the area, convenient access, convenient parking and high visibility all support new retail viability in the Surrey Central Transit Village. The local retail uses could be developed within larger mixed-use projects that appeal to the local and regional retail markets. Improved pedestrian crossings of King George Highway are needed to provide better connections with existing and future businesses east of the highway. The King George Highway frontage should continue to accommodate larger retail and service businesses that are reformatted to be more pedestrian-friendly and to provide convenient structured and underground parking. Restaurants, cafes, pubs, florists, salons, retail and specialty food stores and other small-scale retailers will be interested in sites on the new street system. These streets will also provide improved, pedestrian friendly access to the Central City Mall.

2.4 Office Market - The demand for new office space in all regional town centres in the Lower Mainland is not high and currently competes with office parks, which in the short term, includes substantial office development capacity in the GVRD. However, the larger Surrey City Centre area is well positioned to capture a significant share of the remaining town centre market, due to the relatively large existing office inventory and SkyTrain service. It is anticipated that Surrey City Centre will attract approximately an average of 50,000 square feet to 100,000 square feet per year of private office space over the next 10 years and a large share of this could be located in the Surrey Central Station area. This amount of annual office demand would amount to approximately one office tower every 10 years or, alternatively, office space could be incrementally incorporated into mixed-use developments.

While the market trend for office development in Surrey City Centre may not result in the amount of office space as described, other measures that the City can take to encourage office development include:

- Encouraging a government agency or major institution to locate or expand in Surrey City Centre;
- Assembling land to improve the feasibility of office and mixed-use development;
- Amending regulations to reduce development costs such as reduced parking standards. Parking demand by commercial users may possibly be accommodated through the creation of a public parking facility;
- Reducing property tax rates for office uses, which will in turn increase the net lease rate, improving the feasibility of office development;
- Providing a density bonus provision for the inclusion of a specified amount of office space as part of a mixed-use development;
- Zoning specific sites exclusively for office uses to reflect the office land value instead of a higher residential land value;

- Providing a municipal office presence in the Transit Village area; and
- Offering DCC reductions for high-rise office development.

3.0 Transit Service

Surrey Central will be the main transit hub for the region south of the Fraser River and will need to accommodate a growing number of transit users. The factors that need to be addressed to accommodate transit service include the form of the transit exchange, livability of the area and operational efficiency:

- **Form** - The existing bus loop is a suburban form for a transit exchange that is an extravagant use of land in an urban setting and has been identified as a physical and visual barrier in the centre of Surrey's downtown, with inherent safety and image issues associated with the existing facility;
- **Livability** - The increasing number of buses proposed for Surrey Central can diminish the livability of an area with additional noise and traffic if concentrated on one street. As well, the existing loop configuration requires all transit users to cross bus lanes from the bus loop to access adjacent amenities. In addition to the bus drop-off/pick-up activity, the layover function places numerous buses idling in the loop at any one time to accommodate breaks for the drivers and to meet scheduling requirements. The layover of multiple buses adds to the noise and visual barrier effect of the bus loop;
- **Operational Efficiency** - Bus service needs to accommodate transfers between other bus routes and SkyTrain service. The layover function also needs to be nearby for the efficient functioning of the transit system. The addition of a Bus Rapid Transit (BRT) service will provide more frequent and faster transit service between Surrey Central and three of Surrey's other Town Centres (Guildford, Newton, and Semiahmoo) connecting even more people to this centre. This service will add more buses that need to be close to the local bus and SkyTrain service. Details of new or upgraded transit service are being developed as part of the South of the Fraser Area Transit Plan. Convenient pedestrian, bicycle and vehicle connections to this transit hub are also very important in the efficient operation of transit service.

The following solutions have been incorporated in the proposed Transit Village Plan, to provide the envisioned transit service for the area:

- **Form** - To incorporate transit service in a more urban form, the local bus service is proposed to be relocated from the existing bus loop to a transit "couplet", which is a system of two parallel streets that separate buses based on their direction of travel. Transit riders will be picked-up and dropped-off on attractive City streets that are lined with active retail and public uses. This arrangement allows valuable land previously occupied by the bus loop to be developed with high-density uses that will add to the vibrancy in the area.

- **Livability** - To minimize the visual and functional impact of too many buses on any single street, the transit services have been separated. Local bus service is proposed along the east-west couplet streets, BRT service is on City Parkway, and a bus layover facility is proposed in an enclosed holding area off the northern couplet street.
- **Operational Efficiency** - Transit connections, including BRT, local buses and SkyTrain, have been optimized by placing bus stops and station access on three sides of the civic plaza within sight and walking distance of each other. The layover facility is adjacent to the northern couplet street within a block of the civic plaza and transit hub. The BRT service is to be run along City Parkway to reduce congestion on the couplet and provide a more direct route to other BRT destinations. In addition to transit, all of the streets around the civic plaza/transit exchange are accessible by pedestrians, bicycles and vehicles to provide convenient connection with transit service by multiple modes.

4.0 Transportation Network/Streets

The existing transportation network in the study area is limited and discontinuous, with oversized block sizes that are not conducive to pedestrian movement.

A key planning principle of the Transit Village Plan is to create a finer grained, pedestrian-scaled street grid with shorter, walkable block lengths consistent with an urban setting. This finer street grid will also create more typically scaled, efficient land parcels for urban development. This high quality public realm is to include pedestrian linkages through new developments to provide more direct connections among amenities and services such as between the Central City Tower/SFU/Mall campus, the Civic Square, and the Recreation Centre. Additional crossings of 104 Avenue and King George Highway will also provide more direct multi-modal linkages to the north and east of the study area.

Vehicular mobility has been accommodated by maintaining capacity on King George Highway, improving connectivity to the Ring Roads, and creating new east-west and north-south streets to distribute traffic within the Transit Village.

East-west signed cycle routes have been proposed on the two new couplet roads. These routes will connect with the bike route along City Parkway and link up with the bicycle network outside of the study area, connecting Holland Park, other SkyTrain Stations, Tom Binnie Park, Whalley Ball Fields, and beyond.

The Transit Village Plan provides for parking to be accommodated underground and on-street. While parking regulations and management will be addressed in more detail as part of the larger Surrey City Centre Plan update that is currently underway, the following parking recommendations are proposed in the Transit Village Plan:

- Introduce parking maximums to avoid an oversupply of parking, which may discourage transit use and increase the costs of development;
- Review existing parking regulations to determine the opportunity for potential reductions;
- Discourage off-street surface parking;
- Encourage shared parking arrangements between land uses with opposing peak demands;
- Accommodate on-street parking, which also supports at-grade retail uses; and
- Consider a public parking facility to support commercial uses that may otherwise be unwilling to reduce parking provisions.

5.0 Public Open Space

Greenspace in the study area is limited and poorly connected. While the entry plaza to the Central City Tower/SFU/Mall is an active and attractive civic amenity, the informal green space north of the recreation centre is hidden from view by parking lots, and blank walls on adjacent buildings, inconsistent with the City's policies to promote the principles of Crime Prevention Through Environmental Design (CPTED). There are poor connections to nearby public open space amenities outside of the study area, such as Holland Park to the south and Tom Binnie and Whalley Athletic Fields to the north.

The proposed Open Space Plan for the Transit Village consists of several interconnected public open spaces, including:

- A major civic space at the heart of the downtown, which also serves as the transit interchange between SkyTrain, BRT, and local bus service. This space is to be lined with shop front retail and public uses, which could also be incorporated into the plaza itself. Transit exchange functions will also add to the activity in the area providing additional informal surveillance opportunities. It is recommended that this civic plaza be programmed with activities to further enliven the area, add interest, and increase the attraction to the area;
- An extension of the Central City Tower Plaza, mirroring the plaza on the north side of 102 Avenue. This will provide a south facing public space, and will build on the success of the existing plaza;
- A new neighbourhood amenity - Mosaic Green - to provide local green space designed specifically for residents in the area; and
- City Parkway, consistent with the 1991 plan, will continue to be the main north-south connector through City Centre to other City and regional destinations.

6.0 Utilities

The service capacity in the core study area is generally sufficient to support the growth anticipated as a result of this proposed Transit Village Plan. Some upgrading, extension, and undergrounding of services will likely result as part of new development.

7.0 Proposed Land Use

Currently, there are no residential uses within the core study area. Land uses in the Transit Village area consist of low-density retail businesses that are generally in single storey structures and are set back from the street, with a significant portion of the site area utilized for surface parking. The area is home to the North Surrey Recreation Centre, library, senior's centre, bus loop, and SkyTrain Station. The Central City Tower and Surrey SFU campus are immediately adjacent to the Transit Village, south of 102 Avenue. To transition into a successful Transit Village, the land use plan described in Appendix I (on pages 24-26) has been proposed. The proposed land uses and their locations are summarized below.

- 7.1 High Density Residential** - High-density residential uses are proposed, both as a single use and as part of mixed-use developments throughout the core area, with the exception of the civic plaza and the land between the Recreation Centre and 102 Avenue, West Whalley Ring Road and City Parkway. Residential is proposed at a net density of 6.0 FAR. The addition of residents to the area will support transit use, add more vitality to the area, and provide a larger population base to support retail uses, provide employees for office and institutional uses, provide for students, etc.
- 7.2 High Density Residential and Public Transit Use** - A public transit layover space will be needed to reduce the negative impacts of the transit layover function in the Transit Village. As this function needs to be close to the local transit bus stops, its location is proposed adjacent to the northern couplet road near the residential quadrant of the Transit Village. This facility is proposed to provide space for buses to layover and break facilities for bus drivers. The at-grade facility is to be "wrapped" with street oriented residential uses and topped with high-density residential uses. The public transit use is in addition to the residential density of 6.0 FAR.
- 7.3 Mixed-Use: Retail, Office and Residential** - Retail uses have been subdivided into local-serving retail and regional-serving retail. Local-serving retail uses are generally street front shops and are proposed to be focused on all blocks facing the civic plaza and onto the east-west couplet roads between City Parkway and King George Highway. Regional-serving retail uses, which are larger format uses that rely on auto/transit access and a larger market area, are still provided for in the Transit Village Plan, primarily in the Mall and along King George Highway, but regulations will be introduced to ensure that these uses are

developed in a format more in keeping with an urban, downtown context. Apart from the required retail street frontages, the other mix of uses proposed include office and residential at a density of 6.0 FAR. Measures to encourage office uses will be determined as part of the Implementation Strategy.

A minimum amount of office space will also be required as part of mixed-use developments south of the civic plaza, between City Parkway and King George Highway and will be determined as part of the Implementation Strategy. Other uses in this southeast quadrant of the Transit Village include retail and residential.

- 7.4 Commercial: Retail, Office and Institutional** - This key component of the study area has been reserved solely for office and institutional uses. It is an objective of the City to encourage additional office development, building on the momentum of the Central City Tower. As the student enrolment at the SFU-Surrey campus is proposed to expand from 2,000 students to 5,000 students by 2010, institutional uses have also been identified as appropriate for this site, which is adjacent to the existing campus. There is an existing Comprehensive Development (CD) Zone for this property that was adopted as part of the Central City Tower development that includes this mix of uses at a density of 7.5 FAR. The relocation of the existing bus loop and public parking will be required before this property can be redeveloped. The replacement of the bus loop with a through street will add to the development potential of this site.
- 7.5 Public, Residential, Office and Retail** - Public Uses have been identified in the Transit Village Plan to accommodate the civic and cultural amenities needed to create a complete and vibrant community. The Transit Village Plan provides for the retention of the North Surrey Recreation Centre. Subject to the relocation of the ice sheets in a more suitable location, in the medium to longer term, a multi-story community centre that includes a senior's centre and other cultural amenities is envisioned. This redevelopment of the Recreation Centre could include retail uses with residential and office uses above. The public uses will be in addition to the residential and office density of 6.0 FAR. Measures to attract office development will be identified as part of the Implementation Strategy.
- 7.6 Public, Institutional and Retail** - This land use category is to accommodate outdoor open space, including the new civic heart for the City, in the form of a civic plaza. This plaza will also provide a focus for the connection of all the transit services. To ensure that the civic plaza is active and vibrant, it can also include other active uses such as a new City centre library, cultural amenities, and retail uses. This designation also applies to Mosaic Green, a smaller neighbourhood park space to serve the needs of the new residents in the Transit Village.

8.0 Design Guidelines

Detailed guidelines will be developed as part of the larger update process for the Surrey City Centre Plan to differentiate the various neighbourhood nodes and corridors. The Transit Village Plan does, however, include streetscape design guidelines to define the character of streets in the study area, including City Parkway, the proposed couplet (east-west) streets, and the proposed north-south streets. The design of the streets considers the adjacent land use, activities, environment, adjacent building form and character, in addition to their functional requirements. Pages 47 through 57 of the Transit Village Plan, contained in Appendix I, provide cross sections, plan views, and descriptions of each of these streetscapes. The general character of each of these streets is summarized below:

- **City Parkway** is a greenway and multi-modal transportation corridor that will accommodate bike routes, an enhanced pedestrian environment, BRT service, and automobiles. The SkyTrain alignment, Surrey Central SkyTrain Station, the civic plaza, and new neighbourhood park all abut City Parkway. This important route also provides pedestrian connections from the expanded Central City Tower/SFU/Mall and recreation centre. City Parkway will connect with trails, parks and SkyTrain Stations outside of the core study area.
- **East-west couplet streets** will be lined with shop front retail, bike routes, sidewalks for pedestrians, on-street parking, one-way local bus service, and two-way vehicle lanes. These streets will also provide key connections across West Whalley Ring Road and the commercial businesses east of King George Highway.
- **North-south streets** are proposed to be narrower and are to accommodate pedestrian and vehicular traffic with an adjacent built form that is smaller in scale, with high-density towers set back from two to three storey podiums. These streets are to be lined with shop-front retail or public uses adjacent to the civic plaza and beyond with opportunities for flexible street-oriented townhouse uses that are built with higher ceiling heights to allow for a transition into at-grade retail or other public uses in the future.

9.0 Preliminary Implementation Strategies

Strategies for the implementation of the Showcase Plan are currently being refined. On-going work includes the refinement, design and costing of the capital improvements required to relocate the bus loop, capital improvements and amenity contributions to be included as part of new development, potential OCP and Zoning By-law amendments, methods to enhance image and market opportunities and measures to encourage desirable types of development in the Transit Village area. The final Implementation Strategy will also include proposed timelines, cost implications, and sources of funding to realize the proposed Transit Village Plan. It should be noted that there are significant costs involved in implementing the Plan.

10.0 Capital Improvements Required to Relocate the Bus Loop

City of Surrey and TransLink staff has been working through the respective components of the Transit Village Plan to identify the first two phases of capital improvements that are required to accommodate the relocation of the existing bus loop. The following improvements have been divided into those for which the City and TransLink have primary responsibility:

Phase 1

City of Surrey Elements

- Acquire land, design, and construct two new east-west roads to accommodate the transit couplet;
- Vacant City-owned land for the bus layover space. The bus layover function could be located on a new street for an interim period of time; and
- Acquire land, design and construct the new north-south road along the eastern edge of the civic plaza. This road may be used to accommodate the bus layover function for an interim period of time.

TransLink Elements

- Improve the interim or final bus layover facility; and
- Improve other transit facilities required to support changes in Surrey Central to accommodate BRT service (i.e., improvements are required at the Guildford, Newton and Semiahmoo Transit exchanges to accommodate BRT service). These improvements are under consideration as part of the South of Fraser Area Transit Plan. Interim BRT service could commence as early as 2009.

There are approximately \$3 million remaining as part of the Showcase partnership funds that could be used to construct some of these improvements, but cannot be used for property acquisition. Staff will provide Council with a recommendation for the use of these funds and other timing and financial implications as part of the Implementation Strategy.

Phase 2

City of Surrey Elements include acquiring land for, and designing, constructing, and programming the civic plaza.

TransLink Elements

- Design and construct transit facilities in the civic plaza;
- Design and construct improvements to the Surrey Central SkyTrain Station; and
- Design and construct improvements on City Parkway to accommodate BRT service.

TransLink has applied for a Municipal Rural Infrastructure Fund grant of \$2 million for these Phase 2 works. TransLink has proposed that the City and TransLink provide approximately \$2.5 million each as part of the matching funds to complete this work subject to Council approval.

11.0 Potential OCP and Zoning By-Law Amendments

Changes proposed in the Transit Village Plan will need to be reviewed for consistency with the existing OCP, including an amendment required to allow for additional density proposed.

Further review of the Zoning By-law will be undertaken to examine the potential to reduce parking standards in the Transit Village and to identify the mechanism to determine the minimum amount of office density to be required as part of the mixed-use developments in the proposed Transit Village Plan.

12.0 Methods to Market and Encourage Development

A fundamental objective in undertaking the Showcase Plan, is that this not be a plan that "sits on the shelf", but that it be used as a means to engage the market, to partner with other agencies such as TransLink, and that it be an impetus to encourage major redevelopment in the City Centre. Through the process, strategies are emerging which will provide for the creation of a finely-grained, urban network of streets, viable redevelopment parcels, and a transit system designed to serve a major downtown area. Staff will continue to explore and seek Council's approval for methods to encourage development in the area. This may include continuation and expansion of DCC reductions through a thorough investigation of City-wide land use impacts, further partnership opportunities to market the area and facilitate development, etc.

CONCLUSION

The benefits of realizing the Transit Village Plan includes the integration of land use and transportation strategies to create a vibrant downtown centre for Surrey that fuses a distinctive public space strategy of high quality streets and a major civic square. This new urban "heart" will include finely scaled streets with an enhanced public realm, a broad mix of urban land uses, attractive public open spaces and greenways that will encourage residents, students, workers, and visitors to choose green modes of transportation more often.

It is recommended that Council approve the Transit Village Plan, attached as Appendix I, as a means to:

- Guide and implement transit-oriented redevelopment in the immediate vicinity of the Surrey Central SkyTrain Station, and specifically redevelopment of the lands bounded by 104 Avenue, King George Highway, 102 Avenue and West Whalley Ring Road; and

- Guide the implementation of a transit network that will permit the removal of the existing bus loop and the integration of bus routes into the street network.

It is further recommended that Council authorize staff to refine and expand on initial implementation strategies outlined in this report to support the development of this area and report back to Council with an Implementation Strategy for further consideration.



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Acting General Manager
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General Manager, Engineering

LG/rdd/saw

Attachments:

Appendix I	Proposed Surrey Central Transit Village Plan
Appendix II	Map of Core Study Area
Appendix III	Surrey Central Transit Village - Transit Plaza Evaluation, June 18, 2006

SURREY CENTRAL TRANSIT VILLAGE PLAN



JANUARY 26, 2007

Surrey Central Transit Village Plan

Urban Transportation Showcase Program

January 2007

Prepared for:

City of Surrey

TransLink

Greater Vancouver Regional District

Transport Canada

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Transport Canada

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The Surrey Central Transit Village Plan is part of the
Urban Transportation Showcase Program:

The Showcase Program is a federal program designed to encourage Canadian municipalities to adopt transportation and land use patterns and practices that promote sustainable forms of transportation (i.e. transit, walking, and cycling) thereby reducing greenhouse gas emissions.

The goal of the Surrey Central Transit Village Plan:

...is to create a livable urban neighbourhood around the Surrey Central SkyTrain station based on the principles of Transit Oriented Development (TOD). The intention is to take a critical step towards creating a vibrant downtown for Surrey.

A Transit Oriented Development (TOD) is...

"... a mixed-use community within an average 2,000-foot walking distance of a transit stop and core commercial area. TODs mix residential, retail, office, open space and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot or car"

-Peter Calthorpe

A Transit Couplet is...

"... a system of two parallel streets that separate buses based on their direction of travel. This allows buses to offer direct service to a specific location while minimising the visual and functional impact of buses on any single street. "

Executive Summary

The Surrey Central Transit Village Plan (SCTVP) is an initiative of the Urban Transportation Showcase Program. The Showcase Program is part of the federal government's overall Green Plan for Canada. It is designed to encourage municipalities to adopt transportation and land use policies, patterns and practices that promote sustainable forms of transportation such as transit, walking and cycling, thereby reducing greenhouse gas emissions and air pollution. The common term for this agenda is Transit Oriented Development (T.O.D.).

The SCTVP proposes an integrated plan that fuses a distinctive public space strategy of high quality streets and a major civic square, with an efficient transit strategy and appropriate land uses, to the mutual benefit of all. This integration of land use and transportation strategies will be unique in the Lower Mainland. Its suc-

cessful implementation will also be a key step in the creation of a dynamic new urban focus for the City of Surrey, and a vibrant new downtown. This new urban heart will be an example of what makes great cities great: finely scaled streets and richly textured built fabric contrasted by dramatic public spaces, and a broad mix of urban uses. All of this will occur in a way that accommodates and celebrates the multiple modes that people will use to move around: on foot, bicycle, automobile, and most importantly for the future of this region, public transit.

An added strength of the SCTVP design and implementation strategy is achievability. Through direct discussions with the private development community and a detailed market and economic analysis, the plan has identified those economic and symbolic elements that are most likely to catalyze private developer interest.

The SCTVP proposes:

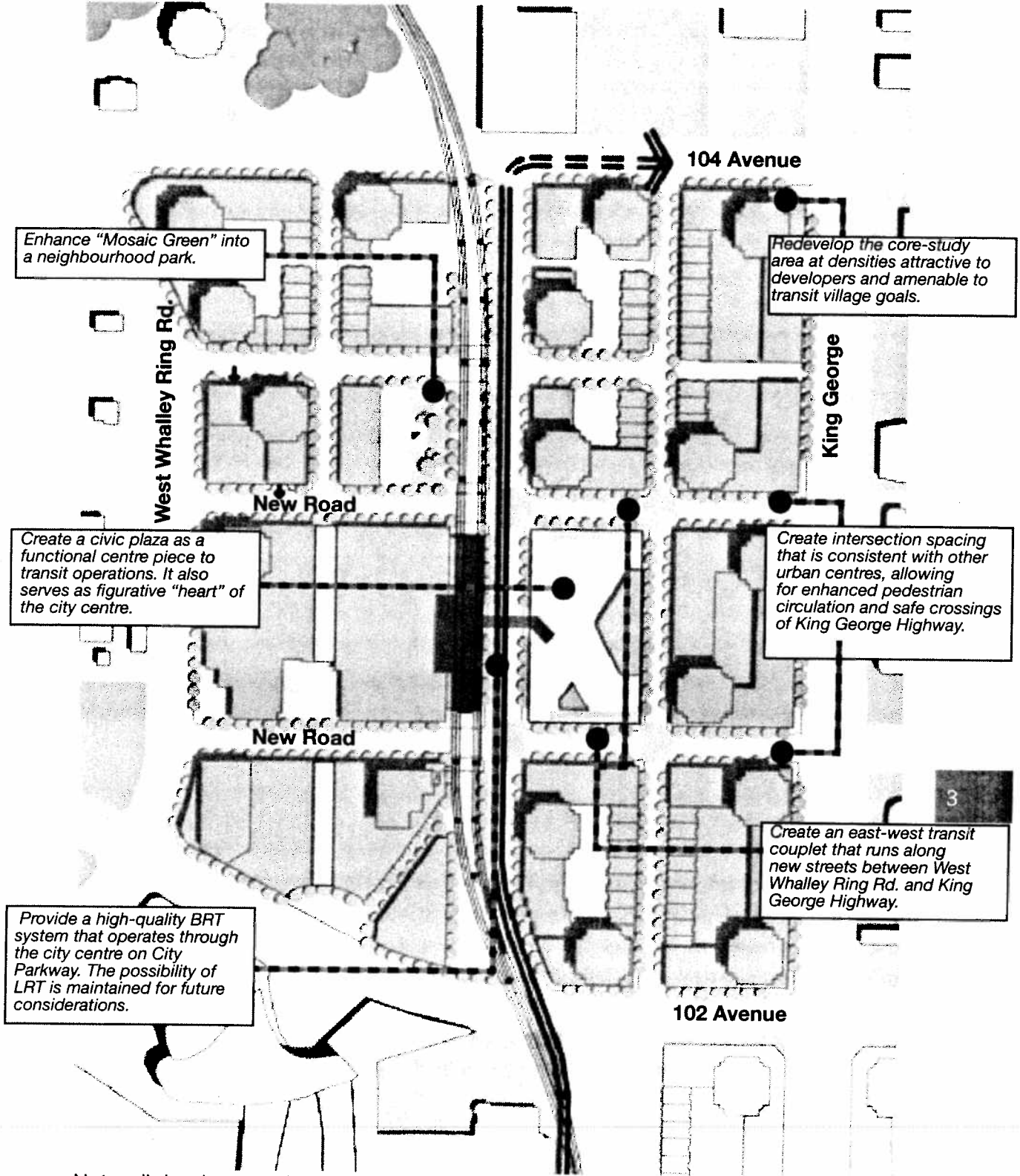
- A finer-grained urban street grid that supports a more walkable, pedestrian-oriented centre, pedestrian-scaled block sizes and enhanced security
- An optimized transit network that permits removal of the existing bus loop and integrates bus routes into the street network on a new transit couplet
- A major civic space that creates a new downtown centre, a unique public icon and a source of community pride, and also serves as the transit interchange
- A high-density, mixed-use, livable urban centre that enhances public security by putting more activities and more eyes on the street
- An improved pedestrian and cycling environment that encourages alternatives to auto use and thus contributes to reducing greenhouse gases
- A retail and commercial strategy that serves regional, citywide and local needs, and creates a unique 'downtown' destination
- A high quality public realm and open space plan that demonstrates civic commitment, enhances community pride and encourages private development

Key Elements of the Plan

The Surrey Central Transit Village Plan includes the following key elements.

1. Two new east-west streets connecting West Whalley Ring Road to King George Highway and, over the longer term, potentially extending further east and west.
2. A new north-south street connecting 102 Avenue and 104 Avenue, located between City Parkway and King George Highway.
3. Additional east-west and north-south streets that provide significant enhancements to pedestrian, cyclist, and vehicular circulation, and create efficient, practical development parcels.
4. Relocated transit (on-street buses) along the two new east-west streets (transit couplet) to replace the bus loop.
5. An enhanced City Parkway to accommodate a Bus Rapid Transit (BRT) and future possible Light Rail Transit (LRT) route within the public right of way.
6. A greenway along City Parkway that connects with the larger greenway system in Surrey City Centre.
7. A bus layover facility at West Whalley Ring Road and the northwestern end of the transit couplet.
8. A Civic Plaza east of Surrey Central SkyTrain Station between the east-west transit couplet streets, which will become the focal point and heart of the city centre as well as facilitate efficient transit transfers between local bus, SkyTrain, and Rapid Bus.
9. Densities of up to 6.0 FAR permitted on all development parcels in the core study area.
10. Conditional increased density permitted provided that commercial office space is included as part of a mixed-use development.
11. A wide range of uses, including mixed-uses, permitted on most development sites including retail, commercial office, residential, institutional, cultural uses, etc., with some sites reserved for office or educational uses only above the ground level.
12. Strong pedestrian connections, notably from Central City Tower to the North Surrey Recreation Centre and to the Civic Plaza
13. Convenient and safe connections for cyclists to/from the SkyTrain Station including new streets that are designed to accommodate cyclists.
14. Secure, conveniently located bicycle storage and end-of-trip facilities.
15. Retail and service uses required at-grade on all development parcels along the east-west transit couplet and facing onto the Civic Plaza.
16. Regional retail on sites fronting onto King George Highway.
17. Development parcels south of the Recreation Centre designated for major office and institutional developments plus street-oriented retail.
18. "Mosaic Green" created and enhanced as a neighbourhood park.
19. New built form to provide for flexibility over the long term, ensuring that street frontages are active, safe and vibrant, as social conditions change.
20. Managed parking supply and pricing at levels appropriate for a city centre, with reduced amounts of off-street surface parking.

Surrey Central Transit Village Plan: Annotated Plan



Note: all development forms are conceptual only for illustrative purposes

Summary of Phasing and Implementation

The development of the Surrey Central Transit Village is a long-term undertaking. However, an initial first phase of infrastructure investment is imperative for the future success of the plan. The plan identifies the minimum capital works required in the first phase. A detailed phasing and implementation plan is provided in the "Surrey Central Transit Village Plan Implementation Strategy," submitted separately from this report.

In summary, the following phasing plan is proposed:

Phase 1:

Lands need to be assembled to permit the following:

- Develop two new east-west streets connecting West Whalley Ring Road and King George Highway, on the north and south sides of the Recreation Centre.
- Develop a transit couplet (for buses) along these new streets.
- Develop a bus layover facility at the northeast corner of West Whalley Ring Road and the northerly east-west street. The layover facility should be incorporated into a larger development that could potentially include a public parkade, a civic building or a private development above.
- Create a Civic Plaza between the transit couplet streets adjacent to the SkyTrain station on the eastern side of City Parkway. There should be at least two developed edges fronting the plaza to ensure that there is informal surveillance of the plaza.
- Develop a north-south street along the east side of the Civic Plaza between the new east-west transit couplet streets.
- Reconfigure the Surrey Central SkyTrain station to permit exit and entry directly into the Civic Plaza.
- Bring any residual development parcels created by the new streets to market.

Phase 2:

- Create remaining east-west and north-south streets, as private development permits
- Reconfigure City Parkway to include a greenway and a BRT (potential future LRT) route.

Phase 3:

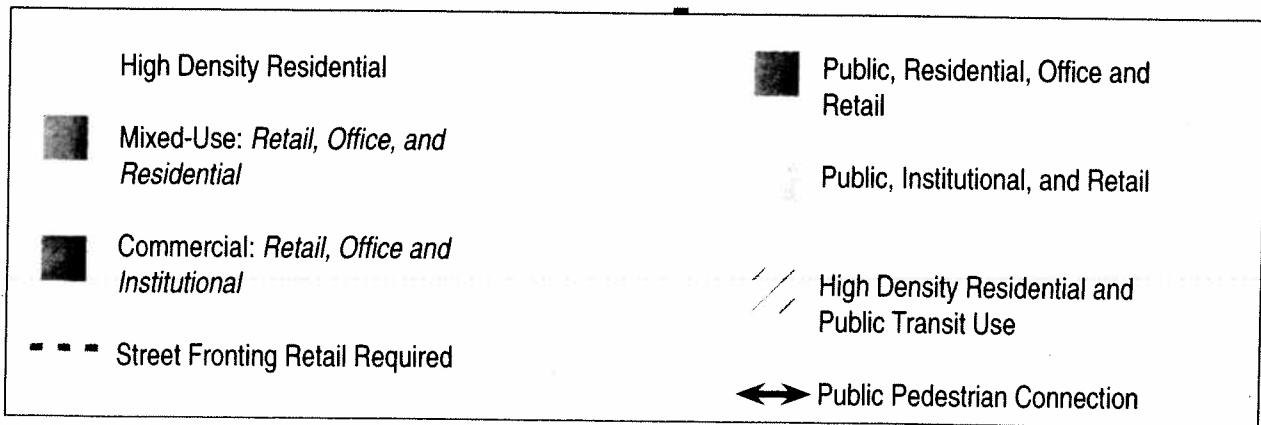
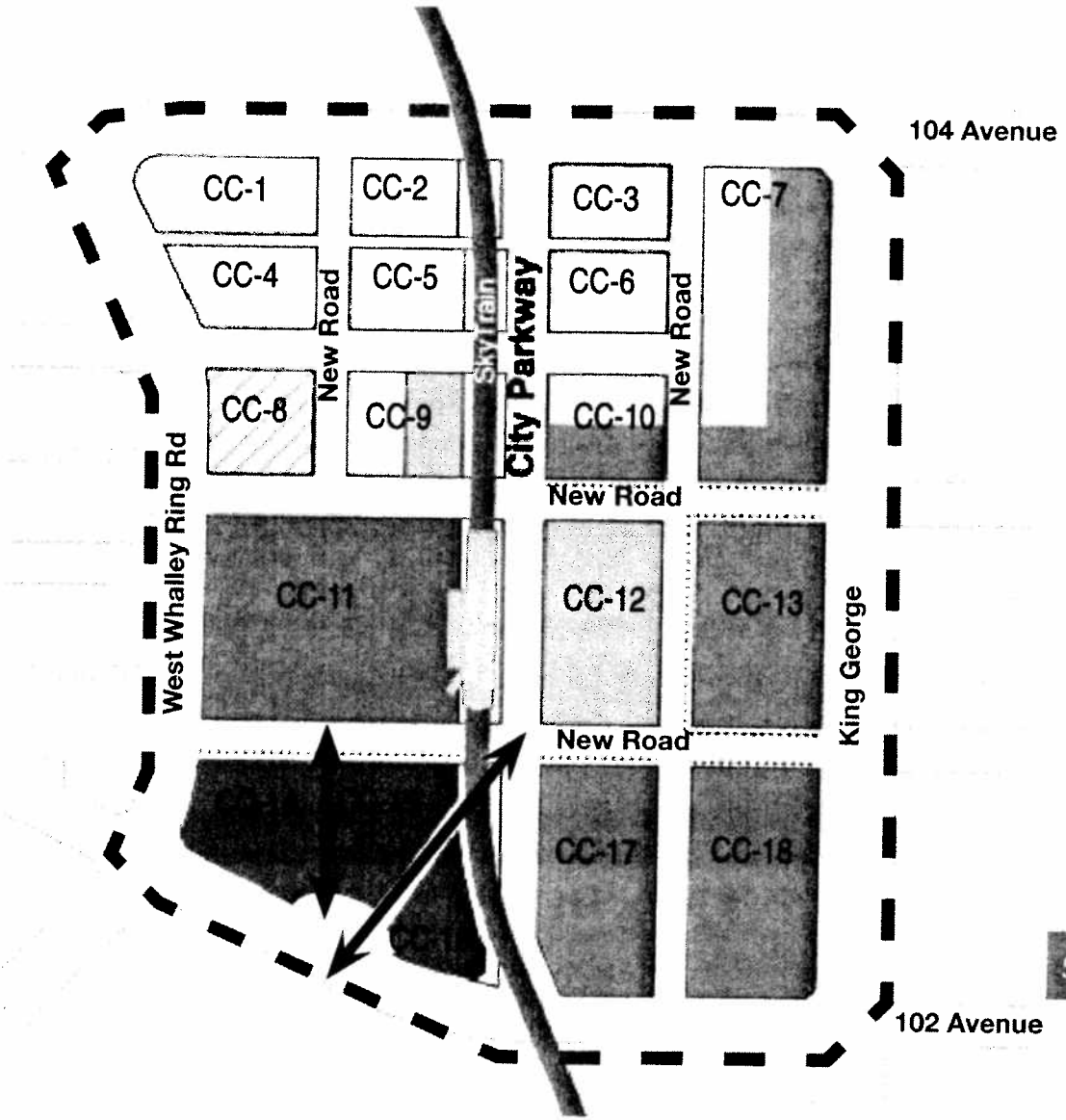
- Continue to encourage redevelopment to occur in the core study area as laid out in this plan, ensuring that pedestrian corridors and key connections are established.
- Create "Mosaic Green" as a neighbourhood park suitable for neighbourhood uses concurrent with the redevelopment of adjacent land.

Ongoing

Throughout the implementation process it is recommended that:

- highest densities are reserved for the core study area, and that the city restrict surrounding areas to lower densities, in order to stimulate and focus development within the core study area.
- the marketing, monitoring and evaluation of the plan are carried out by the City or by an authority set up and mandated by Surrey City Council.

Proposed Land-Use Plan



1.0 Introduction

The Planning Imperative

The area around Surrey Central SkyTrain Station has long been recognized as needing significant investment in order to realize its full potential as the emerging centre of downtown Surrey. In addition, Surrey Central SkyTrain Station is the most significant transit interchange south of the Fraser River, with the largest number of local and regional bus routes converging here. While the area is at the centre of Surrey's "City Centre" designated area, it has not developed into a true downtown and has a dispersed, low-density built form, and large-scaled street blocks resulting in an over-reliance on private automobiles. Though a high-quality regional transit system (SkyTrain) services the City Centre, the existing transit interchange functions are largely based on a suburban model bus-loop which is not suitable for a high-density urban context. As a result, pedestrian movements are often in conflict with bus movements and bus circulation. The area has also been associated with significant social problems.

Past planning efforts in Surrey City Centre – including the Surrey City Centre Plan (1991), Surrey City Centre Urban Design Concept (1993), the Surrey City Centre Social Strategy Report (1993), Surrey's Cultural Strategic Plan (1999), and the Whalley Parks, Recreation and Culture Master Plan (2001) – have initiated some enhancements to the area and created a framework for future interventions. However, a dramatic revitalization of the Surrey City Centre has only just started with the development of the Central City office tower- the location of the SFU Surrey campus- and an increase in the number of multiple residential development applications.

In November 2004, Surrey City Council authorized staff to proceed with a planning and public consultation process "leading to a plan, based on Transit-Oriented Development principles, for a Surrey Central Transit Village on lands within an 800 metre radius of the Surrey Central SkyTrain Station."

The Urban Transportation Showcase Program

The Surrey Central Transit Village Plan is being "kick started" by seed money from the Urban Transportation Showcase Program. The Showcase Program is part of the federal government's overall Green Plan for Canada and is designed to encourage Canadian municipalities to adopt transportation and land use policies, patterns and practices that promote sustainable forms of transportation such as transit, walking, and cycling, thereby reducing greenhouse gas emissions and air pollution. As part of this program, the Surrey Central Transit Village Plan benefits from being a joint partnership between the City of Surrey, TransLink, the GVRD and Transport Canada.

The Vision

Surrey Central, located at the most important transit interchange south of the Fraser River represents an opportunity for positive change.

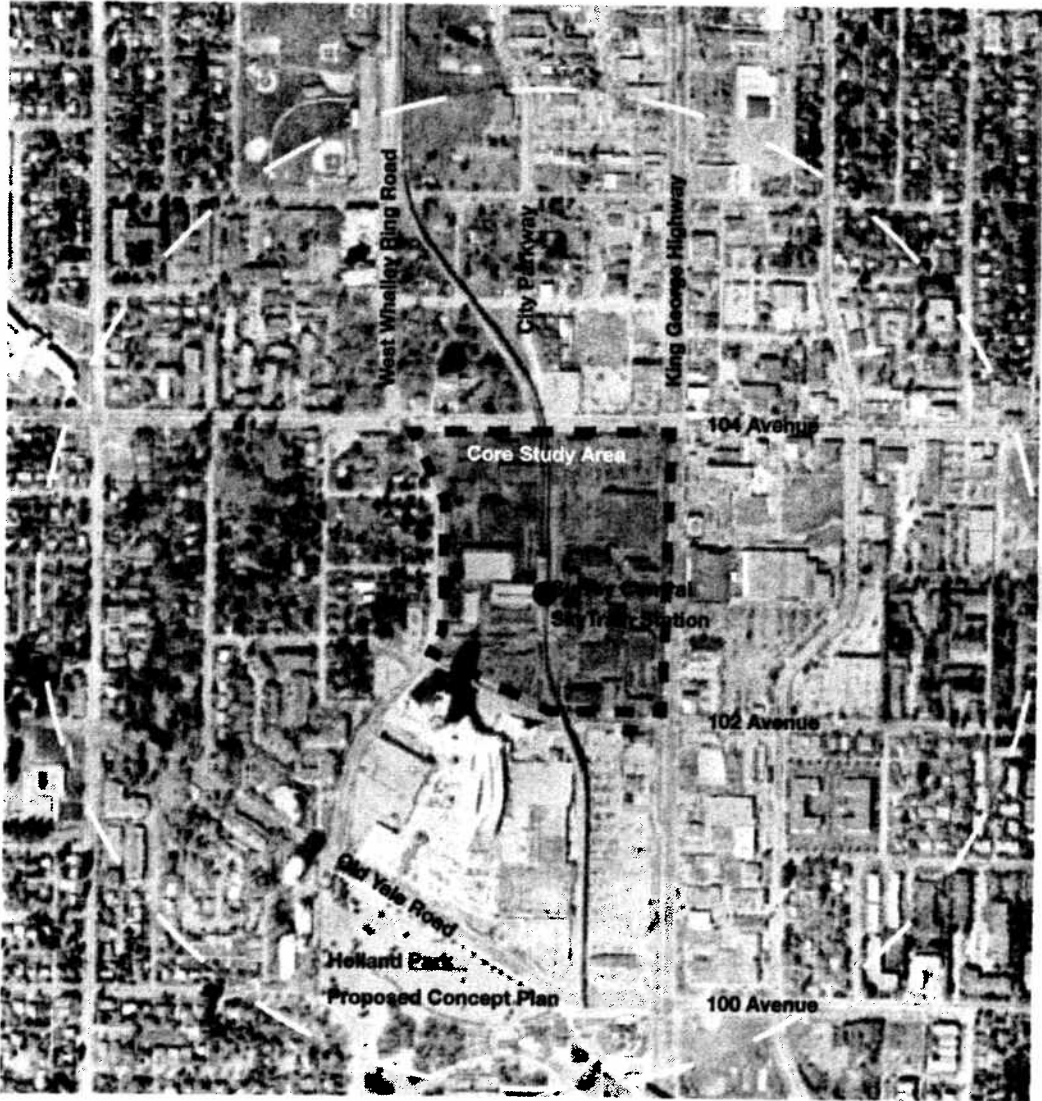
To achieve a vibrant new downtown centre for Surrey, the Surrey Central Transit Village Plan proposes an integrated plan that fuses a distinctive public space strategy of high quality streets and a major civic square with an efficient transit strategy and appropriate land uses, to the mutual benefit of all. This integration of land use and transportation strategies will be unique in the Lower Mainland. The Plan's successful implementation will be a key step in the creation of a dynamic new urban focus for the City of Surrey, and a more sustainable region.

This new urban "heart" of Surrey will be an example of what makes great cities great: finely scaled streets and richly textured built fabric contrasted by dramatic public spaces, a broad mix of urban uses, and higher densities. All of this will occur in a way that supports and celebrates the multiple modes that people will use to move around: on foot, bicycle, automobile, and most importantly for the future of this region, public transit.

The Surrey Central Transit Village Plan provides for mixed-use, high density development within walking distance of a diversity of high-quality transit options. Accordingly, the Plan calls for the enhancement of the public realm and the

creation of a transit-, bicycle- and pedestrian-friendly environment. At build-out, Surrey Central Transit Village will encourage residents, workers and visitors to choose green modes of transportation such as transit, walking and cycling more often.

Just as importantly, the Plan will create a true urban centre for Surrey achieving the vision of an emerging downtown for British Columbia's second largest, fastest growing city.



8

The Core Study Area

Core Study Area

An 800m radius around Surrey Central SkyTrain Station

Achieving the Plan - A Core Study Area

Transit Oriented Developments typically focus on areas within an 800m radius (or 10 minute walk) of a transit facility. By limiting the scope of this plan to a smaller core study area, a higher likelihood of success is created with an achievable strategy for a more limited area of intervention.

The Surrey Central Transit Village Plan is focused on a more targeted core study area that is located within approximately 300m of Surrey Central SkyTrain Station and is bounded by 104 Avenue to the north, 102 Avenue to the south, King George Highway to the east, and West Whalley Ring Road to the west. The Plan maximizes the opportunities for actual positive change, rather than dissipating efforts over a much larger area. It also enhances the likely impact of the initial investment of seed money from the Urban Transportation Showcase Program. The successful enhancement of even a few blocks in this area would be a catalyst for change in the broader City Centre. If the plan proves successful, then the successful strategies can be applied to lands beyond the core study area.

At the same time, the Plan ties into the wider surrounding area with proposals for linking to the City's greenway and bikeway networks and surrounding public open spaces such as Holland Park to the south. The Plan study area also incorporates the section of King George Highway between 102 and 104 Avenues.

The delineation of the study area also takes into consideration property ownership patterns. It includes several large and smaller parcels in private ownership, many of which are likely to be redeveloped under the right circumstances. A substantial part of the core study area also includes parcels in public ownership, which provides an opportunity for the City to play a proactive role in the area's redevelopment.

Realizing the Plan - Implementation

The Plan focuses not only the development of a physical plan, but on a strategy for its implementation.

The Plan recognizes that trade-offs will be required in order to achieve the objective of transforming this area into a truly urban, pedestrian-oriented city centre. For example, it proposes changes to the existing street network and traffic movement patterns that will impact existing free-flowing traffic and transit movements, and emphasize pedestrian enhancements. This represents a cultural shift that will need political as well as technical leadership. In order to succeed, the Surrey Central Transit Village Plan will require champions and a new way of building the city.

An added strength of the design and implementation strategy is achievability. Through direct conversations with the private development community and detailed market and economic analysis, this work has identified those economic and symbolic aspects of the plan that are most likely to catalyze private developer interest.

Although the Plan builds upon previous planning work, it does differ from past work in its proposed treatment of the SkyTrain guideway along City Parkway. Rather than continue to pursue a retail "High Street" along the SkyTrain guideway - a strategy that had to deal with the impacts of the guideway structure and has not been realized - the Plan proposes to create a north-south greenway along the SkyTrain guideway/City Parkway. The principal retail streets are proposed to be oriented along the two new east-west streets, which will not be impacted by the overhead transit guideway structure.

Scope

In addition to an assessment of the existing conditions in the core study area, this report provides direction in multiple areas for achieving the Plan's objectives. It includes:

- a set of Planning Principles
- a Land Use Plan
- a Street Network Plan
- a Pedestrian Network Plan
- a Bicycle Network Plan
- a Transit Network Plan
- a Vehicular Circulation Plan
- a high-level Parking Strategy
- Street Cross-Sections
- Design Guidelines
- an annotated and rendered overall Site Plan
- an Open Space Plan
- an Implementation Strategy that includes:
 - a Phasing Plan
 - Capital Works Recommendations
 - a Financial Strategy
 - Incentives and recommendations for implementing, monitoring and evaluating private sector development

2.0 The Plan

2.1 Assessment of Existing Conditions

A detailed analysis has been undertaken of the existing conditions in the core study area. This analysis included a review of:

- market conditions
- existing land use
- transit service
- transportation network
- public open space
- and utility infrastructure.

This assessment has contributed to a comprehensive understanding of the core study area issues and challenges.

2.1.1 Market and Financial Analysis

This market and financial analysis of development opportunities in Surrey City Centre was completed in September 2005 (updated 2007) by Coriolis Consulting Corp. as input to the Surrey Central Transit Village Study. The market and financial analysis examines opportunities in the overall City Centre, with an emphasis on the core study area. This section of the final report provides a summary of the main findings.

Multiple Residential Analysis: Potential Demand

The City of Surrey's 2006 population was approximately 402,150, with the Whalley area (which includes Surrey City Centre) having a population of about 80,000. A very small portion of Whalley residents actually live near the core study area, with no residents within the core study area.

The City's population grew at an average annual rate of about 2.7% per year from 1994 to 2006. Population growth is anticipated to continue at a high rate in Surrey over the next decade or more. This will lead to high demand for new housing in Surrey and opportunities for multifamily residential development in Whalley and the core study area.

Based on the analysis of residential development trends and projected population growth,

it is reasonable to anticipate demand for new apartment units in Whalley to average 300 to 500 units per year from 2006 to 2016. In addition, there will be demand for ground-oriented housing. Apartment demand could be even higher over the short term (as illustrated by rapid absorption at new projects in the Whalley area during 2005 - 2006 and current plans for several new projects) due to a variety of factors including high levels of interest from investors in multifamily housing, potential pent-up demand due to the low rate of new multifamily development in the neighbourhood over the past several years, and possibly some housing demand generated by SFU students and faculty. To achieve this rate of development, it will be important to continue to enhance the image of the area and improve public perception about crime and safety.

The demand for new apartment units is anticipated to be 300 to 500 units per year in Whalley. The core study area is in a good position to attract a share of this demand (if development sites are available) as it offers convenient access to transit plus proximity to park space, recreation/civic facilities, and commercial services.

Financial Viability of Multiple Residential Development

One of the main obstacles to new housing development in the core study area is the lack of vacant or under-developed properties. The privately owned properties in the study area are all improved with existing commercial buildings. Although developed at a low density, most of the properties have relatively high values under existing commercial use. To encourage redevelopment in the core study area, permitted residential densities will need to be high to help ensure that redevelopment to residential use supports a higher land value than holding the property in its existing use.

Based on the financial analysis, allowable residential densities in the range of about 6.0 FAR (derived from an FAR of 4.0-5.0 on existing gross site area) would make roughly 50% of the properties in the core study area development candidates in the short term (subject to market demand). The remaining properties will require

even higher densities to be attractive for redevelopment in the short term because they have more valuable existing improvements. However, it is probably not necessary for all of the properties to be redevelopment candidates in the short term because market demand will not be sufficient for the entire study area to redevelop in a short time frame.

In addition, developers will require permission to build tall buildings (likely in the range of 25 to 35 storeys). This creates the opportunity to offer a high share of view units and to lower construction costs per square foot as there are usually cost advantages associated with tall buildings.

Retail and Service Analysis: Potential Demand

Surrey City Centre includes a large inventory of retail and service space, including the 700,000 sq. ft. Central City Shopping Centre. Overall vacancy is relatively low in the area, but there are some pockets of vacancy in certain locations including Central City Shopping Centre.

The King George Highway corridor in the City Centre acts as the main retail and service location for the residents, businesses and employees of the Whalley trade area. This location offers convenient access to a large and growing residential trade area as well as nearby businesses and employees. In addition, retail and service businesses in the City Centre draw spending from commuters using the King George Highway.

The City Centre is a popular location for businesses that place a premium on high exposure, convenient access to large sub-regional trade area populations and convenient parking for customers. Examples of some of the larger sub-regional oriented retailers in the trade area include Best Buy, Canadian Tire, Zellers, Toys R Us, Future Shop, Staples and automobile dealers. Central City Shopping Centre also includes numerous smaller scale retailers that serve the sub regional trade area.

There are several large-scale retailers that do not yet have a location serving the Whalley trade area, which may be interested in locating in the City Centre if sites are available. Ex-

amples of potential candidates could include home furnishings and décor stores (such as HomeSense, Home Outfitters, Linens 'n Things), Chapters, Petsmart, and Winners.

The City Centre also includes local oriented retailers that serve the day to day needs of nearby residents such as grocery stores (Safeway, Price Smart Foods), drug stores (London Drugs) and numerous smaller scale business such as restaurants, cafes, salons, convenience stores, video rental, pet supplies, and florists. As the local population continues to grow, there will be interest from additional local oriented retail businesses.

Many of the local oriented businesses will be interested in sites that provide exposure to King George Highway. However, some may be interested in locations off of King George Highway. For example, restaurants, cafes, pubs, florists, salons, video rental, small book stores, specialty food stores, and other small scale retailers and service provided will be interested in sites off of King George Highway if the location is on a major pedestrian route for the residents, students, office workers, and transit users in the area. As the residential, student and employment base in (or near) the core study area increases, the opportunity for retail and service development in the study area will also increase.

Financial Viability of Retail Development

As demonstrated by recent new retail development in the area, retail and service development is financially viable on vacant sites in the City Centre. Within the core study area, new retail and service development could be incorporated into mixed-use residential and commercial projects if the site offers good retail frontage.

Office Analysis: Potential Demand

It is estimated that the City of Surrey includes about 3.3 million sq. ft. of existing office space. Approximately 1.4 million sq. ft. is located in (or near) the City Centre. A further 600,000 sq. ft. is located in the nearby Guildford commercial area. The remainder is located in other commercial centres (mainly Newton, Fleetwood, Cloverdale and South Surrey) or in business parks.

Between 1991 and 2005, demand for new office space in Surrey City Centre averaged about 65,000 sq. ft. per year. Demand has been higher in recent years with the opening of the Central City office building in 2003. Since early 2003, office space demand in Surrey City Centre has averaged about 180,000 to 200,000 sq. ft. per year. However, it should be noted that most of this space was rented at low lease rates.

It should also be noted that demand for new office space in the City Centre has been generated primarily by government tenants and government initiatives. This includes the Surrey Tax Centre building (federal government), the Central City building which was developed originally to accommodate ICBC offices (part of this building is occupied by government tenants and part is occupied by private tenants), and the Gateway office building, which is largely occupied by the Coast Mountain Bus Company. Government and institutions are likely to continue to generate demand for office space in the City Centre in the foreseeable future. For example, the RCMP is planning its new E Division headquarters just east of the City Centre.

Private sector office demand has made up a relatively small share of total demand in the City Centre, although the higher quality buildings include some notable tenants, such as JP Morgan Chase, Financial CAD Corp., Coast Capital Savings, Colliers, PricewaterhouseCoopers, Bank of Nova Scotia, London Life, plus some educational tenants.

Demand for additional office space in Surrey City Centre will come from two sources:

- Businesses interested in serving the local residents, employees and businesses in the Whalley area plus other nearby parts of Surrey. As the population of Whalley grows, demand for office space from local serving businesses will grow.
- Businesses and government agencies serving a broader geographic market that are interested in space in one of the GVRD Town Centres and/or office space in close proximity to transit.

To help evaluate the potential demand for office space in Surrey City Centre (and the core study area), a detailed analysis was completed of trends in the amount and geographic distribution of new office development in the GVRD over the past 15 years with an emphasis on demand in Town Centres and in office locations outside of the CBD that are served by SkyTrain.

Based on the analysis, demand for new office space in the GVRD Town Centres plus other locations served by SkyTrain (excluding Downtown Vancouver), averaged about 200,000 to 250,000 sq. ft. per year between 1991 and 2005. Demand was fairly consistent throughout this time frame. In comparison, demand for office space in Downtown Vancouver/Broadway corridor averaged about 550,000 sq. ft. per year and demand in other locations (business/office parks plus scattered commercial areas) averaged about 750,000 to 800,000 sq. ft. per year over the same time frame.

We do not anticipate average annual office demand in Town Centre locations to increase significantly without a corresponding decrease in the share of demand captured by business and office park locations. In the long term, the business park market share may decline due to a lack of well located business park land that is attractive for office use and possibly due to transportation constraints at business parks (such as increased traffic congestion and lack of transit service in comparison to Town Centres). However, in the short term there is substantial office development capacity in GVRD business park locations, so business parks will likely continue to remain an attractive option for many office users.

Therefore, it is anticipated that Surrey City Centre will be competing for a share of the regional office demand that has historically been captured by Town Centres and transit accessible office locations (outside the Downtown/CBD). This market totals about 250,000 sq. ft. per year on average.

Surrey City Centre (along with Metrotown) is well positioned to capture a significant share of this office space demand because of its large existing office inventory (in comparison to other Town Centres), strong transit links to

other commercial centres (including Downtown Vancouver) and transit links to residential areas (providing access for potential employees). In the longer term, transit accessibility to other office locations in the region will improve (such as Richmond Town Centre and parts of the Broadway corridor due to the Canada line and Coquitlam Town Centre due to the planned extension of LRT to the Northeast Sector). This will create increased competition for Surrey City Centre.

Based on historic demand in Surrey City Centre, the outlook for office demand in Town Centre and transit accessible locations in the region, the City Centre's advantages as an office location, and the number of potentially competing office locations, it is anticipated that future office demand in the City Centre will average between 50,000 sq. ft. and 100,000 sq. ft. per year over the next 10 years or so. The core study area could attract a large share of this estimated demand.

Demand could be higher if government agencies or major institutions (such as SFU) decide to locate or expand in the City Centre.

Financial Viability of Office Development

Office lease rates are currently low in the City Centre because office vacancy has been high in Surrey (as well as other parts of the GVRD) for the past few years. Net effective lease rates for new and high quality office space in the City Centre is currently about \$15-\$20 per sq. ft., but new high-rise office construction requires minimum net effective lease rates in the \$25 to \$30 per sq. ft. range. Therefore, under current market conditions, private sector office development is not financially viable in the City Centre. Lease rates will need to increase before office development is attractive to private developers.

The supply of good quality vacant office space in Surrey City Centre (and other parts of the GVRD) has been declining. This is beginning to put upward pressure on office lease rates. If this continues, office development should be financially viable in the City Centre over the medium to longer term.

2.1.2. Land Use

The study area is located within the City of Surrey's "City Centre" designated land use area. This land use designation "is intended to focus the development of a mixed use and high density downtown. This designation allows for a wide range of retail and office uses, employment, entertainment, cultural and education services and facilities, government services and multiple residential housing, to serve the needs of business and residents throughout the City and the region."

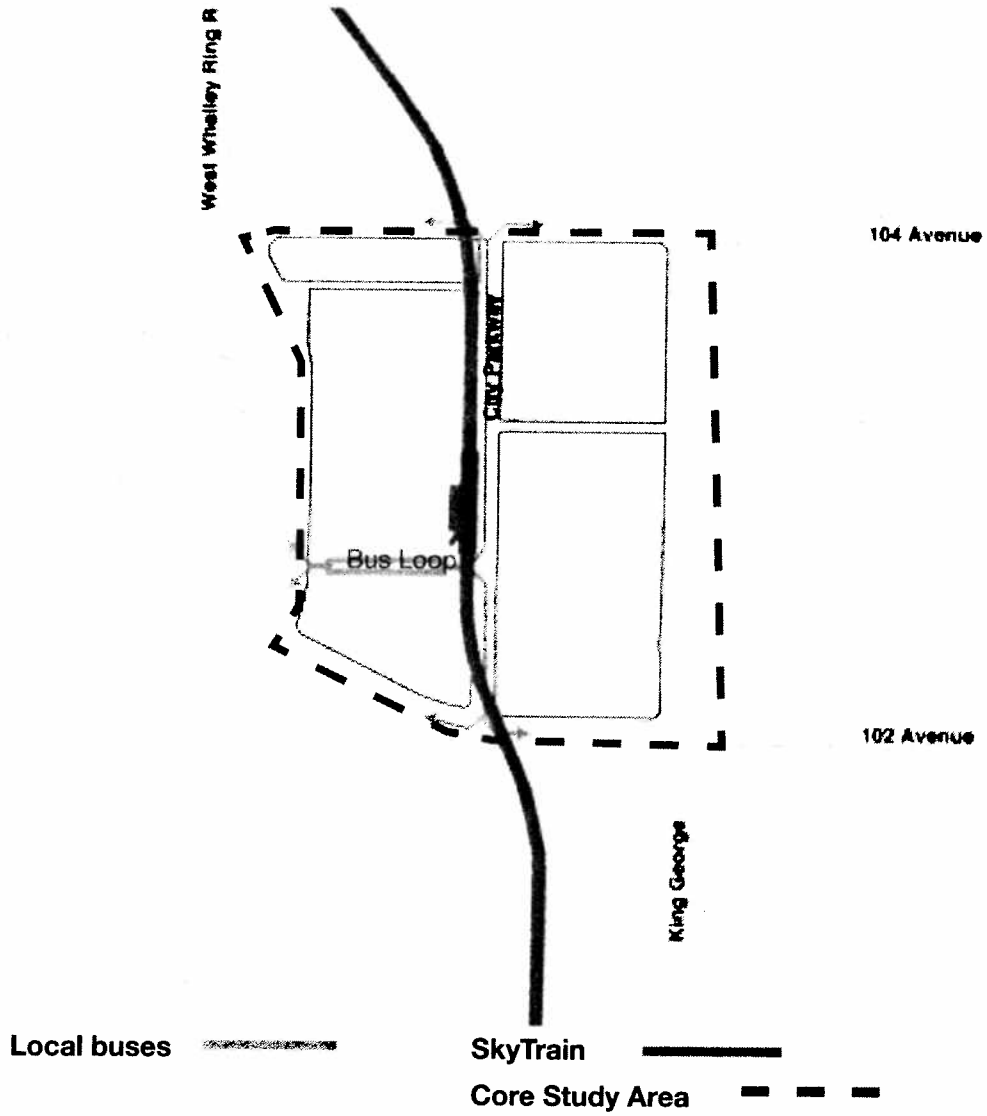
Currently the core study area is characterized by low-density retail commercial and some institutional uses, with large amounts of surface parking. The existing land parcels are typically developed with one- or two-storey buildings. There is no residential housing in the core study area. The prevailing land use can be characterized as low-intensity suburban retail strip malls and small commercial complexes, as well as some large format retail oriented towards King George Highway. Most of the retail does not front directly onto the adjacent streets, but is typically set back behind the surface parking. The one exception to this pattern of dispersed low-rise land use is the recently completed signature Central City Tower, which fronts onto 102 Avenue across from the study area.

Public and institutional assets within the core study area include the SkyTrain station and bus loop, the North Surrey Recreation Centre (NSRC), the Sunrise Senior's Centre and the Surrey Public Library Whalley branch. Simon Fraser University recently established its Surrey Campus in the Central City Tower, adjacent to the southern boundary of the core study area. The Surrey Central Transit Village Plan recognizes these existing assets to be of significant value to the area and seeks to enhance their role in the proposed plan. In particular, the NSRC is seen as a significant civic use anchor and SFU is seen as an equally significant institutional anchor. Both SFU and the NSRC are anticipated to be expanded and/or enhanced in coming years. The plan accommodates aspirations for enhancing and expanding these important institutional uses.



An aerial photo indicates that large areas in and around the core study area are being used as surface parking. This is indicative of a more suburban land-use pattern rather than a high-density urban city centre. (The Core Study area is indicated by the red-dashed line).

Existing Transit Interchange and Circulation



2.1.3 Transit Service

The existing transit interchange functions are located to the southwest of the Surrey Central SkyTrain Station between the North Surrey Recreation Centre and the Central City Tower. The bus loop configuration with a central island for loading, unloading, and passenger connections is largely a suburban model which is not suitable for a high-density urban context as proposed in this Plan. Moreover, a number of public complaints have been registered regarding the pedestrian connection between Surrey Central SkyTrain Station, North Surrey Recreation Centre and Central City Tower. Pedestrians circulating between these locations are required to pass through both the bus exchange and a parking lot. Though pedestrian prioritized routes exist, users often find themselves in conflict with vehicular and transit traffic.

Improvements to enhance the efficiency and functional operation of the current transit operations also need to take general issues of livability into consideration. As Surrey City Centre grows, the number of buses circulating through the city centre will also increase. While the concentration of buses into a single location or street is optimal for connectivity functions, it can create an atmosphere perceived as too noisy and busy for local residents or businesses, or an environment that is perceived to be “dominated” by transit functions.

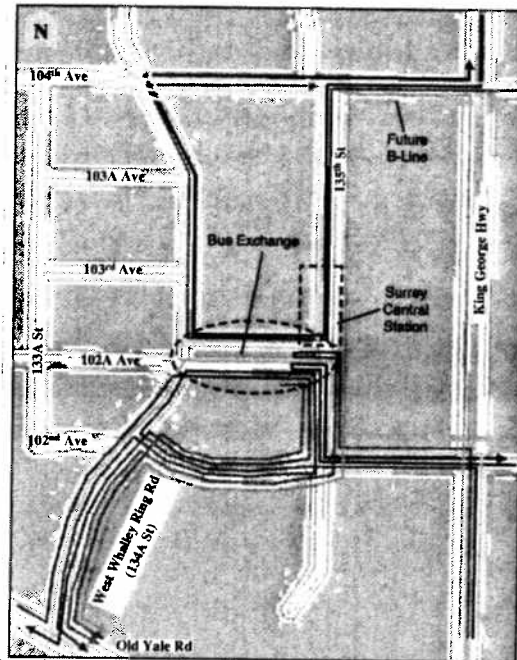
The Surrey Central Transit Village is centred around the primary regional transit hub for areas south of the Fraser River and one of TransLink’s most important transfer points in the network: the Surrey Central SkyTrain Station. This hub is characterized by frequent local and regional buses connecting passengers with SkyTrain service and providing a diversity of transit options.

A critical consideration of the Surrey Central Transit Village Plan is the operational efficiency of buses, including their connectivity with SkyTrain, passenger comfort, and ease of use. However, there is an opportunity for Surrey City Centre to benefit from the high volume of transit riders by integrating them into the urban environment. This integration will benefit passen-

ger comfort, pedestrian safety, and contribute to a sense of activity and vibrancy in the area.

Local Buses

Local buses currently use a suburban model bus “loop” incompatible with a high-density mixed-use urban environment and creates an obstacle to pedestrians accessing amenities in the area. This transit exchange should be re-configured to better accommodate passenger access to the City Centre and connecting transit services, as well as to better integrate transit into the urban fabric.



Local and Regional Bus-Routes currently serving the Surrey Central SkyTrain are indicated by the coloured route arrows in the diagram above. The majority of the higher-frequency routes enter and exit the bus-loop from the north. Image: TransLink

Bus Layover Facility

Buses currently layover in this bus loop creating a physical and visual barrier as well as adding noise and exhaust while idling. To reduce the negative impact of this necessary transit function, a new bus layover facility will be required in close proximity to the relocated bus transfer area. Also, removal of the bus loop will re-

quire the provision of improved transit facilities at other locations including Guildford, Newton, and Semiahmoo Town Centres.

SkyTrain

SkyTrain service will continue to function as a high-quality, regional transportation system. Modifications to the SkyTrain station are required in order to optimize access, and these improvements have been included in investment requirement estimates for the Plan. These access modifications are intended to ensure optimal passenger connectivity between SkyTrain and other transit operations, as well as to better integrate the station into the urban fabric and proposed public open space.

Bus Rapid Transit (BRT)

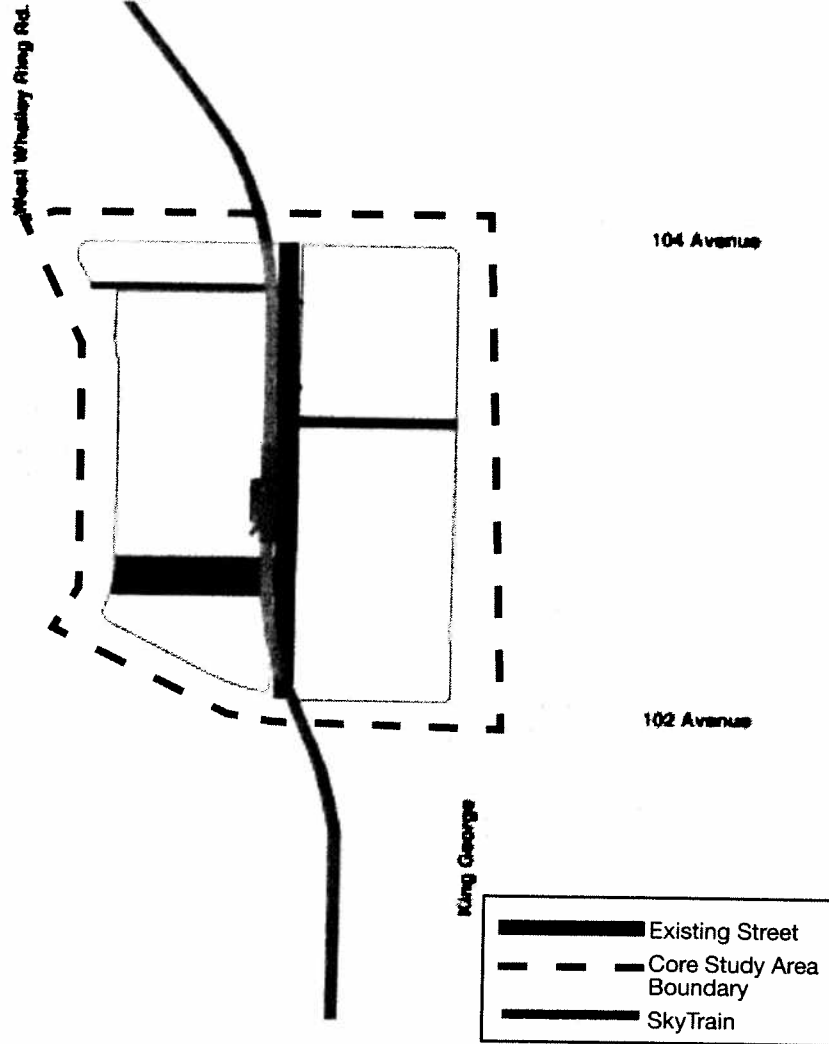
A new Bus Rapid Transit (BRT) service is being planned that will connect with this transit interchange. The proposed BRT route will connect major transit corridors to the Surrey Central SkyTrain station: south to South Surrey and east to Guildford. While BRT service will improve access to Surrey Central from other parts of Surrey, it will introduce a significant increase in the number of large buses to this area and together with the other local bus routes will need to be provided in a way that does not negatively impact any one street. A single continuous routing will reduce the need for BRT end-of-line facilities in the Surrey Central area. The Plan anticipates and accommodates the proposed BRT service.

2.1.4 Street Network

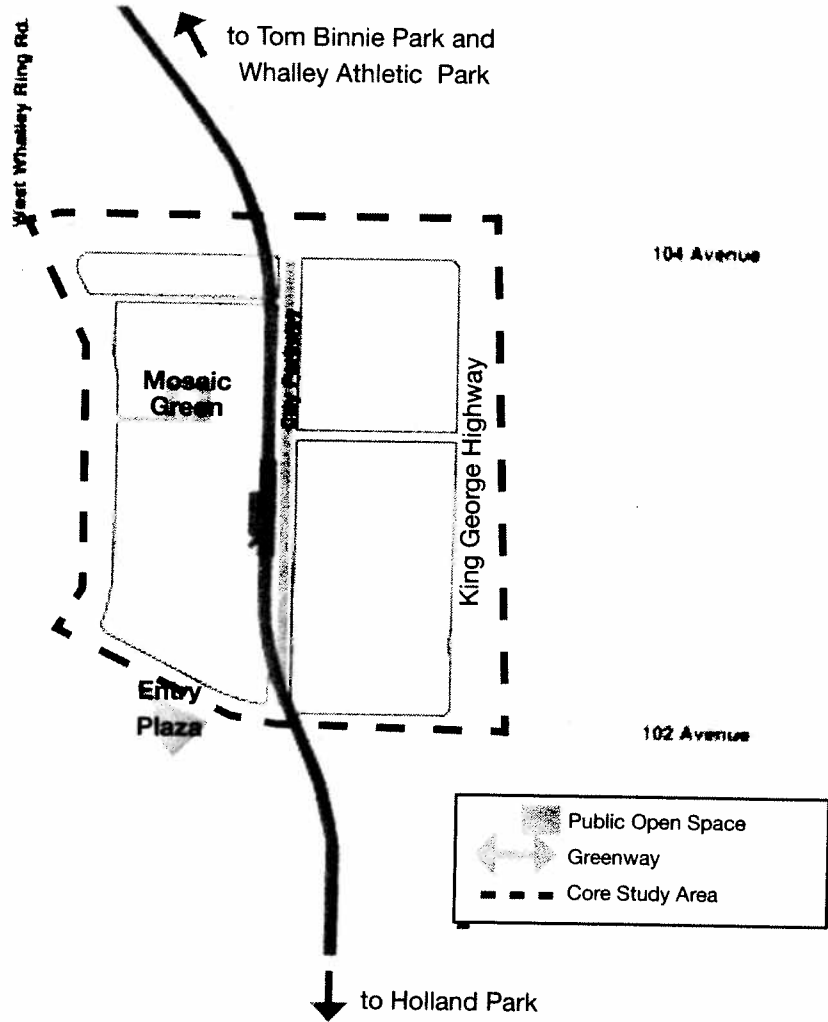
There is a very limited street network within the core study area, as shown in the figure to the left. The existing street network consists of City Parkway (following the SkyTrain guideway alignment), the bus loop between City Parkway and West Whalley Ring Road, a service laneway connecting West Whalley Ring Road and City Parkway and another laneway connecting City Parkway and King George Highway. 104 Avenue, 102 Avenue, King George Highway, and West Whalley Ring Road form the perimeter of the study area. This street network is very weak and discontinuous, with very large, over-scaled block sizes that are not conducive to pedestrian movement. It reflects a suburban rather than an urban context, and is a key impediment to creating a more pedestrian-oriented urban setting. As a point of comparison, the block length along King George Highway in this area is approximately 400m, whereas block lengths along Georgia Street in downtown Vancouver are typically 80m (both streets are part of the same Route 99A).

A key planning principle of the Surrey Central Transit Village Plan is to create a finer grained, pedestrian-scaled street grid, with many more streets and shorter, walkable block lengths. A finer-grained street grid is more appropriate for an emerging urban city centre, offering pedestrians, cyclist and drivers a number of routes and alternatives. A finer street grid will also improve pedestrian safety by providing additional opportunities for crossing major streets such as 104 Avenue and King George Highway. It will also create more typically scaled, efficient land parcels for urban development.

Existing Street Network



Existing Public Open Space



2.1.5 Public Open Space

Two public open spaces currently exist within and adjacent to the core study area: an informal green space between the North Surrey Recreation Centre and the Whalley Library / Sunrise Seniors Centre informally known as “Mosaic Green” and the entry plaza to Central City Tower. Mosaic Green, while not an official park, provides green space and pedestrian walkways through a large block. However this space is somewhat hidden, with blank walls on the adjacent buildings and parking lots between the green space and the surrounding streets. The entry plaza to Central City Tower has significant pedestrian activity from students, shoppers and office workers. This activity is complemented with outdoor restaurant seating on the plaza and the hosting of special events in the plaza such as lunch hour concerts. Holland Park – currently being reconstructed to the south to become Surrey’s first urban park – also contributes to the public open space network, but will need to be connected to the core study area. It will serve as a key anchor to the open space system and a gateway to the City Centre. It will provide spaces for large scale city events and informal recreation. It is also being expanded to provide active recreation opportunities for residents.

The area generally has poor pedestrian connections between these open spaces. Sidewalks are limited in scope and modest in scale, and the streetscape quality is poor, with the exception of recent streetscape enhancements along City Parkway.

There are plans to incorporate a public art walk through Surrey City Centre that will include a series of public and community art pieces that could create visual and physical linkages between public spaces.

The Surrey Central Transit Village Plan recognizes the need for high quality public spaces and sidewalks that contribute both to the livability of the neighbourhood and to the civic significance of Surrey City Centre.

2.1.6 Utilities

City of Surrey staff have advised that there is sufficient existing service capacity in the core study area to support the growth called for in this plan. Therefore no significant additional service or utility requirements are anticipated to support the planned growth.

New underground services and utilities will need to be installed as part of the proposed new streets, to serve both the street themselves (e.g. street lighting, storm sewers) and the adjacent new development parcels.

2.2 Planning Principles

The following Planning Principles derive from the assessment of existing conditions described above, and underpin the Surrey Central Transit Village Plan. These Planning Principles were developed with stakeholder input.

- Create an urban redevelopment plan that is based on a solid financial strategy.
- Make planning choices that can be implemented. (The plan needs to be practical in the short, medium and long-term, while remaining consistent with the long-term transit-oriented development goals.)
- Reduce greenhouse gasses by encouraging modes of transportation other than the private vehicle.
- Create a place that works as a neighbourhood as well as a City Centre.
- Build on existing institutional and public assets (SkyTrain, SFU, Recreation Centre, Library, Holland Park, Mosaic Green, senior's centre, the city's land holdings) where this is appropriate in both the short and long term.
- Create a mixed-use neighbourhood with jobs, homes, services, and amenities centred on rapid transit service.
- Support transportation priorities as follows:
 - For trips of <1000m:
 1. Pedestrians
 2. Cyclists
 3. Private Vehicles
 - For trips of > 1000m:
 1. Transit
 2. Cyclists
 3. Private Vehicle
 - Commercial goods movement will be accommodated to a sufficient degree to support vibrant economic life in the area.
- Enhance community livability as well as the quality of transit experience by improving the physical environment throughout the neighbourhood and around transit stations.
- Promote a high quality, green, lively and safe pedestrian environment.
- Enhance the image of the area, helping to create a desirable location to live, work, shop, study and visit.

2.3 Proposed Plan

2.3.1 Market and Financial Analysis: Implications for Planning

Multiple Residential: Implications for Planning

Analysis of the multifamily residential market has led to the following implications for the Plan:

1. It will only be attractive to redevelop properties in the core study area if relatively high-density high-rise multifamily residential projects are permitted. Minimum residential densities of about 6.0 FAR should be considered for the core study area.

2. Developers will likely be interested in constructing tall apartment buildings, possibly with podium levels. Most streets in the core study area will likely be more attractive for street front commercial space on lower levels rather than grade level residential units. However, if attractive residential streets can be created, townhouse podiums could be considered for these street blocks. In these circumstances, guidelines should mandate that townhouse building forms include higher ceiling heights for ground level floors. This will allow for the conversion of these units into office and retail uses.

Retail and Services: Implications for Planning

Analysis of retail and service development opportunities leads to the following implications for the planning process:

1. Large amounts of residential development are needed to generate opportunities for local oriented retail and service businesses in the core study area. The key to encouraging retail development in the core study area is to create a large nearby residential population.

2. One of the most important pedestrian links in the core study area is the connection between future retail streets in the study area and the retail space in the Central City project. Given that Central City has the largest concentration of retail space in the city centre, a high quality connection between existing and new retail space in the core study area and Central City will help improve retail prospects in the core study area.

3. On the east side of King George Highway there are large sites that are redevelopment candidates. Therefore opportunities to improve the pedestrian crossings from the east side of King George to the core study area should be examined. Ideally one or more new signalized crossing opportunities should be introduced on King George between 102nd Avenue and 104th Avenue. In the long term, this will improve the retail opportunities in the core study area.

4. New east-west streets introduced to the core study area should be planned to extend across King George Highway to the east and across West Whalley Ring Road to the west. These new side streets will offer locations for smaller scale retail and service businesses that are interested in serving the local residents, students and employees in the area. To be successful, the new streets should extend into any future residential areas to the east and to the west.

5. King George Highway frontage should be used to accommodate larger retail and service businesses serving the sub regional trade area.

6. Retail businesses place an emphasis on convenient customer parking. There will need to be convenient on-street and/or off-street customer parking for new retail space in the core study area.

Office Uses: Implications for Planning

Our analysis of the office market leads to the following implications for the planning process:

1. The market for private sector office space is small so office developers will probably be interested in building relatively small office buildings (100,000 sq. ft. or less). Otherwise, lease-up will span several years making development unattractive. A large scale high-rise office project will only be successful with a large anchor, such as a government or institutional tenant/partner or a large private business.

2. To encourage private sector office development in the short term, the City will need to explore opportunities to provide incentives. Some examples of implementation strategies and incentives might include:

- Making publicly owned land available and reserved for office development (to

help minimize land assembly costs and to ensure land is available at office land value rather than residential land value).

- Changing regulations to help reduce development costs, such as reductions in off-street parking requirements (It should be noted that parking is required to make the office space marketable so this option could require creation of a public parking facility).
- Introducing policies to reduce building operating costs, thereby creating room to increase lease rates. One option could be property tax rate reductions on office buildings.
- Using a density bonus system to encourage office development as part of mixed-use residential and commercial projects. Under this strategy, developers could be offered additional density (beyond the density identified in this plan) for including office space in their projects.

3. If the City wants to encourage private office development in the core study area over the long term (other than as part of mixed use projects), sites intended for office use will need to be designated and zoned with office as a required use. If residential is a potential use for a property, an office developer will not be able to outbid a residential developer for the property so the site will likely end up being developed for residential purposes. Therefore such sites will have to specifically exclude residential as a permitted use or require a minimum amount of office space in a mixed-use building. The City could consider designating and zoning public lands for office use and private lands for residential or mixed-use (which has more market potential in the short term).

4. The City should identify and evaluate opportunities to create a municipal office presence in the core study area.

2.3.2 Proposed Land Use

A wide range of land uses is proposed in the plan, consistent with this area emerging as Surrey's downtown:

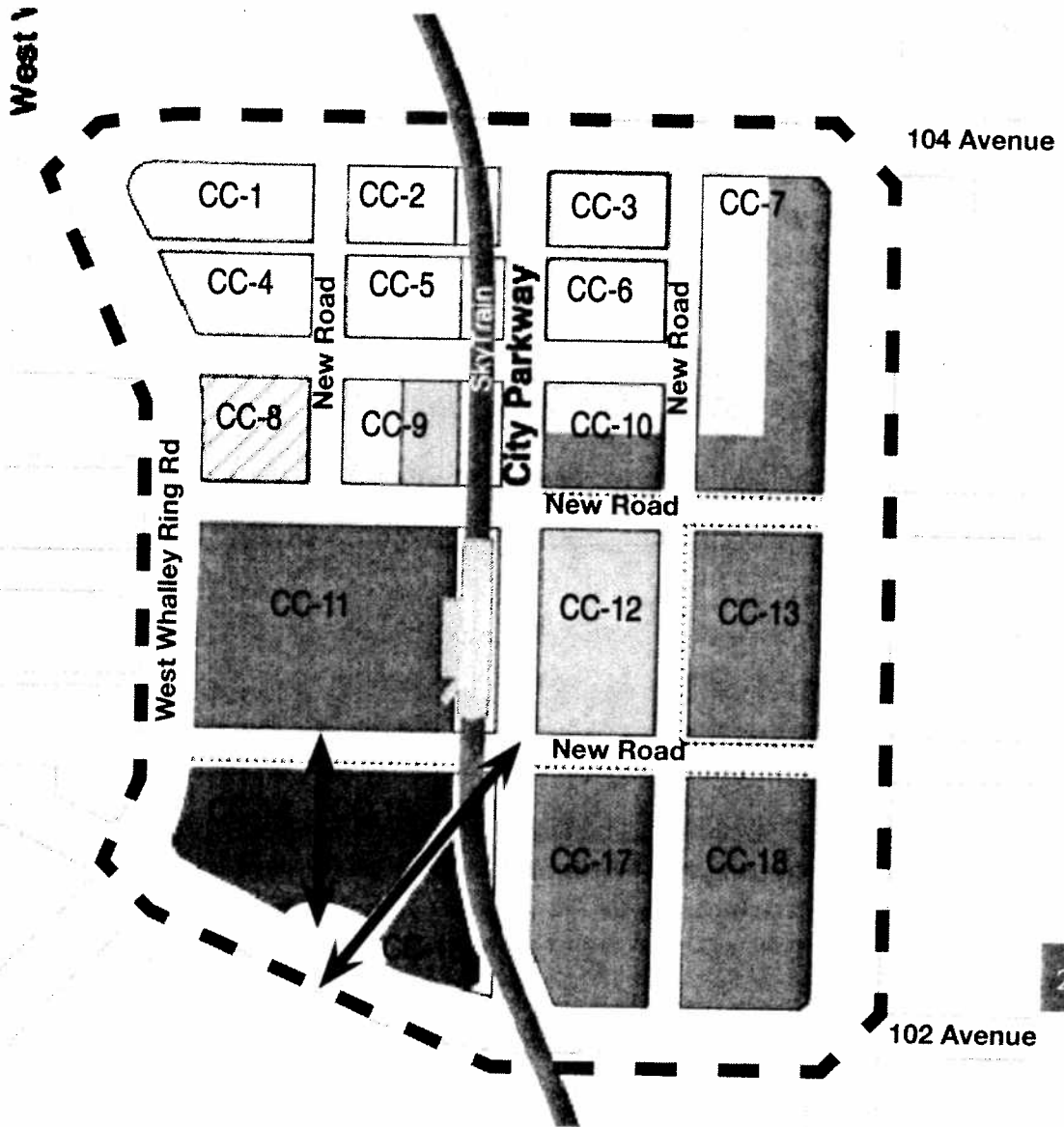
- High Density Residential:
 - maximum 4-storey Multiple Residential housing (RM)
 - high-rise RM
- Retail:
 - City Centre Retail (local/destination serving)
 - Regional Serving Retail
- Commercial Office/Institutional
- Mixed Use Residential/Office/Retail
- Community/Cultural/Recreational
- Public Open Space
- High Density Residential + Public Transit Use









These land uses are discussed in more detail below and illustrated by the graphic on the following page.

High Density Residential

The Surrey Central Transit Village Plan calls for a substantial amount of land to be made available for high-density multiple residential development. Almost all blocks within the core study area permit high density residential, with net densities of up to 6.0 FAR. The only exceptions are a portion of Block CC-9 (Public Open Space), Block CC-12 (Public Open Space) and Blocks CC-14, CC-15, and CC-16 (reserved for commercial retail, office, and institutional.) Blocks C-17 and C-18 can be mixed-use residential and retail, but will be required to include a minimum amount of office and/or institutional space.

Some development parcels are more suited to lower rise RM (up to 8 floors) and others to high-rise towers (up to 30 floors). However, while the Plan illustrates possible tower locations, the specific location of high-rise towers and lower



 High Density Residential	 Public, Residential, Office and Retail
 Mixed-Use: Retail, Office, and Residential	 Public, Institutional, and Retail
 Commercial: Retail, Office and Institutional	 High Density Residential and Public Transit Use
 Street Fronting Retail Required	 Public Pedestrian Connection

rise RM apartments should be made on a case by case development basis, to maximize the developer's flexibility and ability to respond to market demand.

Mixed-Use:

Retail, Office and Residential:

The following blocks are proposed for Mixed Use Residential/Office/Retail use: CC-7, CC-10, CC-13, CC-17 and CC-18, with some office use being required to be included in the development on CC-17 and CC-18.

Local Serving Retail

Mixed Use Retail, Office and Residential uses include restaurants, bars and cafes, stores, professional services, clinics, entertainment, etc. but not big-box format or highway-oriented retail. It also includes specialty or destination retail that serves a citywide market. The Land Use Plan mandates street-fronting retail on all blocks facing the Civic Plaza and facing onto the two East-West streets between City Parkway and King George Highway City Centre Retail can also include second floor retail uses.

Regional Serving Retail

Regional Serving Retail provides regional serving retail including larger format retail uses. This kind of retail typically relies more heavily on auto access and has a larger catchment market than just the local or downtown community. It is located adjacent to King George Highway, on the eastern portion of blocks CC-7, CC-13 and C-18.

While Regional Serving Retail has traditionally been single use, it will be reformatted into more urban types of mixed-use developments along a more pedestrian oriented King George Highway, and could include office and residential uses above.

Commercial Office and Institutional:

Commercial Office provides for commercial and institutional office uses and educational uses. Recognizing that current market forces are unlikely to result in office use over residential use in this area, blocks CC-14, CC-15, and CC-16 are specifically reserved for commercial/institutional office and educational uses only,

with some street-fronting retail required. These blocks are located between the North Surrey Recreation Centre and SFU's emerging Surrey campus.

Public, Residential, Office, and Retail

Block CC-11 is proposed to accommodate for a broad range of public uses including Recreation Centre, Community Centre, Indoor Pool, Arts and Cultural facilities, Library, City Hall, Police Station, Courthouse, Museum, other civic facilities, etc.

This block currently houses the North Surrey Recreation Centre, which is anticipated to remain in the short to medium term but may be renovated, expanded, or redeveloped to include additional public uses. As part of any such redevelopment of Block C-11, the land use would also permit residential and commercial office development to a maximum density of 6.0 FAR. Such residential or office uses could form part of an expanded and redeveloped Recreation Centre, but may not be developed on its own on this block.

Public, Institutional, and Retail

Block CC-12 and a portion of Block CC-9 are proposed for Public Open Space. Block CC-12 is reserved for the Civic Plaza, and a portion of Block CC-9 is planned to accommodate Mosaic Green Park.

The land use also permits local serving Retail and public amenities within the Civic Plaza, as illustrated on the Annotated Plan (Section 2.3.6).

High Density Residential and Public Transit Use

Block CC-8 is proposed for High Density Residential and Public Transit Use, to accommodate the bus layover facility required in the town centre. This facility will be at grade and could be part of a high-density residential development. The bus layover facility could be screened from view and located within the bulk of the overall development, with a separate one-way entry and exit for buses.

2.3.3 Transit Service

The Surrey Central Transit Village Plan proposes a major civic square, unique to the region both in terms of public open space and the operational efficiency of transit. The civic square will not only serve as a premier civic space in the region, it will also enable the Surrey Central SkyTrain Station to function as a successful major transit hub. This means:

- providing direct connection between buses and SkyTrain, for travel between Surrey and the rest of the region;
- providing direct connections between bus routes as a primary means of local travel within Surrey. Local transit service will become increasingly more important as Surrey grows and diversifies;
- supporting and benefiting from a high level of development density that accommodates future transit requirements

Transit facilities will need to accommodate a large and growing number of users. Similarly, public space that also functions as part of a transit interchange benefits from the animation of transit passengers as they complete connections.

It is proposed to replace the bus loop with a “transit couplet” on two new parallel east-west streets. A transit couplet on adjacent parallel streets provides a balance between meeting transit operations requirements, achieving a high-level of service for passengers, and having minimal negative impacts on the surrounding areas. An east-west transit couplet focused around a Civic Plaza offers the opportunity to provide passenger drop-off and pick-up in a centralized location immediately adjacent to the SkyTrain station as well as allowing for the inclusion of the proposed Bus Rapid Transit (BRT) route below the SkyTrain and adjacent to the Civic Plaza. The core study area accommodates the integration of local bus, BRT, and SkyTrain service for the area south of the Fraser River.

A critical consideration of the Surrey Central Transit Village Plan is the operational efficiency of buses, including their connectivity with

SkyTrain, passenger comfort and ease of use.

Local Buses

Local buses will travel along two new east-west streets and stop adjacent to the Civic Plaza. A transit couplet centred on a public plaza will:

- reduce pedestrian / bus conflicts. Passengers connecting to other routes will no longer need to cross the path of buses in operation. Instead, connections can be made across the Civic Plaza;
- improve the sense of safety of passengers. All passengers waiting for buses are in view of other transit users and less likely to feel alone;
- integrate transit and urban design considerations in a seamless way.

BRT

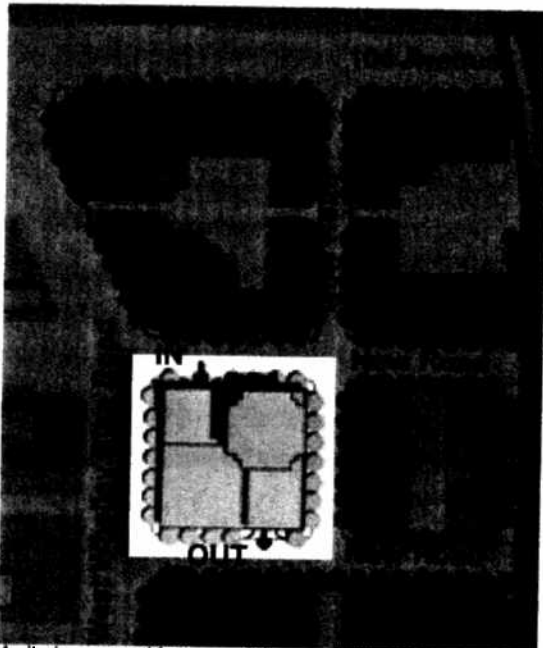
In the short to medium term, TransLink is proposing to implement a BRT service connecting Guildford Town Centre, Surrey City Centre and the Semiahmoo Peninsula. This will provide opportunities for citywide connectivity that focuses on the Surrey Central SkyTrain Station. This BRT route may eventually become a Light Rail Transit (LRT) route in the long-term.

The proposed alignment is along City Parkway continuing south across 102 Avenue until reconnecting with King George Highway and north until 104 Avenue, at which point it turns east. Having the BRT service on City Parkway will provide for good connections to other transit services without over-burdening the local bus service on the east-west transit couplet roads. This meets the functional requirements of BRT including:

- Protection from auto congestion, through a largely exclusive right of way and signal priority;
- adequate pedestrian capacity at stations;
- geometrics and protection of right-of-way consistent with future light rail (to preserve the long term possibility of replacing rapid buses with a light rail transit system).

Bus Layover Facility

The Surrey Central Transit Village Plan has identified a potential location for a bus layover facility at West Whalley Ring Road on the north side of the transit couplet. This is expected to be an at-grade covered facility with a residential tower above. This facility will allow buses terminating / starting here to be stored off of the street with break facilities for bus drivers. Incorporating residential uses above and around this bus layover function will help to provide a more attractive street facade.



A site is reserved for a transit layover facility. Upper levels of this facility may be developed for residential or commercial uses.

Transit Connectivity

Transit services will include SkyTrain, BRT (Bus Rapid Transit- a high quality regional transit bus system), and local buses that will serve the Surrey Central Transit Village.

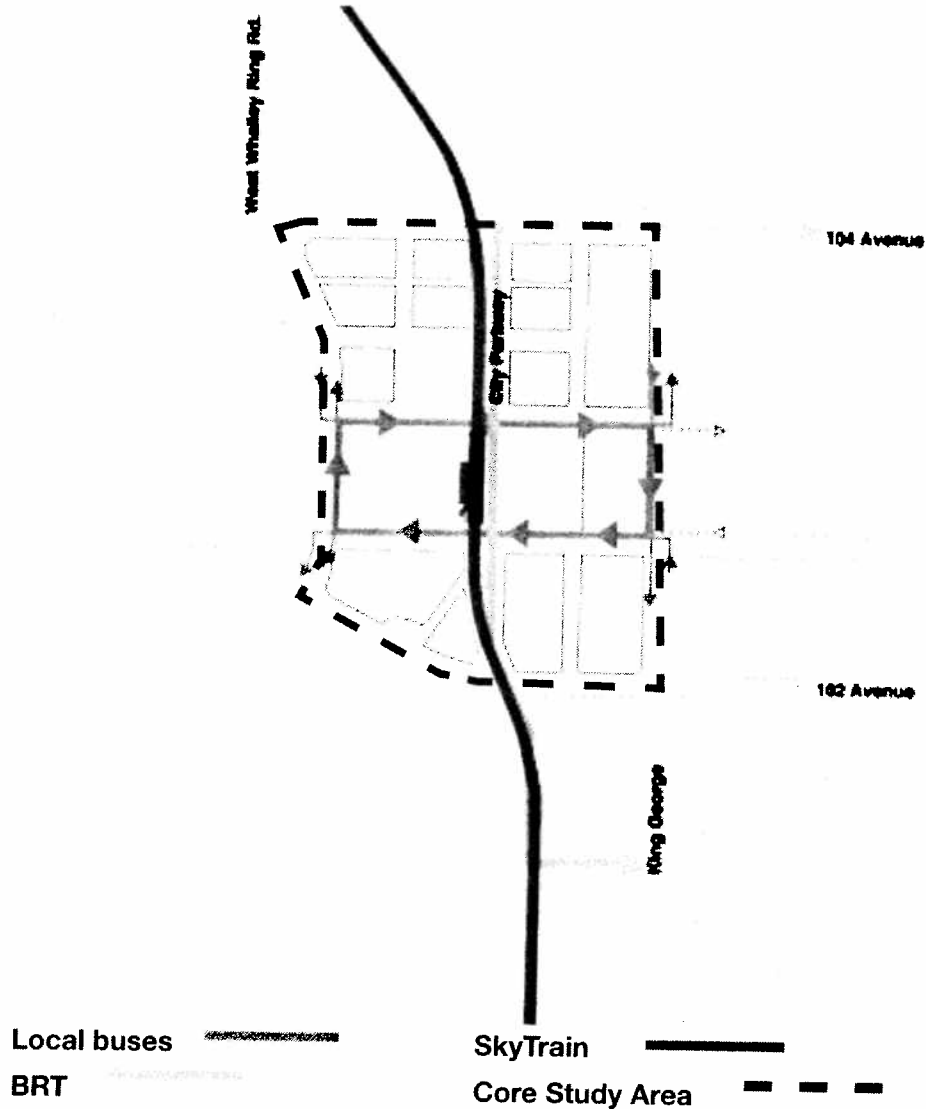
All transit in the area would stop adjacent to the Civic Plaza, as follows:

- SkyTrain at the station on the west side of the plaza;
- BRT on City Parkway beneath the Sky Train station, on the west side of the plaza;
- Eastbound non-BRT buses on the east bound couplet street, which is on the north side of the plaza;
- Westbound non-BRT buses on the westbound couplet street, which is on the south side of the plaza.

In addition to providing optimal connectivity functions, the Civic Plaza component of the transit couplet will be the symbolic and physical heart of the city, a public space unique in the Lower Mainland. The presence of transit on three sides of the plaza will also help to ensure the animation and safety of the space: plaza users will feel more comfortable with other users in the area and the high number of passengers throughout the day will ensure constant eyes on the street. The portion of City Parkway between the two couplet roads can be designed to promote pedestrian priority over other modes by providing pedestrian crossing tables over vehicular lanes that make the roadway even with adjacent sidewalks.

TransLink has confirmed support for the concept of using the Civic Plaza as a transit interchange, and a viable alternative to the existing bus loop.

Proposed Transit Infrastructure and Circulation



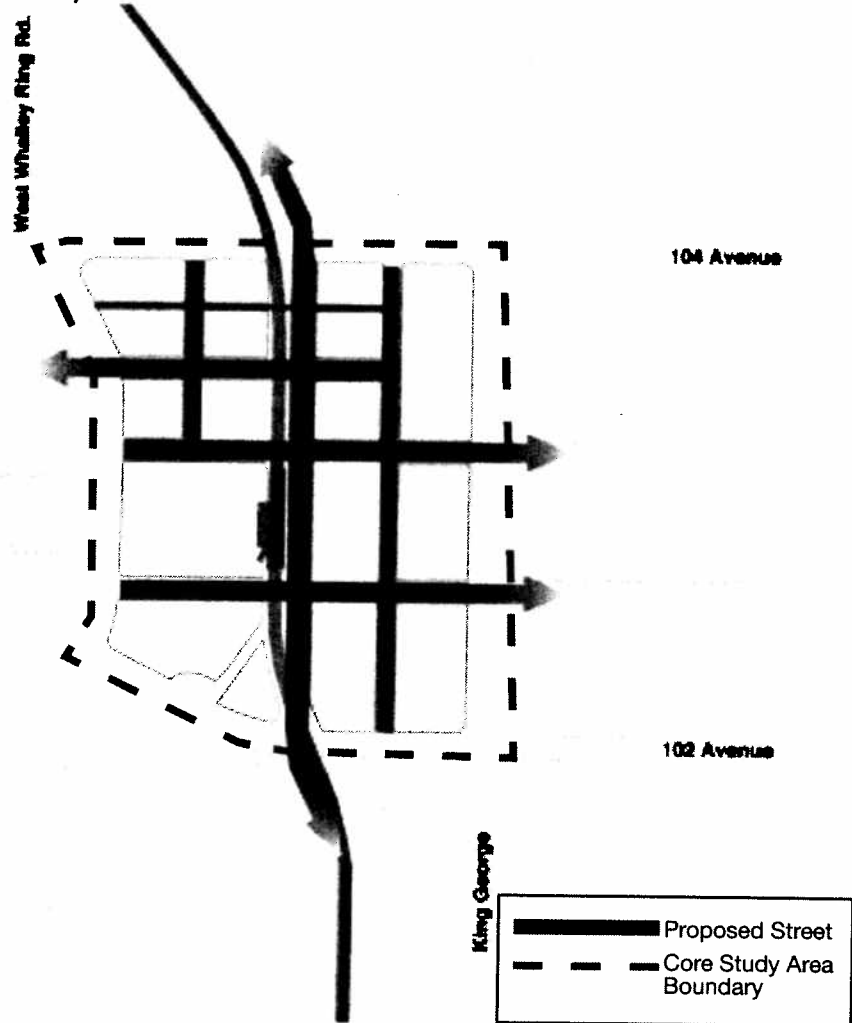
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SkyTrain Connectivity

To improve connectivity between SkyTrain service and other modes, several improvements are proposed:

- A new connection between the civic plaza and the SkyTrain platform;
- Modification to the existing southernmost SkyTrain platform access as part of redevelopment;
- A new entrance access to the north end of the SkyTrain platform when required in the future.

Proposed Transportation Network



2.3.4 Transportation Network / Streets

The Surrey Central Transit Village Plan proposes three new east-west streets, two of which connect West Whalley Ring Road and King George Highway. The proposed streets should have a right of way to adequately accommodate vehicular, transit, bicycle and pedestrian circulation in an urban environment. These streets could extend beyond the core-study area in the long term. These extensions have already been earmarked by the City as future streets.

The plan proposes two new north-south streets. East of City Parkway, a new north-south street will connect 102 Avenue and 104 Avenue. A second north-south street is located west of City Parkway although it would only run from 104 Avenue as far as the North Surrey Recreation Centre. These two north-south streets should have a right-of-way that is wide enough to accommodate a variety of uses, but slightly narrower than other city streets to contribute to a more pedestrian friendly, domestic neighbourhood scale. These streets will be quieter in nature and more local serving. Buildings along these street frontages should be 4 storeys or less and flexible in use to permit either residential, retail, or office space, ensuring an active public realm.

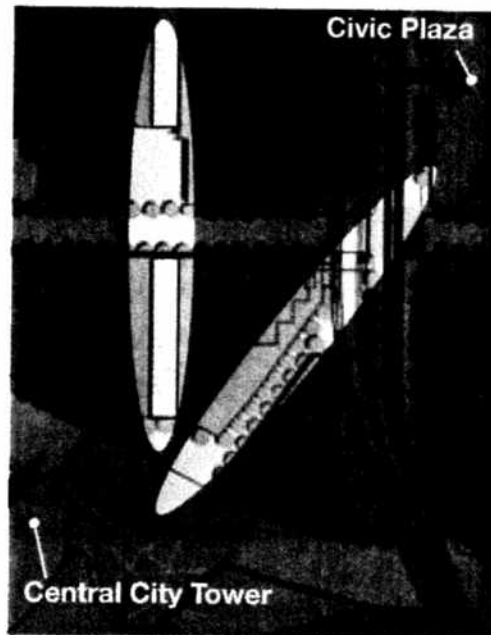
This new street network will create a more normalized urban infrastructure of streets and building blocks, suitable for pedestrians as well as vehicles and transit.

Pedestrian Network

All new streets will be designed to have generous, safe sidewalks on both sides. Sidewalks should be designed to downtown urban standards, with a generous zone for unobstructed passage as well as a service zone (street utilities, poles, furniture, parking meters, trees, etc.), dropped curbs at intersections, and well marked and signed crosswalks. Accessibility features on all new sidewalks, crosswalks and pedestrian routes will be required.

High quality pedestrian connections between existing and new retail space in the core study area and Central City Tower will help improve

retail prospects in the core study area. The pedestrian network connects the Civic Plaza to the surrounding streets and other activity nodes. A pedestrian corridor is proposed to link the Civic Plaza and the Central City Tower entry plaza. A second pedestrian corridor links the North Surrey Recreation Centre and the Central City Tower entry plaza.



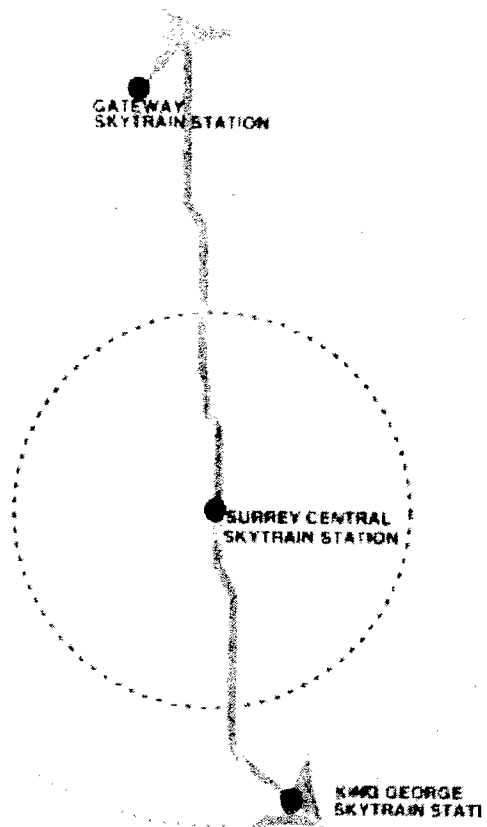
A pedestrian linkage connects the Central City Tower to the Civic Plaza and recreation centre. Pedestrian linkages will need to be wide with appropriate adjacent building heights, well-lit, and attractive.

The proposed greenway network includes a north-south greenway that follows the route of the elevated SkyTrain line and connects Gateway SkyTrain Station to the north and Holland Park to the south. The greenway system will also serve to enhance the Civic Plaza at Surrey Central SkyTrain Station. The Civic Plaza creates a destination for those traveling along the greenway while the location of the greenway in relation to the plaza strengthens the role of the plaza as the civic heart of Surrey City Centre.

Additional considerations include significant improvements to the pedestrian environment

along King George Highway, particularly signalized crosswalks at existing and proposed new intersections. One or more new signalized crossings should be introduced on King George Highway between 102nd Avenue and 104th Avenue. This will improve retail opportunities in the core study area as well as provide better access to new retail on the east side of the highway.

Components of this section are more fully discussed in Opus Hamilton's "SURREY CITY CENTRE TRANSIT-ORIENTED DEVELOPMENT PLAN Transportation Memorandum: Review of the Draft Preferred Option." The full report is available in the supporting technical document titled "Surrey Central Transit Village Plan Background Information."



Surrey Central Transit Village, centred around the Surrey Central SkyTrain station, is a centre piece of a north-south greenway network that extends throughout Surrey City Centre.

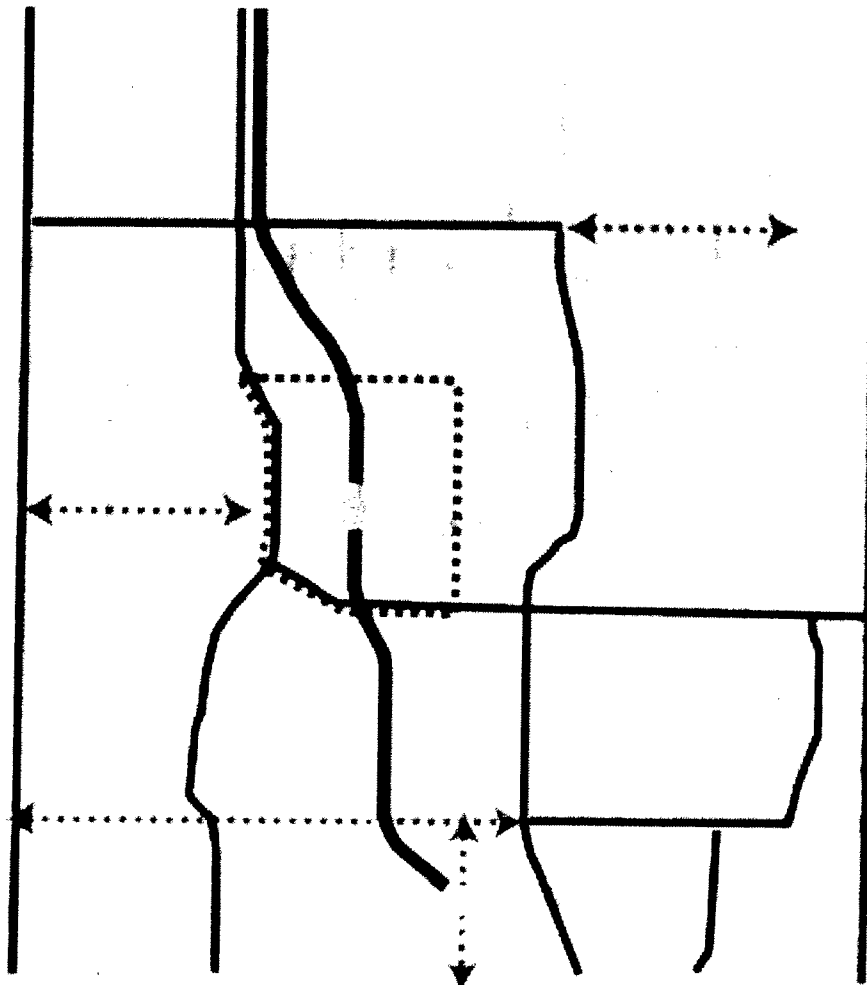
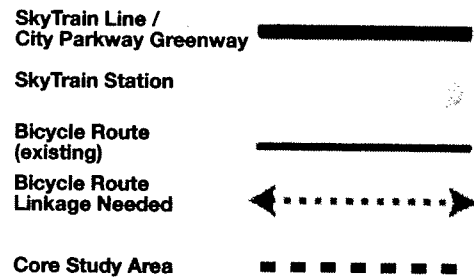
Bicycle Network

The following diagram illustrates the proposed bicycle network in the core study area.

The plan proposes an extensive network of bicycle routes. The bicycle network connects beyond the core study area to existing designated bicycle routes. Also, end of trip facilities including secure bicycle storage and shower facilities and frequent bicycle parking are encouraged in all new development and in the public realm.

Cycling routes from the east and west will connect into the principal north-south greenway/bikeway route, thereby enhancing the existing bicycle network.

All new roads in the city centre, including the two new east-west roads in the core study area, will be designed to ensure that cyclists can enjoy comprehensive and safe access throughout the city centre.



Vehicular Circulation

As noted previously, the current street configuration in and around the core study area is suburban in character. It is therefore important to understand the implications of an emerging City Centre on transportation and to accept that a successful City Centre requires a different transportation network context than a suburban network. Increased trip generation by all modes from new development will likely result in more congestion, consistent with an urban environment. In an urban context, traffic congestion is accepted and indeed can be a positive contributor to inducing other travel modes. It also means traffic moves more slowly, which supports a safer pedestrian environment.

An operational analysis was conducted based on both existing conditions and comparative analysis to ensure that the continued mobility of private vehicles and trucks is maintained. While pedestrian, bicycle, and transit mobility are the highest consideration in this Plan, private vehicles and trucks will continue to service the core study area efficiently and effectively. This will ensure easy delivery of goods to businesses and stores, opportunities to drop off passengers to connect with SkyTrain and other transit operations, as well as to provide daily need trips into and through the City Centre.

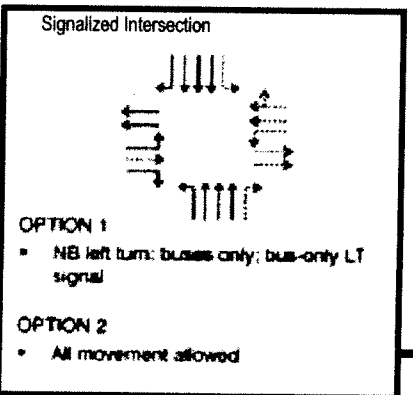
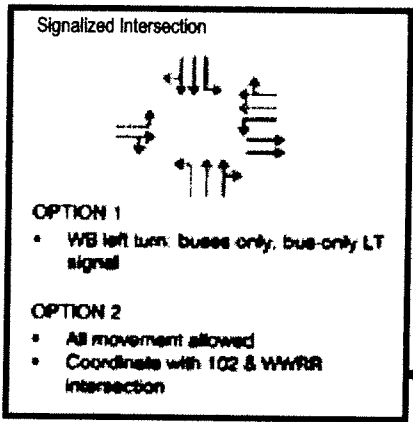
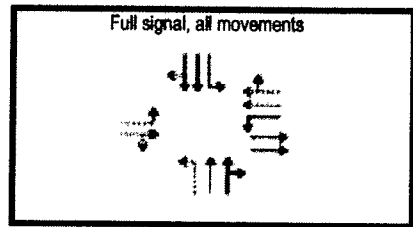
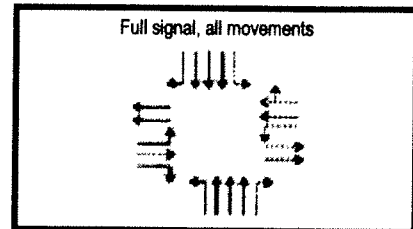
It should be noted that while the Surrey Central Transit Village Plan focused on a relatively small core study area, the transportation analysis involved a much broader geographic scope. This ensured that both local and regional considerations were taken into account in assessing the Plan.

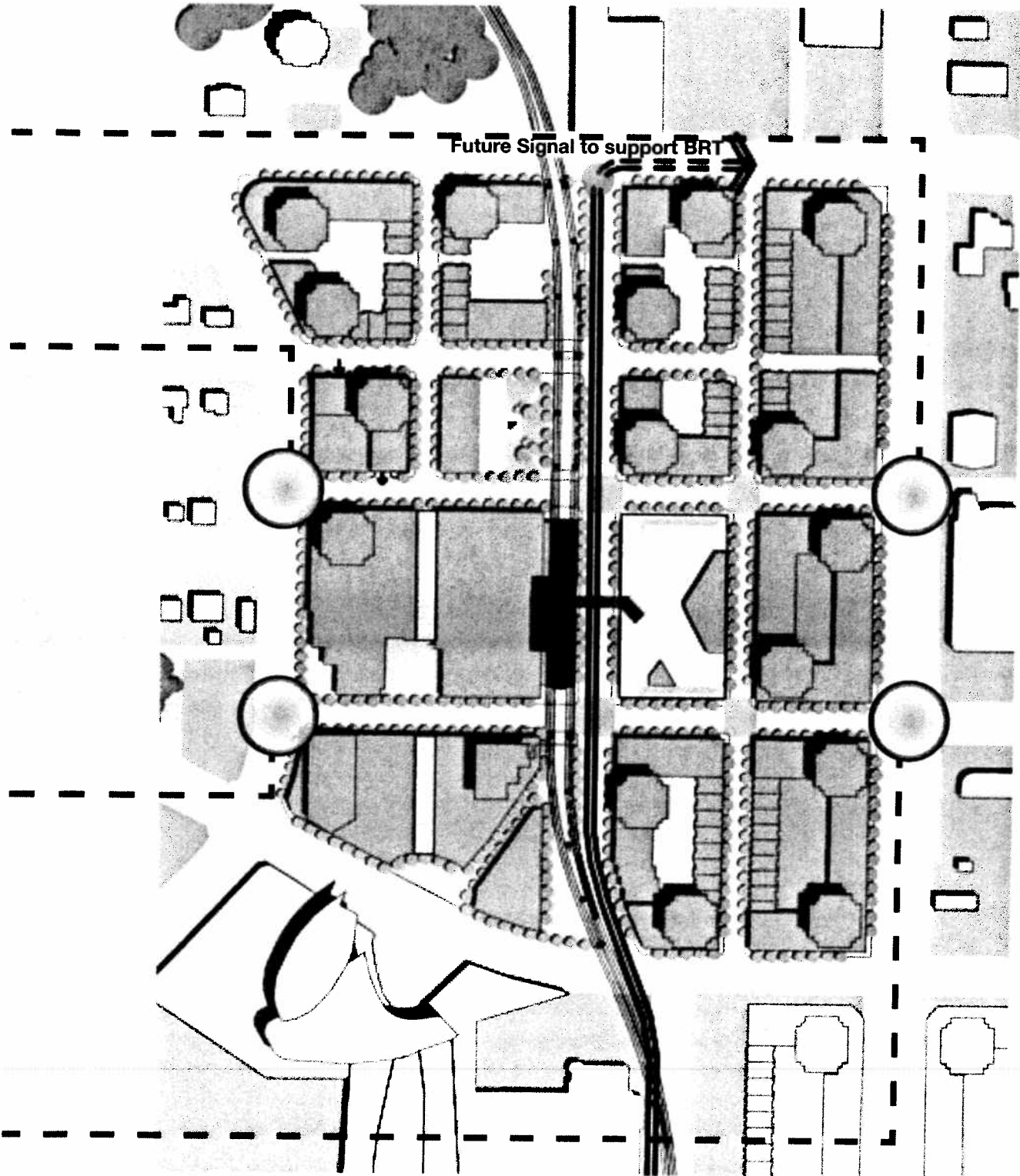
Vehicular mobility is maintained by:

- maintaining 3 lanes per direction on King George Highway;
- making better use of and connectivity to East Whalley Ring Road and West Whalley Ring Road;
- creating several new two-way east-west and north-south streets that will distribute traffic within the City Centre.

Intersection Movements

The following illustration represents possible intersection laning for private vehicles and buses.





Truck mobility is maintained by:

- utilizing King George Highway, East Whalley Ring Road, and West Whalley Ring Road to, from, and through the City Centre.

The transition of the Surrey Central Transit Village from a suburban context to an urban environment depends partly on the reduction of block sizes and intersection spacing. These reductions will encourage multi-modal transportation options (walking, cycling and transit) and enable a more livable urban environment to emerge. Of particular interest is how the proposed intersection spacing might impact vehicular circulation on King George Highway and West Whalley Ring Road. A comparative analysis of major corridors (King George Highway under current conditions, Georgia Street in Vancouver, and King George Highway under the proposed conditions of the Surrey Central Transit Village Plan) indicated that:

- the reduced distance between intersections will not necessarily affect current daily capacity on King George Highway;
- the average daily traffic throughput on King George Highway can be maintained with the addition of two new intersections. The number of intersections within the core study area will be less than that of a similar section of Georgia Street, which has greater traffic volumes;
- adjacent streets (West Whalley Ring Road, for example) have the potential to absorb a significant amount of additional traffic when traffic growth occurs in the area.

While some impact on traffic is expected, the more pedestrian-friendly environment that will result represents a critical step towards the transformation of the core study area into an urban downtown.

New intersections on West Whalley Ring Road are expected to:

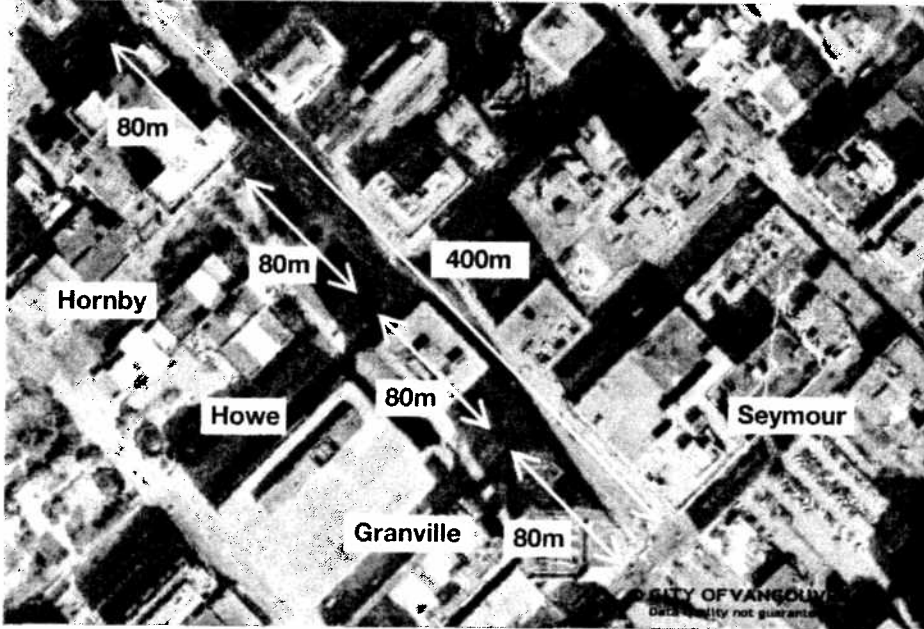
- contribute to an improved pedestrian friendly environment;
- reduce potential conflict points and reduce collision risks by employing turning movement restrictions where necessary.

Additional factors to consider include the following:

- maintaining three through lanes in each direction, plus one left-turn lane in each direction;
- maintaining or improving KGH's current people-moving capacity with the introduction of Bus Rapid Transit and improved transit operations.
- taming King George Highway in order to make Surrey City Centre a more desirable and livable area.
- providing a full signal on one of the new KGH intersections with the other being a bus- and/or pedestrian-activated signal;
- reducing queuing by introducing shorter signal phases.

Components of this section are more fully discussed in Opus Hamilton's "SURREY CITY CENTRE TRANSIT-ORIENTED DEVELOPMENT PLAN Transportation Memorandum: Review of the Draft Preferred Option." The full report is available in the supporting technical document titled "Surrey Central Transit Village Plan Background Information."

Comparative Block Lengths



A 400m length of Highway 99A in Surrey (King George Highway) fits a suburban context with no intersections and limited opportunity for multi-modal mobility. A 400m length of Highway 99A in Vancouver (Georgia Street) includes shorter block lengths and three intersections, helping to create a more pedestrian friendly environment while still maintaining vehicular mobility and circulation.

Parking Strategy

Appropriate parking supply and pricing will be a critical element to achieve the goals of the Surrey Central Transit Village Plan. The Plan provides opportunities for the provision of underground parking, shared parking, and parking ratios more suitable for a transit-served, urban City Centre. The Plan also creates new opportunities for on-street parking with new streets added to the area. It should be noted that the current ample supply of free parking encourages automobile use as the primary mode of transportation, and a clearly-defined parking policy is required to achieve a more balanced, multi-modal City Centre.

Current Parking Supply and Demand

In Surrey City Centre, a large amount of land is currently dedicated to surface parking. Much of the parking supply appears to be unused for large portions of the day. Several caveats should be kept in mind as development of the new City Centre proceeds:

- In urban settings, rationalizing parking policies in relation to transit-oriented development is essential to influencing how a SkyTrain station will be accessed and used, and to avoiding conflicts over whether land goes to parking or development.
- Surface parking lots strongly influence the character of an area, making it less pedestrian friendly and much more difficult to create a compelling, safe public realm.
- Increased parking around rapid transit stations also increases peak hour congestion and pollution on local streets, which runs counter to the Urban Transportation Showcase Program goals of reducing greenhouse gases. Associated traffic also has a negative impact on local residents.

Studies of parking policies within transit-oriented development areas have shown that when large parking garages are provided for “park-and-ride” purposes, it does not bring a commensurate number of new riders. Rather, those who use the parking lots tend to be existing passengers who used to take local transit to reach the station, but switched to driving when it became more convenient. Shared parking (e.g. between a daytime use, such as an office building and an evening use such as a movie theatre) can economize on development costs and land consumption.

Residential parking requirements within the core study area should be reduced and/or be more flexible to reflect the tendency of many households in transit-oriented developments to have lower car ownership rates.

Short- to Long-term Recommendations

Over the short- to long-term, the following parking initiatives are recommended for Surrey City Centre:

- Introduce parking maximums to limit the oversupply of parking; over the long-term, lower the maximums to fit with an increasingly urban context;
- Review the current minimum parking bylaw requirements and determine whether they can be further lowered in City Centre;
- Strongly discourage the amount of off-street surface parking available, through incentive zoning strategies. Restrict surface parking in new developments within the core study area;
- Develop incentives to encourage shared parking between land uses with opposing peak demands;
- Accommodate on-street parking.

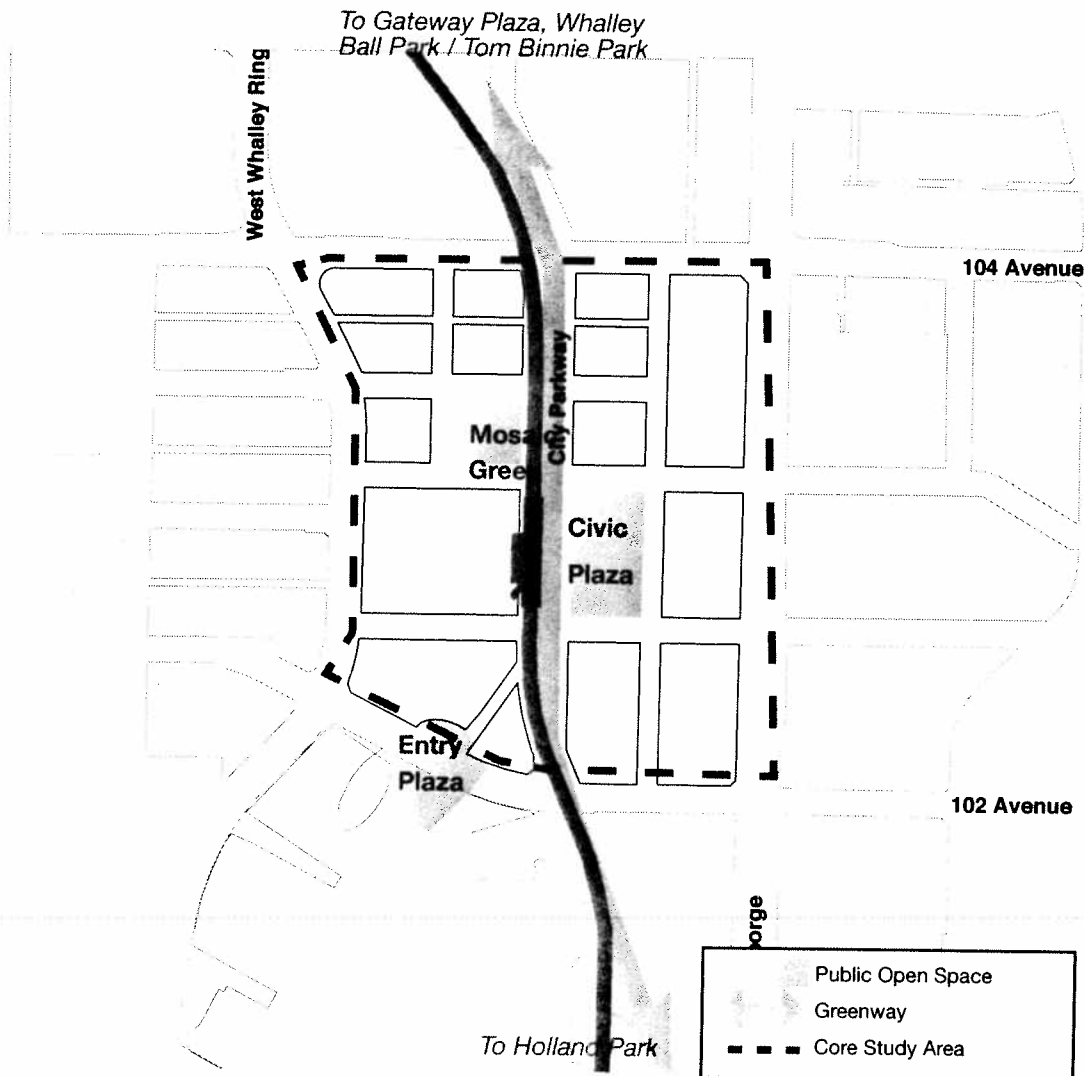
2.3.5 Public Open Space

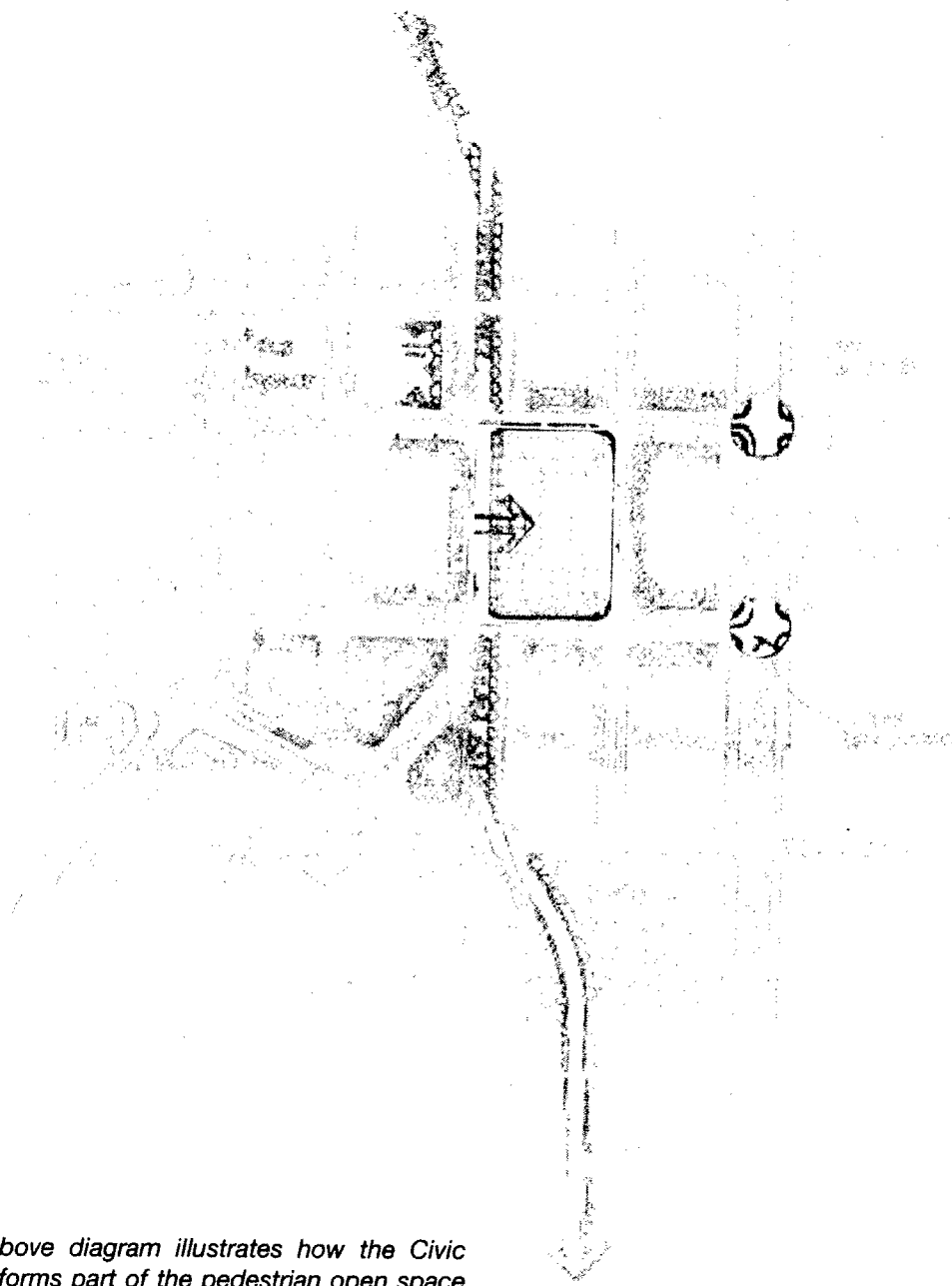
The proposed Open Space Plan consists of several interconnected public open spaces and the pedestrian-oriented street network that connects them.

The Surrey Central Transit Village Plan is consistent with previous planning work in its recommendations for enhancements to the public open space for Surrey City Centre. The Whalley Parks, Recreation and Culture Master Plan (January 2001) recommends a pedestrian system running north-south through Surrey City

Centre from the Gateway SkyTrain Station in the north to King George SkyTrain Station and Holland Park in the south. The proposed route roughly follows the SkyTrain line. The centre piece of this pedestrian system includes a major new public plaza centrally located and developed in conjunction with the Surrey Central SkyTrain Station. The Civic Plaza is proposed to be located just east of the existing SkyTrain station. It is defined by City Parkway to the west, the two new east-west streets to the north and

Proposed Public Open Space





The above diagram illustrates how the Civic Plaza forms part of the pedestrian open space network through Surrey City Centre, is supported by commercial and retail functions, and is centrally located within the new street network to service a variety of transit options, including BRT, SkyTrain, and local buses.

south respectively, and a new north-south street to the east. It forms part of the normalized urban street grid being proposed for downtown Surrey.

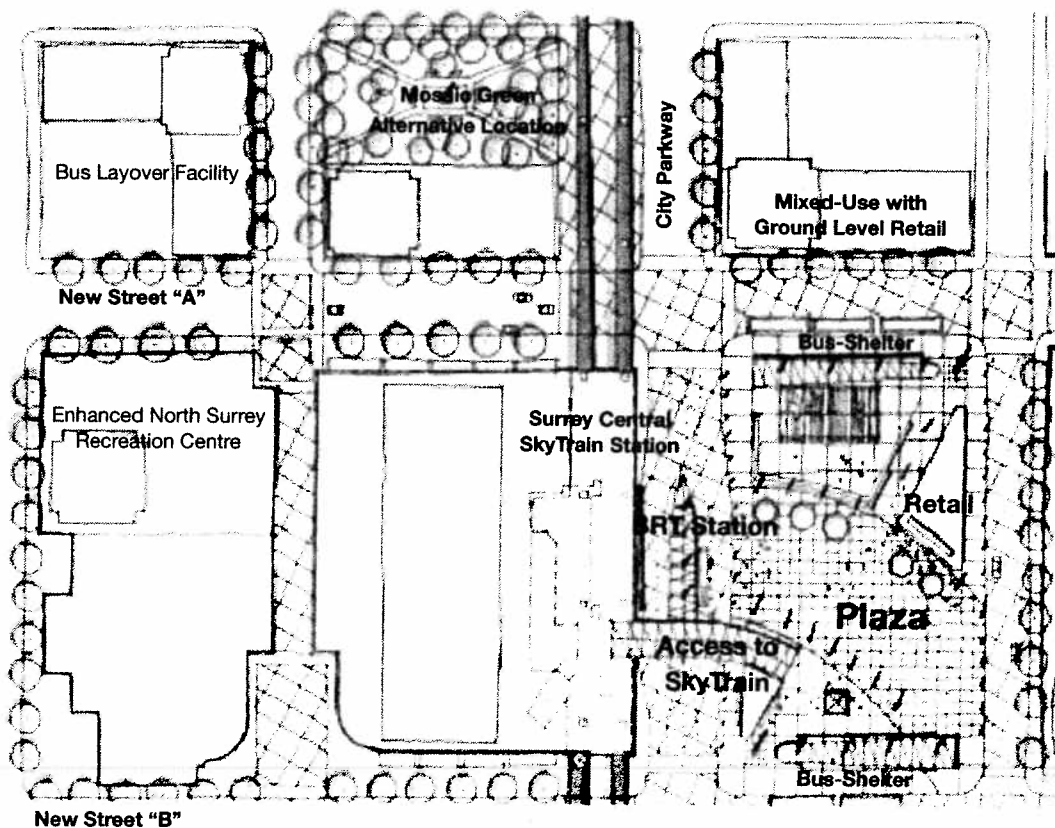
The Plan recognizes the importance of public open space in the city centre. Typically, the City of Surrey targets the provision of 0.6 hectares of neighbourhood park space per 1,000 residents across the city. The Plan's proposed densities for the core study area along with the suggested development parcels result in a projected population of more than 4,100 people at build-out. This would require the provision of approximately 2.5 hectares (6 acres) of public open space in the core study area. However, Holland Park provides approximately 9 ha. of park space nearby along with Tom Binnie/Whalley Athletic Park and Gateway Plaza, reducing the need to fulfill the full 2.5 hectares within the core study area.

Civic Plaza: a Commercial and Civic Heart

Great civic spaces are defined both by their built edges and the quality and use of the space itself. The proposed Civic Plaza will be defined by the SkyTrain Station to the west, adjacent street-oriented retail on the other three sides, and retail or public uses opportunities within the plaza itself. Some street-fronting retail development should ideally be in place on two sides prior to the development of the Civic Plaza to ensure informal surveillance of the public space.

Public activity, as well as carefully detailed design, landscaping and programming are important for the success of the plaza to assure a safe, comfortable and animated public place.

The Civic Plaza has been designed to accommodate approximately 20,000 sq. ft. retail space in freestanding pavilion structures. These pavilions could provide convenient services such as



The plan above illustrates the proposed Civic Plaza located at the centre of the Surrey Central Transit Village. This is a preliminary conceptual plan, subject to more detailed design.

The Civic Plaza will be a unique urban experience where the SkyTrain Station is integrated with a civic open space that also functions as the city's main transit hub.

coffee shops and restaurants, which will help animate the plaza and also provide “eyes on the plaza” to deter antisocial or illegal activity. The pavilions could also accommodate a public uses, such as a tourist information centre or a public library.

The plaza will act as a new gateway to downtown Surrey, and would be surrounded by multi-floor retail and/or office uses as well as high-density residential. The plaza will become the animated focus of pedestrian activity, including all transit interchanges, and the heart of the emerging downtown.

The Civic Plaza is scaled and designed to accommodate heavy pedestrian movement between the SkyTrain Station and bus stops, as well as to provide space for both programmed and spontaneous civic events, celebrations and gatherings.

The Civic Plaza should be designed to include the following components:

- Transit infrastructure including bus shelters and improved access to the SkyTrain station; special hardscape paving surfaces, sidewalks and crosswalks to surrounding blocks; retail pavilion(s); coordinated street furniture—including opportunities for seating in both sun and shade; pedestrian lighting; rich, green landscaping with seasonal horticultural displays and large tree growth; signage and way finding; public art; in-ground services including electric supply, fibre optics, cable/satellite TV, public sound system, closed circuit TV; and water features, etc.
- Programming of the space will be important both to ensure a lively range of public activities and to help control antisocial and illegal activities. It will be important to establish a civic management structure to monitor the space and manage programming. Adequate ongoing funding for plaza operations and maintenance will be needed.

- The Civic Plaza should be designed to make it unique in the Lower Mainland. Contemporary technologies and information systems should be incorporated into its design to reflect Surrey's forward looking ethos as a young, 21st century city. For example, a dramatic large-scale electronic projection screen attached to the east face of the SkyTrain station overlooking the plaza should be explored.
- The plaza could be designed to be developed in phases, to permit interim uses. This would address the likelihood that not all blocks facing onto the plaza will be developed immediately. This could also address concerns about programming and securing a large open space before the demand is fully in place.
- The Civic Plaza should be designed to meet or exceed the latest CPTED (Crime Prevention Through Environmental Design) standards.

All great cities are defined by their civic spaces. The Surrey Central Transit Village Plan delivers the opportunity for Surrey to create a landmark civic space. The Civic Plaza will be a unique urban experience where the SkyTrain Station is integrated with a civic open space that also functions as the city's main transit hub.

The plaza's location between the two new east-west streets will also provide better connections to the surrounding residential neighbourhoods to the east and west.

The location of the Civic Plaza will also tie into the City's bicycle network, which designates City Parkway and the twin couplet streets as bikeways.

The Civic Plaza will also form part of an interconnected set of public open spaces that will include Mosaic Green and the expanded Central City Tower plaza.

Alternative locations for the Civic Plaza were examined during the planning process. This work is included for reference in the associated Background Information report.

Transit Interchange

The Civic Plaza will function as both a public open space and as a transit interchange facilitating transfers between SkyTrain, local buses and the Bus Rapid Transit (BRT) service that is proposed for City Parkway. This transit function will facilitate the removal of the existing suburban bus loop facility and will help to realize the development potential of those lands.

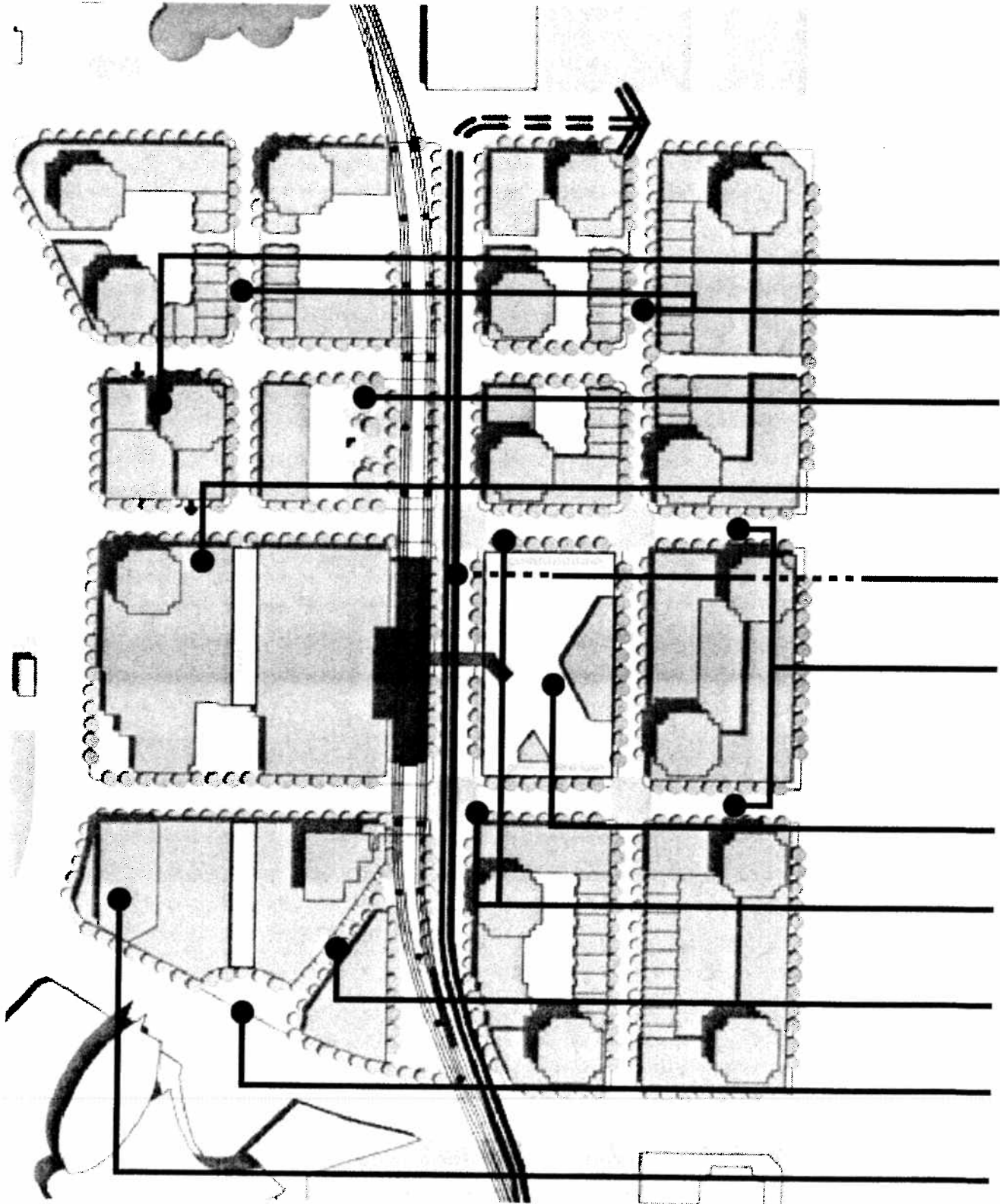
The Civic Plaza provides for a more urban form of transit transfers, with a new SkyTrain station entrance and high quality bus stop shelters on both the north and south sides. Transit amenities such as the bus stop shelters could have a distinctive design, as part of the coordinated Civic Plaza design.

The Civic Plaza will allow the transit interchange functions to be accommodated on the urban street system rather than needing a stand-alone transit bus loop.

2.3.6 Annotated Plan

A unique transit-activated Civic Plaza supported by a finer grained street grid, a network of public open spaces and a transit couplet, form the basic physical structure of the Surrey Central Transit Village Plan. These key elements underpin a land use plan intended to achieve a vibrant mix of uses in a compact, livable urban environment. Combined, these considerations form the Surrey Central Transit Plan, annotated in detail below.

Conceptual Annotated Plan



A commercial strategy that recognizes the core study area as both a regional town centre and a local neighbourhood and therefore accommodates both small scale, local serving retail as well as regional and sub-regional commercial operations. The strategy also recognizes the value of having strong commercial uses along transit route streets.

A redeveloped core-study area with densities attractive to developers and supportive of transit village goals.

A bus layover facility within a mixed-use development.

New north-south streets with flexible built-form at street level that support the ongoing vitality of street activity along neighbourhood-scaled streets over the long term.

A relocated and enhanced "Mosaic Green" as a new neighbourhood park with an adjacent development parcel.

A redeveloped North Surrey Recreation Centre that is a mixed-use civic facility (possibly including residential or office above). Both north and south street frontages are conducive to small scale retail operations.

A high-quality BRT system operating through the city centre on City Parkway. The possibility of conversion to LRT is protected for future consideration.

Intersection spacing that is consistent with successful urban centres, allowing for enhanced pedestrian circulation and safe crossings of King George Highway and West Whalley Ring Road.

A Civic Plaza that forms the heart of the City Centre. Retail or mixed-use pavilions could be included to help animate and reduce the size of the square. The inclusion of a stand-alone civic facility such as a new library or small theatre into this square is possible in the long term.

An east-west transit couplet along new streets between West Whalley Ring Road and King George Highway. The Civic Plaza acts as the functional centre-piece for transfers between local buses, Rapid Bus (BRT) and SkyTrain.

A pedestrian corridor connecting two nodes of pedestrian activity, Central City Tower and the Surrey Central Civic Plaza.

An entry plaza to Central City Tower that is complemented by a mirrored public open space across 102 Avenue.

Promotion of opportunities for commercial office and institutional space in key locations.

3.0 Design Guidelines

City Parkway, new east-west streets along the transit couplet, and new north-south streets form a network of public right-of-ways within the core study area that serves pedestrian, cyclist, transit, and vehicular circulation. The design of streets considers the use, activities, environment, adjacent building form, and character of these streets in addition to their functional requirements.

City Parkway plays a significant role in the Surrey Central Transit Village Plan as a greenway and multi-modal transportation corridor. Pedestrians, cyclists, bus rapid transit (BRT), and vehicles will all have access along this central street. Additionally, SkyTrain riders will travel above this portion of City Parkway. The street is a component of a central north-south greenway that connects areas south of King George Station to areas north of Gateway Station and, therefore, a high-quality streetscape with a generous provision of pedestrian and cycling space is desirable. There is an opportunity for City Parkway to take on a civic role as the proposed civic square is immediately adjacent to City Parkway in the heart of the core study area. A key design challenge along City Parkway is to mitigate the shading and visual impacts of the SkyTrain guideway. Residential uses will predominate in the short to medium term, but will allow for conversion to retail uses as the core grows.

The proposed east-west streets have a critical role as complementary components in a "transit couplet," allowing buses to circulate throughout the city centre while minimising bus impact on any single street. The streets would have continuous retail at grade and take on the role of the "High Street" in the City Centre. The streets are adjacent to the civic plaza. The civic plaza, in turn, enhances the transit couplet as it provides a point of transfer between a variety of transit modes: local buses, BRT, and SkyTrain. Particular attention should be paid to signaling on to and off of King George Highway (refer to the Surrey Central Transit Village Plan: Transportation Memorandum). Other considerations include ensuring bus mobility and stopping capabilities and maintaining drop-off opportunities for private vehicles near City Parkway transit services and the North Surrey Recreation

Centre. The streets should also ensure pedestrian and cyclist access.

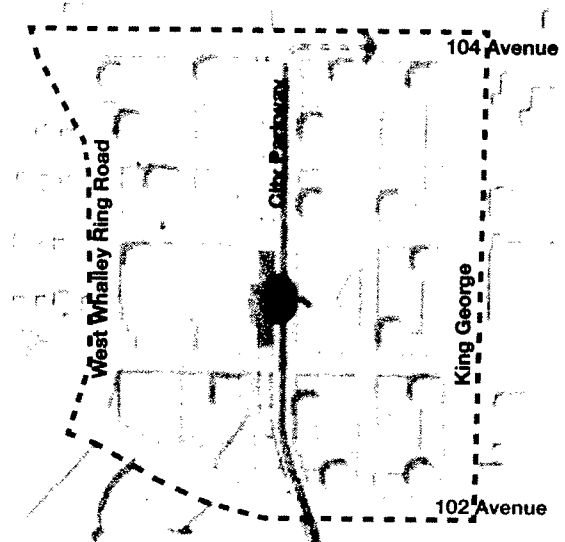
The proposed north-south streets offer a unique opportunity for intimate, neighbourhood-scaled streets in a vibrant city centre. The proposed right-of-way is relatively narrow, but still sufficient to allow for the efficient movement of pedestrians, cyclists, and vehicles. The narrow street will provide a unique contrast to the larger scale of adjacent streets. Built form along these streets should primarily be small scale, flexible, three-storey townhouses. This building typology will foster a unique sense of place in the city centre as well as allow for long-term flexibility of use.

The street cross-sections on the following pages illustrate typical conditions on the various proposed new streets in the core study area.

These sections illustrate how each street type accommodates private vehicles, buses, bicycles and pedestrians within the relevant street right-of-way. They also illustrate the recommended form of development and building heights adjacent to the street.

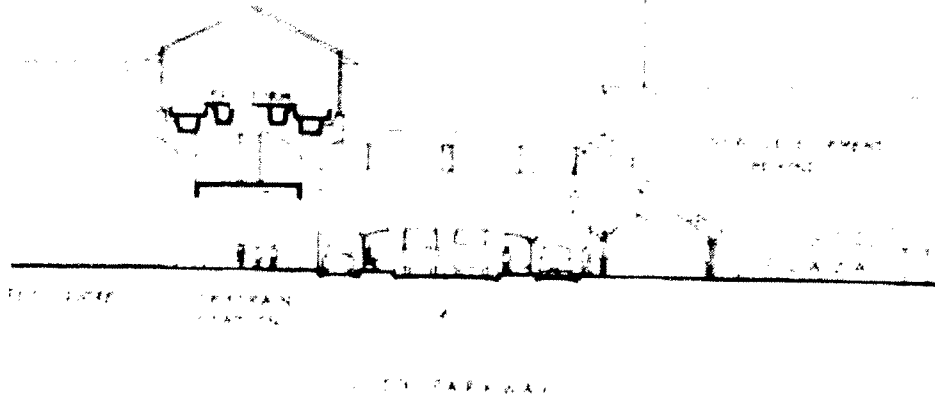
Typical Section: City Parkway at BRT Station

This section drawing represents a typical condition of City Parkway at the Bus Rapid Transit Station. The proposed BRT buses would occupy the centre portion of the right of way, flanked on either side by passenger waiting platforms. Vehicular traffic continues north and south on the outer portions of the right of way, while pedestrians circulate underneath the SkyTrain guideway or on sidewalks east of traffic lanes. The portion of City Parkway between the two couplet roads can be designed to promote pedestrian priority over other modes by providing pedestrian crossing tables over the vehicular lanes that make the roadway even with adjacent sidewalks. There is no opportunity for vehicle parking on this short stretch of City Parkway. Cyclists traveling along the north-south greenway are encouraged to dismount and walk for this short passage underneath the guideway. However, it is anticipated that most north-south bicycle traffic will either complete their travel in the core study area or connect to regional transit services. As such, end-of-trip or transitional facilities for cyclists (such as secure bicycle and gear storage) should be provided. While other options exist for traffic alignment here, this typical cross-section demonstrates that multiple modes of transportation can be accommodated alongside the BRT station on City Parkway.



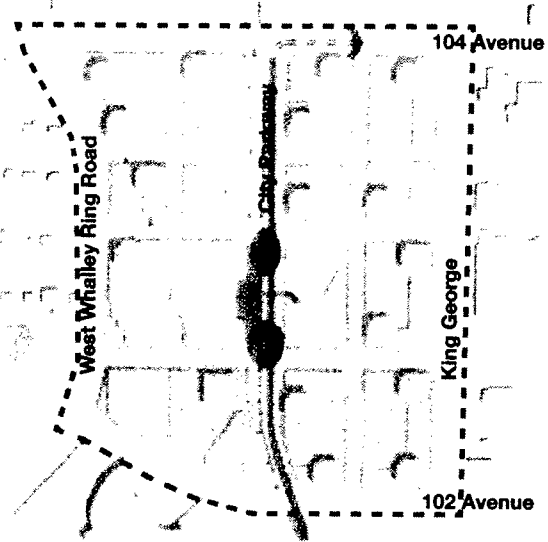
This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.

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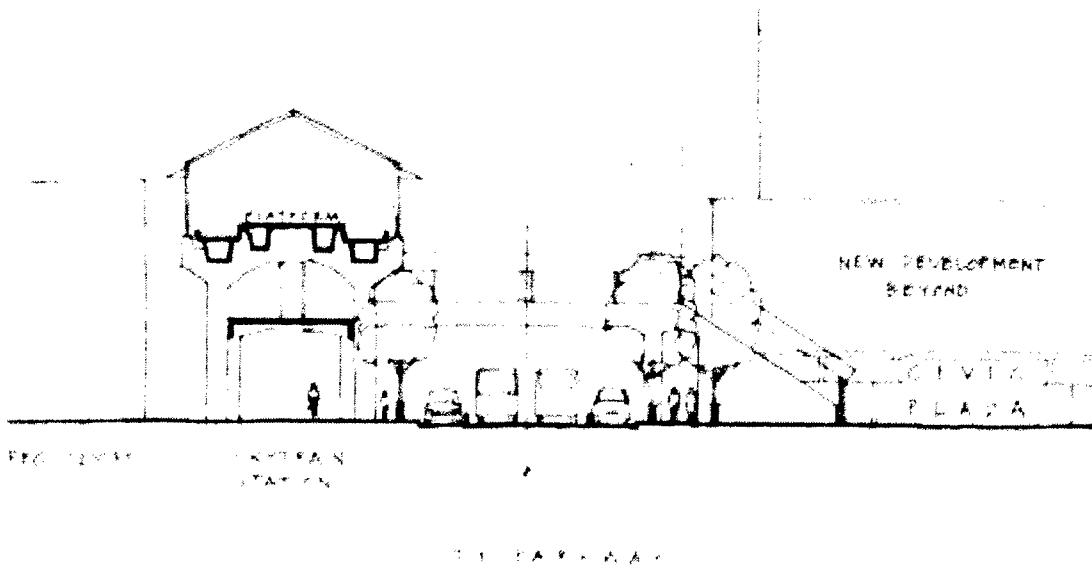


Typical Section: City Parkway at Civic Plaza

This section drawing represents a typical condition of City Parkway adjacent to the civic plaza where no BRT station is proposed. Generous amounts of space have been devoted to the pedestrian realm and both buses and vehicles can circulate north - south along City Parkway. There is no parking along this stretch of City Parkway. Cyclists traveling along the north-south greenway are encouraged to dismount and walk for this short passage underneath the SkyTrain station.

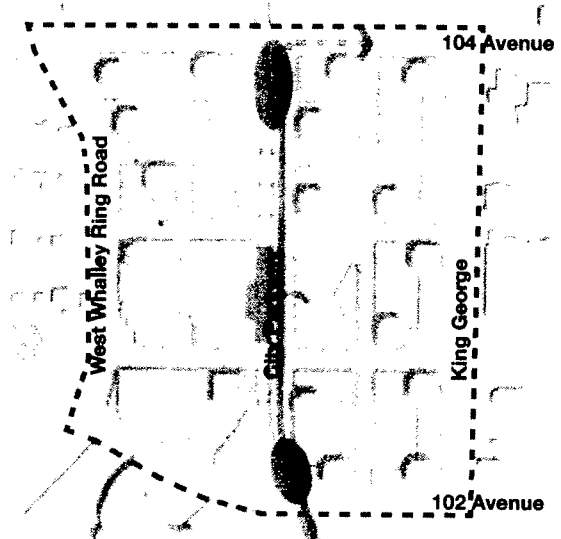


This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.



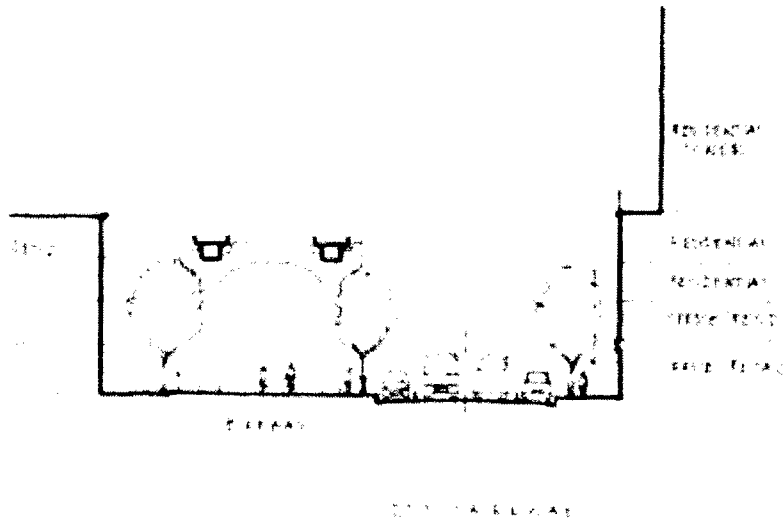
Typical Section: City Parkway A

This section drawing represents a typical condition of City Parkway. Generous amounts of space will be devoted to the pedestrian realm and both buses and vehicles can circulate north - south along City Parkway. Bicycle routes may be designated underneath the SkyTrain guideway (as shown in the section below) or on the street surface. There is no parking along this stretch of City Parkway. This section is included as a demonstration only. A more detailed street design is recommended for all of City Parkway to ensure functional consistency along the street.



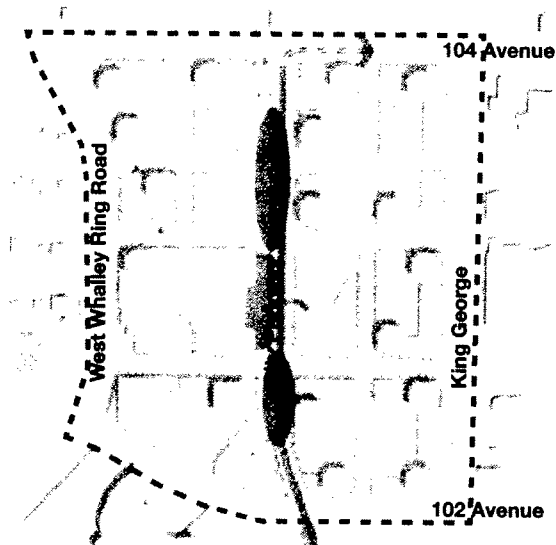
This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.

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Typical Section: City Parkway B

This section drawing represents another typical condition of City Parkway with a wider existing right of way. Generous amounts of space have been devoted to the pedestrian realm and both buses and vehicles can circulate north-south along City Parkway. Bicycle routes may be designated underneath the SkyTrain guideway or on the street surface (as shown in the section below). Additional space is available for dedicated cycle lanes. There is no parking along this stretch of City Parkway. A more detailed street design is recommended for all of City Parkway to ensure functional consistency along the street.

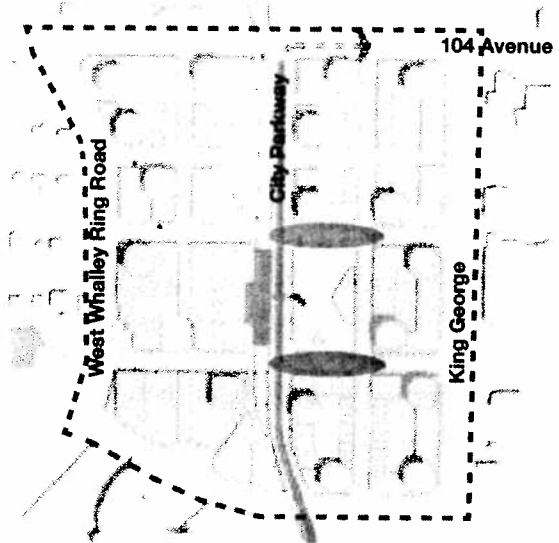


This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.

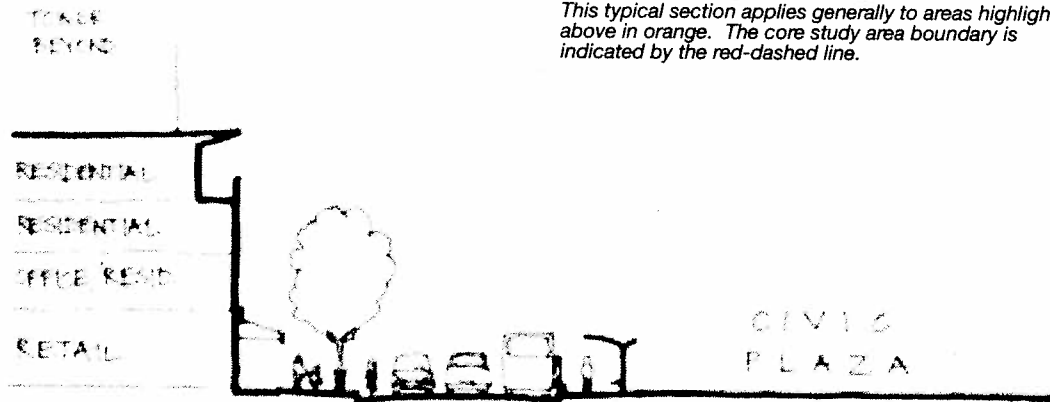


Typical Section and Plan View: New East-West Street at Civic Plaza

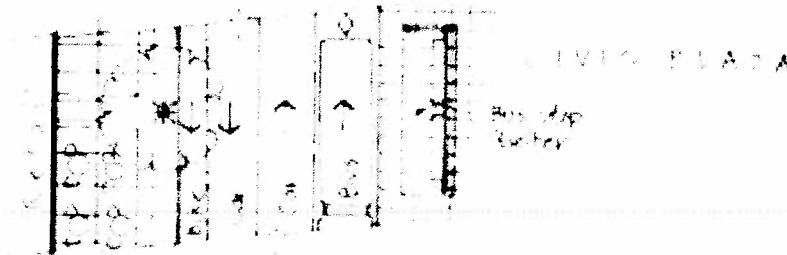
The new east-west streets combine to form the transit couplet, with buses running along both streets, though only in a single direction along each street. Bus shelters and bus stops will be located adjacent to the civic plaza. Building setbacks (approximately 2m) are encouraged to allow for sidewalk retailing space or cafe seating. Sidewalk widths should be an additional 1.5 - 2m minimum. Cyclists will be able to travel in one direction on each street. Ground floor retail uses, supported by upper level office or residential uses, contribute to an active and vibrant public street life.



This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.

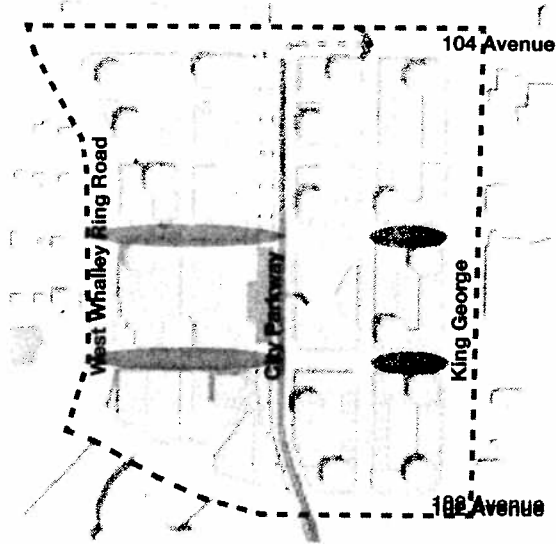


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Typical Section and Plan View: New East-West Street

In locations not adjacent to the civic plaza, bus shelters and waiting areas are not required, providing an opportunity for on-street vehicular parking. Building setbacks (approximately 2m) are encouraged to allow for sidewalk retailing space or cafe seating. Sidewalk widths should be consistent with the areas adjacent to the civic plaza: an additional 1.5 - 2m minimum. Cyclists will be able to travel in one direction on each street, sharing a lane with traffic. Ground floor retail uses, supported by upper level office or residential uses, contribute to an active and vibrant public street life.



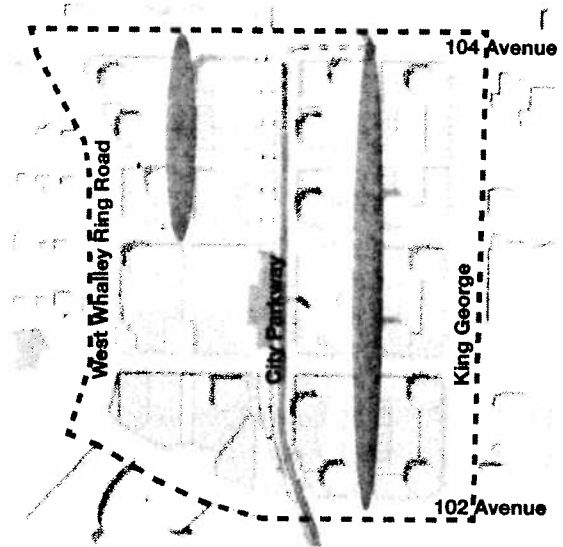
This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.



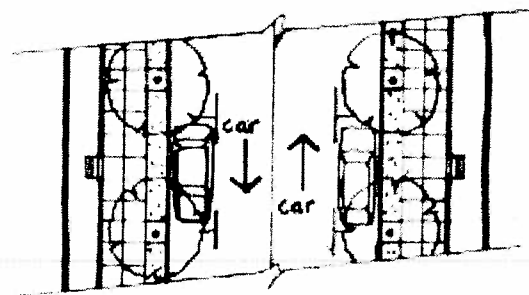
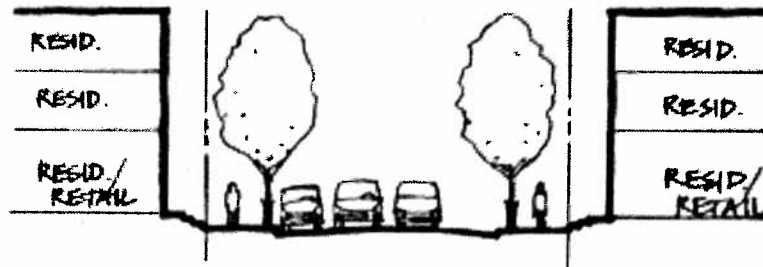
Typical Section: New North-South Streets

This section drawing indicates a possible alignment for a new north-south street. The street right of way is narrower to create a more intimate, pedestrian scaled street. In contrast to City Parkway, West Whalley Ring Road, and King George Highway, these new streets are meant to serve a more local, "domestic" function. Local traffic, parking, and pedestrian areas are accommodated. A mix of uses along the street (retail is expected adjacent to the civic plaza) will contribute to a vibrant public realm.

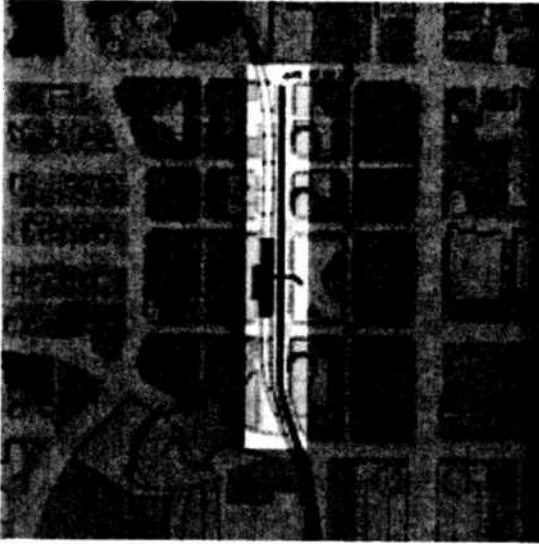
These streets also provide long-term land-use flexibility. Street oriented townhouses (with the possible exception of those locations adjacent to the civic plaza) are encouraged to provide the opportunity for either residential or commercial uses. High ceilings in the townhouses will facilitate easy conversions. A 2m setback is preserved to allow for either semi-private residential space or sidewalk retailing, depending on the choice of use. The street-wall primarily consists of three storey buildings. In the case of towers or four-storey buildings, an additional setback of 2-4m from the lower level facade will be required on all levels above the third floor.



This typical section applies generally to areas highlighted above in orange. The core study area boundary is indicated by the red-dashed line.



City Parkway Design Guidelines



City Parkway is highlighted in the image above.

Building massing / Relationship to the Street:

4-storey maximum for all buildings along the street edge. High-rise buildings should be setback from a 4-storey podium element.

Building setback:

A maximum setback of two metres should be established to allow for retail activities along sidewalks.

Landscaping:

Streets will be generously planted with continuous rows of street trees and adequate soil volumes below grade in keeping with best arboricultural practices. Street tree selection will be determined by the City's Urban Forestry Staff.

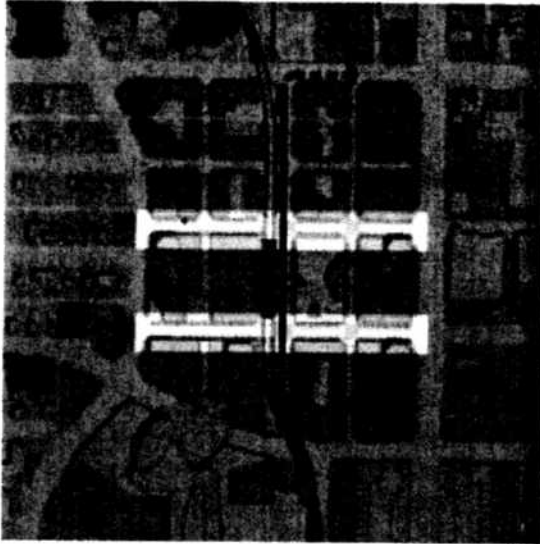
Lighting:

Pedestrian scale lighting (3-4m in height) will be provided along both sides of the street. Fixtures unique to Surrey City Centre will enhance the character of the neighbourhood.

Additional elements:

- Street furnishings- including bike racks, garbage cans, benches, etc.- should be provided where suitable.
- Unique treatments / additional landscaping opportunities should be considered adjacent to Mosaic Park.
- The street surface may be partially raised or demarcated with unique paving materials to indicate high pedestrian frequency along City Parkway between each of the two new east-west couplet streets.

East-West Street Design Guidelines



New East-West streets are highlighted in the image above.

Lighting:

Pedestrian scale lighting (3-4m in height) will be provided along both sides of the street. Fixtures unique to Surrey City Centre will enhance the character of the neighbourhood.

Additional elements:

Street furnishings- including bike racks, garbage cans, benches, etc.- should be provided where suitable.

Building massing / relationship to the street:

Four storey, mixed-use buildings are appropriate to strengthen and activate the street edge. Building setback: a maximum 2m setback may be established to allow for retail activities along sidewalks.

Weather Protection:

continuous weather protection should be provided

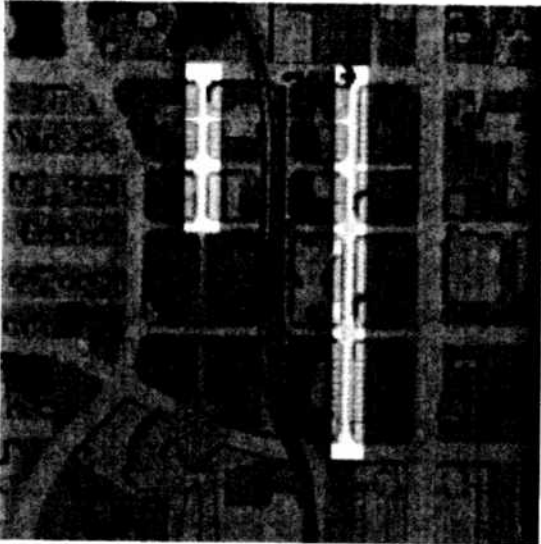
Landscaping:

Streets will be generously planted with continuous rows of street trees and adequate soil volumes below grade in keeping with best arboricultural practices. Street tree selection will be determined by the City's Urban Forestry Staff.

Corner treatment:

To shorten the distance pedestrians must cross at any intersection and to calm traffic speeds, sidewalk bulges are proposed at all corners along the east-west streets within the core study area.

North-South Street Design Guidelines



New North-South streets are highlighted in the image above.

Building massing / relationship to the street:

Built form should be primarily 3-storey structures lining the street. Where the use is residential townhouse, all ground floor units shall have direct access to the street, and should preferably be raised at least 0.6 m (2 ft.) above sidewalk level. Where the use is retail or office, all such ground floor uses shall face the street directly and should preferably be at sidewalk level. A flexible building format with over height ground floors could allow for a variety of potential ground-level uses, permitting conversion from residential to retail/office use over time. At intersections, an increase to four storeys is permitted. At locations with a retail focus, such as adjacent to the Civic Plaza, 4-storey, mixed-use buildings are appropriate to strengthen and activate the plaza edge.

Building setback:

A 2-metre maximum setback may be established to allow for retail activities to occur on sidewalks or for staircase / grade separation on main levels of residential units.

Landscaping:

Streets will be generously planted with continuous rows of street trees and adequate soil volumes below grade in keeping with best arboricultural practices. Street tree selection will be determined by the City's Urban Forestry Staff.

Corner treatment:

To shorten the distance pedestrians must cross at any intersection and to calm traffic speeds, sidewalk bulges are proposed at all corners along the north-south streets within the core study area.

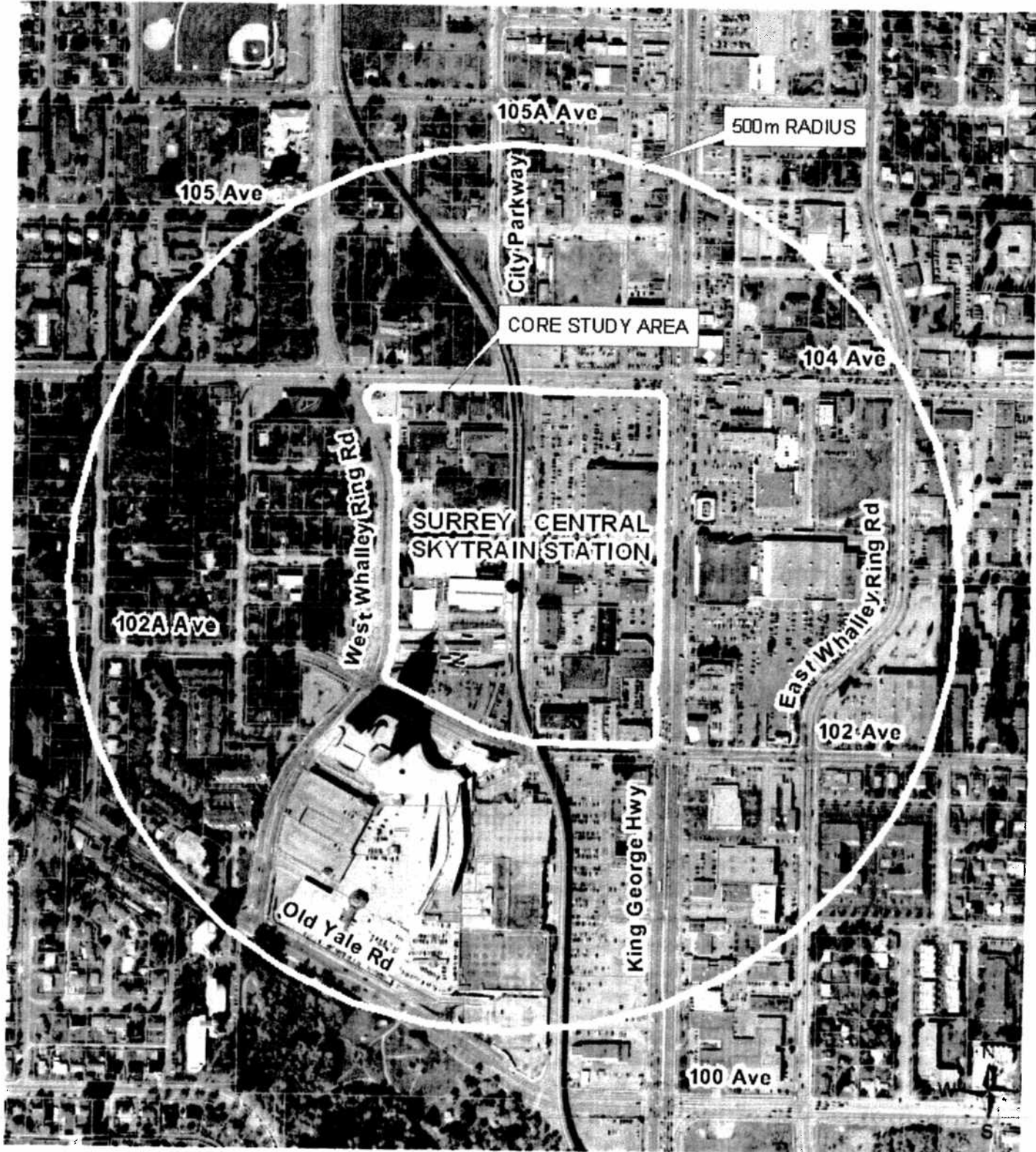
Lighting:

Pedestrian scale lighting (3-4m in height) will be provided along both sides of the street. Fixtures unique to Surrey City Centre will enhance the character of the neighbourhood.

Additional elements:

- Street furnishings- including bike racks, garbage cans, benches, etc.- should be provided where suitable.
- At the intersection of the two east-west couplet streets and the new north-south streets adjacent to the civic square, the street surface may be partially raised or demarcated with unique paving materials to indicate high pedestrian frequency.

CORE STUDY AREA



Surrey Central Transit Village- Transit Plaza Evaluation
June 18, 2006

City of Surrey
TransLink
Greater Vancouver Regional District
Transport Canada

Hotson Bakker Boniface Haden Architects + Urbanistes
Urban Forum Associates
Coriolis Consulting Corp.
Don Wuori Design
Opus Hamilton

Key Sections

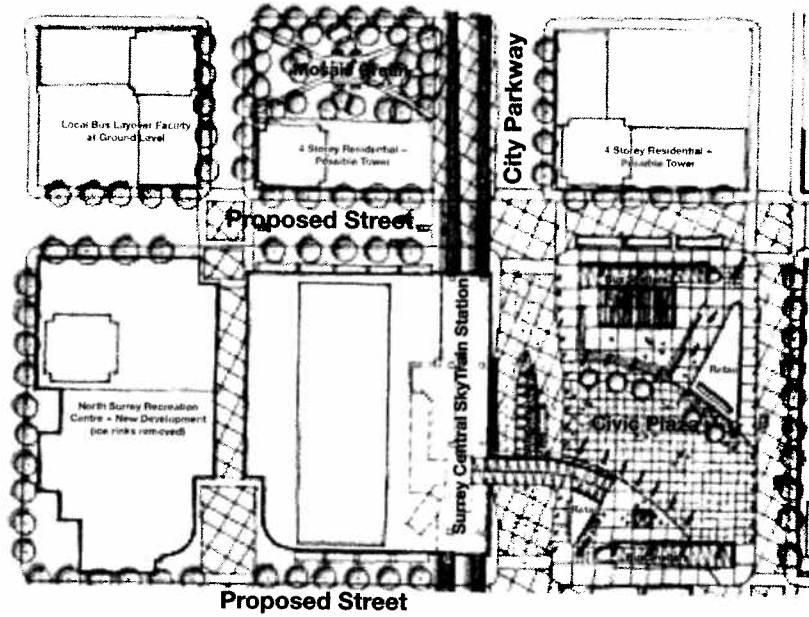
- 1. Charrette Plan View Sketches**
- 2. Summary Analysis of Plaza Options**

Supporting Work

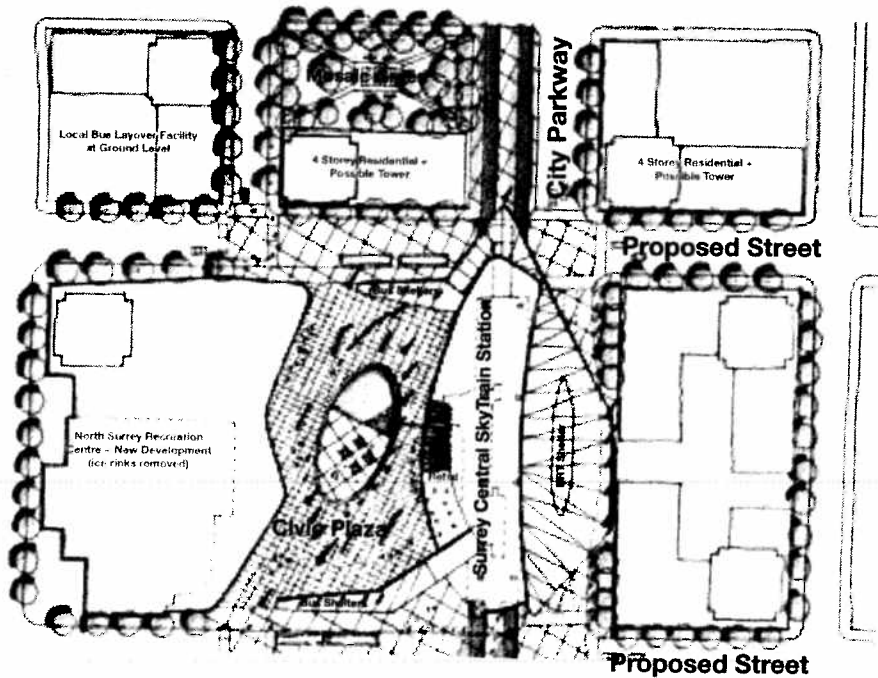
- 3. Development Area Calculations**
- 4. Financial Analysis**
- 5. Phasing**
- 6. Urban Design Implications**
- 7. Transit Functionality and Phasing Analysis**

1. Charrette Sketches- Plan View

East Plaza Option- Charrette Sketch



West Plaza Option- Charrette Sketch



2. Summary Analysis of Plaza Options

This report summarizes the various inputs developed as part of the Surrey Transit Village Civic Plaza Options Charrette undertaken by the consultant team. The team developed two Civic Plaza options: a West Plaza and an East Plaza.

The following sections of this report summarize the key findings of the Financial Analysis, Phasing Implications, Urban Design Implications, and Transit Impacts Assessment reports for the plaza options. The complete versions of these reports/diagrams are included as Appendices to this Summary Report.

Plans of the two plaza options as well as the Phase 1 Plans for both options are also included in other sections of this report.

Financial Analysis

(See Section 4: Financial Analysis)

The financial comparison assumes that the City and TransLink take a proactive approach to implementing the plan by acquiring privately owned property for the creation of the new east-west transit couplet and the civic plaza, rather than waiting to negotiate land dedications from property owners as the area redevelops. It estimates the costs and revenues for each plaza option, and establishes the resulting net investment in Phase 1 for each option.

Based on revised cost estimates received from Translink and external cost consultants, and estimates of the commercial/residential potential of each Civic Plaza option, the principal conclusions of the financial analysis are:

	East Civic Plaza	West Civic Plaza
Total Costs for Phase 1	\$25,700,000	\$39,400,000
Total Land Sales Revenues	\$8,300,000	\$14,200,000
Net Investment	\$17,400,000	\$24,200,000
Less Showcase Funding	<u>\$3,000,000</u>	<u>\$3,000,000</u>
Net Phase 1 Investment	\$14,400,000	\$21,200,000

- The net initial investment required for the East Civic Plaza is estimated to be approximately \$6.8 million lower than the West Civic Plaza option.
- This is because although the West Plaza option requires acquisition of less privately owned property it requires the demolition and replacement of the existing ice rinks plus renovations to the Recreation Centre facade.
- The East Plaza Option allows deferral of the ice rink demolition and replacement, and renovations to the Recreation Centre.

Phasing Implications

(see Section 5: Phasing)

In Phase 1, both options:

- require development of the two new east-west streets between West Whalley Ring Road and King George Highway
- require development of bus layover facility on the City-owned block to the north of the Recreation Centre

- require enhancements to City Parkway between the new east-west streets
- create immediate redevelopment potential for the lands between the Recreation Centre and Surrey Central tower

West Plaza Phase 1

- requires alterations to the SkyTrain station at both the north and south ends for access
- requires substantial new development along west flank of station to screen back of station infrastructure facing plaza
- requires demolition of both ice rinks
- requires renovations to resulting east façade of Recreation Centre to create new west edge of plaza
- requires some form of canopy to link BRT stops on City Parkway and new bus stops on plaza
- requires acquisition of fewer private properties than East Plaza option (4 properties)
- creates two new blocks for private development to the east of the plaza

East Plaza Phase 1

- requires alterations to the SkyTrain station at the east side only for access to plaza
- defers demolition and relocation of ice rinks
- defers redevelopment and renovation of Recreation Centre
- creates potential new street fronting retail on all four sides of plaza
- requires acquisition of more private properties than West Plaza option (6 properties)
- creates one new block for private development to the east of the plaza

Conclusion

Both plaza options require a similar amount of new works in Phase 1. The West Plaza requires more substantial renovations to the SkyTrain station, and it also requires the demolition/relocation of the ice rinks and some renovations to the Recreation Centre. The East Plaza requires acquisition of more privately owned land.

Urban Design Implications

(see Section 6: Urban Design Implications)

There are urban design pros and cons with both options. Key urban design pros/cons:

West Plaza

Pros:

- a somewhat smaller-scaled public space, more easily programmable with Recreation Centre uses
- plaza is fronted directly with active public uses (Recreation Centre on west)
- a more direct pedestrian connection to Surrey Central Tower plaza to south
- bus stops and station access located close together, optimizing transfers and usual connections between SkyTrain and local buses

Cons:

- more restricted land area available for Recreation Centre expansion at grade
- requires more extensive alterations to SkyTrain station, including a new north entry that includes stairs & escalators from grade to mezzanine and from mezzanine to platform, extend mezzanine northwards to connect to this new access point
- requires new retail building to screen west station façade
- less retail street frontage facing onto the plaza (three sides, not four)
- narrower, more restricted plaza size and shape
- shifts plaza centre of gravity west, further away from KGH
- less direct transfer between BRT and local buses
- City Parkway not integrated into plaza design
- SkyTrain guideway structure closer to, more directly dominates plaza

East Plaza

Pros:

- substantially more retail street frontage facing onto the plaza, on all four sides
- more land area available for Recreation Centre expansion at grade
- better-proportioned plaza size and shape
- wide range of programming options and possible uses
- integrates City Parkway into plaza design
- more direct transfers between BRT/local buses/SkyTrain: opportunity to create a public space that fully integrates all transit functions
- less extensive design alterations to SkyTrain station required
- permits Recreation Centre redevelopment to occur over time
- plaza centre of gravity centred between West Whalley Ring Road and KGH

Cons:

- larger plaza space requires careful detailed design to limit anti-social uses
- more privately owned land will need to be acquired to create the Civic Plaza
- Recreation Centre is physically separated from plaza, and less visible
- plaza surrounded by vehicular streets on four sides, impacting pedestrian access to plaza

Conclusion

The East Plaza plan has substantially more potential urban design attributes than the West Plaza plan. It is better located to function as the future civic heart of the downtown Surrey, being better sited to engage King George Highway and all transit modes.

Transit Impacts Assessment

(see Section 7: Transit Functionality and Phasing Analysis)

An assessment of transit impacts has been provided by Translink. The complete memo is included as an appendix to this report.

The assessment notes that:

- most aspects of transit operations are identical under both plaza options. These include:
 - the basic cross-section of the east-west couplet
 - the cross-section of City Parkway,
 - the provision for off-street layover on the block north of the Recreation Centre
- a key design consideration is the length of curb space at the north and south sides of the plaza, which must each accommodate 3 buses typically, and requires max. 52 metres. Both plaza options appear to meet this minimum length, although the West Plaza has less length of sidewalk open to the plaza on the northside street.
- Passenger Circulation between transit modes impacts:
 - SkyTrain – BRT: No Difference
 - SkyTrain – Eastbound Buses: West Plaza Preferred
 - SkyTrain – Westbound Buses: No Difference
 - BRT – Eastbound Buses: East Plaza Slightly Preferred
 - BRT – Westbound Buses: East Plaza Preferred
 - Eastbound Buses – Westbound Buses: No Difference

Conclusions

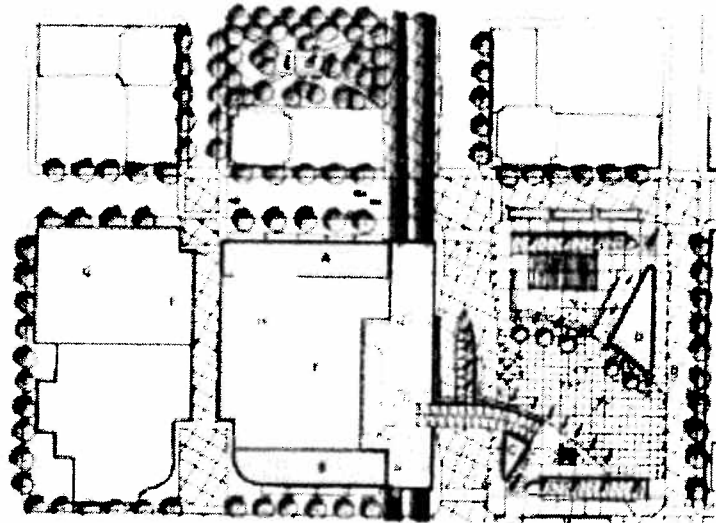
Based on the foregoing evaluations, both the West Plaza and the East Plaza appear to be workable. However, on balance, there is a better case for the East Plaza option as the preferred plan to take forward.

3. Development Area Calculations

The following graphics and accompanying text describe potential built area of development for both the east and the west plaza options. Figures are estimates only. A more detailed analysis may yield either an increase or decrease in area calculations.

East Plaza Option

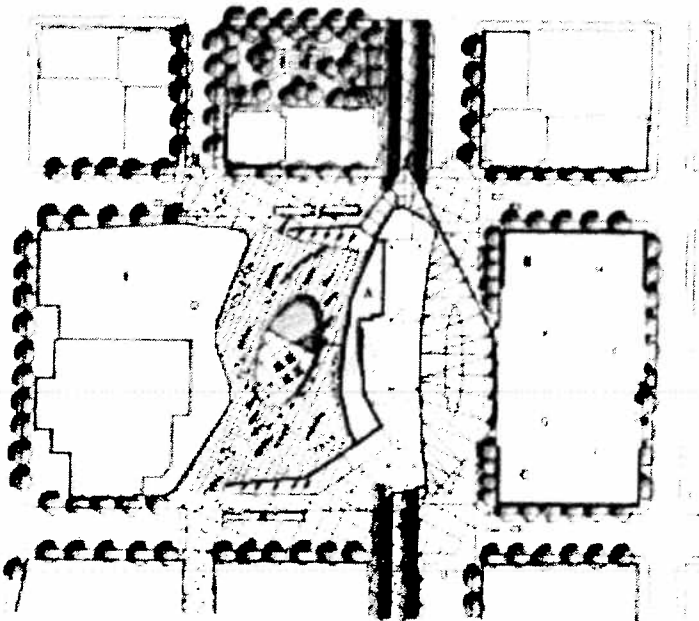
Commercial A: 1440 sq. ft. (1 story)
Commercial B: 16311 sq. ft. (1 story)
Recreational / Community E: 22760 sq. ft.
Recreational / Community F: 11875 sq. ft.
Residential G: 202610 sq. ft. (28 stories) x 7236 sq. ft.
Residential H: 16810 sq. ft. (3 stories) x 12270 sq. ft.



Commercial C: 860 sq. ft. (1 story)
Commercial D: 4620 sq. ft. (2 stories) x 3310 sq. ft.

West Plaza Option

Commercial A: 5562 sq. ft. (1 story)
Commercial B: 16200 sq. ft. (1 story)
Commercial E: 3895 sq. ft.
Recreational / Community D: 52850 sq. ft.
Residential E: 202610 sq. ft. (28 stories) x 7236 sq. ft.
Residential F: 18640 sq. ft. (4 stories) x 16601
Residential G: 20640 sq. ft. (4 stories) x 5210 sq. ft.
Residential H: 115780 sq. ft. (16 stories) x 7216 sq. ft.
Residential I: 115780 sq. ft. (16 stories) x 7236 sq. ft.



4. Financial Analysis

M E M O R A N D U M

DATE: 7 June 2006

TO: Lynn Guilbault, City of Surrey

Moreno Rossi, TransLink

FROM: Blair Erb, Coriolis Consulting Corp.

RE: Financial Comparison of Phase 1 of the East Side and West Side Plaza
Options for the Surrey Central Transit Village Plan

Introduction

The City of Surrey, TransLink and the GVRD requested a financial comparison of the Phase 1 elements of the East Side and West Side Civic Plaza options for the Surrey Central Transit Village Plan. The concept plans for these two plaza options are attached to this memo.

This memo provides a preliminary financial evaluation of the net investment that will be required to implement phase 1 of the draft preferred plan under the two different options for the location of the civic plaza.

Preliminary Financial Analysis of Phase 1

Phase 1 of the draft preferred plan includes the following elements:

- Creation of the new east-west road couplet, freeing up the existing bus loop for redevelopment. This will require acquisition of some privately owned land and construction of the new east-west roads. The road couplet is the key element of phase 1 as it will have multiple financial, urban design and transit advantages. First, it will eliminate the bus loop and create an opportunity for TransLink to invest in a solution that would be compatible with the long term picture of Surrey City Centre. Second, it will be a key first step towards the establishment of a finer pedestrian grid, which is an essential precondition to a vibrant city centre. Third, it will create the bones for development of street oriented retail and services in an east-west direction, allowing City Parkway to function as a north-south greenway link. Finally, it creates the framework for the civic/transit plaza.
- Creation of the new civic/transit plaza. This will require acquisition of some privately owned properties in the East Side Plaza option.
- Creation of a new under cover bus layover facility.
- Upgrade of City Parkway adjacent to the new plaza.
- Upgrade/renovations to the Skytrain Station, including connecting the Station to the new civic plaza and constructing canopies on City Parkway.
- Relocation of Mosaic Green.
- In the West Side Plaza Option, demolition of the two existing ice rinks to create a site for the new plaza. The financial evaluation for the West Side Plaza option includes the cost to demolish and rebuild the two ice rinks in an alternative location on City owned land plus an allowance to renovate the remaining recreation centre façade that faces the new plaza. These costs can be deferred in the East Side plaza option as they are not required as part of Phase 1.

To help off-set the investment needed for the Phase 1 elements, we have identified potential proceeds from the sale of City owned properties associated with Phase 1. This includes:

- Sale of the surplus land that results from property acquisitions needed for creation of the new east-west road couplet (for this analysis, we assume that entire properties will be acquired even though the road rights-of-way will only use a portion of the properties. The City can then sell any un-needed land after the roads are constructed).
- Sale of the surplus development rights on the new bus layover property. The draft plan assumes that the bus layover facility could be built on City owned property within a new high density building. The surplus development rights could be sold to a private developer.
- Sale of a private sector development opportunity on the City owned site adjacent to the new Mosaic Green.
- Sale of a parcel in the civic plaza for a small commercial project.
- In the West Plaza option, sale of surplus residential development rights on the North Surrey Recreation Centre site. There is an opportunity to sell private sector development rights at this location as the ice rinks are assumed to be demolished as part of Phase 1. In the East Side Plaza option, the sale of development rights at the Recreation Centre site is deferred as it is not part of Phase 1.

In addition, the \$3 million of Showcase Program funding can be used to help off-set the Phase 1 costs.

The following table summarizes our financial comparison for Phase 1¹. This preliminary analysis assumes that the City and TransLink take a proactive approach to implementing the plan by acquiring privately owned property for the creation of the new east-west transit couplet and the civic plaza, rather than waiting to negotiate land dedications from property owners as the area redevelops.

Total Net Investment for Phase 1 of the Draft Plan

Comparison of East Side and West Side Plaza Options. All figures rounded to nearest \$100,000.

Revenue ² and Cost Items	East Side Civic Plaza	West Side Civic Plaza
Estimated Costs		
Land Acquisition for Road, new roads and/or Civic Plaza ¹	\$13,500,000	\$9,700,000
Demolition Cost Allowance for Existing Commercial Buildings ³	\$400,000	\$300,000
East-West Streets plus signalized intersections at KGH ⁴	\$3,500,000	\$3,500,000
Mosaic Green ⁵	\$300,000	\$300,000
New Bus Layover Space ⁶	\$1,200,000	\$1,200,000
Civic Plaza ⁷	\$3,000,000	\$3,000,000
City Parkway Upgrade ⁸	\$1,000,000	\$1,000,000
Station Upgrade ⁹	\$2,400,000	\$2,400,000
Allowance for Canopy	\$500,000	\$1,000,000
Demolition Allowance for Existing Ice Rinks	not required	\$1,000,000
Construction of 2 New Ice Rinks plus Parking ¹⁰	not required	\$15,000,000
Allowance for Renovations to Recreation Centre Façade	not required	\$1,000,000
Total Costs for Phase 1 Investments	(\$25,700,000)	(\$39,400,000)
Estimated Land Sale Revenues		
Sale of Surplus Land on KGH After Road Creation	\$3,000,000	\$3,000,000
Sale of Surplus Land on New east-west Corridor After Road Creation	\$0	\$3,000,000
Sale of Commercial Parcel at Civic Plaza	\$300,000	\$200,000
Sale of Development Rights at Bus Layover Parcel	\$2,100,000	\$2,100,000
Sale of Residential Development Site Adjacent to Mosaic Green	\$2,600,000	\$2,600,000
Sale of Residential Opportunity on Recreation Centre Site	requires demolition	\$3,000,000
Total Revenues from Land Sales for Phase 1	\$8,300,000	\$14,200,000
Net Investment Before Showcase Funding	\$17,400,000	\$25,200,000
Less Showcase Program Funding	\$3,000,000	\$3,000,000
Net Phase 1 Investment Excluding Deferred Items	\$14,400,000	\$22,200,000
Deferred Items	East Side Civic Plaza	West Side Civic Plaza
Demolition Allowance for Existing Ice Rinks	\$1,000,000	included above
Construction of 2 New Ice Rinks plus Parking	\$15,000,000	included above
Sale of Residential Development Opportunity at Rec Centre Site	\$3,800,000	included above
Total Net Deferred Items	\$19,800,000	\$0
Net Phase 1 Investment Including Deferred Items	\$34,200,000	\$22,200,000

¹ Revenues based on current estimated market values for high density, multi-family residential development sites of about \$15 per sq.ft. buildable and an assumed permitted density of 6.0 FAR.

² Estimated market value of properties under existing use and zoning.

³ Based on an allowance of \$5 per sq.ft. of existing floorspace.

⁴ Based on \$3,000 per lineal metre plus design, engineering and signalized intersection costs.

⁵ Based on \$15 per sq.ft. of site area.

⁶ Estimate based on \$70 per sq.ft. plus design and engineering.

⁷ Based on mid-point of City of Surrey Parks, Recreation and Culture estimate.

⁸ Based on \$2,000 per lineal metre plus design, engineering.

⁹ Estimate by BLY, excluding cost for new access to Bus Loop site (not part of Phase 1).

¹⁰ City of Surrey Parks, Recreation and Culture estimate.

City of Surrey Parks, Recreation and Culture estimate.

The table shows that:

1. The total net investment for Phase 1 in the East Side Plaza option (excluding the deferred costs and revenues associated with the ice rink demolition and replacement) is about \$14.4 million.
2. The total net investment for Phase 1 in the West Side Plaza option is \$22.2 million. This shows that the required upfront Phase 1 investment for the East Side Plaza option is lower than the West Side Plaza option by about \$7.8 million. Although, the West Side Plaza option requires acquisition of less privately owned property (as the planned plaza site is already owned by the City), it requires the demolition and replacement of the two existing ice rinks plus renovations to the recreation centre facade. The East Side Plaza Option allows deferral of the ice rink demolition and replacement. Therefore, the East Side Plaza Option has a much lower Phase 1 cost.

It is important to note that the estimated total net investment for Phase 1 would be contributed from both City and TransLink funding sources (and possibly through negotiations with benefiting property owners, such as ICBC), as the investment creates significant transit infrastructure improvements as well as civic improvements.

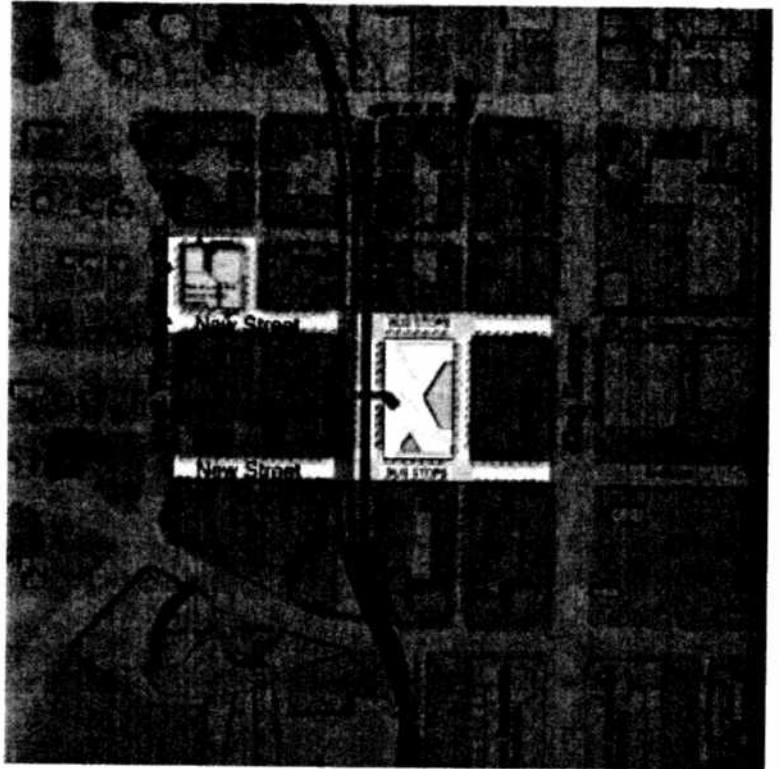
This net investment estimate does not take into account any potential increase in municipal revenues from the resulting development, such as development cost charges, increased property taxes and increased property values for other municipal properties in the area.

If necessary, there may be opportunities to reduce this upfront initial investment by delaying some of the Phase 1 elements. However, in order to realize the full operational and economic benefits of the new transit couplet and civic/transit plaza, these works would need to be implemented in their entirety.

Areas highlighted in the graphics below are part of Phase 1.

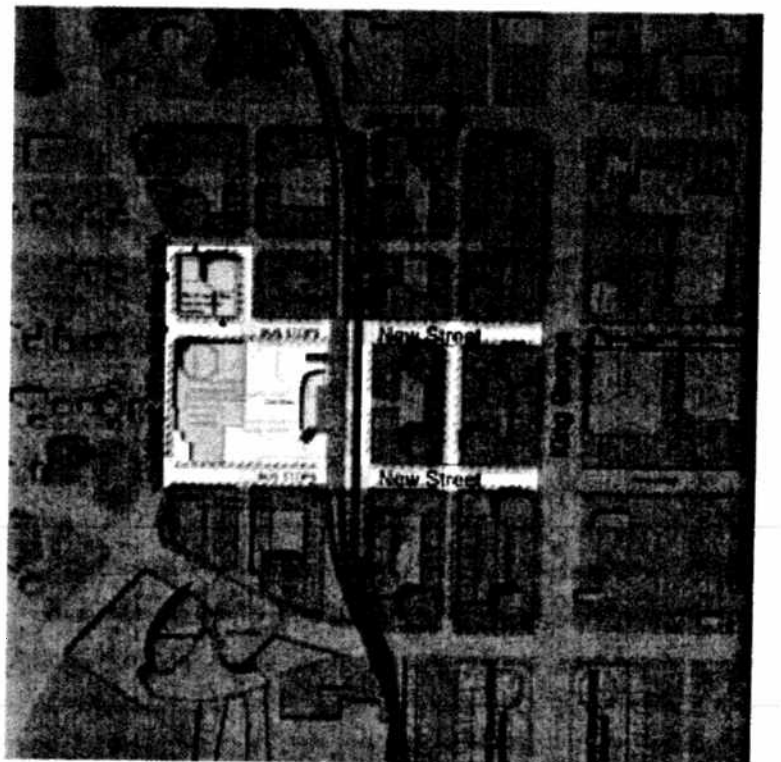
East Plaza Option

In summary, Phase 1 of the East Plaza Option includes the civic plaza, two new east-west streets, and a development site that includes a transit layover facility. A more detailed description of phase 1 elements is included in the financial analysis of this report.



West Plaza Option

In summary, Phase 1 of the West Plaza Option includes the civic plaza, two new east-west streets, and a development site that includes a transit layover facility. A new north south street east of City Parkway should also be included. A more detailed description of phase 1 elements is included in the financial analysis of this report.



6. Urban Design Implications

EAST PLAZA

PROS

- creates approximately 22,000 sq. ft. of ground oriented commercial/retail floor space both fronting onto the plaza and onto the two new E/W streets
- substantially more retail street frontage facing onto the plaza, on all four sides
- creates more additional Recreation/Community Centre floor space at grade (approximately. 55,000 sq. ft. vs. 33,000 sq. ft.)
- better-proportioned plaza size and shape, with wide range of programming options and possible uses
- integrates City Parkway into plaza design
- more direct transfers between BRT/local buses/SkyTrain. This means a strong opportunity to create a public space that fully integrates and celebrates the transit function.
- less extensive design alterations to SkyTrain station required. In particular, a new north entry can be deferred until required.
- permits Recreation Centre redevelopment to occur over time, when funds become available
- locates bus stops and station access close together, optimizing transfers between SkyTrain and local buses
- more residential development potential on the Recreation Centre site (240,000 sq. ft. vs. 203,000 sq. ft.)
- plaza centre of gravity centred between West Whalley Ring Road and King George Highway with a closer relationship to King George Highway and future development located on both sides of King George Highway.

CONS

- larger plaza space, requiring careful detailed design to limit potential sense of emptiness and limit under-use or anti-social behaviour
- more privately owned land will need to be acquired by the City/Translink as part of Phase 1, to create the Civic Plaza
- single access point only from plaza up to SkyTrain Station
- Recreation Centre is physically separated from plaza, and less visible
- plaza surrounded by vehicular streets on four sides, impacting pedestrian access to plaza
- nominally less direct pedestrian connection to Surrey Central Tower plaza to southwest

WEST PLAZA

PROS

- requires no purchase of additional lands to create the Civic Plaza, as the City owns this block
- creates approximately 17,000 sq. ft. of ground oriented commercial/retail floor space both fronting onto the plaza and on the block opposite City Parkway
- a somewhat smaller-scaled public space, programmable with Recreation/Community Centre uses
- plaza is fronted directly with active public uses (Recreation Centre to west and retail to east)
- a more direct pedestrian connection to Surrey Central Tower plaza to south
- potential new retail at grade screening rear (west) elevation of SkyTrain station
- locates bus stops and station access close together, optimizing transfers between SkyTrain and local buses
- creates approximately 500,000 sq. ft of new residential development on both the Recreation Centre site and the adjacent block to the east (latter not publicly owned)

CONS

- more restricted land area available for Recreation Centre expansion
- requires demolition of both ice rinks immediately in order to implement plaza. This reduces a source of

people and activity in the surrounding, adding to the night time security concerns in particular.

- requires immediate reconfiguration and redesign of Recreation Centre in order to create an active plaza edge
- accommodates substantially less additional Recreation/Community Centre floor space at grade (approximately 33,000 sq. ft. vs. 55,000 sq. ft.)
- requires substantially more extensive alterations to SkyTrain station design. In particular, a new north entry must be built as part of plaza construction that will include stairs & escalators from grade to mezzanine and from mezzanine to platform, extend mezzanine northwards to connect to this new access point. Also, new retail to screen west station façade will be required.
- less retail street frontage facing onto the plaza
- narrower, more restricted plaza size and shape
- shifts plaza centre of gravity west, further away from KGH
- less direct transfer between BRT and local buses/SkyTrain. This means a limited opportunity to create a public space that fully integrates and celebrates the transit function.
- SkyTrain guideway closer to, more directly impacts the plaza

7. Transit Functionality and Phasing Analysis

SURREY CENTRAL TRANSIT VILLAGE PROJECT COMPARISON OF "EAST PLAZA" AND "WEST PLAZA" OPTIONS TRANSIT ISSUES

Jarrett Walker
June 14, 2006

This memo outlines key tradeoffs between the eastside and westside plaza options from a transit perspective. This assessment is based on drawings provided to me by Lance Berelowitz on June 12.

There are two broad areas of transit impact to assess:

- Transit operations, including flow, turns, and stops.
- Passenger movements at the exchange.

Transit Operations

Most aspects of transit operations are identical under the two options. These include the basic cross-section of the east-west couplet, the cross-section of City Parkway, and the provision for off-street layover on the block north of the Recreation Center.

The one key design consideration that must be incorporated within the two options is the curb space at the north and south sides of the plaza. In general, 2-3 buses will be present at once throughout the day. However, during the evening timed-transfer operations may be needed. At these hours, it must be possible to line up 4 standard buses, nose to tail, along these curbsides. If the plaza curbside has only room for three buses, then it may be necessary to take space on an adjacent block for one more. This is not a major design issue, but does need to be noted as a functionality that should be accommodated. The maximum curb requirement, for evening timed transfer operations, is roughly 52 metres.

Note: The West Plaza option as now drawn does appear to show a staircase from the north side of the station descending while still over the eastbound couplet street. The descent must actually occur when clear of the street, and it is not entirely clear from the drawing how much of the plaza this descent consumes. Bus operations require a clearance of at least 3.5 metres.

Passenger Circulation at Exchange

An effective exchange design must provide clear and attractive pedestrian paths between any two of the following:

- SkyTrain platform.
- BRT platform in City Parkway
- Eastbound buses on the north side of the plaza.
- Westbound buses on the south side of the plaza.

The following is a brief comparison of the two alternatives in these terms:

SkyTrain - BRT: No Difference

This pedestrian movement in either case require out of direction travel and crossing of half of the section of City Parkway. Walking distances appear to be comparable.

SkyTrain - Eastbound Buses: West Plaza Preferred

West plaza option requires a north station entrance, which has the effect of improving the directness of access for this movement.

SkyTrain – Westbound Buses: No Difference

For this movement, both options provide a direct pedestrian path with no backtracking and no street crossings. Both are excellent in this regard.

BRT – Eastbound Buses: East Plaza Slightly Preferred

East Plaza provides a clear and unobstructed pedestrian path. West Plaza provides a somewhat pinched pedestrian path under the guideway, though this path has been optimized to be as direct and open as possible given the constraints.

BRT – Westbound Buses: East Plaza Preferred

On the West Plaza option, this path is entirely obstructed by the guideway, and requires walking along the west side of City Parkway at a point where it is somewhat pinched by the guideway structure. On the East Plaza option, there is a wide path through the plaza, though visibility between the two platforms is somewhat compromised by the elevated crossing just south of the BRT platform.

Eastbound Buses – Westbound Buses: No Difference

Both options require a roughly 100m walk across the plaza between eastbound buses and westbound buses. In each case, the plaza design has retained a clear line of sight between the buses in the two directions. To the extent that structures limit this line of sight, or constrict the pedestrian flow, the effect appears to be broadly similar between the two alternatives.