City of Vancouver *Land Use and Development Policies and Guidelines*
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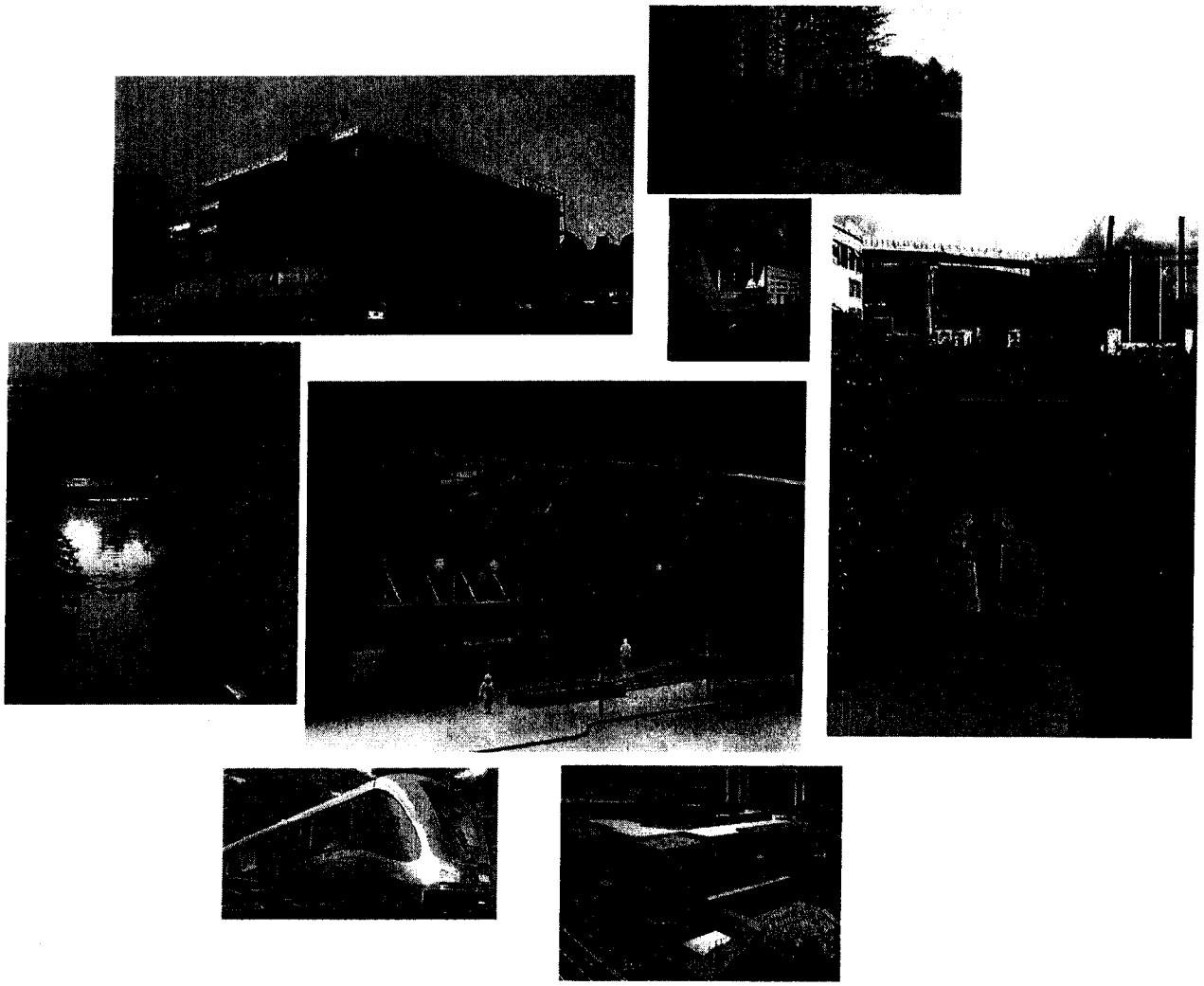
GRANDVIEW BOUNDARY Industrial Area Rezoning & Development

Policies and Guidelines

[Incorporating Guidelines for Still Creek CD-1 (By-law No. 6654)]

Adopted by City Council



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1. Application and Intent

These policies and guidelines are to be used in conjunction with the Grandview Boundary Industrial Area Plan and with the I-2, I-3, and Still Creek CD-1 District Schedules of the Zoning and Development By-law. The Still Creek CD-1 Guidelines (By-law No. 6654) have been rescinded and revised guidelines for properties adjacent Still Creek are included here. The guidelines respecting Still Creek are highlighted as described below.

These Guidelines should be consulted in seeking approval for all rezonings, including rezonings to I-3 (High Technology Industrial District), to CD-1 adjacent the Skytrain stations, or to CD-1 for Highway Oriented Retail (HOR) development; and approvals for conditional uses within I-2, I-3 or Still Creek CD-1 Districts. As well as assisting the applicant, these guidelines will be used by staff and Council in the evaluation of projects.

The majority of guidelines apply to all applications. Some guidelines are only relevant to specific types of uses or locations in the area. These use or location specific guidelines are shaded and flagged with the following margin tags.

HOR - Highway oriented retail uses on Grandview Highway

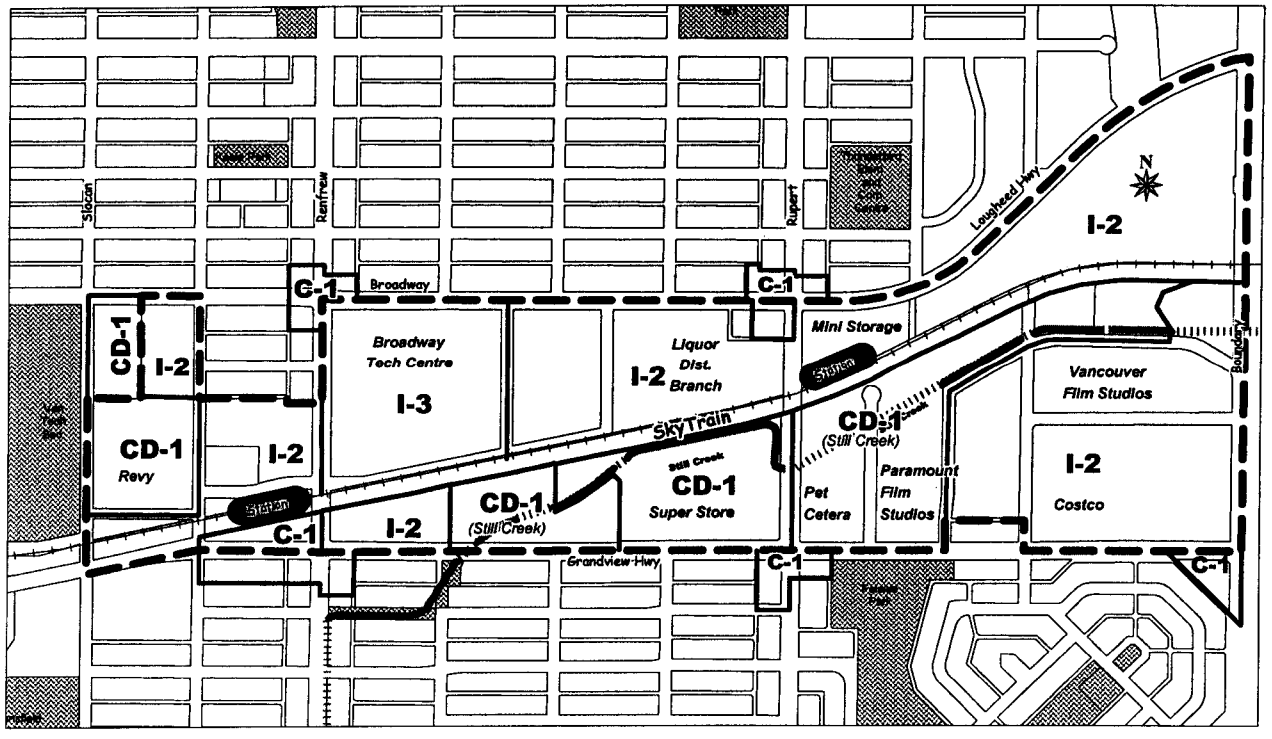
I-2/I-3 - High technology uses under the I-2 or I-3 schedules

Instit. - Institutional, educational, cultural and recreational uses throughout the Grandview Boundary Area

Stat. - Station area uses on sites adjacent to Renfrew and Rupert Skytrain Stations.

Still - Sites which are zoned Still Creek CD-1 and/or border on Still Creek

Figure 1. Grandview Boundary Industrial Area, Current Zoning and Major Uses



The intent of the guidelines is two-fold:

(a) To guide the anticipated change to the built environment by:

Assisting in converting the Grandview Boundary Industrial Area (GBIA) to an attractive and vibrant mixed use industrial employment centre; and

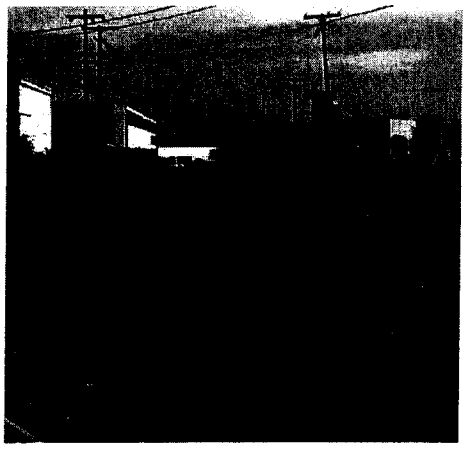
Ensuring new development around the Skytrain Stations contributes to creating safe, active and interesting pedestrian oriented environments;

(b) To recognize Still Creek as a valuable community resource by:

Ensuring that Still Creek is enhanced as an open water course, that a public walking path is provided adjacent the Creek as redevelopment occurs, and that new development contributes to enhancing the Creek for recreation and returning the Creek to a more natural condition.

Ensuring that new development does not increase the likelihood of future flooding in Grandview Boundary or downstream areas and is constructed to minimize flood damage in the event of flooding.

Still Creek at Danier Leather site



Still Creek north of Cornett Road

2. General Design Considerations

2.1 Area Character

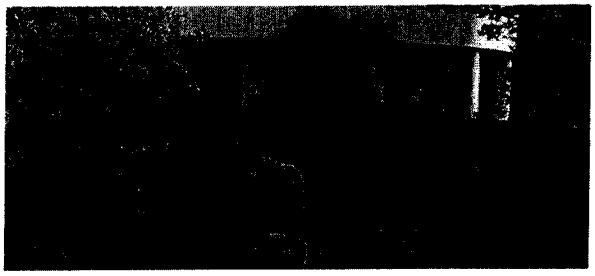
The area has a traditional industrial character with few visual or pedestrian amenities and lacks a coherent identity or image. Tilt up concrete warehouse buildings surrounded by parking dominate the landscape. With the exception of Still Creek and landscaped setbacks along Grandview Highway, green space is generally lacking. To assist the emergence of a mixed-use and high-technology employment centre, and to help create a distinct area image, streetscape improvements, Still Creek enhancements and redeveloped Skytrain station areas will occur over time. Private developments will need to assist the transition through careful site planning, high-quality architectural building expression, public and private landscaping, and appropriate vehicular and pedestrian circulation, as set out in these policies and guidelines.

2.2 Street Character

With the arrival of Skytrain and I-3 high-tech uses, film studios and other non-traditional industry, a more active, interesting and attractive pedestrian-oriented street character and enhanced public realm are a priority. Except where landscaped setbacks are required, as described in Figure 8, new buildings should locate close to the street rather than setback behind surface parking, in order to create a more urban street feeling. Windows at grade are essential to enhance the pedestrian experience and

provide transparency for casual surveillance. Small public open spaces linked to area greenways and bikeways should be created at strategic points on large development sites to allow meeting and resting places for employees and pedestrians. Street trees should be planted extensively throughout the area in keeping with the Tree Plan outlined in Section 8. Trees will serve to create a more pleasant pedestrian environment, but also introduce a unifying theme through coordination of tree species and placement. Together with the Skytrain Station area improvements, the associated streets - Rupert and Renfrew will be the focus of changes that will see these streets as the gateways into the area.






2.3 Station Area Built-Form and Character

Station area development should focus on creating safe, convenient and pleasant pedestrian spaces and routes between the stations and adjacent employment destinations and residential areas. These areas should be the most densely developed and intensely used areas in the GBIA. New buildings should have an urban form with underground parking and a significant street wall to define and create the pedestrian space.

2.3.1 Renfrew Station Precinct Redevelopment Concept

Figures 2 and 3 illustrate the basic elements of the future development of critical sites in this station precinct which these policies and guidelines seek to foster. They include:

a) Relocating 12th Avenue between Slocan and Kaslo Streets for both improved orientation and circulation, and to create a development site and public space adjacent to the SkyTrain guideway.

b) Street-wall built form defining tree-lined streets and sidewalks with pedestrian lighting.

c) "Green" contemporary architectural expression, including green roofs and natural ventilation

d) Pedestrian-oriented retail and services located at grade near the Renfrew Station

e) Major open space in the central area of development sites, with water as a preferred design feature

f) Primary east-west vehicular access to development sites, with parking below grade

g) A transition in scale of buildings in recognition of adjacent single family residential area between Renfrew and Kaslo Streets.

Figure 2. Renfrew Station Area - Redevelopment Plan View

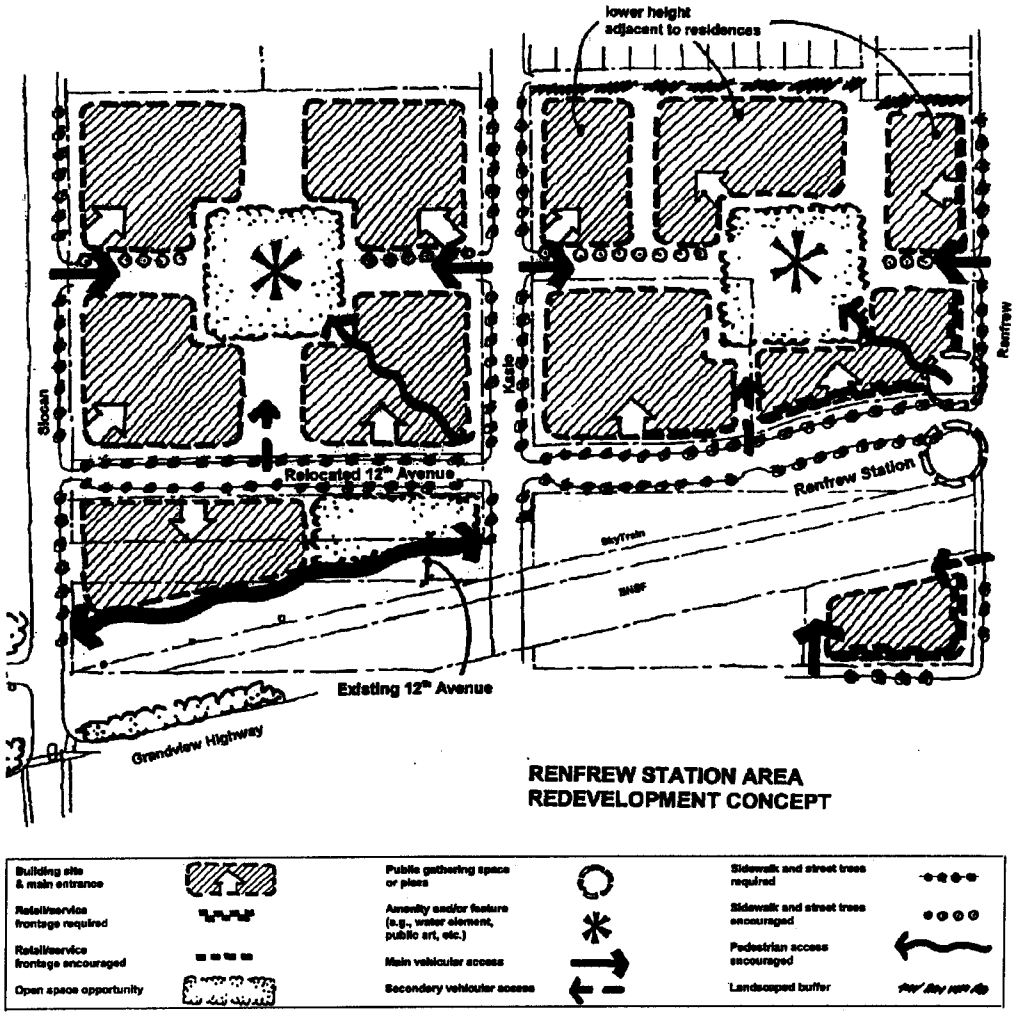
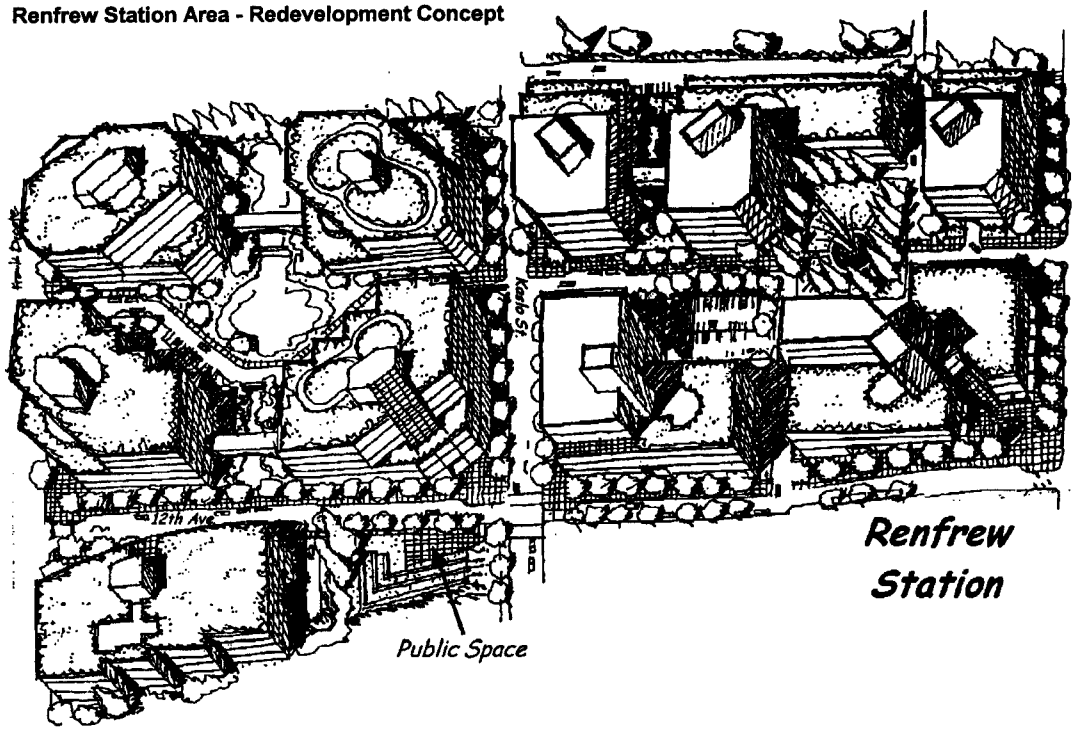


Figure 3. Renfrew Station Area - Redevelopment Concept



2.3.2 Rupert Station Precinct Redevelopment Concept

Figures 4 and 5 illustrate the basic elements of the future development of critical sites in this station precinct, which these policies and guidelines seek to foster. They include:

h) A realigned and meandering Still Creek adjacent to the south side of the BNSF railway, with a continuous pedestrian path

i) Street-wall built form defining tree-lined streets and sidewalks

j) "Green" contemporary architectural expression, including landscaped roofs and natural ventilation

k) Pedestrian-oriented retail/services located at grade near the Rupert Station on Rupert Street

l) A recreational feature such as a small stormwater retention pond located along the Creek alignment at the north end of Bentall Street.

Figure 4. Rupert Station Area - Redevelopment Plan View

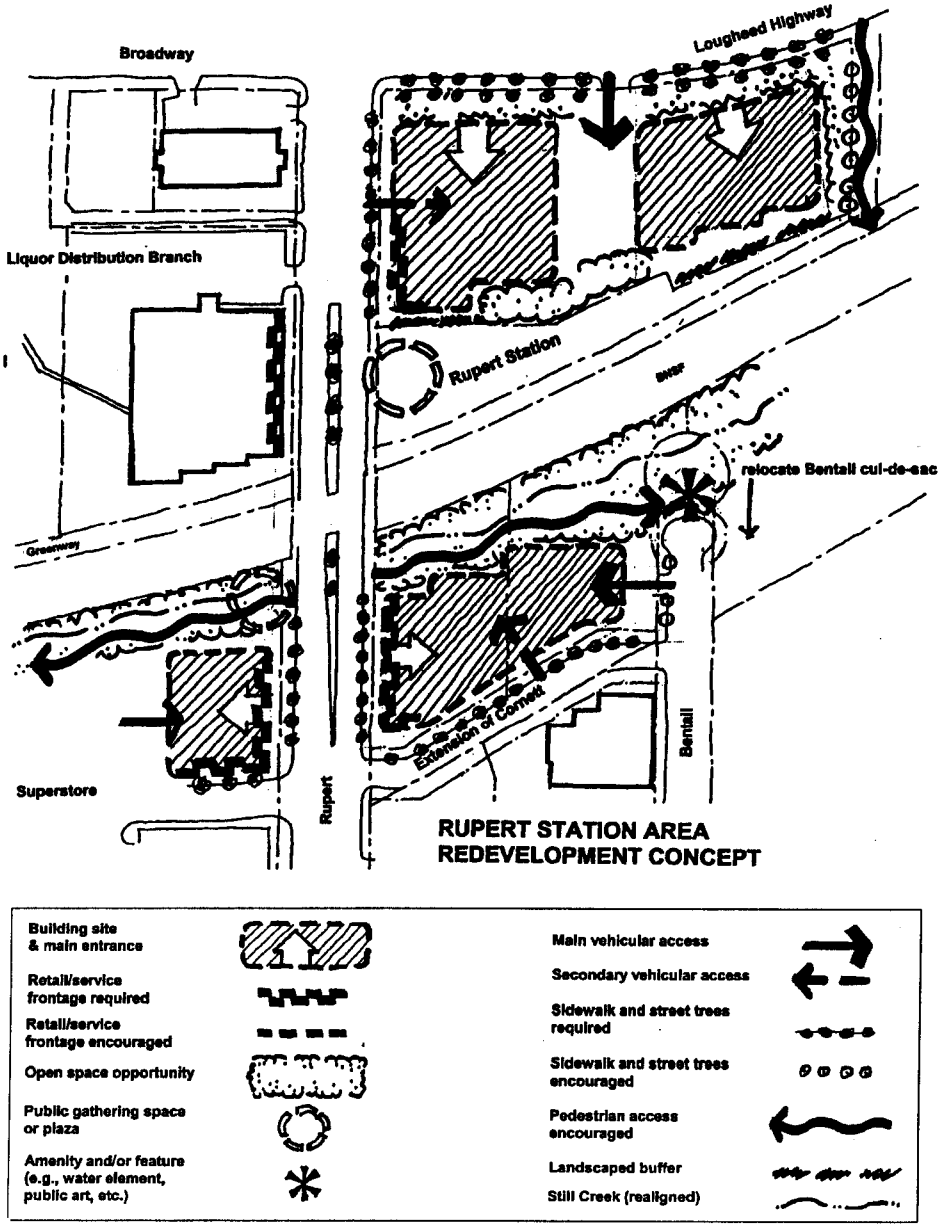
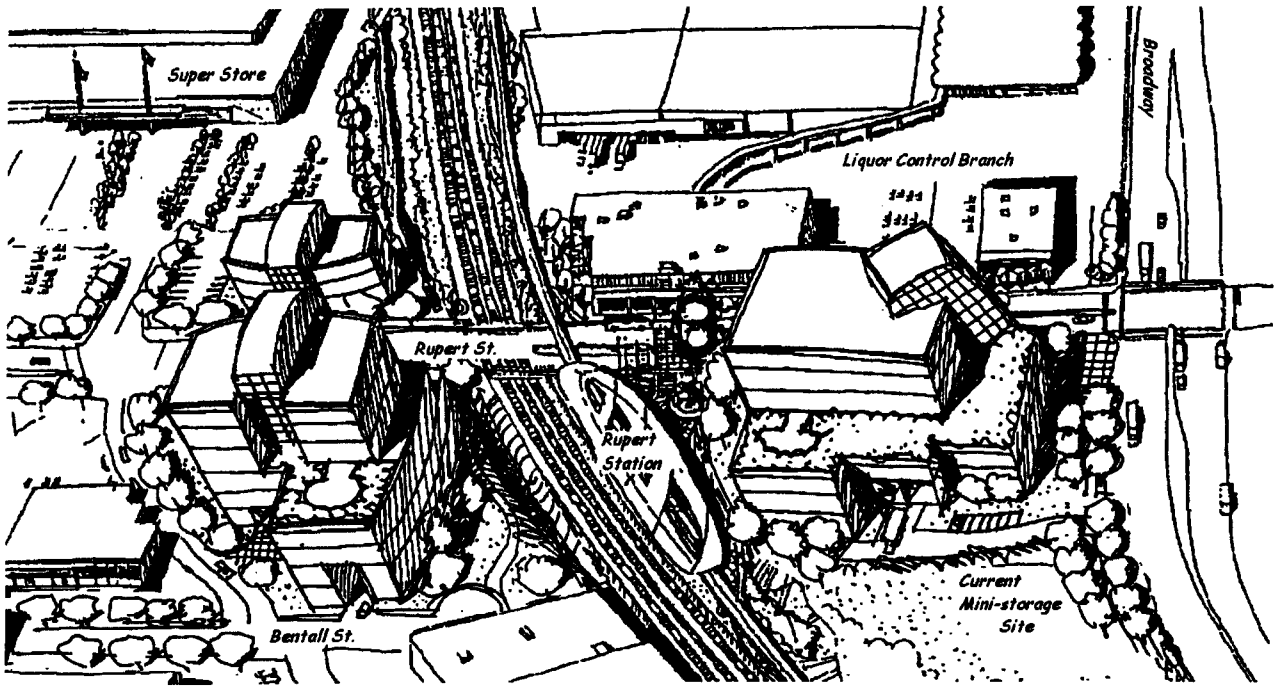


Figure 5. Rupert Station Area - Redevelopment Concept



2.7 Weather Protection

(a) Main building entries should provide generous weather protection that is designed to be an integral feature of the building's architectural character.

(b) All commercial frontages along Rupert and Renfrew, including the transit stations, as well as commercially zoned intersections along Grandview Highway, should provide full weather protection on street frontages.

(c) Canopy and/or awning systems detailing should consider integrated signage, lighting and display systems.

(d) Canopy and awning systems depth should be maximized to provide greater weather protection.

(e) Weather protection elements on overhangs may be considered in required yards and landscaped setbacks.

2.11 Access and Circulation

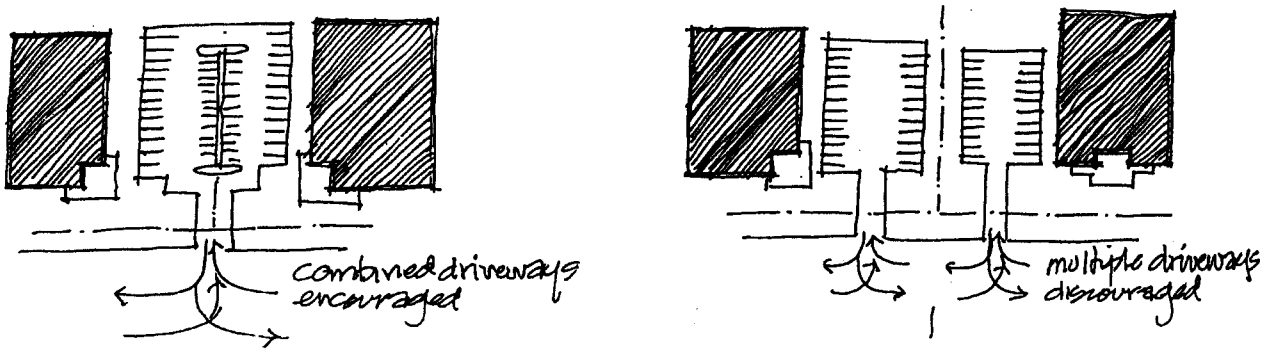
2.11.1 Vehicular Access

(a) A traffic and parking analysis will be required for rezonings and major developments to forecast traffic impacts. The City may require safety improvements for vehicular traffic as well as enhanced vehicle, pedestrian, and bicycle facilities. In addition, for non-HOR uses, information on proposed Transportation Demand Management (TDM) measures should be provided.

(b) Direct access onto Grandview and Broadway should be minimized .

(c) Shared driveways to abutting properties should be provided where possible as illustrated below to maximize safety, minimize impervious surfaces, and increase the landscaped buffer bordering the properties. The city standard crossing width should not be increased.

Figure 6. Vehicular Access and Parking



2.11.2 Pedestrian Access

(a) Ground-oriented pedestrian "streets" through large footprint buildings are encouraged to create connections to on-site circulation routes and amenities, consistent with a campus-like high tech environment. Such circulation through buildings should be clearly identified and designed for use by the general public.

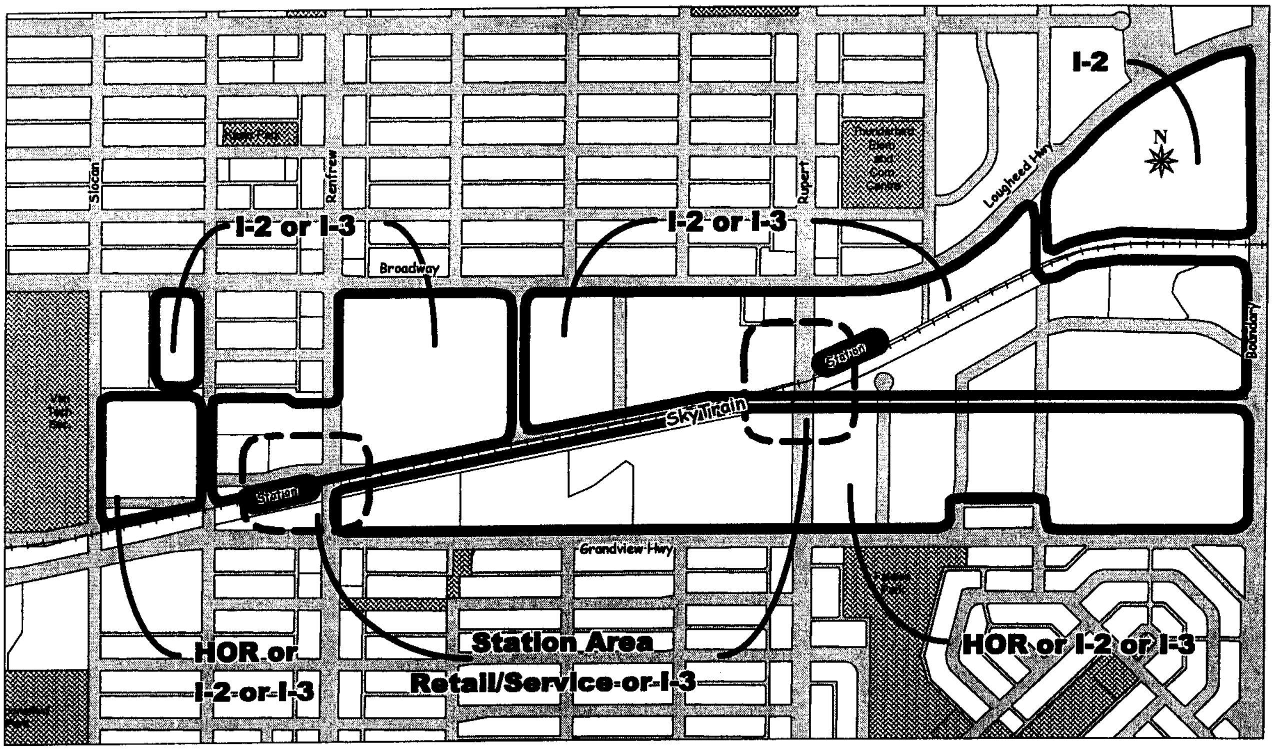
(b) Larger sites that are developed with more than one building should provide weather protected pedestrian linkages to connect building entries within the site, and public rights-of-way should be integrated into development sites for convenient public access to adjacent properties, SkyTrain stations and City Greenway and Bikeway networks.

(c) Bridge/walkway systems with weather protection are encouraged for upper-floor connections between buildings on the same parcel.

3. General Land Use Policies

The GBIA Plan supports a variety of future uses and activities including a continuation of traditional industrial uses, high-tech industrial uses including film studios and bio-tech, HOR uses and retail/service uses near Skytrain Stations. Implementation will occur through redevelopment or reuse of buildings under the existing I-2 and Still Creek CD-1 zones and through rezonings to I-3 and CD-1 for HOR uses on Grandview Highway or for retail/service uses in the station areas. Figure 7 shows the preferred long-range land use plan.

Figure 7. Long-Range Preferred Land Use Plan



3.1 Rezoning Policies

3.1.1 HOR Rezonings

HOR 1. [illegible] rezoning [illegible] (Comprehensive [illegible] minimum [illegible] 10,000 sq. ft.) [illegible] able to achieve the minimum size within the floorspace ratio (FSR) limits. In these circumstances, the Director of Planning may allow a smaller store providing the FSR limit is achieved. Rezoning will require Council approval of a specific form of development at a Public Hearing.

3.1.2 HOR Retail Uses and Impact on Neighbourhood Centres

HOR 2. The type of uses suited to the HOR area are those not normally found or appropriate in a neighbourhood centre. Neighbourhood centres, usually developed from existing shopping areas, are the "hearts" of a neighbourhood. It is here that people find shops, jobs, neighbourhood-based services, public places that are safe and inviting, and a place to meet neighbours and join in community life. Examples of types of retail that would be better accommodated in the HOR area include:

- retail which requires large sites by nature of the product (e.g., large display areas needed for bulky items such as furniture, home improvement, etc.);
- retail that generally requires the use of a car;
- retail that serves a wide catchment area; and
- retail that does not sell goods that are or can be conveniently available in neighbourhood centres or other commercial areas.

The proposed use should not undermine the role of nearby neighbourhood centres by drawing customers away from local stores. Food and clothing retail often form the basis of local shopping areas and it is probable that large scale retailers selling these products will find themselves at odds with City policy and may not be successful.

The type of retail use is not limited. However, retail uses including food and clothing will require a retail impact analysis to be paid for by the applicant. Staff will set the terms of reference and hire an independent consultant. The extent of the trade area to be examined will depend on the proposed use. The study should demonstrate how the proposed development will affect retail competition in the determined trade area. Projects are preferred which are likely to permanently increase the number and variety of competing retail businesses in the area. Applications which reduce competition or which could lead to store closures in the trade area are discouraged.

3.1.3 Station Area Retail /Service Uses

STAT. Small-scale uses which help make a station environment more vibrant and also feel safer and which do not tend to either generate destination vehicular traffic or require large off-street loading facilities are encouraged in Station areas. These include:

- Convenience stores and services (eg. news stands, local grocery store)
- Small cafes
- Professional/community services and offices
- Light manufacturing
- Artist studio (excluding associated residential component)

Station Area retail uses should be located at grade, either within a station, on a station site, under the guideway on Rupert, Renfrew, [illegible] Avenue or East 12th Avenue, directly adjacent to or across from a Station. Development could either be in a stand-alone single [illegible] or [illegible] ground floor of office or high-tech industrial [illegible] above grade. Rezoning [illegible] would be required.

3.1.4 High-Tech Development - Location and Access to Transit

I-2/I-3 Some forms of high technology industry, such as information technology, can achieve high worker density and are best located in close proximity to rapid transit. Developments should coordinate with Translink to improve access to transit, provide stops and, where needed, provide comfortable, safe bus shelters. All proposals for high-tech development or uses with high worker density require safe and direct access to SkyTrain stations. (5-10 minute walk)

3.2 Institutional, Cultural and Recreational Uses

INSTIT. To reserve the balance of land for industrial and local serving uses, cultural, recreational and institutional uses are discouraged in the I-2 and I-3 areas, except as described below.

Institutional Uses:
Institutional uses, such as schools or colleges which relate directly to hi-tech industrial development, will be considered as part of high-tech development and require safe and direct access to SkyTrain Stations.

Cultural and Recreational Uses:
Generally, cultural and recreation uses will be considered in the HOR area only. Cultural and recreation uses may be considered as part of mixed-use development with other permitted industrial uses. Fitness centres and similar recreational uses that could be shown to serve area workers will be considered on arterials in existing buildings. Theatre use is not supported.

4. Guidelines Pertaining to the Regulations of the Zoning and Development By-Law (and Parking By-Law)

4.1 Topography: Adjustments to Grade

4.1.1 The grade of new development in the Still Creek flood plain should be set in consultation with the City Engineer. The City's Floodproofing Policies should be consulted for general information on floodproofing.

4.1.2 Any significant alterations of existing grade should support convenient pedestrian access, reflect the natural slope of the land and help visually integrate the building massing into the landscape.

4.3 Height

I-2/I-3

(a) For I-2 and I-3 developments the allowable height is 18.3 m (60 ft.). The Director of Planning may consider height up to 30.5 m (100 ft) where view impact studies demonstrate minimal impact on nearby residential properties and Still Creek and where increased height also assists in providing usable public open space at grade.

HOR

(b) For Highway Oriented Retail stand-alone developments a maximum height of 12.2 m (40 ft.) is recommended.

STAT

(c) Height should not exceed 9.2 m (30 ft.) where station area retail is a stand-alone use.

(d) The Director of Planning may consider heights up to 18.3 m (60 ft.) for other stand-alone conditional uses or for mixed use projects, where view impact studies demonstrate minimal impact to nearby residential properties and Still Creek, and where increased height also assists in providing usable public open space at grade.

(e) Lower forms are encouraged near residential areas and higher forms near transit stations and other lower lying areas.

(f) Height should not exceed 9.2 m (30 ft.) to a depth of 9.2 m (30 ft) from the required landscape setback for sites bordering Grandview Highway, Broadway and Boundary Road.

4.4 Street and Greenway Setbacks

a) Landscape setbacks should be provided as shown in Figure 8, unless otherwise specified. These setbacks will create a necessary green buffer to nearby residential and other uses, and contribute to the street character described in Section 2.2. They provide a suitable gateway to the city, and should be free of parking and manoeuvring areas, signs, fences and product display.

b) Requirements may be relaxed for retail uses at grade in the Station Areas.

4.4.2 Building Setbacks

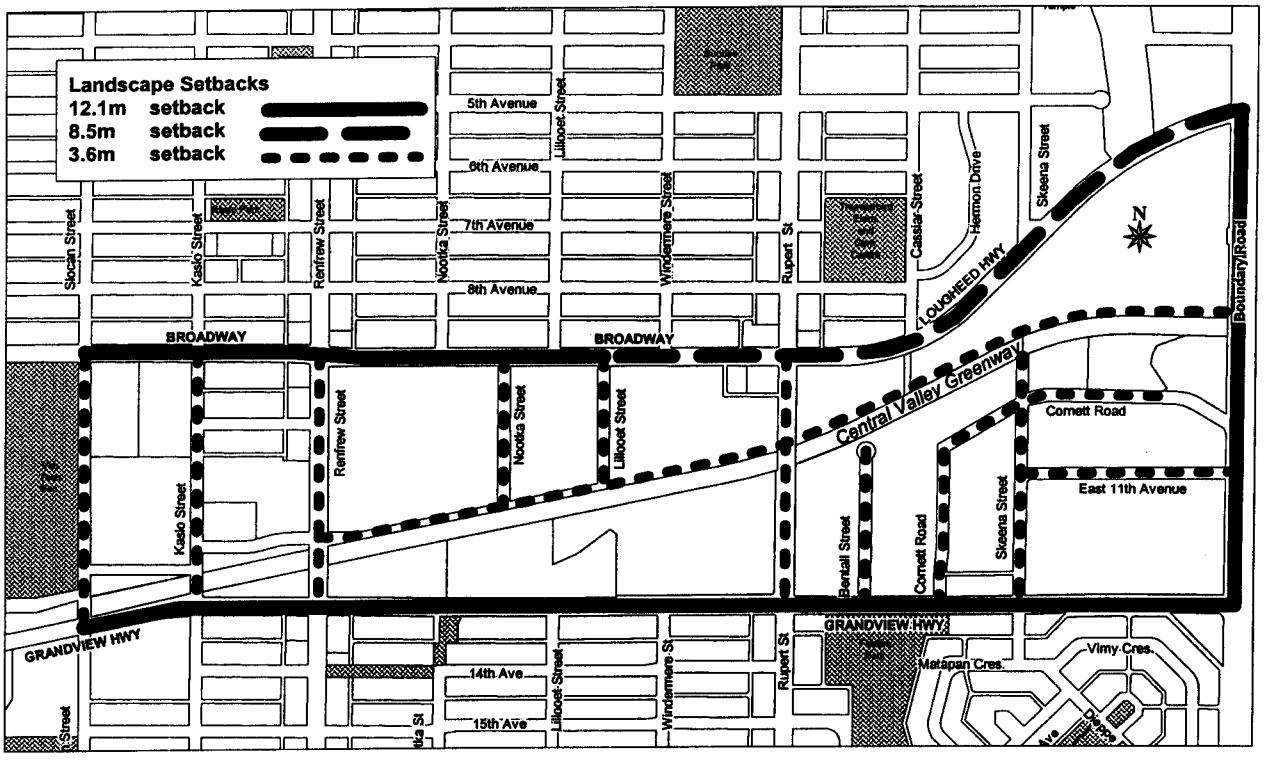
STILL The health of Still Creek is influenced directly by the amount of natural vegetation between the water and the built areas. This natural vegetation serves to protect the stream bank from erosion, slow storm water run-off, filter contaminants from water draining into the Creek, add to the Creek's natural beauty, and provide recreational opportunities.

a) Buildings and impermeable surfaces should be set back at least 5.0 m (16.4 feet) from the edge of the GVSDD Easement.

b) The setback should be landscaped with native vegetation. Areas for seating and viewing Still Creek are appropriate in the setback but should be small in scale and designed to blend with the natural setting and have minimal impacts on the Creek.

c) Design solutions should accommodate the objective and intent to achieve a minimum 2.0m publicly accessible greenway along the Creek. Where possible and desirable, the Greenway should be outside of the 5.0m setback.

Figure 8. Required or Recommended Setbacks



4.7 Floor Space Ratio

HOR

(a) The FSR for HOR retail uses should not exceed 0.65. The minimum retail floor area is 929 m² (10,000 sq. ft.). Where incorporated in a mixed use building, a total FSR of 3.0 is allowable subject to the same considerations as the I-2/I-3 development outlined in (b) below.

I-2/I-3

(b) Whether I-2 and I-3 projects developed for high-tech uses will be able to achieve the maximum 3.0 FSR is dependent on a number of factors. These include:

d) Site size and configuration achieving landscape and open space guidelines, and overall quality of site and architectural development.

e) Contributions to enhancing Still Creek and maximizing on-site stormwater retention.

f) Adequate internal vehicular circulation and underground parking.

g) Achieving a sensitive relationship to adjacent residential areas.

4.9 Off-Street Parking and Loading

4.9.1 Off-Street Parking Requirements

(a) Section 10.1 should be consulted prior to design and construction of all parking areas.

(b) Excessive parking is discouraged and parking standards provided should recognize and encourage transit use. In general, parking standards should not exceed 2 spaces per 1000 sq-ft.

HOR

(c) Parking requirements should be consistent with the Parking By-law requirement for Grocery Stores. Where the retail use is for furniture, or similar type of retail, which in the opinion of the Director of Planning in consultation with the City Engineer, requires less parking, the parking standard for office and retail uses may apply.

STAT

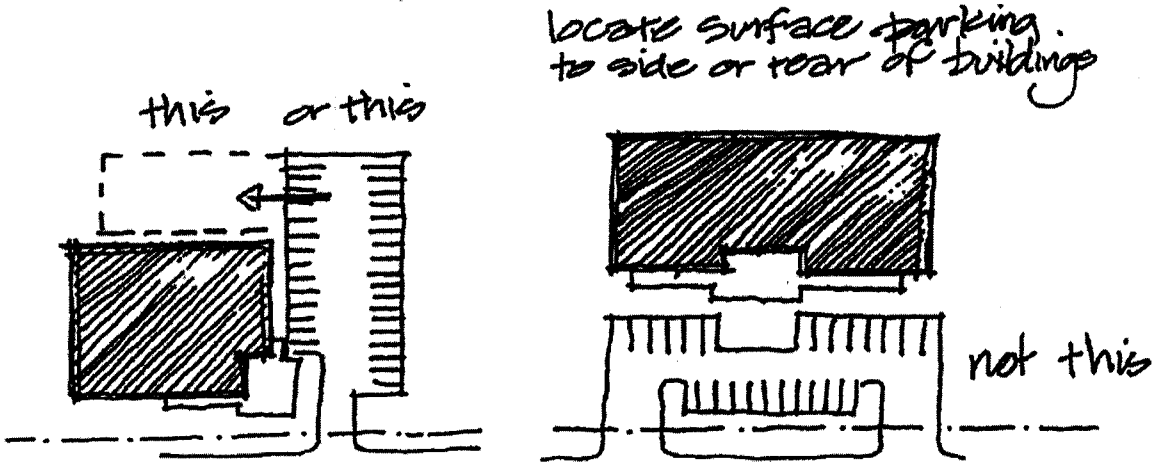
(d) No off-street parking is required for stand-alone small scale (less than 250m²) uses in the station areas, which do not tend to either generate destination automobile traffic or require off-street loading facilities.

(e) Surface parking facilities should be located to the rear or beside buildings as shown in Figure 9.

(f) No parking or manoeuvring should be permitted in landscaped setback areas.

(g) Parking lots are a major source of harmful run-off to Still Creek. In addition to the environmental considerations outlined in Section 10, careful design of parking, loading and drive aisles should occur to strictly minimize hard surfacing on the site.

Figure 9. Parking Location



4.9.2 Landscaping and Screening of Parking Facilities

(a) A layered landscape treatment should be provided to screen parking and loading areas while providing strategic visual access to entries and access areas.

(b) Safety and security are important factors in the layout, size and characteristics of plant material and earth-berming that affect visual access throughout the site.

(c) Security fences should be limited to black vinyl covered chain link fence that is accompanied by appropriate plant material that minimizes its visual impact and takes into account Crime Prevention Through Environmental Design (CEPTD) principles.

4.9.3 Loading and Outdoor Storage Areas

(a) Loading areas should be located to the rear of the property, and not be visible from major streets.

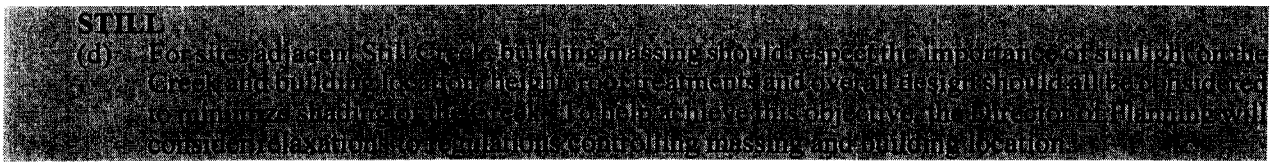
(b) Loading areas should be screened from view from all Greenways and Still Creek.

4.16 Building Massing

(a) Neither the width nor depth of an individual building should exceed 61.0 m (200 ft).

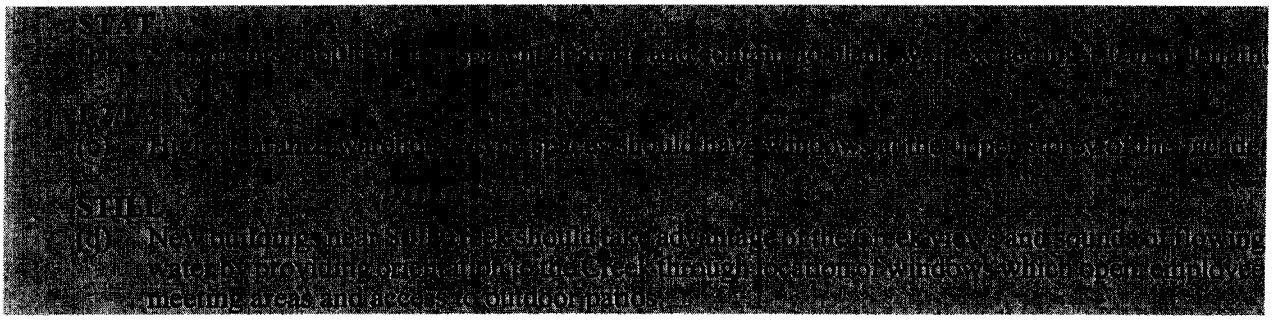
(b) Additional width or depth may be considered where the proposal demonstrates exceptional design merit.

(c) Where the need for longer, wider buildings can be demonstrated, consideration should be given to facade articulations, and connections by transparent bridges and walkways on the upper floors.

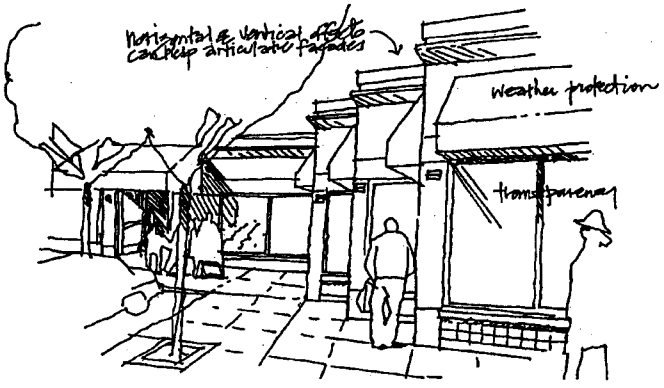


4.17 External Design

(a) Generic "big box" building designs that exhibit little facade interest and transparency to the street should be avoided.



Transparency and Fenestration:
High clearance warehouse-type spaces should have windows at the upper storey of the facade.



Comfort and interest at grade level

5.2 Windows

Views into building activities should be provided, especially at grade levels; accordingly, use of mirrored or highly reflective glass is discouraged.

5.3 Main Entries to Street

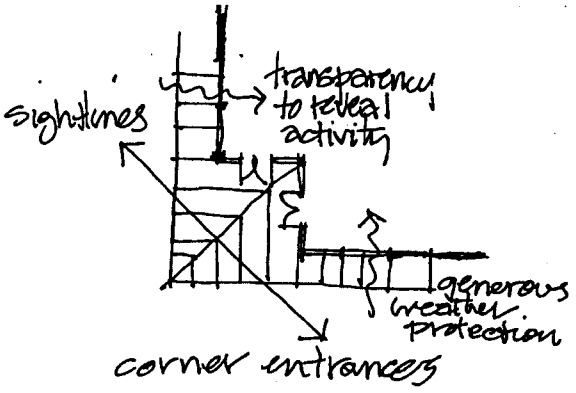
(a) Main building entries should be clearly identifiable, visible, transparent and accessible from the street.

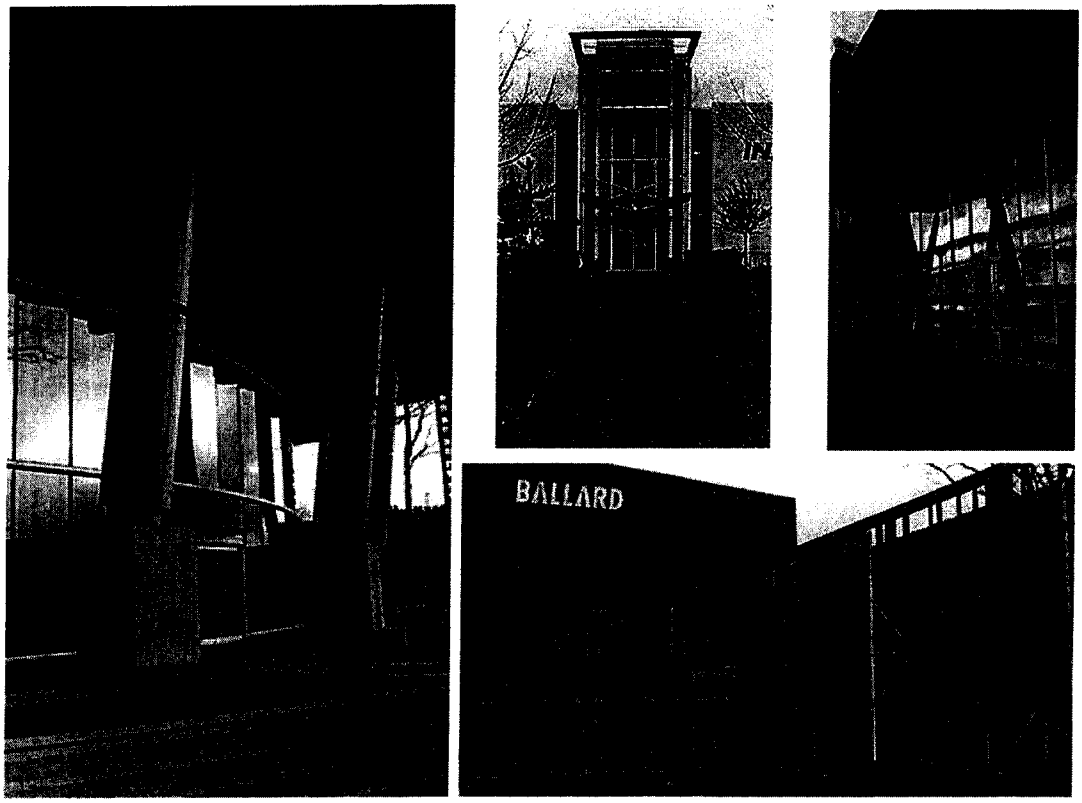
(b) Pedestrian interest and comfort at entries should be provided through specifically designed seating, signage, lighting and features that signal the building's use.

HOR

(c) Non-retail uses should have separate and distinct entries.

(d) Corner entries that can provide access from both the street and parking facilities are encouraged.





Architectural Characteristics: Entrances

5.4 Building Articulation

(a) Building articulation can be achieved utilizing glazing, canopy and shading systems, as well as exposed structural components.

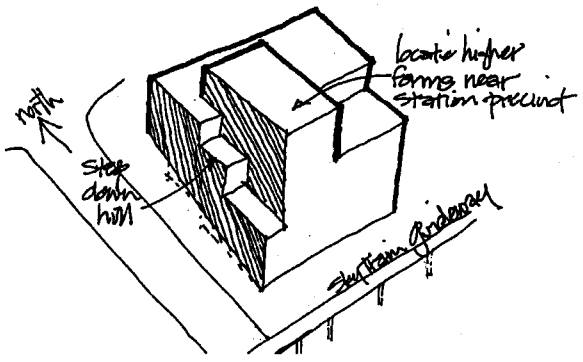
(b) Feature banding to break up perceived wall height may be used to assist in achieving horizontal articulation.

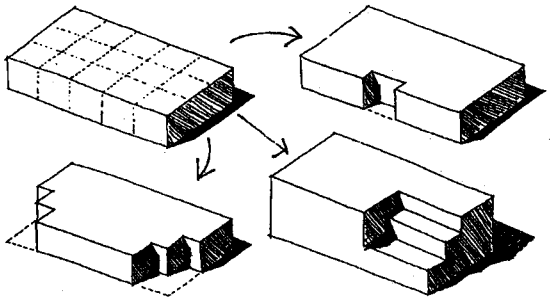
(c) Highly visible circulation and building systems are encouraged.

(d) Vertical service elements, such as stair and elevator shafts, that are located to the perimeter of the building, may be used to assist in articulation, as well as express their function.

(e) Rooftop mechanical systems, elevator penthouses and other appurtenances should be integrated into the form of the building and screened from view.

I-2/I-3 Developments	HOR Developments





5.5 Exterior Walls and Finishing

(a) Exterior building design should reflect the industrial character of the precinct by utilizing appropriate, durable materials.

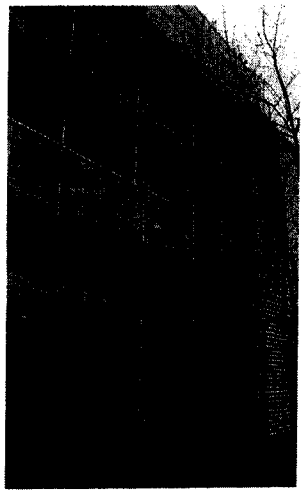
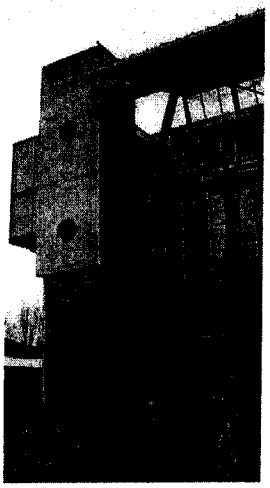
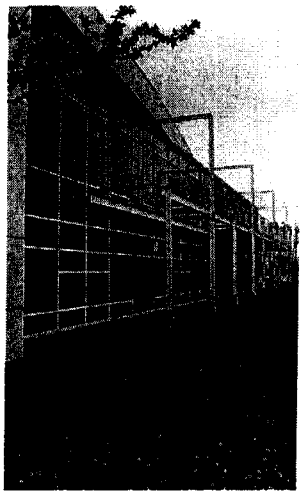
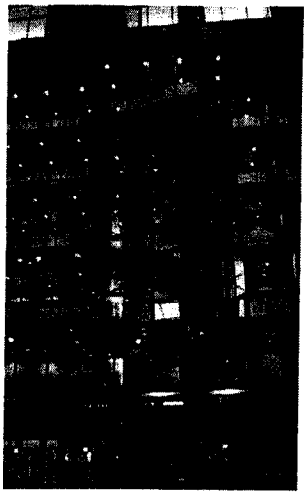
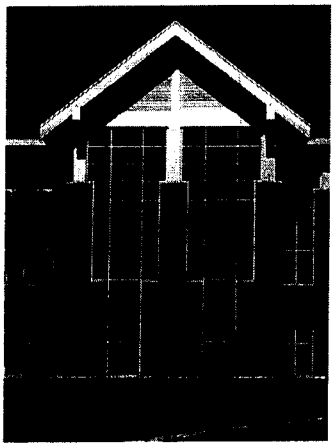
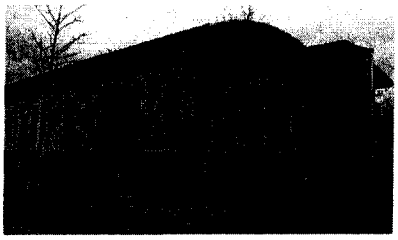
(b) Exterior materials that are encouraged include:

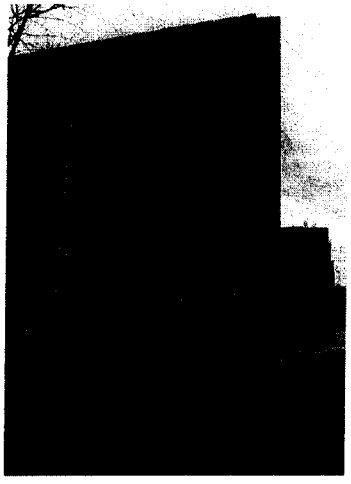
(i) contemporary metal cladding systems;
(ii) heavy timber structural elements;
(iii) glass and steel;
(iv) architectural concrete or brick.

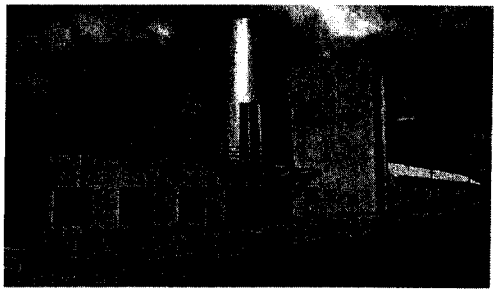
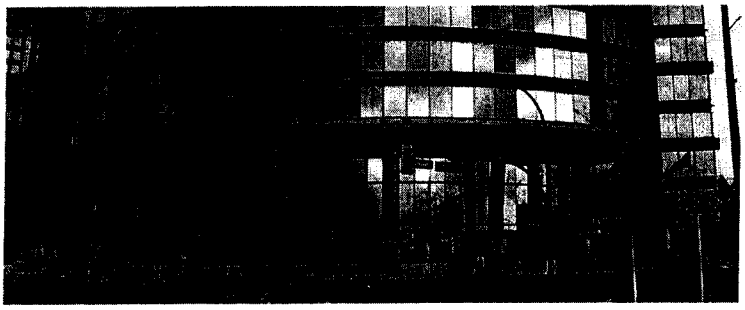
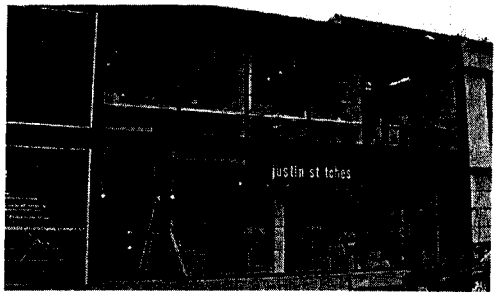
(c) Stucco, vinyl and corrugated metal are discouraged as primary exterior materials.

(d) Roofs visible from the SkyTrain should be architecturally treated and/or landscaped as "green roofs" see 10.1 (f).

(e) Exterior colours should enhance the building form and corporate colours should be clearly subordinate, providing accent colours only.

Architectural Characteristics

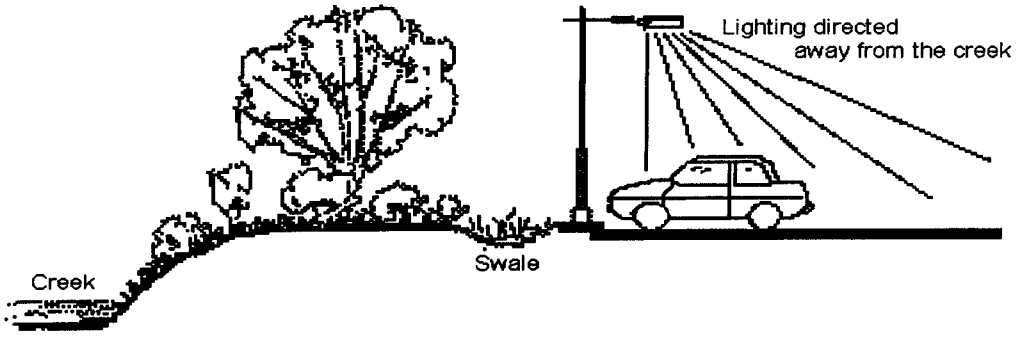
5.7 Lighting

(a) Street, building, entry path and parking area lighting should be integrated into the site design.

(b) For exterior lighting, incandescent and other white light sources are encouraged, while sodium vapour light sources are discouraged.

(c) Exterior lights should be oriented away from adjacent residential properties, with cut-off shields to minimize light.

STILL
(d) Site lighting used for security reasons should not detract from the amenity value of the Creek and minimize light pollution and glare on the Creek channel.

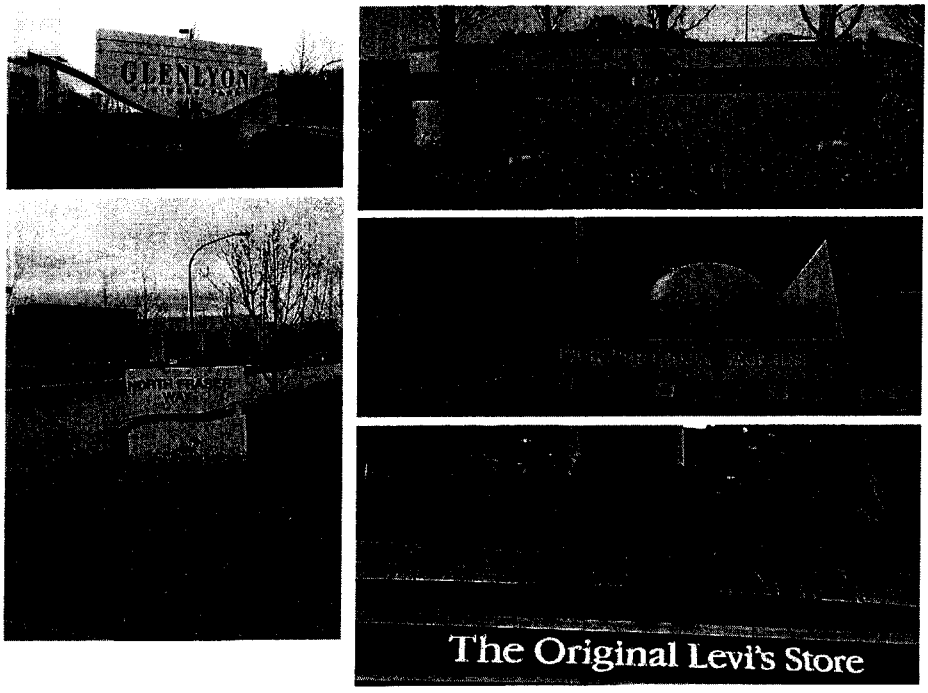


5.8 Signs

(a) Corporate signage should be subordinate to the design of the building and architecturally integrated with the development.

(b) Billboard signs and mobile signs should not be located on the site.

(c) Internally illuminated or back light sign boxes are discouraged.



Signage

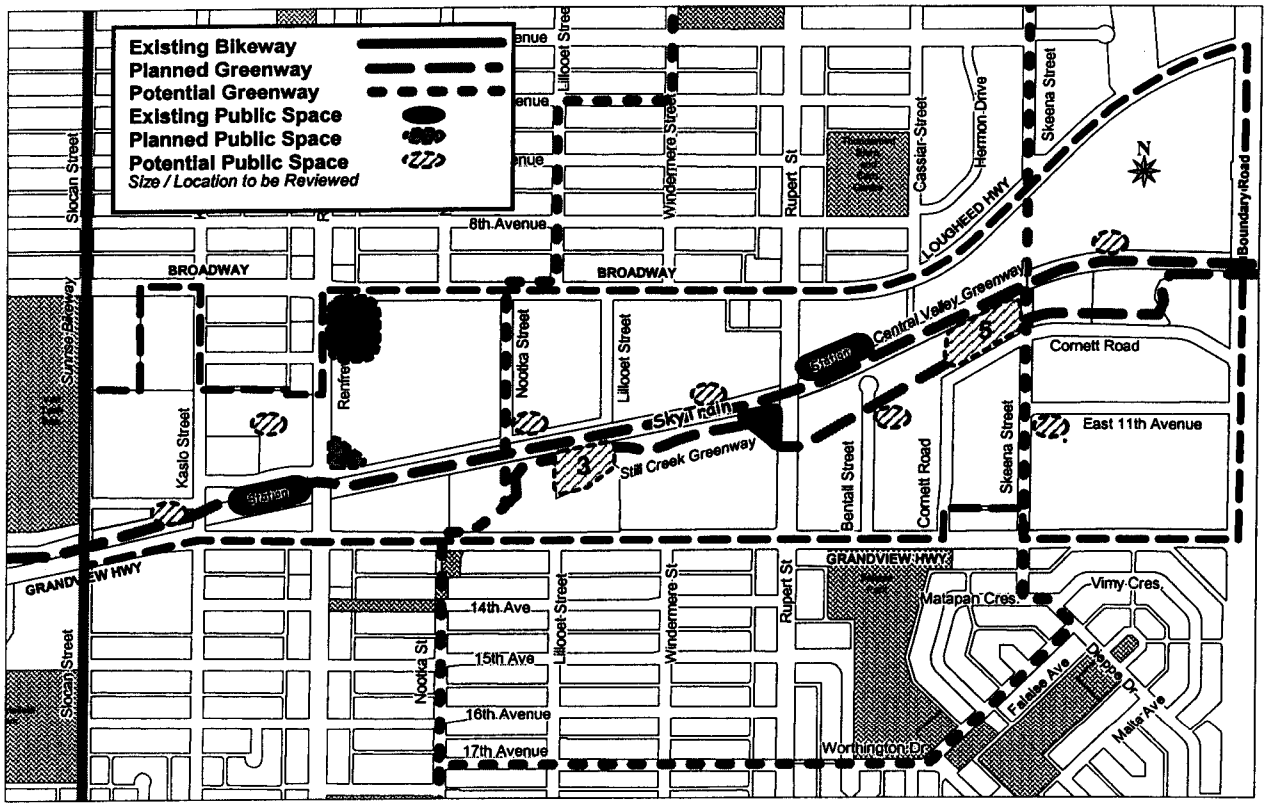
7. Open Space and Greenways

7.1 Public Open Space

The GBIA currently has no dedicated parks, few existing public spaces and lacks new open space opportunities. To provide for outdoor recreation for workers and the public, an enhanced Still Creek will be the major open space element and small public plazas and green spaces will be incorporated into redevelopments along greenways or into the street edge of major sites such as planned for the northwest and southwest corners of the Broadway Tech Centre (Figure 10, #1 and #2). Opportunities for these spaces on other larger parcels are shown in Figure 10. as "Potential Public Space."

In addition, proposed Still Creek retention ponds shown as #3 and #5, will offer opportunities for public recreation. These features are part of the long-term 10-50 year vision for Creek enhancement and they will be investigated further as part of an Integrated Stormwater Management Plan. Their size and location may change as a result of this work.

Figure 10. Public Open Spaces, Pedestrian and Cycling Routes



The following should guide design and location of public spaces and Greenways:

(a) Given the large amount of hard surfacing in the GBIA, new public space should minimize further hard surfacing and maximize "soft"and green landscaping.

(b) Landscaping elements and public art which reflect the industrial history of the area or enhance or celebrate Still Creek are encouraged.

(c) Large sites indicated in Figure 10, as providing "Potential Public Space"should incorporate green spaces for employees and the public as part of site landscape design.

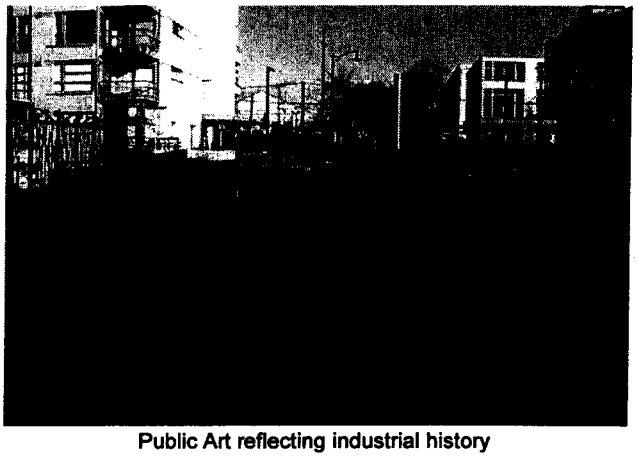
(d) Public space should connect to future greenways and other public routes to create a network of linked green spaces.

(e) Where practical the Still Creek and Central Valley Greenways will be constructed on City owned land or City R.O.W. In some circumstances, an additional R.O.W. may be requested from adjacent development to provide a more useable trail width.

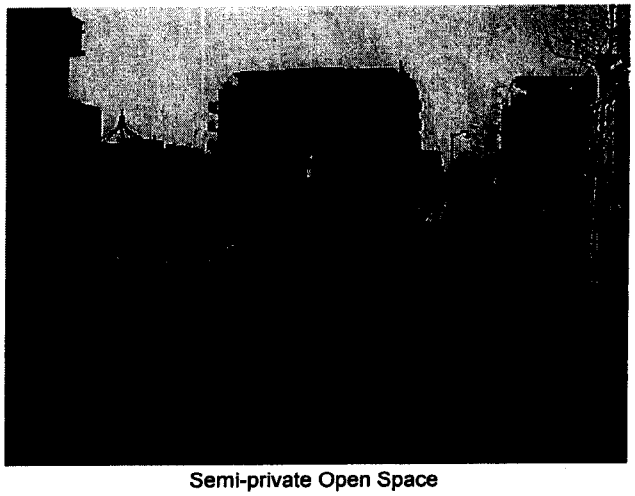
7.2 Semi-Private Open Space

Social semi-private open space is desirable for employees and should be provided wherever possible. It could be located at grade or on the rooftop as part of a landscaped rooftop garden and should maximize sun exposure.

Public Art in Open Space



Public Art reflecting industrial history



Semi-private Open Space

Public Open Spaces connected by Greenways

8. Public Realm Landscaping and Streetscape

8.1 General Provisions

(a) Continuous sidewalks should be provided for the site's full frontage to encourage pedestrian use. Figure 11 indicates where sidewalks are currently absent.

(b) Landscape design should provide for views into buildings for pedestrian interest, as well as special features such as opportunities to sit, view or take part in walking or active recreation.

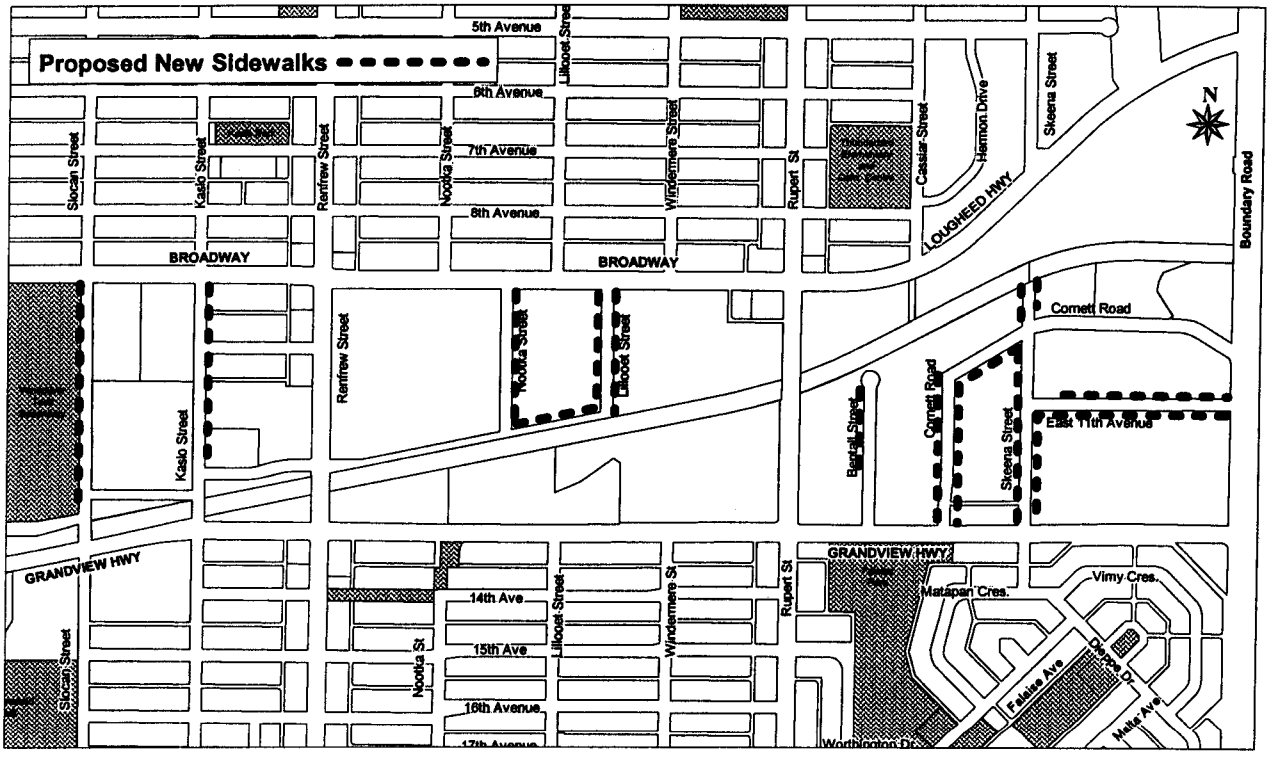
(c) Bus stop and transit station landscaping treatment of sites adjoining SkyTrain stations should be coordinated with TransLink.

(d) The required landscaped setbacks on Grandview Highway, Broadway/Lougheed, Boundary Road and the Central Valley Greenway provide good opportunities for public art and historical references

(e) Crime Prevention Through Environmental Design (CPTED) principles should be followed.

- Maximize opportunities for natural surveillance;
- Provide unobstructed and transparent sightlines to exits and destinations;
- Foster territoriality and a sense of ownership;
- No hiding places; and
- Lighting of public places.

Figure 11. Proposed New Sidewalks



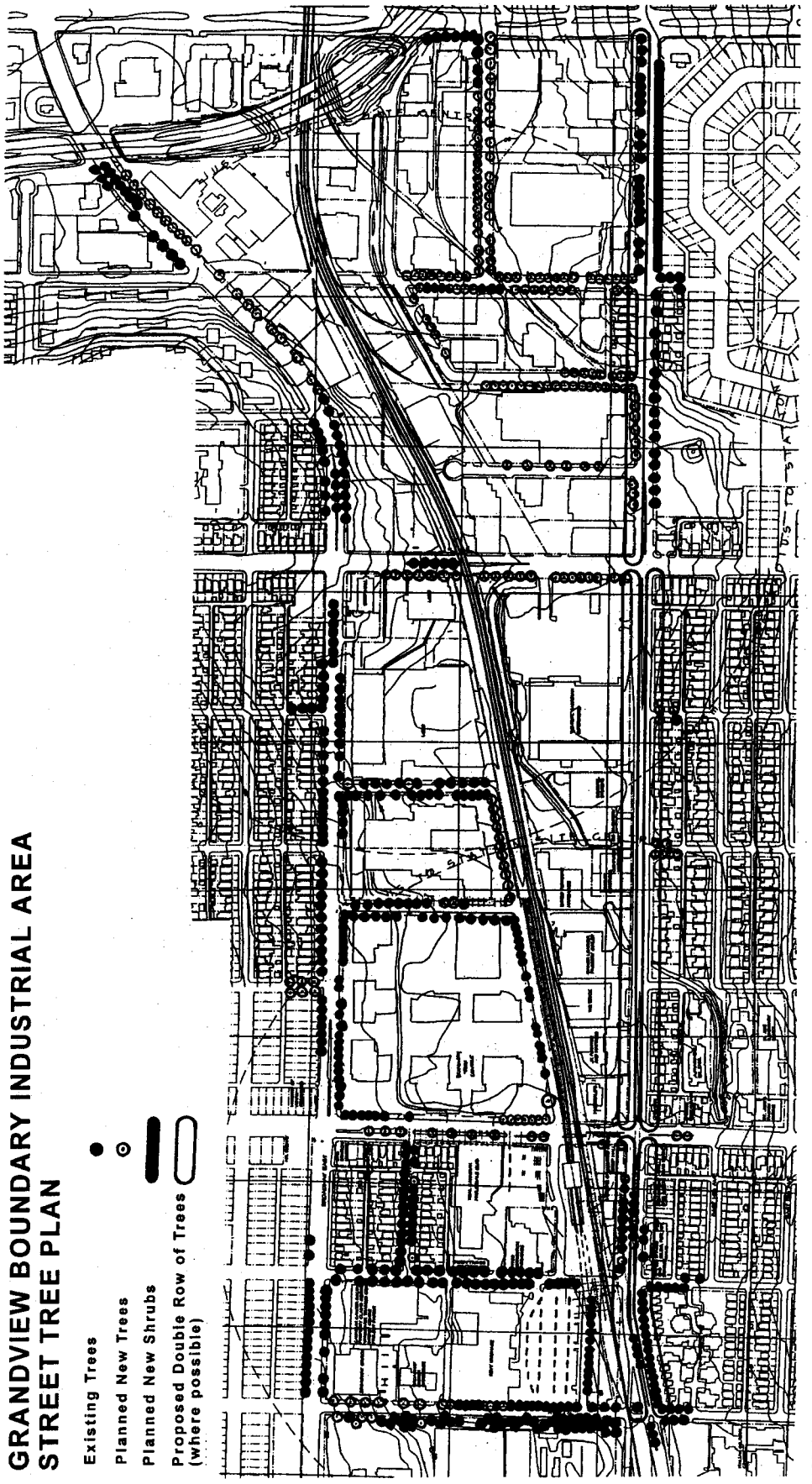
8.2 Public Realm Landscaping and Street Trees

8.2.1 Street Tree Plan

The existing street trees in the GBIA vary in size, species, age and form. On most streets there are either no street trees or there are major gaps. The street tree plan objectives are to:

- Be a major element in developing visual continuity along streets and an attractive urban environment.
- Increase the awareness of the presence of nature in the urban environment.
- Provide a "natural" or ecological link to neighbourhood open spaces such as Falaise Park, Still Creek, the greenways and public open spaces.

Figure 12. Street Tree Plan



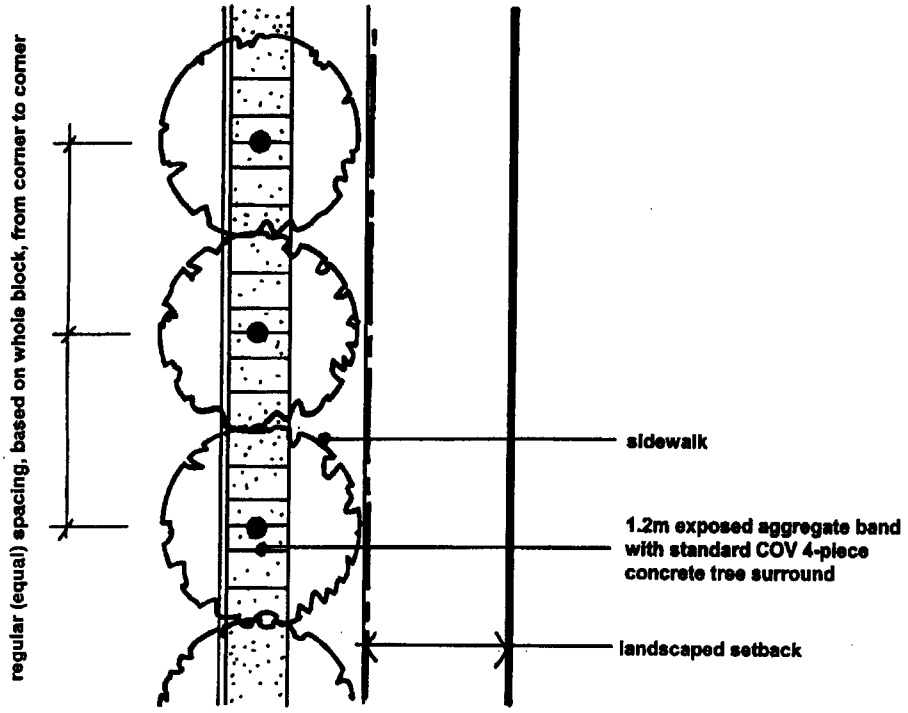
8.2.2 Tree Selection and Spacing Criteria

The following criteria have been established to assist in determining appropriate tree species, variety and spacing for the GBIA. The street trees shall:

(a) have reasonable root containment habits;
(b) have a maximum mature size appropriate for its site, given the constraints of overhead wires, boulevard width, views and other visibility concerns;
(c) have a long leaf life and predominately green leaf colour but provide seasonal colour change, and variable leaf size to create diversity in texture and canopy widths where possible;
(d) be capable, with pruning, of maintaining a 2 m (7ft) minimum clearance from sidewalk level to the underside of branches; and
(e) have longevity, be a species less prone to disease, as well as being clean and generally easy to maintain.
(f) be spaced as close as physically possible (ideally 7-9m [23-30ft], subject to meeting all relevant technical criteria. Spacing will vary depending on whether the planting zone is hard-surfaced or grass.

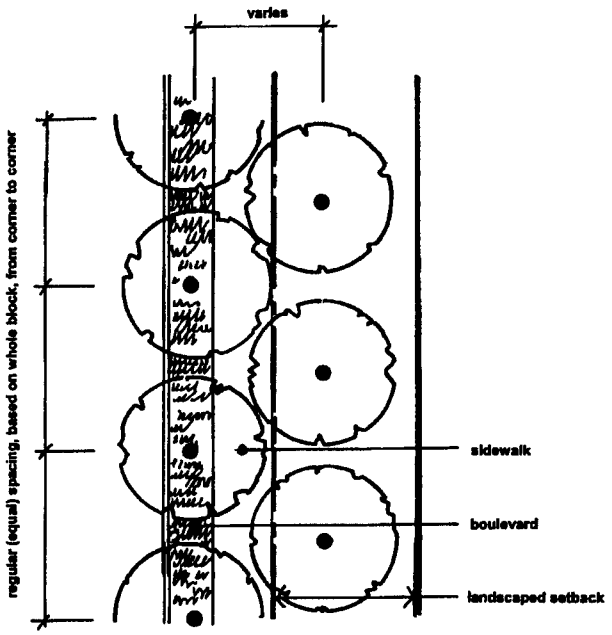
Some of the plan will be carried out through the Park Board Street Tree Infill Program and the remainder will occur as part of the redevelopment of adjacent sites. Engineering Services should be contacted for further information on tree location and the Board of Parks and Recreation, Arboriculture for the approval of tree species. Applicants should also refer to the Streetscape Design Standards for more detailed street tree requirements.

See illustrations below for general streetscape characteristics and locations:

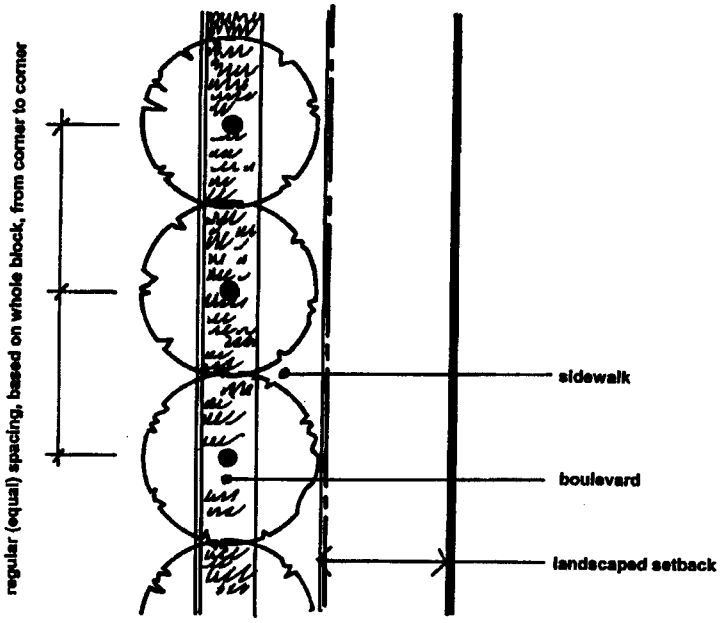


Rupert and Renfrew Streets

Major Streets



Secondary Streets



8.2.3 Still Creek Landscaping

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(a) A landscape plan is required for all developments adjacent Still Creek. The plan should be prepared by a certified landscape architect or a professional landscape designer who has prior experience with landscape design and remediation near water courses. The plan should show existing and proposed plant materials, and all other landscape elements.

(b) Existing Still Creek landscape character should be preserved and incorporated into new development by using plants native to Still Creek in areas adjacent the Creek. Native plants should be incorporated throughout sites adjacent Still Creek in order that the use of fertilizers, herbicides and pesticides can be avoided.

(c) Existing mature trees provide shade, stabilize stream banks and add significantly to the natural beauty of the Creek and their preservation is of primary importance.

Riparian planting to stabalize creek bank

STILL

(d) Landscape design and planting adjacent the Creek should discourage direct contact with the Creek due to health and safety concerns and impacts to the creek.

(e) Only non-toxic materials should be used for park and development. For example, asphalt commonly used for path surfaces could leach toxic chemicals into the Creek.

8.2.4 Grandview Highway, Broadway/Lougheed Highway and Boundary Road

(a) Where a landscape setback is required, lower understorey shrubs and other accent plantings should be used to enhance the green border and highlight entries and features on the site. Pedestrian level lighting should be incorporated The treatment of the landscape setback should form part of the landscape plan.

(b) Street trees on these streets should be planted in double rows to provide a parkway experience suitable for a major gateway to Vancouver. One row of trees may be in the public space in the outside boulevard where there is one, and the other row in the landscape setback. The Park Board and Engineering Department should be consulted for advice on tree species and location.

(c) Pedestrian oriented intersections should be provided at all Grandview Highway and Broadway/Lougheed intersections between Boundary Road and Slocan Street.

8.2.5 Renfrew and Rupert Streets

(a) Properties fronting on Renfrew and Rupert Streets are recommended to provide a 3.6 m (12 ft.) landscape setback. Lower understorey shrubs and other accent plantings should be used to enhance the green border and highlight entries and features on the site. Pedestrian level lighting should be incorporated The treatment of the landscape setback should form part of the landscape plan.

8.6 Central Valley Greenway

(a) Properties bordering the Central Valley Greenway will be required to provide a 3.6m (12ft) landscape setback. The landscape design within the setback should employ Crime Prevention Through Environmental Design (CPTED) principles.

8.7 Outdoor Storage and Display Areas

(a) Outdoor storage areas should be limited to the rear yard areas, screened from main entrances, streets, Still Creek, and City greenways.

(b) Screening should include fencing, planting and earth berms that filter undesirable views.

9. Public Services

9.1 Water and Sewer Services

Current water and sanitary sewer services are at capacity and will require upgrading to accommodate additional development. Please refer to the Grandview Boundary Area Plan for further information.

9.2 Storm Water and Flood Risks

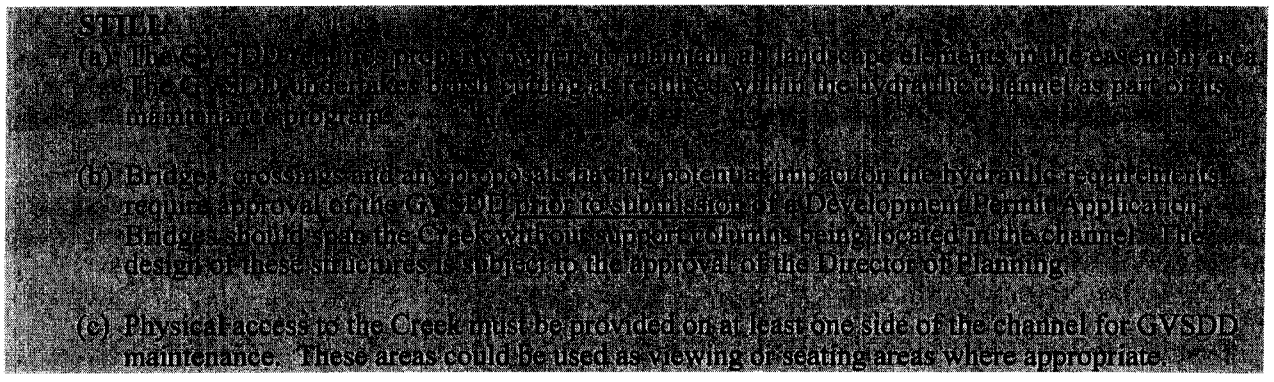
Still Creek conveys stormwater for the GBIA and surrounding area. With increased development and associated impervious surfaces in the Still Creek water basin, the volume of stormwater during rain events has continued to increase with attendant increases in flooding risk and impacts to the ecology of the Creek itself.

(a) New development in GBIA should reduce the amount of stormwater that is channelled directly into the stormwater system and Still Creek by applying the methods outlined in Section 10.1.1.

(b) For the portions of the GBIA identified on flood plain maps to be within the 200 year flood area, the grade of new development must be raised to mitigate flooding risks in consultation with the City Engineer. The City's Floodproofing Policies should be consulted for general information on flood proofing.

9.2.2 GVSDD Requirements

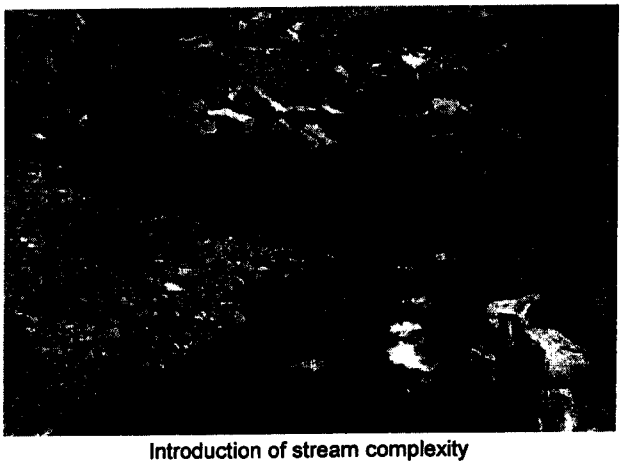
The Greater Vancouver Sewer and Drainage District (GVSDD) has authority over stormwater in Still Creek.



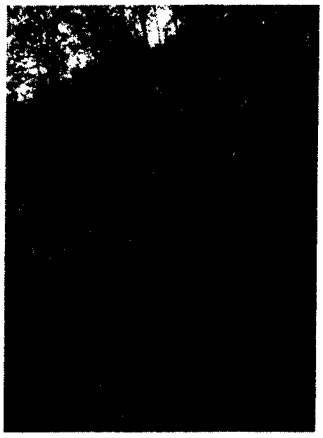
10. Environmental Considerations

10.1 Still Creek Watershed: Protection and Enhancement

Still Creek was once an important natural feature and remains a visible reminder of the environmental systems upon which urban life is based. Through urbanization large sections are now buried and above ground sections have been straightened and channelized in order to better convey stormwater. Still Creek suffers from extremes of high and low flows, flooding potential for adjacent properties and poor water quality from direct hard-surface run-off which carries vehicle pollutants and other contaminants into the Creek. Contribution to enhancing Still Creek will be a key criteria in assessing proposed developments throughout the GBIA, and particularly for those sites adjacent the Creek.



Introduction of stream complexity



New foot bridge

10.1.1 Creek Sensitive Development Practises

The objective for all new development should be first to maximize the infiltration of stormwater and secondly, to delay its release into the stormwater system and Still Creek. To achieve these objectives the following guidelines should be incorporated as far as practical into all new GBIA development:

(a) Permeable surfaces should be maximized to reduce stormwater runoff and recharge groundwater. Soil preparation and introduction of appropriate soil type layering is critical to effective functioning of all permeable surfaces, and should be an integral part of design and construction.

(b) On-site stormwater storage and treatment should be provided through under pavement storage, ponds, wetlands, landscaping or similar features that have dual functions of slowing rainwater release to Still Creek and providing a visual or recreational amenity for employees.

(c) Ditches or swales should be created adjacent to hard surfaces, to carry, filter and reduce surface runoff as well as minimize the need for underground pipes. Parking areas adjacent the Creek should incorporate swales as standard practise.

(d) Oil interceptors should be used in all parking lot catch basins and other drainage structures and cleaned out regularly according to manufacturers instructions.

(e) New development should maximize the number of trees planted .

(f) For new buildings green roofs should be investigated and employed to store and evapo-transpirate storage and to provide a recreational amenity for employees. Alternatively, roofs should be designed to store rainwater for delayed release into the stormwater system.

(g) Consideration should be given to recycling grey water on site, if possible, for irrigation purposes to reduce water use, waste water and runoff.

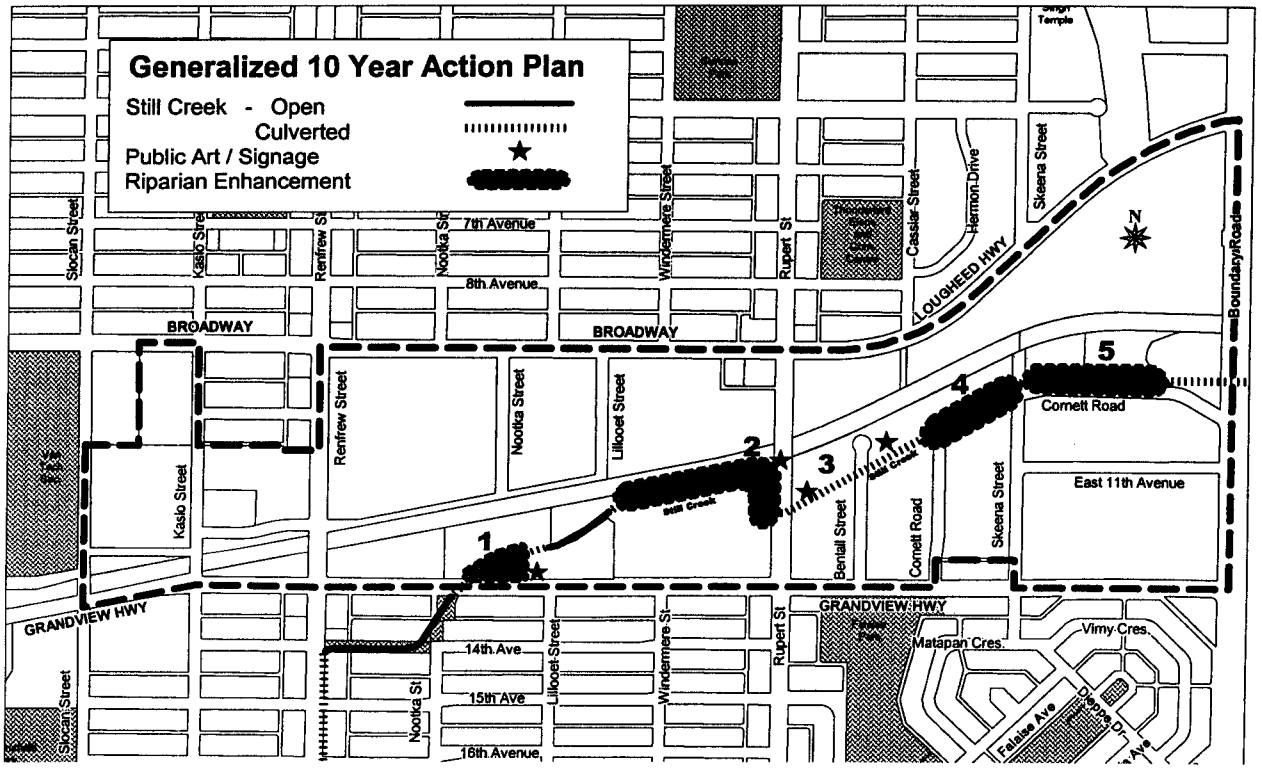
(h) Any changes to the Creek alignment should introduce more natural conditions such as gentle meanders. Except for efforts to daylight the Creek, further straightening and channelization is not supported.

On-going study is occuring to determine the most effective of these approaches to reducing stormwater run-off in the Still Creek Basin and elsewhere. Applicants should request this information from the GVRD and the City as it becomes available to develop an approach that strives for a signficant reduction in the runoff compared to that which would normally occur using standard practises.

10.1.2 Still Creek Enhancement Study

The Still Creek Enhancement Study was undertaken to review enhancement options and recommend measures to protect the remaining portions of the Creek. The goals were to improve stormwater management and water quality, create recreational opportunities for area workers, provide educational experience of natural systems and recover the Creek's natural and aesthetic appeal through daylighting and other means. The Study advances a series of Creek enhancement projects that could occur in the short and long-term toward achieving these goals. The more immediate actions are illustrated in Figure 13. These actions would lay the ground work for the more extensive longer-term improvements. These more complex stream enhancements are shown as proposed in the study and will be reviewed in more detail as portions of an Integrated Stormwater Management Plan for Still Creek.

Figure 13. Still Creek 10 Year Action Plan



Area 1 - using the green triangle on the Danier Leather site, widen the creek, enhance riparian area and install public art.

Area 2 - enhance the stream side vegetation and add riffle weirs, boulders etc. to increase stream complexity.

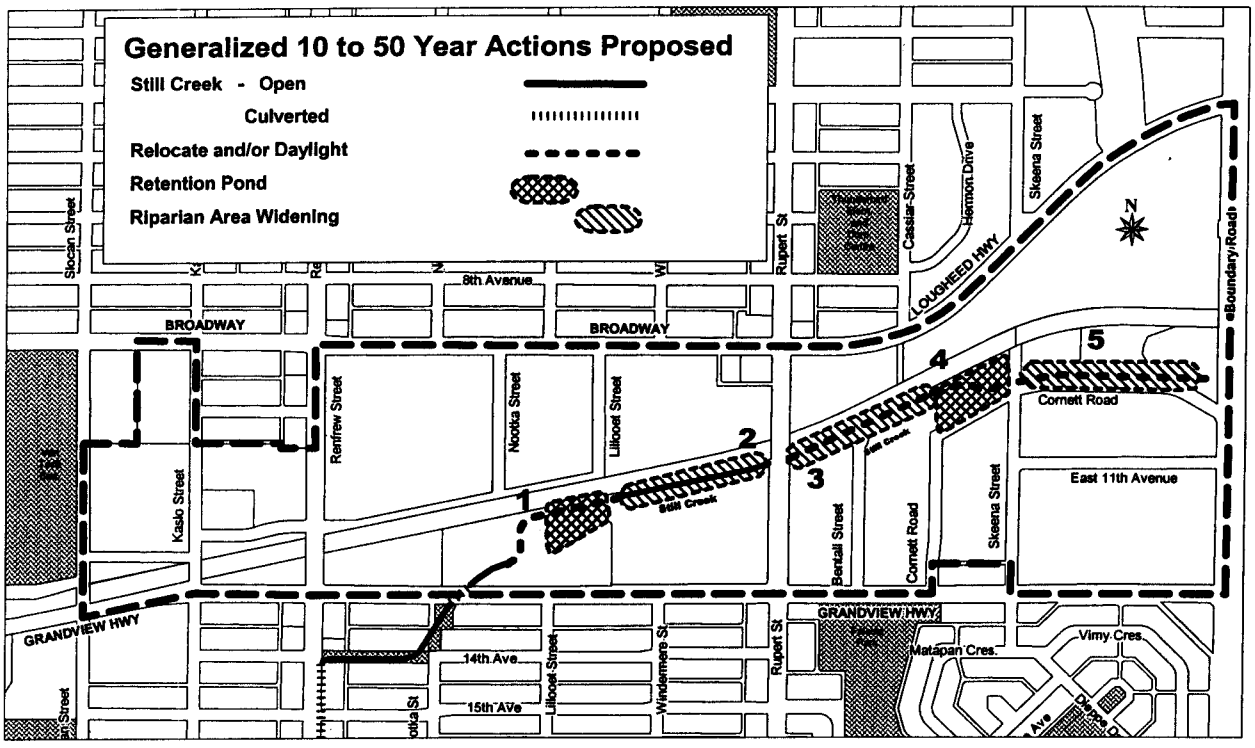
- install public art and educational kiosk in the existing park space at the northeast corner of the Superstore parking lot.

Area 3 - represent the underground portion of Still Creek through painting the Creek alignment, mosaics or other public art.

Area 4 - remove on-street parking from the north side of Cornett Road and expand the stream side area to add meanders and riffle weirs.

Area 5 - replant the stream side areas with native plants.

Figure 14. Proposed 10 to 50 Year Actions



Area 1 - when the United Furniture site redevelops, relocate and daylight the Creek on the south side of the BNSF tracks and extend the Greenway.

- acquire the parking area in the northwest corner of the Superstore site and construct a passive recreation area, stormwater retention pond and wetland.

Area 2 - acquire additional land to expand the stream side area, add stream meanders, pedestrian view points.

Area 3 - relocate and daylight the Creek on the south side of the BNSF rail corridor and extend the Greenway.

Area 4 - acquire 3445 Cornett Road and 2525 Skeena Street and construct a passive recreational area, stormwater retention pond and wetland.

Area 5 - widen stream side areas to add meanders, seating areas and other pedestrian amenities either in current location or after relocation to the south side of the BNSF line and extend the Greenway.

10.2 Trees and Vegetation: Retention, Relocation and Replacement

(a) Existing trees and vegetation should be retained and incorporated into site planning. New trees should be added wherever possible.

(b) Groups of trees should be retained to protect against potential isolated tree hazard situations and preserve the associated understorey vegetation for minimum disturbance of existing conditions.

(c) If tree retention is not possible, the trees should be relocated to other parts of the site, and if relocation is not possible, trees should be replaced with appropriate species.

(d) A variety of native trees and vegetation should be provided to minimize maintenance, water use and integrate the planting design into the traditional landscape character. Trees and vegetation planted near Still Creek should be native species appropriate to the riparian zone.

(e) Existing planting patterns and connections to adjoining properties should be extended and reinforced.

10.3 Soils: Retention, Cleansing and Replacement

(a) Topsoil should be retained and soil quality improved where necessary by remediation on site or addition of new soil to provide a rich basis for site planting and landscape development.

(b) Contaminated soils should be replaced with quality soils to enhance plant growth and ground water quality.

10.4 Air Quality and Transportation: Proximity and Land Use

(a) Walking and bicycling should be encouraged by providing secure bike storage areas and employee change facilities with showers.

(b) Convenient, safe and accessible pedestrian and bicycle connections should be provided to major bus routes and SkyTrain Stations.

10.5 Energy: Conservation and Efficiency

(a) Buildings should be oriented to maximize solar orientation, taking into consideration building placement and planting design.

(b) Building materials, systems and construction methods should be used to conserve energy and reduce long-term operating costs.

10.6 Solid Waste: Reuse and Recycle

(a) A solid waste disposal and recycling area should be designated for each building. This area should be of sufficient size to meet the needs of the proposed development and should be at ground level to facilitate container emptying.

(b) A comprehensive waste management plan is encouraged among land owners to provide recycling and reuse in close proximity by different industrial, retail or high technology uses.