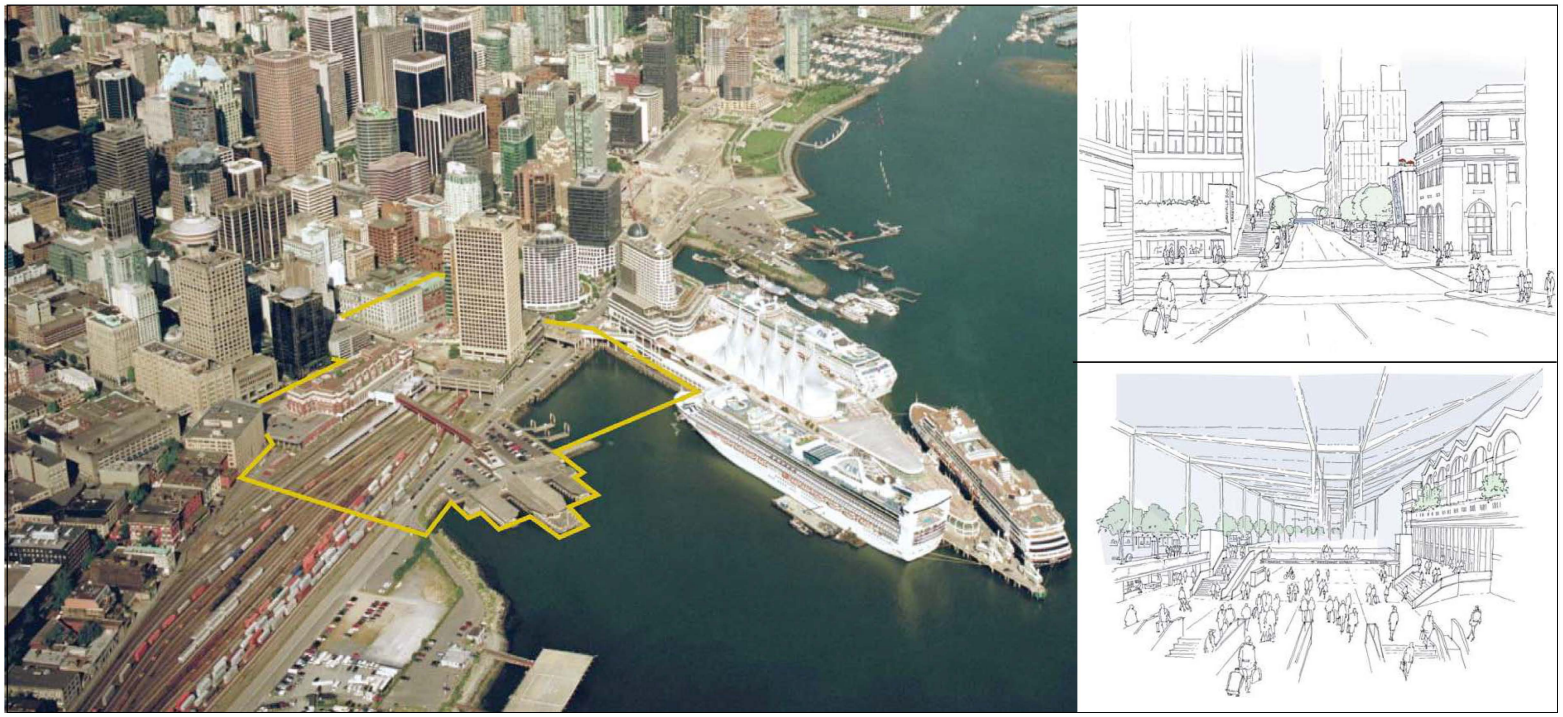
CENTRAL WATERFRONT HUB FRAMEWORK

Adopted by Council June 11, 2009



CITY OF VANCOUVER

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EXECUTIVE SUMMARY

The Central Waterfront is the principal focal point of the regional transportation network, where multiple rail, road, marine, and air transportation modes converge (see Figure 1). The area is expected to see a significant increase in passenger volumes over the next few years as the current transit operations expand and several new services are added.

Having developed incrementally over several decades, the existing transportation infrastructure does not present a fully integrated facility, becomes congested at peak times, and lacks many facilities and amenities needed by transit users. As a result, there is a need to plan for an expanded, better-integrated transportation interchange with a wider range of facilities.

At the same time, the potential exists to physically reconnect the city to the waterfront in this area and introduce new commercial and mixed use development which would expand downtown 'job space' capacity in a location with unparalleled transit accessibility.

Although the City has no land ownership in the area, nor the ability to finance or undertake the development of a transportation hub, it has a strong interest in seeing it realised due to the major transportation and 'city building' benefits that could accrue. As the authority with a mandate for overall land use planning, the City also has a responsibility to propose an integrated vision of what could be achieved and guide the preparation of development proposals by area landowners and stakeholders.

In February 2007, City Council authorized staff to undertake the Central Waterfront Hub Study to explore the opportunity for an enhanced transportation hub and examine the appropriate type, form and layout of new development in the area. Through the Hub Study, City staff developed this Framework document in consultation with the public, area landowners, major stakeholders, and a wide range of interest groups.

The Framework outlines a vision for the creation of a world-class transportation interchange and dynamic new downtown extension in the Central Waterfront. It also establishes planning principles and objectives to guide further, more detailed work, which is ultimately expected to include amendments to the existing City policies covering the area and rezonings.

In addition, the Framework identifies and explores some significant challenges facing development in the area which require resolution before the vision can be realised, including:

- Complex engineering and technical issues, particularly the impact of development on the Canadian Pacific Railway rail yard, but also challenges relating to structural design, site servicing, and dangerous goods movement in the rail yard.
- The expense of developing over the rail yard relative to expected development revenues, which is expected to result in the need for significant public investment.
- The difficulties inherent in the need to coordinate interrelated development between multiple landowners and stakeholders.

One of the keys to moving forward will be to identify a 'champion' for the project. This could either be a single party, or a consortium, with the capacity for multi-year involvement, lengthy negotiations and significant financial investment, as well as the ability to present a comprehensive approach to development which demonstrates how the complex, interlinked challenges could be resolved.

The City cannot function as the champion due to its regulatory role, however, City staff can play an important part in interpreting the Framework and guiding further planning work. Mayor and Council could also play a significant role by advocating for the vision established in the Framework and seeking the support of senior levels of government, area landowners and other stakeholders.

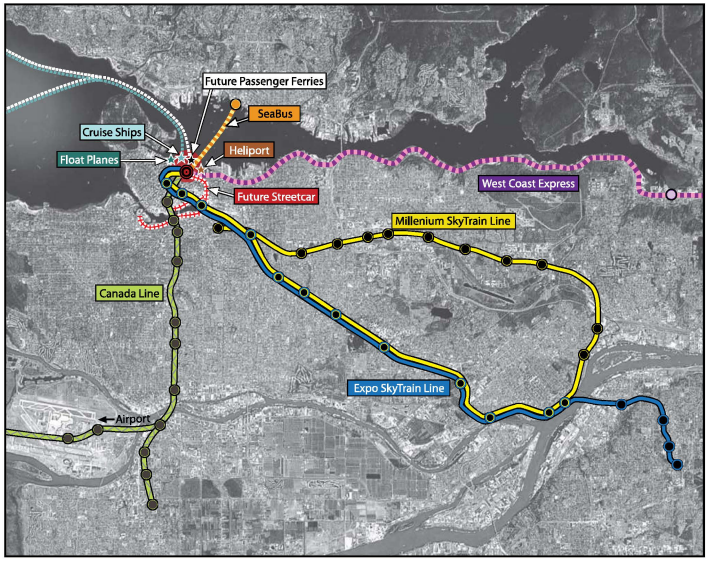


Figure 1: Regional map showing transit related to Waterfront Station.

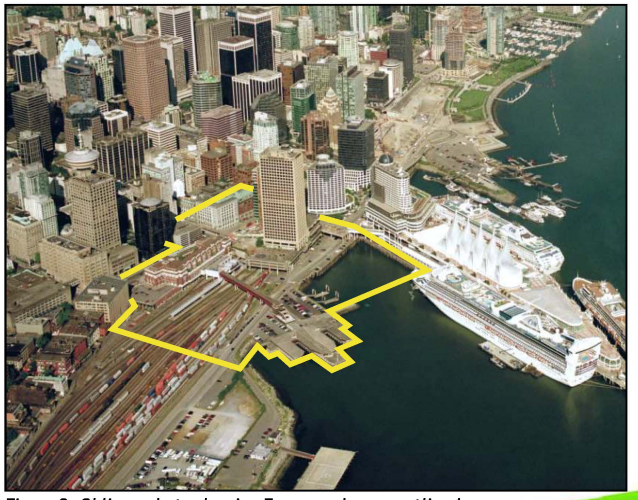


Figure 2: Oblique photo showing Framework area outlined.

1. INTRODUCTION

1.1 PURPOSE, APPLICATION AND CONTENTS

1.1.1 Purpose

This report presents a planning Framework for the Central Waterfront Hub that describes how this key area of Vancouver, where multiple transportation modes converge, could develop into a world-class transportation interchange and dynamic extension of the downtown waterfront.

The area covered by the Framework comprises 8.9 hectares (22 acres) focussed on Waterfront Station (The Station Building) and extending north from Cordova Street to include a portion of the Canadian Pacific Railway (CPR) rail yard, the SeaBus terminal and adjacent water lots, and the Granville Square complex (see Figures 2 and 3). Howe Street forms the western boundary of the Framework area, while the eastern edge is defined by a line running north from the Landing building to Burrard Inlet. The Framework area includes the western portion of the Central Waterfront Port Lands and is planned to integrate with future development on the remainder of these lands to the east.

Previous significant planning in the area occurred in the late 1970's and again in the 1990's, however, this work is in certain respects outdated and did not adequately address the opportunities and constraints of a transportation hub. The City, while having no land ownership, nor the ability to undertake or finance the development of a transportation hub, has a strong interest in seeing it realised. As the authority with a mandate for overall land use planning, it also has a responsibility to propose an integrated vision of what could be achieved in the area.

The purpose of the Framework is to present the City's vision for the area, to inspire other stakeholders, and to set the parameters to guide future work by the City and others towards the implementation of the vision.

It should be noted that the landowners within the Framework area have been consulted in the preparation of this document and have expressed interest in continuing to work with the City to further develop the vision, however, at this stage the City has not sought or been offered any commitment from the landowners to a particular development outcome.

1.1.2 Application

There are Council-adopted land use policies and regulations in place which cover the Framework area, including Official Development Plans (ODPs) and a Policy Statement (see Section 1.4). The Framework does not replace these, and conveys no development rights or obligations.

Eventually, through further, more detailed planning, it is the City's presumption that there will be revisions to the ODPs and subsequent rezonings. In the meantime, the City will endeavour to ensure that no rezoning or development occurs that would contradict the vision put forward in this Framework. The Framework will be used as a supplementary "overlay" to guide further planning, including ODP amendments and rezonings, bearing in mind the need for flexibility to respond to evolving City land use, built form and density policy directions which could impact the Framework area.

1.1.3 Contents

The Framework begins with an overall Vision statement. It then presents Directions and Specific Requirements relating to a series of topics; including Transportation, Land Use and Density, Urban Design, Public Benefits and Environmental Sustainability. The Directions provide guidance for future, more detailed planning. The Specific Requirements provide detailed guidance on certain aspects of the Framework where the technical work undertaken indicates that there are critical parameters that must be observed.

As part of the technical planning undertaken in the preparation of the Framework, an Illustrative Concept Plan was developed. This is presented in Section 8 as a means to illustrate the major opportunity in the area, however, the eventual

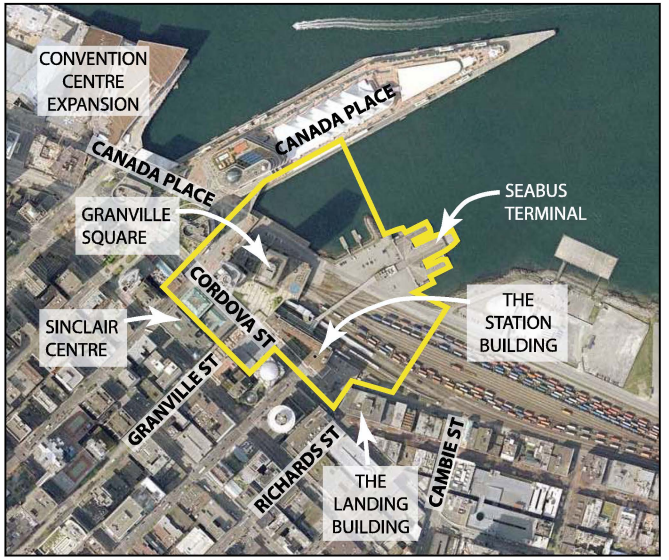


Figure 3: Aerial photo showing Framework area outlined.

development proposal that satisfies the Directions and Specific Requirements may vary considerably.

The final section of the Framework provides information and guidance relating to some significant challenges which will need to be resolved through the future planning of the area, including: structural and construction challenges to freight rail capacity and transit services; management of dangerous goods in the rail yard; and the extension of Granville Street. This section also discusses the funding and phasing of development within the Framework area.

1.2 FRAMEWORK PREPARATION

This Framework document was prepared by City staff as part of the Central Waterfront Hub Study, for which Council approved Terms of Reference on February 1 2007. The main goal of the Hub Study was to explore and report back on:

- the opportunities and challenges involved in developing an integrated transportation interchange in the Central Waterfront, and;
- the appropriate type and scale of development that could occur on the various potential development sites in the area.

The Terms of Reference also included a preliminary technical and public review to examine the feasibility of a revised proposal by the Vancouver Whitecaps to develop a soccer stadium adjacent to the Hub (see Section 1.3.2.3).

The Hub Study involved a wide range of technical work carried out by City of Vancouver staff and consultants, including:

- Transportation needs assessment.
- Urban design analysis, option generation and concept plan preparation.
- Urban Design Panel workshop.
- Traffic and parking analysis.
- Preliminary street and intersection design.
- Structural feasibility study and costing.
- Real estate focus group.
- Development pro-forma analysis.

The Hub Study involved extensive consultation with a range of interested parties, including:

- Meetings through the course of the study with the Framework area landowners [Port Metro Vancouver, Vancouver Whitecaps, Ontrea (Cadillac Fairview Corporation Ltd), Federal Government], major stakeholders, TransLink and Canadian Pacific Railway.
- Meetings with the Hub Study Working Group, which comprised the Framework area landowners, TransLink, Canadian Pacific Railway, Carnegie Community Action Project, Gastown Neighbourhood Coalition, Central Waterfront Coalition, Gastown BIA, Downtown Vancouver BIA, Stadium Now, and Friends of Soccer.
- Meetings with other interested groups, including: Gastown Historic Area Planning Committee, Downtown Vancouver Association, Chinatown Revitalisation Committee, Chinatown BIA and Vancouver Heritage Commission.
- Three sets of public Open Houses, held in March 2007, April 2008 and March 2009.

Summary information on all of the technical work and consultation carried out as part of the Hub Study is contained within the Central Waterfront Hub Technical Document.

1.3 EXISTING CONDITIONS

1.3.1 Existing Development

The Framework covers a prominent and pivotal area of the Central Waterfront at the meeting point of Downtown and Gastown. The area serves a major regional transportation function and is unique in Canada in terms of the number of transportation modes which converge in one location: SkyTrain, West Coast Express, SeaBus, various bus routes, and the heliport (see Figure 6, Section 3.1). The introduction of the Canada Line, planned Downtown streetcar, and new passenger ferries will further

underline the importance of the area as a transportation focus and gateway to the city. However, currently there is little sense of an integrated transportation facility or the regional significance of the interchange, the transit infrastructure is aging and becomes congested at peak times, and the area provides a poor environment and few amenities for transit users.

The area context includes a mix of high-rise commercial buildings in Downtown, heritage landmarks such as the Sinclair Centre and The Station Building and the historic buildings and streetscapes of Gastown. This varied built form supports a diversity of uses including commercial offices, hotels, retail, bar/restaurant and tourist activities. The city fabric and activities are currently separated from the waterfront by the CPR rail yard, Waterfront Road and the SeaBus terminal.

1.3.2 Landowners and Agencies

1.3.2.1 Overview

Figure 4 illustrates current land ownership within the Framework area. The principal land owners are:

- Port Metro Vancouver (PMV) - owners of Waterfront Road and the land and water lots to the north, including the SeaBus terminal lot.
- Vancouver Whitecaps - owners of the CPR rail yard, the Landing and the parkade at Granville and Cordova.
- Ontrea Inc (Cadillac Fairview Corporation Ltd) - owners of Granville Square, The Station Building and adjacent parking lot.
- Federal Government (Public Works and Government Services Canada) - owners of the Sinclair Centre.

Other parties which have a major presence in the Framework area include:

- TransLink - operators of most of the principal transit systems.
- Canadian Pacific Railway - responsible for freight rail operations within the rail yard, which is part of CPR's inter-provincial rail network.

The City has two options to purchase right-of-ways for new streets in the Framework area.

1.3.2.2 Port Metro Vancouver (PMV)

The Framework area covers a section of Waterfront Road and the land and water lots to the north which are under the ownership of PMV. The PMV ownership includes all of the Framework area waterfront, which is critical with respect to the integration of marine transit services into the transportation interchange and also presents significant development opportunities. In order to provide a comprehensive document which addresses all of the transportation and development issues, the Framework includes Directions and Specific Requirements which relate to the PMV property, however, the City recognises that the planning and management of development within this area is under the jurisdiction of PMV as a federal Crown corporation. The City welcomes ongoing collaboration with PMV through subsequent stages of planning to ensure that PMV objectives, as well as those of the City and other stakeholders, are appropriately reflected and balanced in zoning and/or other development regulations which may be created for the PMV-owned property.

1.3.2.3 Vancouver Whitecaps

The Vancouver Whitecaps have two significant land ownerships within the Framework area - the CPR rail yard and the parkade site at the south east corner of Granville and Cordova (320 Granville Street). In 2006, the City carried out an initial review of a proposal by the Whitecaps to develop a 15-30,000 seat soccer stadium on a site over the rail yard immediately to the north of the 300 block of Water Street (see Figure 4). Having received the findings of this review, in July 2006 City Council resolved that, while the stadium is a highly desired amenity for the city, five fundamental issues would need to be resolved before a rezoning for the stadium within the Central Waterfront could be considered.

The Whitecaps subsequently began discussions with PMV regarding the potential to reconfigure the stadium site to resolve the five fundamental issues and approached the City with a revised proposal which involved locating the stadium on PMV property at the site of the existing SeaBus terminal (see Figure 5). In parallel with the early stages of the Hub Study in 2007, City staff began an initial technical and public review of this proposal. During this review it became clear that the

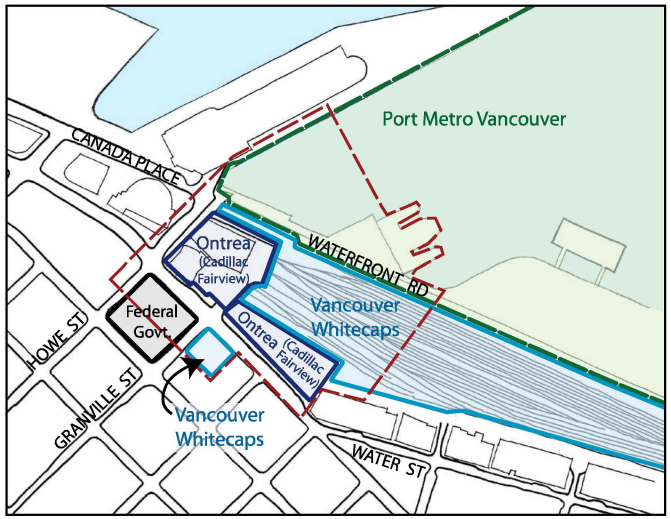


Figure 4: Land ownership in Framework area

proposal was unworkable due to the constraints imposed by cruise ship operations at Canada Place and the challenge of finding a suitable alternative location for the SeaBus terminal.

The Whitecaps are currently holding further discussions with PMV over the potential to use part of the Central Waterfront Port Lands to the east of the Framework area and north of Waterfront Road as an alternative site for the stadium (see Figure 4). It is unclear at this time whether these discussions will result in another stadium proposal. In any event, PMV is expected to pursue development of some kind on these lands and as such this Framework document is intended to be robust and flexible enough to integrate with a range of possible development scenarios, including a stadium.

1.3.2.4 Ontrea (Cadillac Fairview)

As owners of the Granville Square complex and The Station Building, including the parking lot to the east of the station, Ontrea Inc. (managed by Cadillac Fairview) are a key landowner in the Framework area. The successful introduction of new development into the Framework area, including the street network, transportation interchange and related commercial development, will require careful consideration of the constraints and opportunities presented by these existing properties.

1.3.2.5 TransLink

As the regional transit authority, TransLink is responsible for operating most of the principal transit systems in the Framework area through its subsidiaries - Coast Mountain Bus Company (SeaBus and buses), BCRTC (SkyTrain) and West Coast Express - and will play a major role in the planning and operation of the future transportation interchange. TransLink staff have provided input to the preparation of the Framework, including commissioning a consultant study to examine potential improvements to the transit systems, and have expressed support for the concept of creating an enhanced transit hub in this location. However, TransLink and its subsidiaries will need to be involved in considerable further planning and design work before details of the form, functions and services of the new transportation interchange can be determined.

1.3.2.6 Canadian Pacific Railway (CPR)

As a federally-regulated entity, CPR owns the freight rail infrastructure and operates the railway within the rail yard through registered rights binding on the owners of the land (currently Vancouver Whitecaps). The yard is an integral part of the rail network that supports the operations of the Centerm and Vanterm container terminals on the south shore of Burrard Inlet and other industrial rail traffic along the waterfront. The yard is critical to the functioning of the container terminals, which are themselves of major importance to the city, regional and Canadian economies. CPR and PMV have indicated that the freight rail functions of the yard will be required for the foreseeable future and may need to be expanded over time to keep pace with growth in container traffic at the terminals. CPR will need to be involved in the further planning of passenger rail services within the yard to ensure that this is coordinated with the needs of the freight rail operations.

Portion of CPR rail yard east of the Framework area

While the western section of the rail yard is included within the Framework area, the section of the yard located to the east of the Landing building up to the Main Street overpass (see Figure 6) is not included due to the extreme challenges facing development in this area while the freight rail operations are in place. This is consistent with the approach taken by the Central Waterfront Official Development Plan (1979), which anticipated that no major urban development would take place within this area until the rail facilities are relocated. The challenges facing development in the eastern section of the rail yard stem in part from the fact that the existing Gastown streets are at the same level as the rail tracks in this location. In order to provide sufficient height clearance over the tracks for rail operations to continue, development over the yard would need to be at an elevated deck level. This would create a very problematic urban design relationship between the deck-level development over the yard and the existing Gastown frontage buildings. It would also make achieving appropriate pedestrian and vehicular connections down to the existing street level extremely difficult without negatively impacting Gastown. Another major issue which would compromise development in this area is the impact of columns and foundations needed to support development on the capacity of the freight rail yard.

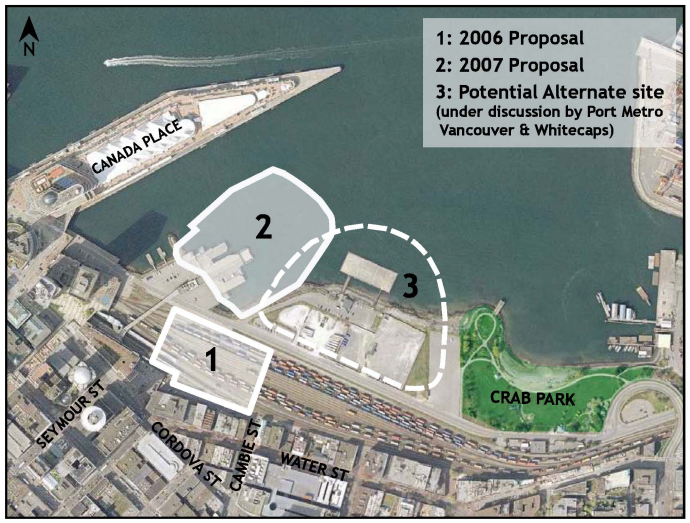


Figure 5: Aerial photo showing stadium locations.

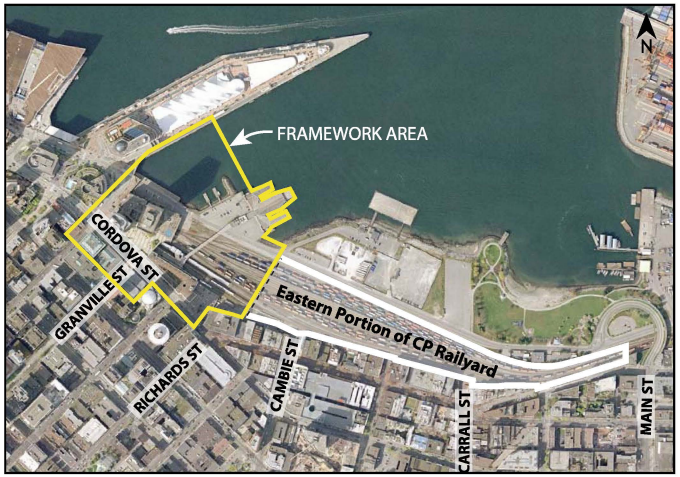


Figure 6: Aerial photo showing eastern section of rail yard excluded from Framework area.

1.4 EXISTING CITY POLICY

The Framework area overlaps with portions of the areas covered by the existing City policy documents identified below. The Framework builds on the objectives enshrined in these documents and provides more detailed policy guidance for the area covered, however, these documents remain in effect and are not replaced by the Framework.

1.4.1 Land Use Regulations and Policy

Downtown Official Development Plan (1975, amendments to 2009)
The Downtown Official Development Plan (D ODP) covers the Cordova Street blocks of the Framework area including The Station Building. The D ODP encourages a high-density form of development comprised of a range of commercial, public and recreational uses for this area.

Central Waterfront Official Development Plan (1979)
The Central Waterfront Official Development Plan (CW ODP) covers the CPR rail yard portion of the Framework area. The CW ODP encourages the creation of an efficient transit interchange to support and expand the current transportation role, redevelopment to create a high quality urban environment with public-oriented commercial uses, and the retention of essential port and rail facilities.

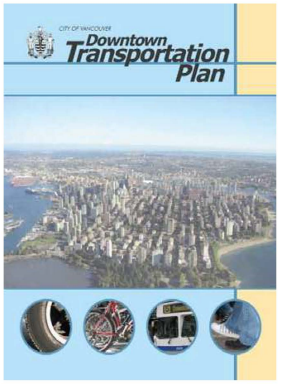
Central Waterfront Port Lands Policy Statement (1994)
The Central Waterfront Port Lands Policy Statement covers the portion of the Framework area which extends north of Waterfront Road, including the SeaBus terminal and adjacent water lots. The Policy Statement encourages the creation of a 'downtown-oriented area' comprised of integrated transportation functions, tourism and commercial activities, and compatible housing. Following on from the Policy Statement a 'shell' CD-1 zone (containing only a list of permissible uses) was created for part of this area in response to a proposal to expand the Convention Centre into this location.

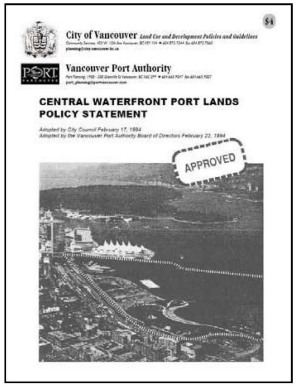
Metro Core Jobs and Economy Land Use Plan - Issues and Directions Report (2007)
The Issues and Directions Report seeks to affirm the Metropolitan core as the major employment and cultural centre of the region. It aims to ensure adequate floorspace for future job growth in the city and encourages focusing job growth on areas well served by public transit. The Report identifies the Framework area as a prime location for job intensification with the potential to deliver much-needed triple-A office space by virtue of its proximity to the central business district and waterfront views.

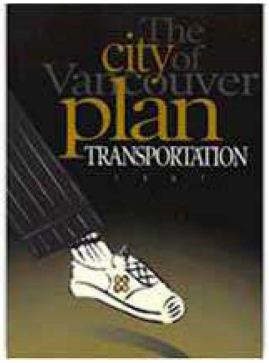
1.4.2 Transportation Policy

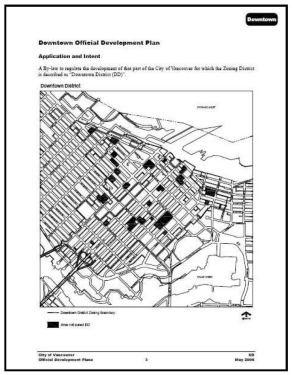
City of Vancouver Transportation Plan (1997)
The City of Vancouver Transportation Plan established priorities for improvements to transportation infrastructure in the following order: walking, cycling, public transit, goods movement, private vehicle movement.

Downtown Transportation Plan (2002)
The Downtown Transportation Plan identifies Waterfront Station as the City's pre-eminent multi-modal transfer station. The Plan includes measures to improve bus access to the station, increase sidewalk widths to enhance pedestrian movement and introduce a station on Cordova Street for the planned Downtown streetcar.









2. THE OVERALL VISION

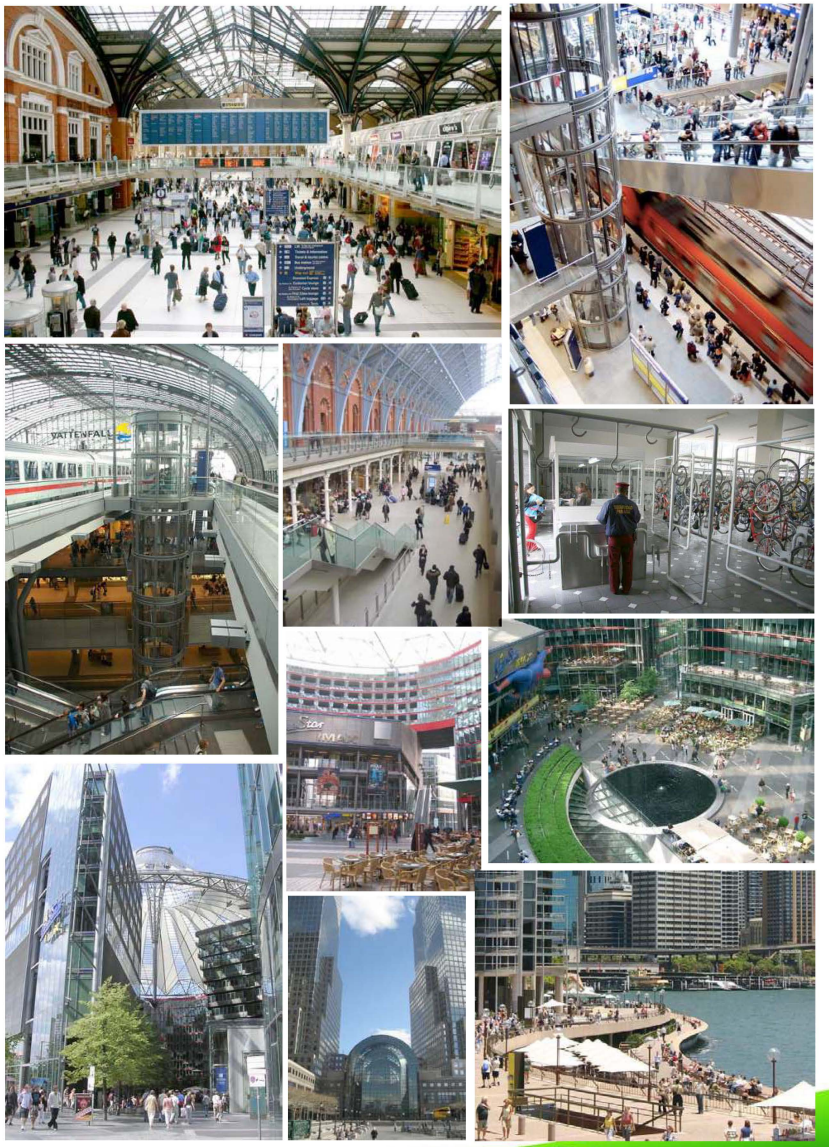
The City of Vancouver's Vision for the Central Waterfront Hub is the creation of a world-class transportation interchange at the heart of a dynamic new downtown waterfront extension.

A WORLD-CLASS TRANSPORTATION INTERCHANGE

- The Central Waterfront would be focussed on a dramatically enhanced transportation interchange which combines the best attributes of successful transit nodes around the world and takes full advantage of its unique Vancouver setting.
- The interchange would include a grand new passenger concourse which provides a bright, comfortable, active environment with a full array of passenger facilities and services, and draws on the strengths of the historic Station Building.
- A marine transit terminal on the waterfront would serve SeaBus and ferry passengers within an integrated facility.
- Clear, direct and attractive links would connect each of the road, rail, air and marine transit systems.
- The transportation interchange would be designed and developed with sufficient flexibility to accommodate growth and change in the transit systems serving the Central Waterfront.

A DYNAMIC DOWNTOWN WATERFRONT EXTENSION

- Development would bridge over the rail yard and physically reconnect the city to the waterfront, while maintaining the necessary freight rail capacity.
- High density commercial and mixed use development would take advantage of the excellent transit accessibility and support increased transit ridership.
- The area would extend the central business district as well as complement the activity of Gastown.
- The architecture of the area would be of exceptional quality, reflecting the prominence of the setting and respecting the existing heritage buildings.
- A welcoming and beautiful public realm of new streets and open spaces would entice people and activity to the waterfront and provide opportunities to enjoy the water, mountain and port views.
- A strong commitment to environmental sustainability would be expressed in all aspects of the design and construction of the buildings and infrastructure within the area.



3. TRANSPORTATION

The transportation section of the Framework is divided into two parts. The first part summarizes the current conditions and future needs for the transportation systems in the Framework area based on analysis by City staff and discussions with transit operators. The second outlines Directions and Specific Requirements to be applied to any future development proposals to ensure that transportation issues are adequately addressed.

3.1 TRANSPORTATION NEEDS ASSESSMENT

Figure 7 below illustrates the existing and planned transportation infrastructure within and adjacent to the Framework area while the following table summarises the transportation issues for all modes within the Framework area and identifies transportation planning considerations that have been addressed in the preparation of the Framework.

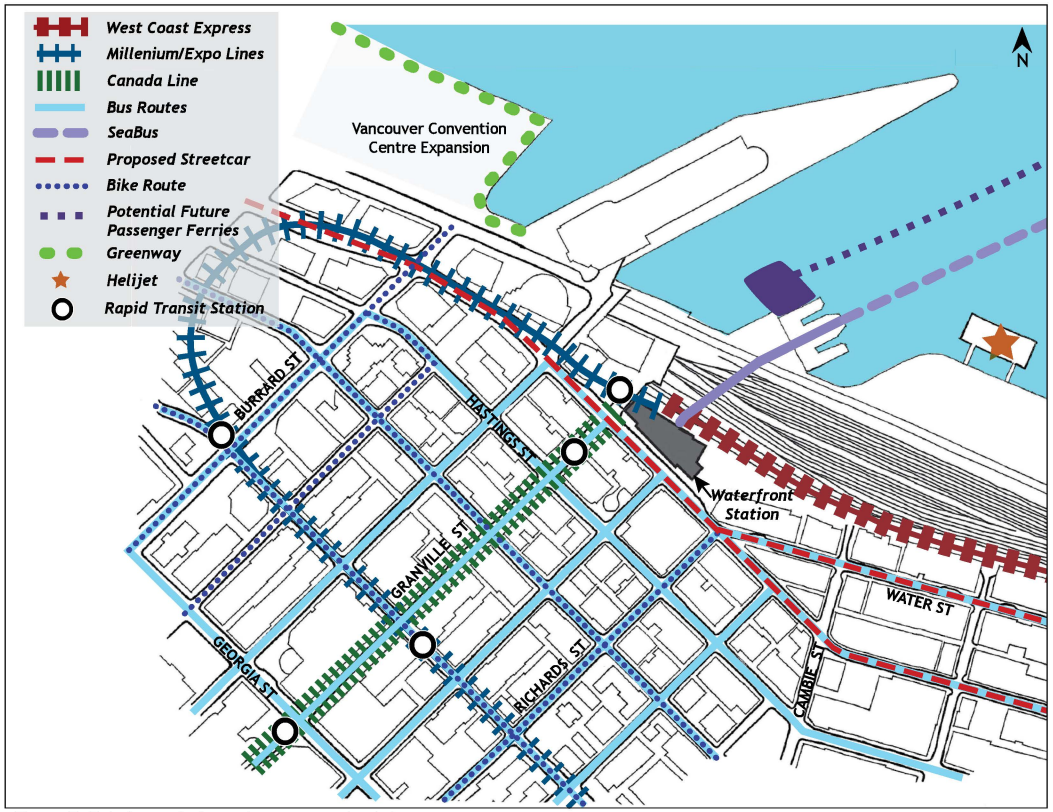
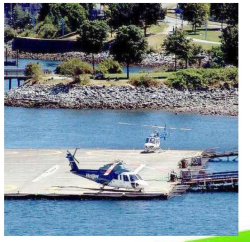


Figure 7: Existing and planned transportation infrastructure.



MODE		EXISTING CONDITIONS	PLANNING CONSIDERATIONS
PEDESTRIANS	STREET	Sidewalk widths on Cordova Street are constrained in certain locations e.g. adjacent to the Sinclair Centre and Landing. At-grade pedestrian crossing of Cordova Street at Granville is currently restricted to the west side by the ramp leading to the Sinclair Centre loading bay. The quality of many streetscape elements - sidewalks, street furniture, signage, etc - is poor.	Ensure that all new sidewalks are wide enough to comfortably accommodate the anticipated pedestrian activity, including pedestrian flows at peak times, street life, and transit waiting areas. Explore ways to improve pedestrian movement along and across Cordova Street and remove constraints where possible. Improve the quality of the streetscape and wayfinding.
	WATERFRONT WALKWAY	No waterfront walkway currently exists east of Canada Place. Existing pick-up/drop-off zone for Pan Pacific Hotel and loading ramp for Canada Place constrain waterfront walkway extension.	Extend the waterfront walkway through the Framework area and make provision for future connection to Central Waterfront Port Lands. Examine ways to extend the walkway through the pick-up/ drop-off zone adjacent to the Pan Pacific Hotel and address the conflict with the Canada Place loading ramp.
	CONNECTIONS TO CONVENTION CENTRES & CRUISE SHIP TERMINAL	Connections from The Station Building are currently limited (via constrained sidewalks or underground walkway to Howe Street SkyTrain exit).	Examine ways to improve connections through Framework area to Convention Centre and Cruise Ship terminal.
CYCLISTS	ROUTES	Existing on-street routes include: Richards and Burrard Streets southbound, Hornby Street northbound, Seymour Street bike/bus lane northbound (to Hastings). No waterfront bikeway currently exists east of Canada Place. Poor connectivity in vicinity of The Station Building.	Explore ways to better connect existing bike routes through the Framework area and directly into the transit interchange. Extend waterfront bikeway through the Framework area and make provision for connection to Central Waterfront Port Lands.
	STORAGE/ SUPPORT FACILITIES	Facilities limited to a few bike racks in front of The Station Building on Cordova Street.	Explore opportunities for bike storage and support facilities (showers, maintenance, etc) within the transit interchange.
PUBLIC TRANSIT	BUSES	Routes with stops on Cordova Street include: 6, 44, 50, 98, WCE Trainbus. Several routes terminate on Hastings Street due to lack of curb space on Cordova and difficult circulation routes.	Explore, with TransLink, opportunities to circulate more bus routes into the Framework area to facilitate direct connection to other modes.
	LIGHT RAIL	Expo Line/ Millenium Line - Advanced light rail technology (SkyTrain) connecting through Vancouver to Burnaby, New Westminster, Coquitlam and Surrey. Canada Line - New light rail transit line opening in fall 2009 with connections through Vancouver along Cambie Street to Richmond with service to the airport.	Explore with TransLink ways to improve the connections with other modes.

Over the past 15 years, Vancouver has seen an increase in the mode share of non-auto modes. Walk and bike trips within Vancouver comprise 17% and 3% of total daily trips. In the downtown this increases to 27% and 3%. Figures 8 and 9 illustrate an increasing trend in walk and bike trips, highlighting the need to create well connected bike routes and generous sidewalks to be able to handle current and future demands.

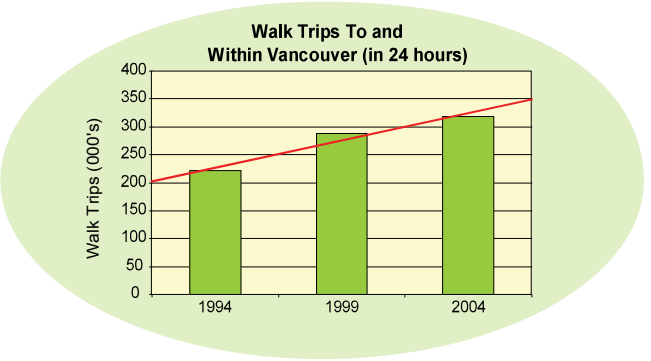


Figure 8: Number of walking trips to and within Vancouver in 24 hours.
Source: TransLink Trip Diary Surveys

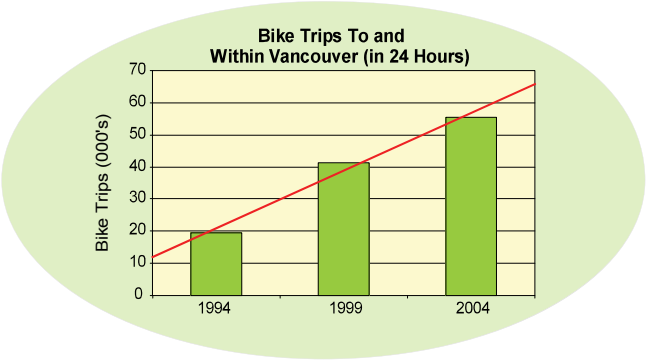


Figure 9: Number of bike trips to and within Vancouver in 24 hours.
Source: TransLink Trip Diary Surveys

MODE		EXISTING CONDITIONS	PLANNING CONSIDERATIONS
PUBLIC TRANSIT	HEAVY RAIL	West Coast Express - Commuter rail service with connection to Port Moody, Coquitlam, Port Coquitlam, Pitt Meadows, Maple Ridge, Port Haney, and Mission.	Explore with TransLink ways to accommodate anticipated increases in passenger volumes. Safeguard potential to accommodate an additional passenger rail platform for expanded/new services, subject to no negative impact on freight rail capacity.
	SEABUS	Currently two SeaBuses operating, with a third planned by 2010. SeaBus terminal will require escalator replacements in the near future and full upgrade/redevelopment in the medium term.	Accommodate planned growth in SeaBus frequency and passenger volumes. Explore with TransLink and PMV ways to integrate the SeaBus terminal with other planned passenger ferries, creating a coordinated marine terminal with improved passenger amenities.
	STREETCAR	Planned to run along Cordova St with a stop and temporary terminus at the Station Building (Waterfront Station).	Cordova St design should accommodate both a streetcar terminus and future extension to Stanley Park.
	TRANSIT CONCOURSE	Interchange area to transfer between SkyTrain, West Coast Express and SeaBus becomes congested at peak periods. Lack of signage and poor wayfinding throughout interchange.	Examine ways to reduce congestion and accommodate anticipated growth in passenger volumes. Examine ways to reduce transfer times between modes and improve wayfinding.
	FACILITIES & AMENITIES	The Station Building is a privately-owned heritage building providing access to transit, waiting areas and retail services. The heritage value of The Station Building has been diminished over the years by insensitive additions and alterations. Facilities and amenities such as transit information, washrooms, secure luggage storage and comfortable waiting areas are either limited or completely lacking.	Explore the potential to improve and add passenger facilities and amenities.
	INTER-REGIONAL PASSENGER FERRIES	Various operators have run a walk-on ferry service from the Framework area in the past, with service to destinations such as Victoria and Nanaimo. There is a current ferry service from Coal Harbour to Bowen Island. Interest in renewing these services and adding more routes (e.g. to Seattle, Gulf Islands, etc.) is expected.	Explore with TransLink and PMV the potential to create a coordinated marine terminal accommodating passenger ferry services as well as SeaBus.
	SHORT-LINK PASSENGER FERRIES	No existing services but may be future interest in providing local services to destinations such as Stanley Park and Ambleside.	Explore facility requirements within marine terminal.
OTHER MARINE	CRUISE SHIPS	Cruise ship terminal at Canada Place can currently accommodate up to four vessels at one time.	Any marine proposals must preserve the ability to dock four vessels at Canada Place and allow a 125m clearance for manoeuvring and servicing.
	MARINA	Marina located in Coal Harbour and some marine docking locations near Crab Park.	Due to the frequency of SeaBus, Cruise ship operations, and the expected introduction of additional passenger ferry services, there will not be available space within the Framework area for marina facilities.

In the past five years there have been significant increases in passenger volumes in SkyTrain (34%), Westcoast Express (32%) and SeaBus (17%), and these are anticipated to continue to grow. Currently, about 50,000 people enter the Waterfront Station precinct during an average weekday, with many of these people transferring between modes. Not all of these transfers take place within Waterfront Station itself as some modes, such as SkyTrain, have multiple entry points. With Canada Line, the number of people entering this precinct is expected to nearly double to over 90,000. Not all of these additions will require transfers through Waterfront Station, as passengers can exit the Canada Line station at Hastings Street, however, at least 4,000 additional transfers will occur at Waterfront Station, which is becoming increasingly congested, particularly in the AM peaks during arrival of West Coast Express trains.

Summary of 24 Hour Boardings and Alightings at Waterfront Station, 2007 and 2011

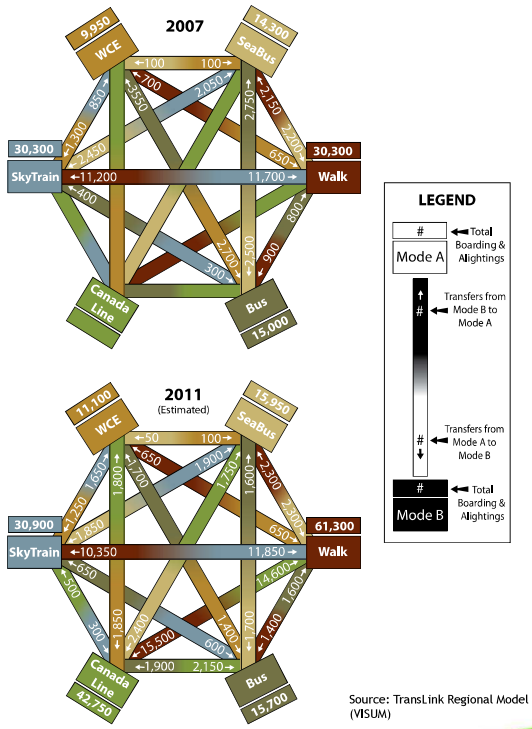


Figure 10: Transit Passenger Volumes, 2007 & 2011.

MODE		EXISTING CONDITIONS	PLANNING CONSIDERATIONS
AIR	HELIPORT TERMINAL	Located on a floating deck adjacent to Central Waterfront Port Lands, with parking lot and terminal building. Up to 25 daily flights operated by Helijet.	Explore opportunities for permanent facility with improved connections to other transportation modes.
	SEAPLANE TERMINAL	Currently operate from temporary facilities east of Convention Centre expansion site. Permanent facility adjacent to Convention Centre expansion opening in 2010.	Due to taxi and takeoff/landing requirements and conflicts with other marine modes, there is no opportunity to accommodate a float plane terminal within the Framework area. Examine ways to provide better connections between new float plane terminal and transit interchange.
FOR HIRE	PRIVATE CHARTER/ TOUR BUSES	Various services operate within the Central Waterfront including Airport to Cruise Ship transfers and City tours.	Explore opportunities to increase space for tour bus stopping/loading zones.
	TAXIS	Taxi queuing area is located along Howe Street between Cordova and Canada Place.	The existing taxi queuing area would need to be shortened or removed to accommodate revisions to the Canada Place/ Howe Street intersection. Examine locations to provide new taxi queueing space within the Framework area.
SITE SERVICING	LARGE TRUCK LOADING/ SERVICING	Loading bay at Sinclair Centre and servicing requirements for Canada Place take place below viaduct level. Some servicing for Canada Place is accessed from the ramp at the end of Howe St.	Loading and servicing for new developments should occur from Waterfront Road level wherever possible. Examine ways to remove the Canada Place ramp connection from the end of Howe St.
	PARKING	Private development-related parking is located in Granville Square parkade and at The Station Building. Public parking is available in various parkades within walking distance of Waterfront Station and limited on-street parking is available.	The amount of parking supplied with new development should be minimized while ensuring that development is marketable.
FREIGHT RAIL	CPR RAIL YARD	The yard is an integral part of the rail network that supports the operations of the Centerm and Vanterm container terminals on the south shore of Burrard Inlet and other industrial rail traffic along the waterfront. The yard currently contains 20 freight rail tracks ranging in length from approximately 230 - 1,100m.	CPR and PMV have indicated that three additional tracks may need to be added to the north side of the yard in the future to accommodate growth in container movements through Centerm and Vanterm. Development in the Framework area should seek to maintain yard capacity and identify measures to address any impacts in consultation with CPR and PMV.

There are four cruise ship berths at Canada Place and on a peak day there are nearly 13,000 cruise ship passengers at Canada Place and Ballantyne Pier. Cruise ship passenger volumes peaked in 2002 and have declined slightly since due to world events (including terrorism, war, disease and natural disasters) as well as competition from the Port of Seattle.

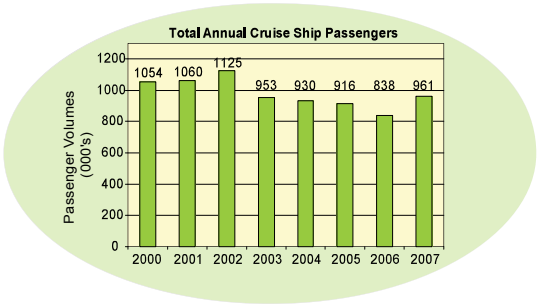


Figure 11: Annual cruise ship passenger volumes, 2000 - 2007.
Source: Tourism BC Visitor Volume Indicators, Nov. 2008

The number of for-hire licenses within Vancouver has been relatively consistent over the past 5 years. The Cruise ship terminals, convention centre and hotels in the vicinity of the Framework area create a large demand for taxis and there is currently a large taxi queuing area along Howe Street that can hold up to 14 taxis.

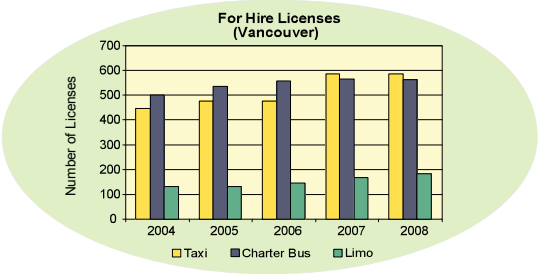


Figure 12: Number of for-hire licenses in Vancouver, 2004 - 2008.
Source: City of Vancouver

3.2 TRANSPORTATION DIRECTIONS AND SPECIFIC REQUIREMENTS

The Transportation Directions and Specific Requirements for the Framework area are outlined below under the following headings:

- Street Network
- Transit Interchange
- CPR rail yard

These Directions and Specific Requirements are based on the findings of the Transportation Needs Assessment as well as technical analysis of the constraints and opportunities within the Framework area for the delivery of improvements to transportation infrastructure.

3.2.1 Street Network

Four aspects of the Framework area street network are addressed below:

- Street network elements - the streets required within the Framework area to provide adequate access and circulation.
- Street functions - design considerations relating to the functions and components of streets.
- Street elevations - guidance on establishing new viaduct street elevations in relation to rail and transit infrastructure.
- Intersection considerations - issues to be addressed in the design of streets connecting the Framework area street network to the downtown street network.

Street Network Elements

DIRECTIONS

- The Framework area should include a permeable, fine-grained network of public streets with block sizes that are similar to those found elsewhere in the downtown.
- The existing downtown street system should be extended into the Framework area to provide pedestrian, bicycle, bus and vehicle access to the transit interchange and new development through a series of viaducts bridging over the rail yard.
- The street network in the Framework area should enable connection(s) down to Waterfront Road level to provide access to future development on the Central Waterfront Port Lands. Prior to the implementation of a street connection to Waterfront Road, an interim pedestrian and bicycle connection should be provided to improve access to the Central Waterfront Heliport and to facilitate an extension of the waterfront walkway/bikeway to Crab Park.
- In addition to the street network elements set out below under Specific Requirements, an east-west street ('Hub Street') linking the Granville extension with the Cordova Connector should be provided to increase space for bus stops and improve bus circulation, subject to the ability to maintain the capacity of the freight rail yard. If a street is not achievable, an east-west public pedestrian connection should be provided as a minimum.

SPECIFIC REQUIREMENTS

- The following elements would be required to complete the Framework area street network (see Figure 13):
  - Extension of Canada Place east of Howe Street to the eastern boundary of the Framework area, with provision for a further easterly extension and connection down to Waterfront Road and the Central Waterfront Port Lands.
  - Extension of Granville Street north of Cordova Street to the Canada Place extension.
  - The 'Cordova Connector'; a street linking Cordova with the Canada Place extension to the east of The Station Building.

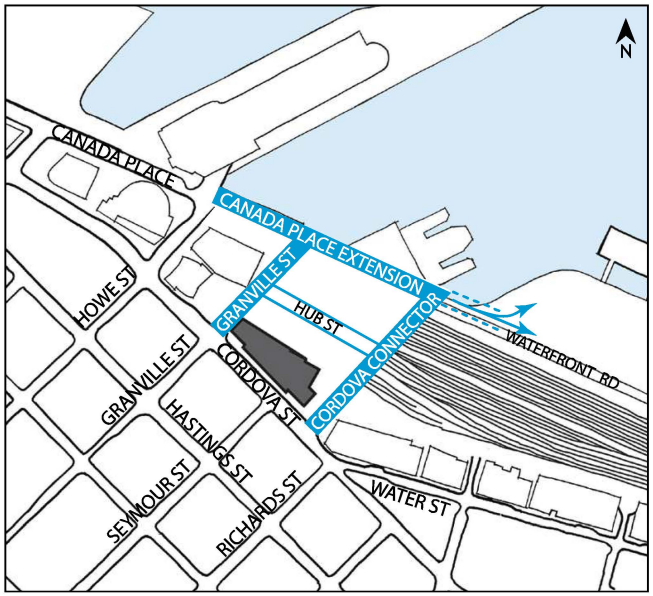


Figure 13: Framework area street network

Street Functions

DIRECTIONS

- Streets within the Framework area should be designed to enable safe and efficient circulation for all modes, with priority given to walking, cycling and public transit ahead of private vehicles. Figures 14, 15, 16, and 17 illustrate the proposed circulation through the street network for each transportation mode.
- The design of the streets within the Framework area should provide for the following:
  - Generous sidewalk space to accommodate large volumes of pedestrians.
  - Cycling connections into and through the Framework area linked directly to existing downtown routes.
  - A continuous waterfront walkway/bikeway through the Framework area at the viaduct street level, linked to the west past Canada Place pier to the existing waterfront walkway/bikeway. Provision should also be made to enable the future easterly extension of the waterfront walkway/bikeway down into the Central Waterfront Port Lands.
  - Adequate lane width to accommodate buses on all streets and intersections within the Framework area.
  - Adequate space designated for bus, taxi and tour bus pick-up/drop-off.
  - Adequate space for proposed streetcar tracks and station on Cordova Street, including provision for a temporary terminus and turnaround.
  - One continuous moving lane in each direction on each street, with space to pass turning traffic at intersections.

SPECIFIC REQUIREMENTS

- In order to meet the Directions above, preliminary design work indicates that:
  - The Granville Extension, Cordova Connector and Transit Street should have Right-of-Way widths of at least 20m.
  - The Canada Place Extension should have a Right-of-Way width of at least 33m, including 12m for the waterfront walkway/bikeway.

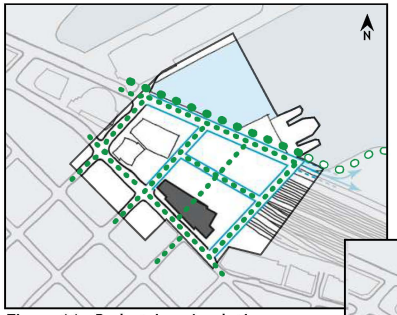


Figure 14: Pedestrian circulation

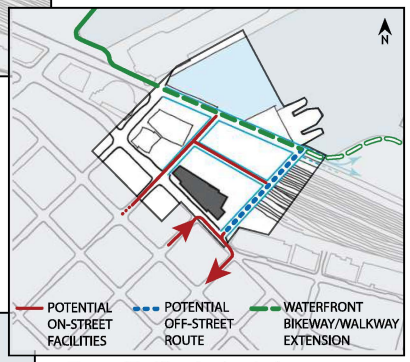


Figure 15: Bicycle circulation

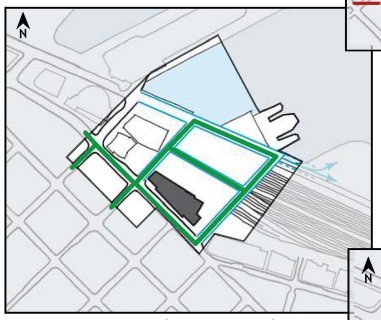


Figure 16: Potential transit circulation

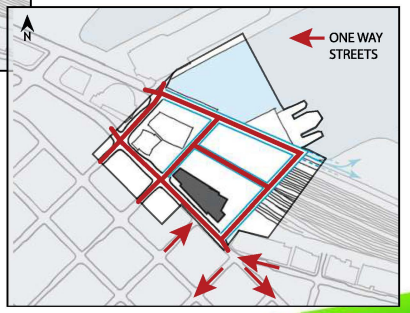


Figure 17: Vehicular circulation

Elevations

DIRECTIONS

- The Framework area street network should be at city street level to ensure that the area functions as a seamless extension of the downtown and optimizes convenience for pedestrians and cyclists. Street elevations should be as low as possible while:
  - allowing for the required height clearances over the rail yard and Waterfront Road, and;
  - accommodating below-street transit connections where necessary.
- The Canada Place extension should slope down towards the eastern boundary of the Framework area to facilitate a gradual transition down to Waterfront Road level for the future connection to the Central Waterfront Port Lands.

SPECIFIC REQUIREMENTS

- Street elevation parameters for the locations indicated in Figure 18 are set out below:

  A : Street elevations should relate to the P1 level of Granville Square parkade (elevation 14.9m) to facilitate introduction of active uses along the Granville Street Extension.

  B1, B2 : Street elevations should be as low as possible while enabling a below-street pedestrian walkway to the marine transit services and adequate rail clearance. Preliminary investigations indicate that, based on a below-street pedestrian walkway floor level of 11.5m, a street elevation of 15.6m is achievable.

  C : Maximum grade change of 5% down from B1 to C and maximum grade change of 5% up from Cordova St (elevation 12.3m) to C. Based on these parameters, preliminary investigations indicate that a street elevation of 13m is achievable at C.

  D : Maximum grade change of 5% down from B2 to D. D should be no higher than C and should have a maximum grade change of 5% down from C to D. Based on these parameters, preliminary investigations indicate that a street elevation of 13m is achievable at D.

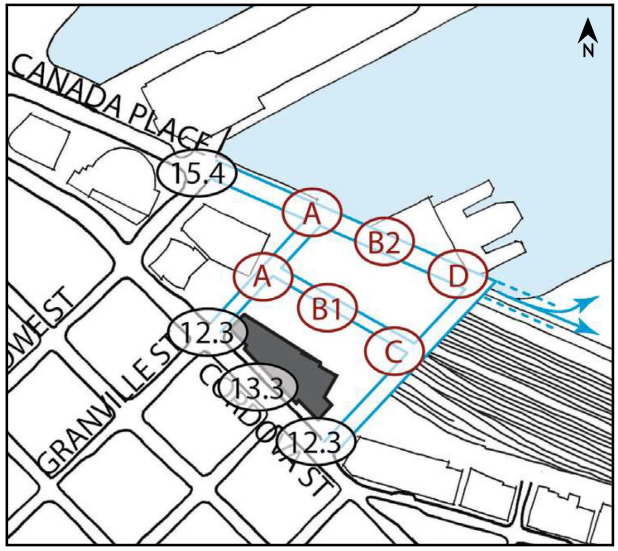


Figure 18: Street elevation parameters (see Specific Requirements opposite)

Intersection Considerations

DIRECTIONS

The three intersections connecting the existing downtown street system with the Framework area street network should be designed to address the following:

- Canada Place / Howe Street intersection (see Figure 19):
  - o High volume pedestrian movements to and from Canada Place pier, along the waterfront walkway and through the intersection.
  - o East-west waterfront cycling connections.
  - o Commercial vehicle servicing access to Canada Place pier, unless alternative servicing arrangements can be made.
  - o Taxi staging facilities for Canada Place pier.
- Cordova Connector / Cordova Street intersection (see Figure 20):
  - o High volume pedestrian movements between the Cordova Connector and Gastown.
  - o Cycling connections between the Cordova Connector and downtown cycle routes.
  - o Accommodation of streetcar infrastructure on Cordova Street.
  - o Operation of right-in/right-out intersection in close proximity to Water/Cordova/Richards and Seymour/Cordova intersections.
- Granville Street / Cordova Street intersection (see Figure 21):
  - o Accommodate high volume pedestrian movements through the intersection at grade to enable the removal of overhead walkway.
  - o Cycling connections between the Granville Extension and downtown cycle routes.
  - o Accommodation of streetcar infrastructure on Cordova Street.
  - o Maintenance of access to Sinclair Centre service ramp, unless alternative servicing arrangements can be made.

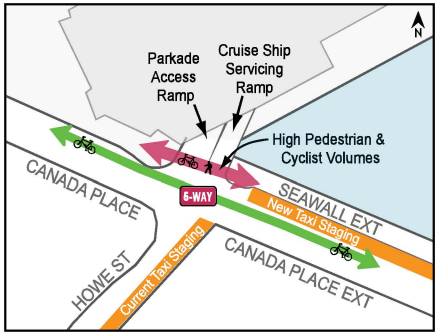


Figure 19: Canada Place & Howe St. intersection constraints.

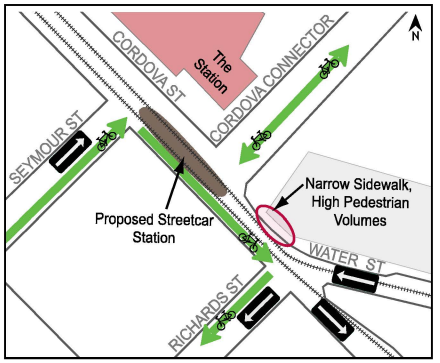


Figure 20: Cordova St. & Cordova Connector intersection constraints.

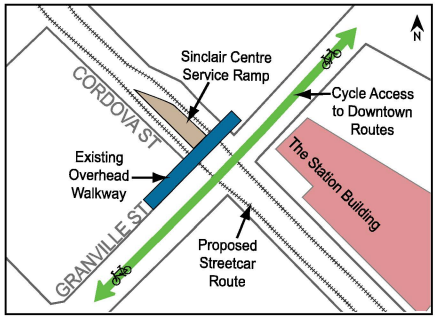


Figure 21: Granville St. & Cordova St. intersection constraints.

3.2.2 Transit Interchange

Development within the Framework area should include the creation of a multi-modal transportation interchange which effectively integrates the existing and planned transit modes in the Central Waterfront and provides a wide range of facilities and amenities for transit users in an attractive environment. The transit interchange should include connected Land and Marine terminals (see Figure 22). The potential to integrate the Central Waterfront heliport as an Air Terminal within the framework area should also be explored.

The directions relating to transit infrastructure are intended to provide guidance to TransLink for more detailed investigation and planning.

3.2.2.1 Land Terminal

Transit Concourse: Role, Location, Design

DIRECTIONS

- A new transit concourse should form the focal point of the Land Terminal, complementing and enhancing the functions of the existing Station Building hall. The concourse should be an impressive urban space with a wide range of facilities and amenities for transit users and the public as a whole.
- The concourse should be located immediately north of The Station Building over the SkyTrain and West Coast Express platforms.
- The concourse should provide for a wide range and high quality of facilities and amenities, including: transit-related facilities such as travel information, ticketing, signage and wayfinding; public washrooms; comfortable waiting areas; secure bicycle storage and changing facilities; secure luggage storage; tourist information; airport check-in (if feasible); and shops, cafes and restaurants.
- The concourse design should create a dramatic, beautiful and highly functional new urban space. Key design considerations include:
  - Creating a strong sense of 'place' and 'arrival'
  - Enhancing the functionality and architectural integrity of The Station Building
  - Providing strong connections to transit services, The Station Building, and the adjacent street and open space network
  - Creating a comfortable and secure environment for all users
  - Internal and external orientation and views
  - Weather protection and natural light
  - Universal accessibility

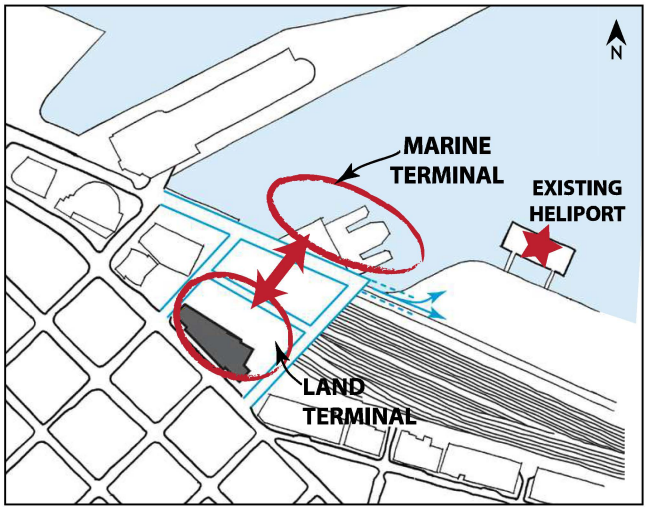
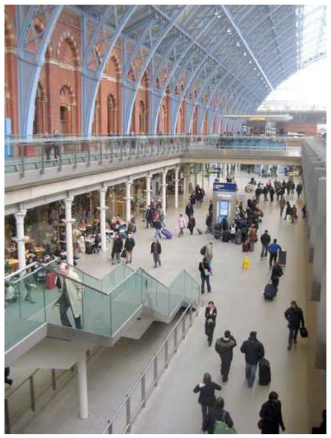
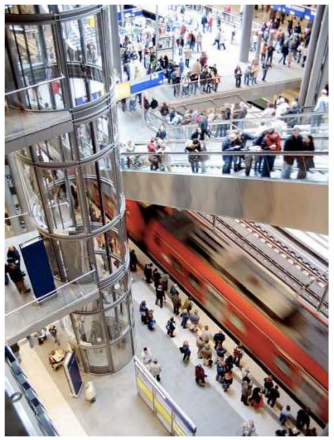


Figure 22: Diagram of transportation interchange components.



St. Pancras Station, London, UK



Berlin Hauptbahnhof, Berlin, Germany

Transit Concourse: Connections and Elevation

DIRECTIONS

- The concourse should provide convenient, attractive and universally accessible connections to the following transit modes: SkyTrain, West Coast Express, Canada Line, Central Waterfront bus stops, Streetcar (on Cordova Street), SeaBus, future Passenger Ferries, and the Heliport.
- In addition to the above, opportunities should be explored to create new direct connections between: the concourse and Canada Line; and the West Coast Express platform and SkyTrain platform.
- Connections should be designed to accommodate ultimate system passenger capacities.
- The concourse elevation level should be established to both:
  - allow sufficient height clearances over the rail operations below, and;
  - facilitate convenient connections to The Station Building hall level.

SPECIFIC REQUIREMENTS

- The underside of the concourse structure should have a minimum of 7.2m clearance above the rail track level (top of rail).
- The finished floor level of the concourse should not be higher than The Station Building hall level (elevation 13.3m).

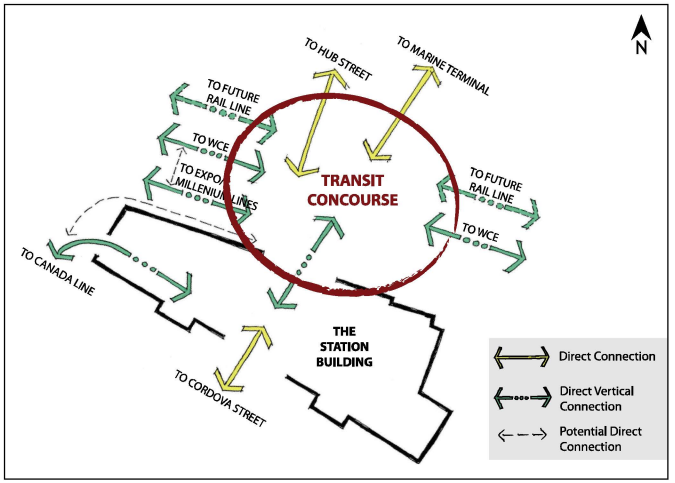


Figure 23: Functional diagram of land terminal transit connections.

Transit Concourse: Size and Flexibility

DIRECTIONS

- The concourse should be large enough to comfortably accommodate projected passenger volumes, including peak demands, from existing and planned transit modes serving the Central Waterfront as well as the necessary supporting facilities and amenities.
- The concourse should be designed with sufficient flexibility to allow for expansion of circulation space and provision of additional connections to new transit operations, such as additional passenger rail services, which may be introduced into the Central Waterfront in the future.
- The concourse size and location should enable provision of at least one additional passenger rail platform to the north of the West Coast Express platform, including escalator/stair and elevator access to the concourse, subject to no negative impact on freight rail capacity. In order to achieve this, preliminary investigations indicate that the concourse would need to extend approximately 45m north from The Station Building.

Liverpool St. Station, London, UK

Land to Marine Terminal Connections

DIRECTIONS

- The Land and Marine Terminals should be connected via a direct, dedicated walkway, separated from street level to avoid conflicts with street traffic. In addition, street-level connection(s) between the Land and Marine Terminals should be created.
- The dedicated walkway should be designed to create a pleasant environment for passengers, with daylight and animation by active land uses wherever possible.
- The walkway should be wide enough to accommodate peak demands for Land to Marine Terminal transfers. Walkway widths should be modelled to ensure adequate capacity.

SPECIFIC REQUIREMENTS

- The underside of the walkway structure should have a minimum of 7.2m clearance above the rail track level (top of rail) and 5.5m clearance above Waterfront Road.
- The walkway ceiling height should be maximised. In certain locations the height of the walkway may be constrained by structural requirements and in these locations the minimum height of the walkway should be 3m.

3.2.2.2 *Marine Terminal*

Marine Terminal: Role, Location, Design

DIRECTIONS

- The Marine Terminal should accommodate the SeaBus and other future Passenger Ferry operations. These could include longer-distance services (e.g. to Seattle, Nanaimo, Victoria) and shorter routes (e.g. Ambleside, Stanley Park). When the existing SeaBus terminal is redeveloped and/or new Passenger Ferry operations are introduced, the potential to develop a single, consolidated terminal for both services should be explored. If separate facilities are required, their design and operation should be closely coordinated to ensure a coherent, integrated service for passengers.
- The design and location of the Marine Terminal should ensure safe and efficient operation of the SeaBus and Passenger Ferry services while avoiding conflicts with cruise ship operations at Canada Place.
- The Marine Terminal should contain a range of facilities and amenities, including: transit-related facilities such as travel information, ticketing, signage and wayfinding; immigration control for international Passenger Ferry services; public washrooms; comfortable waiting areas; and shops and cafes.
- Key design considerations for the Marine Terminal include:
  - Taking advantage of views of the Burrard Inlet and North Shore mountains from passenger waiting and circulation areas
  - Creating an attractive edge to the Canada Place Extension when viewed from the Inlet
  - Comfortable and secure environment for all users
  - Weather protection and natural light
  - Universal accessibility

SPECIFIC REQUIREMENTS

- Port Metro Vancouver has indicated that the siting of the Marine Terminal should ensure a 125 metre clearance is maintained free of fixed physical obstructions from the eastern edge of Canada Place pier to avoid conflicts with cruise ship operations (Figure 24). Ferries can maneuver and dock within this clearance zone, subject to scheduling around cruise ship operations.

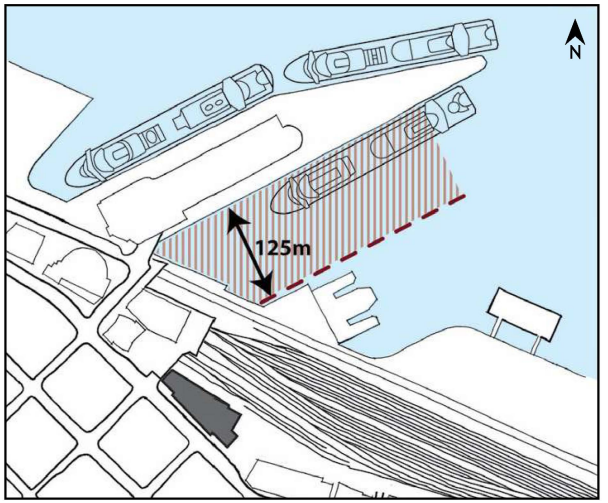


Figure 24: Required clearance for cruise ship operations.

Marine Terminal: Size and Connections

DIRECTIONS

- The Marine Terminal passenger concourse(s) should be large enough to comfortably accommodate projected passenger volumes, including peak demands, from SeaBus and Passenger Ferry services as well as the required supporting facilities and amenities.
- In addition to the dedicated connection to the Land Terminal, the Marine Terminal should also be connected to:
  - Canada Place Extension
  - Waterfront Road
- The connection between the Marine Terminal and Canada Place Extension should be located as far as possible from the intersection of Howe St. and Canada Place to avoid conflicts with traffic and pedestrian activity from cruise ship terminal.

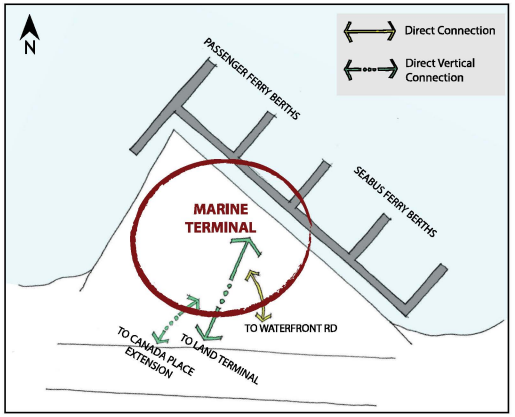


Figure 25: Functional diagram of Marine Terminal

3.2.2.3 *Air Terminal*

Air Terminal

DIRECTIONS

- Opportunities to integrate the Central Waterfront heliport as an Air Terminal within the Framework area should be explored. Potential options identified through preliminary investigations include:
  - A rooftop facility connected to the Land or Marine Terminal via elevator
  - A rooftop or dock facility in association with the Marine Terminal
- If the heliport cannot be integrated into the Framework area, measures to enhance connections between the transit interchange and existing heliport location should be implemented wherever feasible.

Brisbane Riverside Ferry Terminal, Brisbane, Australia

Helipad, Vancouver, BC

3.2.3 CPR Rail Yard

The placement of structural elements required to support development over the rail yard is expected to require the realignment of some of the freight rail tracks. The yard is an integral part of the rail network that supports the operations of the Centerm and Vanterm container terminals on the south shore of Burrard Inlet and other industrial rail traffic along the waterfront. CPR and PMV have indicated that the freight rail functions of the yard will be required for the foreseeable future and may need to be expanded over time to keep pace with growth in container traffic at the terminals. The City recognizes the importance of the CPR yard to the container terminals and therefore to the city, regional, and Canadian economies, as well as the efficiency and environmental benefits of transporting goods by rail.

CPR Rail Yard

DIRECTIONS

- Development within the Framework area should seek to maintain the capacity of the CPR rail yard, identifying measures to address any impacts on the capacity of the yard in consultation with CPR and PMV.

4. LAND USE AND DENSITY

This section is in two parts. The first part summarizes existing City policies relating to land use and density which are relevant to the Framework area. The second part outlines new land use and density Directions and Specific Requirements which support the City's vision for the creation of a dynamic new downtown waterfront extension within the Framework area.

4.1 EXISTING CITY POLICY

The existing city policies which address land use for the Framework area can be summarized as follows:

Downtown Official Development Plan (1975, amendments to 2009)
Covers The Station Building and the portions of the Framework area south of Cordova Street and permits hotel, light industrial, office, retail and other commercial, parking area and parking garage, parks and open space, public and institutional, social, recreational and cultural uses. The maximum density is 7.0 FSR gross.

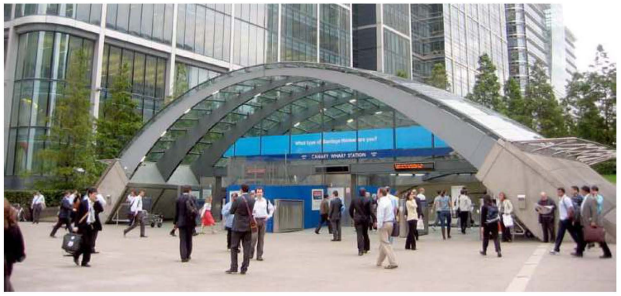
Central Waterfront ODP (1979)
The Framework area covers portions of two sub-areas identified in the ODP:

- Sub-area 3 – West of Seymour Street: Supports expansion of transportation role and introduction of commercial uses including retail, hotel and entertainment/cultural. The maximum density is 3.5 FSR gross, with office-commercial density not exceeding 3.0 FSR gross. This would result in a maximum of approximately 30,700 m^2 (330,500 ft^2) of additional floorspace (i.e. on land which is not yet developed) within the Framework area.
- Sub-area 4 – East of Seymour Street: Supports retention of port and rail uses and introduction of new urban uses wherever possible to create an exciting mixed use environment. Maximum density within the CPR rail yard prior to its relocation is 0.75 FSR gross, with office-commercial density not exceeding 0.35 FSR gross. This would result in a maximum of approximately 10,300 m^2 (110,900 ft^2) of additional floorspace (i.e. on land which is not yet developed) within the Framework area.

Central Waterfront Port Lands Policy Statement (1994)
Identifies a 'downtown-oriented area' covering the Framework area which encourages predominately downtown-related activities such as transportation, tourism, commercial and compatible housing.

Metro Core Jobs and Economy Land Use Plan - Issues and Directions Report (2007) and Proposed Downtown Policy Directions (2008)
The Issues and Directions Report identifies the Framework area as a prime location for job intensification with the potential to deliver much-needed triple-A office space by virtue of its proximity to the central business district and waterfront views. The Proposed Downtown Policy Directions anticipate that 102,000 m^2 (1.1 million ft^2) of job space could be delivered within the Framework area. The introduction of a variety of commercial support service uses in the Framework area, such as hotels, is encouraged. Mixed-use residential/commercial buildings may also be considered but only where they would serve to increase the delivery of job space.

Vancouver, BC.



Transit-oriented office space at Canary Wharf, London, UK.

4.2 DIRECTIONS AND SPECIFIC REQUIREMENTS

The following Directions and Specific Requirements apply to the portion of the Framework area that lies outside the Downtown Official Development Plan (i.e. north of The Station Building). With regard to other sites within the Framework area, the Sinclair Centre is covered by a CD-1 zoning, while The Station Building property and existing parkade site at 320 Granville is covered by the Downtown Official Development Plan, as well as policies that govern the types of land use and density that can be considered in rezoning.

4.2.1 Non-Residential Use

DIRECTIONS

- In order to optimize transit ridership and provide the necessary employment capacity in the downtown to 2021 (as per Metro Core Land Use Plan - Issues and Directions Report, 2007), land uses in the Framework area should emphasize non-residential "job space". Job space is delivered by all kinds of non-residential uses: office, hotel, retail, service, cultural, recreational, industrial (e.g. cruise ship terminals) and others.
- The Framework area should include a mix of non-residential land uses which contributes to a vibrant waterfront district that remains lively at evenings and weekends.
- Active retail and service uses should be located and configured to animate and provide visual interest to streets, public spaces, transit connections and the waterfront.
- While internal retail and service is appropriate in the transit concourse and connections, internal shopping malls should not be considered.
- New water-based uses which bring activity to the waterfront may be considered provided that they do not conflict with marine transit services or cruise ship operations.

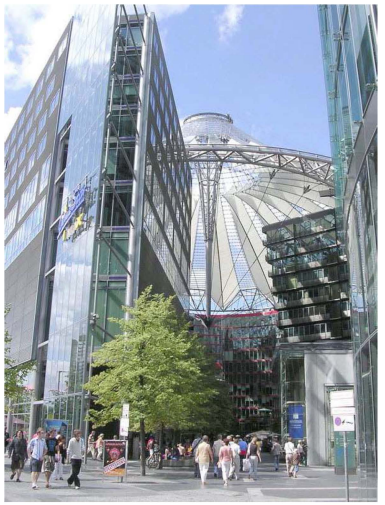
SPECIFIC REQUIREMENTS

- A minimum of 102,000 m^2 (1.1 million ft^2) of non-residential floorspace should be delivered on the sites outside the Downtown Official Development Plan (i.e. north of The Station Building). This could be made up of any type of non-residential use, noting that some types of internal public spaces (e.g. transit concourse, convention hall, etc) would not be considered to count fully towards the total.

4.2.2 Residential Use

DIRECTIONS

- If there is capacity on the developable sites beyond the Specific Requirement for non-residential uses, residential use could be considered within the Framework area.
- Given the noise associated with the nearby marine, rail and air transportation, any residential development should be subject to conditions that involve ongoing notification of future residents about the anticipated noise, including covenants registered on title.
- Given the limited developable acreage, the job space needs, and the nature of the Framework area, the City is unlikely to require inclusion of an on-site component of affordable housing. However, contributions towards affordable housing may be made through applicable Development Cost Levies, as well as possibly through Community Amenity Contributions (see Section 8 - Public Benefits below).



Sony Centre, Berlin, Germany.

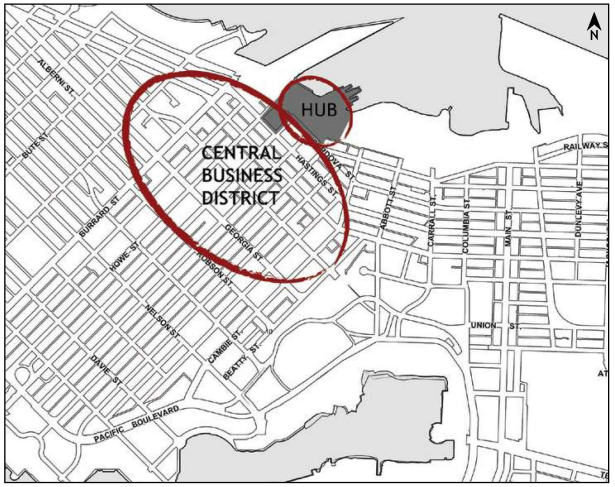


Figure 26: The Hub Framework area in relation to the central business district

4.2.3 Density

DIRECTIONS

- Floorspace on the developable sites within the Framework area should be maximized, within the building height and form directions discussed in Section 5 - Urban Design. As an order of magnitude, investigations carried out in the preparation of this document indicate that up to approximately 134,000 m^2 (1,442,000 ft^2) could be built on the sites within the Framework area outside the Downtown Official Development Plan (i.e. north of The Station Building).

4.2.4 Public Open Space

DIRECTIONS

- The most highly used public spaces within the Framework area will be the transit concourses and the waterfront walkway. However, other opportunities to create public open spaces at street level and on accessible podium levels should be sought to provide places for meeting, passive recreation and the enjoyment of water and mountain views. Given that a portion of the Granville Square plaza will be lost as a result of the Granville Street Extension, new open spaces which provide the same kind of amenity should be provided.

4.2.5 Parking Ratios

DIRECTIONS

- Parking ratios for each land use within the Framework area will be determined at the time of rezoning. While cognizant of market requirements, parking provision should be as low as possible to reflect the unique level of transit accessibility enjoyed by the Framework area, and to discourage automobile use. Payment-in-lieu, shared parking, and innovative Transportation Demand Management measures to reduce on-site parking demand will be encouraged.

Circular Quay, Sydney Australia.

5. URBAN DESIGN

This section is in two parts. The first part summarizes existing City policies relating to urban design which are relevant to the Framework area. The second part outlines new urban design Directions and Specific Requirements which support the City's vision for the Framework area.

5.1 EXISTING CITY POLICIES

The existing city policies which address building height and form within the Framework area can be summarized as follows:

Downtown Official Development Plan (1975)
Covers The Station Building and the portions of the Framework area south of Cordova Street and limits building heights to 91m (relaxable to 137m by the Development Permit Board).

Central Waterfront ODP (1979)
A variety of building heights and forms are encouraged, with a downward transition in height from the existing buildings on the northern edge of Downtown and Gastown to the water's edge. For Sub-area 3 (west of Seymour Street), slender building forms are preferred and height is limited to 70m, relaxable to 91m, measured from the existing track level. For Sub-area 4 (east of Seymour Street), the historic scale and character of Gastown should be respected, with new development limited to 18m in height as measured from existing track level. Existing street end views from Granville, Howe, Cambie, Carrall and Columbia streets are to be preserved.

Central Waterfront Port Lands Policy Statement (1994)
Advises locating higher buildings on the western part of the site, stepping down towards the east and towards the water's edge. The prevailing height in the "downtown-oriented" area (which corresponds to the framework area) should be between 46m and 75m. One landmark building close to the southerly edge of the site may be considered up to 91m. Built form should respect, frame and enhance existing street end views.

View Protection Guidelines (1989, amended 1990)
Building heights within the Framework area are limited by five Council-adopted View Cones which preserve views of the North Shore mountains from areas south of the downtown peninsula (see Figure 27). The most restrictive of these View Cones (from Queen Elizabeth Park) limits building heights over the whole Framework area to 124m above base elevation 3.5m (rail track level).

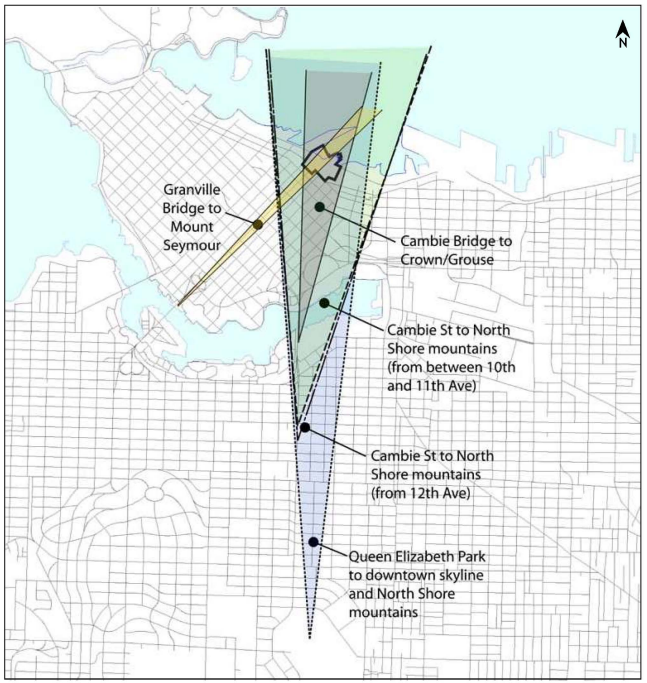


Figure 27: Council-adopted View Cones impacting the Framework area.

5.2 DIRECTIONS

5.2.1 Building Heights

DIRECTIONS

- Buildings that are higher than allowed under the Central Waterfront ODP and Central Waterfront Port Lands Policy Statement should be considered in the Framework area, subject to the height limits imposed by the Council-adopted View Cones. Some of the View Cones over the downtown are currently under review. Should this review result in changes to the height restrictions affecting the Framework area then the revised restrictions will apply.
- The heights of new buildings within the Framework area should seek to create a varied but coherent profile which reflects the following principles (see Figs 28, 29):
  - Building heights should step downwards from west to east to reflect the prevailing transition in building scale between Downtown and Gastown.
  - Building heights should step downwards towards the waterfront in the northern part of the Framework area to create a gradual transition from the downtown to the water's edge.
  - While opportunities should be sought to visually mark the transit interchange as an area of interest and importance in the city, taller buildings should be sufficiently set back from The Station Building to preserve its setting and prominence within the urban fabric.

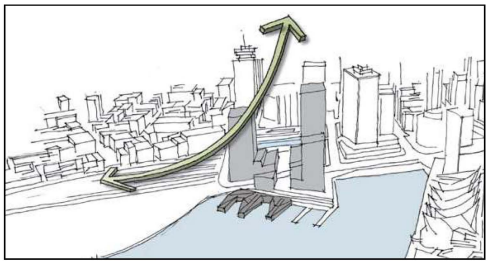


Figure 28: Building heights step down towards Gastown.

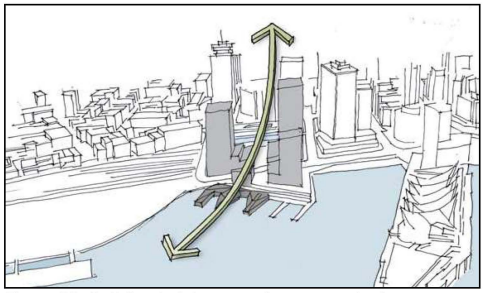


Figure 29: Building heights step down towards the water.

5.2.2 Views

DIRECTIONS

- Building placement within the Framework area should be such that the street-end views identified under Specific Requirements below are preserved. In addition, consideration should be given to preserving (see Figure 30):
  - The Cordova Connector street-end view.
  - The view down Seymour Street from Dunsmuir Street over The Station Building to the mountains.
- Opportunities to create or enhance public views of the Inlet, North Shore mountains, Canada Place, The Station Building and other landmarks from streets and open spaces within around the Framework area should be maximised.
- Wherever possible, private views of the Inlet and North Shore mountains from existing development in and around the Framework area should be preserved. Particular attention should be paid to views from The Station Building.

SPECIFIC REQUIREMENTS

- The Howe, Granville and Cambie street-end views adopted by City Council in the Central Waterfront ODP and Central Waterfront Port Lands Policy Statement should continue to be preserved (see Figure 30). Low-scale intrusions within these views (e.g. for transportation facilities or minor building/ landscape elements) may be considered as long as some view experience is maintained in each corridor of the water and mountains.

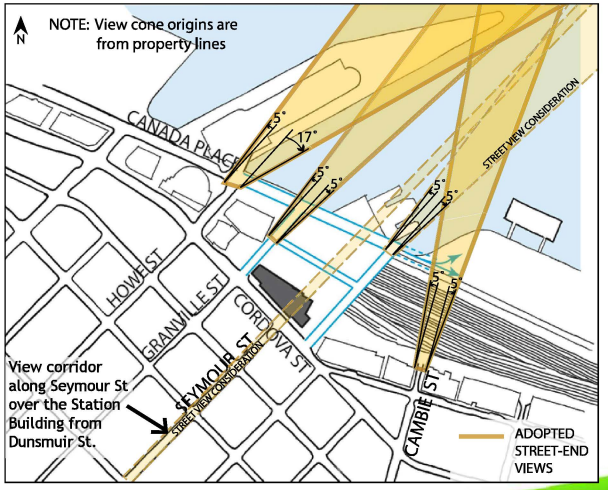


Figure 30: Street end views.

5.2.3 Heritage Preservation and Enhancement

DIRECTIONS

- The Framework area includes two Vancouver Heritage Register A listed and Municipally designated heritage buildings - The Station Building and the Sinclair Centre. The Landing Building, directly adjacent to the Framework area, is a Vancouver Heritage Register B listed, Municipally designated heritage building. The siting and design of new buildings within the Framework area should be carefully considered to ensure that the setting of these three significant heritage buildings is preserved and, wherever possible, enhanced.
- There are opportunities to enhance the fabric of the heritage buildings within the Framework area through appropriate alterations and removal of insensitive additions; these should be realised where possible. Specific opportunities include removal of the pedestrian overpass linking the Sinclair Centre with Granville Square, and improvements to the northern and western facades of The Station Building.
- Statements of Significance for the three Municipally designated heritage buildings will be needed to provide a comprehensive understanding of their heritage values prior to the City's consideration of rezoning or development proposals that could affect the fabric or setting of these buildings.
- Rezoning or development proposals within the Framework area are to include a heritage impact statement outlining how the impacts of new development on the three Municipally designated heritage buildings and the Historic Area of Gastown have been considered and addressed. Impacts to be considered could relate to a variety of issues including, but not limited to: physical alterations and additions; functional alterations; proximity, height and massing of new development; views; architectural character; materials; etc.

The Station Building 1930s.
(Photo by J. Spalding, Vancouver Public Library, VPL 31536)

The Landing Building, 1930s.
(Photo by W.J. Moore, City of Vancouver Archives Bu522.3)

Sinclair Centre, 1936.
(Photo by L. Frank, Vancouver Public Library, VPL 10965)

The Landing Building & The Station Building (background), 1940s.
(Photo by J.Lindsay, City of Vancouver Archives 1184-2081)

5.2.4 Building Siting and Design

DIRECTIONS

- The design of new buildings should reflect careful consideration of building form, shape, colour and materials in order to complement existing landmarks such as the heritage buildings and Canada Place.
- Buildings should be sited and oriented to address and provide definition to streets and open spaces.
- Terracing, setbacks and articulation may be useful to create view opportunities and/or reduce apparent building massing.
- Taller buildings are anticipated within the Framework area, but careful attention should be paid to tower design, including:
  - floorplate size, shape and terracing to reduce building bulk
  - base treatment
  - relationship to lower building forms
  - orientation
  - top or roof treatment
  - façade articulation
- The design of taller buildings should pay careful attention to their impacts in terms of downdrafts and wind on nearby streets and public open spaces.
- Building siting, massing and design should seek to minimise shadowing of public open spaces, including the waterfront walkway/bikeway.

5.2.5 Open Space and Public Realm Design

DIRECTIONS

- The open space network should be configured and designed to:
  - take full advantage of the waterfront setting through enhanced public access and views, and;
  - provide continuity with existing open space and pedestrian patterns in the adjacent areas of the downtown.
- Streets and open spaces should be clearly defined and contained with buildings whose grade-level elevations provide pedestrian-scaled activity, interest and security.
- The design of the public realm should seek to establish a unique and cohesive sense of place and identity for the Framework area, possibly reflecting the area's historic transportation and maritime functions. The public realm should be comfortable, beautiful and durable, with a high quality of materials, street furniture, public art, signage, lighting and landscaping.
- Streetscape design should make provision for sustainable initiatives to manage surface water runoff wherever feasible.
- Streets where transit stops are anticipated should ensure that streetscape design does not conflict with unloading areas and that opportunities for weather protection are maximised.

5.2.6 Parking and Loading Treatment

DIRECTIONS

- Parking structures should be located below street level wherever possible, noting that available space is limited. If parking structures are located above street level they should be wrapped by active land uses to avoid blank building frontages onto the public realm, or alternatively facade design should be carefully considered to avoid the 'car park' appearance.
- Parking, loading and service access points should be located and designed so as to minimize their impact on building frontages, streets and public open spaces.
- Loading and servicing needs of new development sites are to be addressed off-street.

South Granville St., Vancouver BC

6. PUBLIC BENEFITS

6.1 EXISTING CITY POLICY

When planning any major redevelopment area, or considering major rezonings, the City develops a public benefits strategy.

"Public benefits" is a broad term that covers a wide range of amenities:

- park land acquisition and park improvement
- community centres
- childcare facilities
- affordable housing and replacement low-cost housing
- transportation improvements, particularly for pedestrians, cyclists, and transit
- cultural facilities
- heritage preservation (including receiving transferred density from heritage sites)
- library facilities

A public art contribution is also a requirement of major rezonings, with the contribution set at a fixed amount.

A Public Benefits Strategy includes an assessment of the amenities needed to serve the new employment or resident populations. This is guided by the adopted service standards, strategic facility or service plans, and/or conceptual project designs that have been developed by the various responsible City departments.

The Public Benefits Strategy also assesses how the benefits could be funded and delivered. Public benefits can be funded in a number of ways, the main ones being:

- City capital funding.
- Development Cost Levies (DCLs): a fixed levy on all new development which may pay for growth-related projects (not past deficiencies). The funds raised by DCLs may be spent on a limited number of types of improvements (park, replacement low cost housing, childcare, and infrastructure) and are allocated in fixed percentages which Council has established.
- Community Amenity Contributions (CACs): voluntary contributions made by rezonings, which may address either growth impacts or past deficiencies. A CAC may be in kind or in cash, and can be used for a broader array of items. CACs may or may not be afforded by all development projects, and consideration is always given to maintaining the economic viability of the project.
- Senior government contributions.

Even with these sources, it is usually not possible to meet 100% of the public benefit demands in all categories. The Public Benefit Strategy therefore sets out the priorities for which public benefits should be delivered, and through what resources. Besides the estimated needs and possible financial sources, considerations include the deficiencies that may already exist in or around the area, the feasibility of delivery of capital projects, and the unique opportunities that may exist on particular sites.

Note that developments are also normally responsible for paying any "direct costs", i.e. road and infrastructure improvements, traffic signals, etc. These are not considered public benefits.

The portion of the Framework area south of Waterfront Road is part of the Citywide DCL area, and development will be subject to DCLs. The area north of Waterfront Road is covered by alternative arrangements for funding amenities and infrastructure (i.e. the "direct costs"). These arrangements were put in place through the Central Waterfront Port Lands Policy Statement (1994), are out of date, and will need to be reviewed.

6.2 DIRECTIONS

DIRECTIONS

- At the time further planning and/or rezoning occurs in the portion of the Framework area south of Waterfront Road a public benefits strategy should be developed. However, it should be noted that the anticipated challenges facing the economics of development in the Framework area suggest that a significant CAC is unlikely.
- At the time further planning/and or rezoning occurs in the PMV property north of Waterfront Road, a revised strategy should be developed for financing the amenities and infrastructure.

St. Pancras Station statue, London UK

7. ENVIRONMENTAL SUSTAINABILITY

7.1 EXISTING CITY POLICY

The entire thrust of the City's vision for the Framework area towards improving the efficiency, capacity, and experience of transit at one of the critical points in the transportation network represents a major contribution toward environmental sustainability. However, certain more specific environmental policies also apply.

The City's green building standards are evolving, and the project will be expected to meet the standards in place when rezoning occurs. The most recently adopted City policy in relation to green buildings and sustainable infrastructure is contained in the Council-adopted EcoDensity Initial Actions (June 2008), summarized below:

EcoDensity Action A-1: Rezoning Policy for Greener Buildings
Requires that all rezonings achieve a minimum equivalent of LEED™ Silver, with the intent of raising the equivalency requirement to LEED™ Gold by January 1st 2010.

EcoDensity Action A-2: Rezoning Policy for Greener Larger Sites
Establishes that, in addition to the minimum requirements of Action A-1, all rezonings that involve sites of two acres or more will require:

- A district energy system, if the business case is viable.
- Site design to reduce energy needs, facilitate passive energy solutions, incorporate urban agriculture opportunities, and replicate natural systems where feasible.
- A sustainable Transportation Demand Management Strategy.
- A sustainable rainwater management plan.
- A solid waste diversion strategy.
- On sites accommodating housing, a range of unit types and tenures to enhance market and non-market affordable housing.

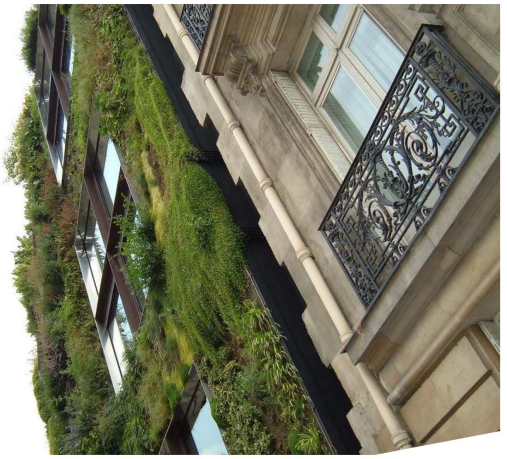
Provincial regulations regarding soil quality will also apply. Site profiles, Ministry of Environment approval, and legal agreements may be required for rezonings, subdivision, or development application.

Development adjacent to, in or over the water area will require review and approval by the Burrard Environmental Review Committee.

7.2 DIRECTIONS

DIRECTIONS

- New development within the Framework area will be expected to meet or exceed the City's applicable standards for green buildings and sustainable infrastructure in place at the time of rezoning; as well as meeting Provincial soils regulations and BERC requirements.



Musee du Quai Branly, Paris France. Photo by J. Woolliams

8. ILLUSTRATIVE CONCEPT PLAN

8.1 INTRODUCTION

This section includes a series of drawings depicting an Illustrative Concept Plan which represents one way in which the Policy Directions and Specific Requirements contained within this Framework document could be expressed.

The Illustrative Concept Plan is included to provide a more vivid impression of the opportunities presented by the City's vision for the Framework area. It should be stressed that the Illustrative Concept Plan is for illustrative purposes only and that a variety of alternative approaches to the layout and form of development could be considered in further planning work which meet the intent of the Directions and fulfill the Specific Requirements.

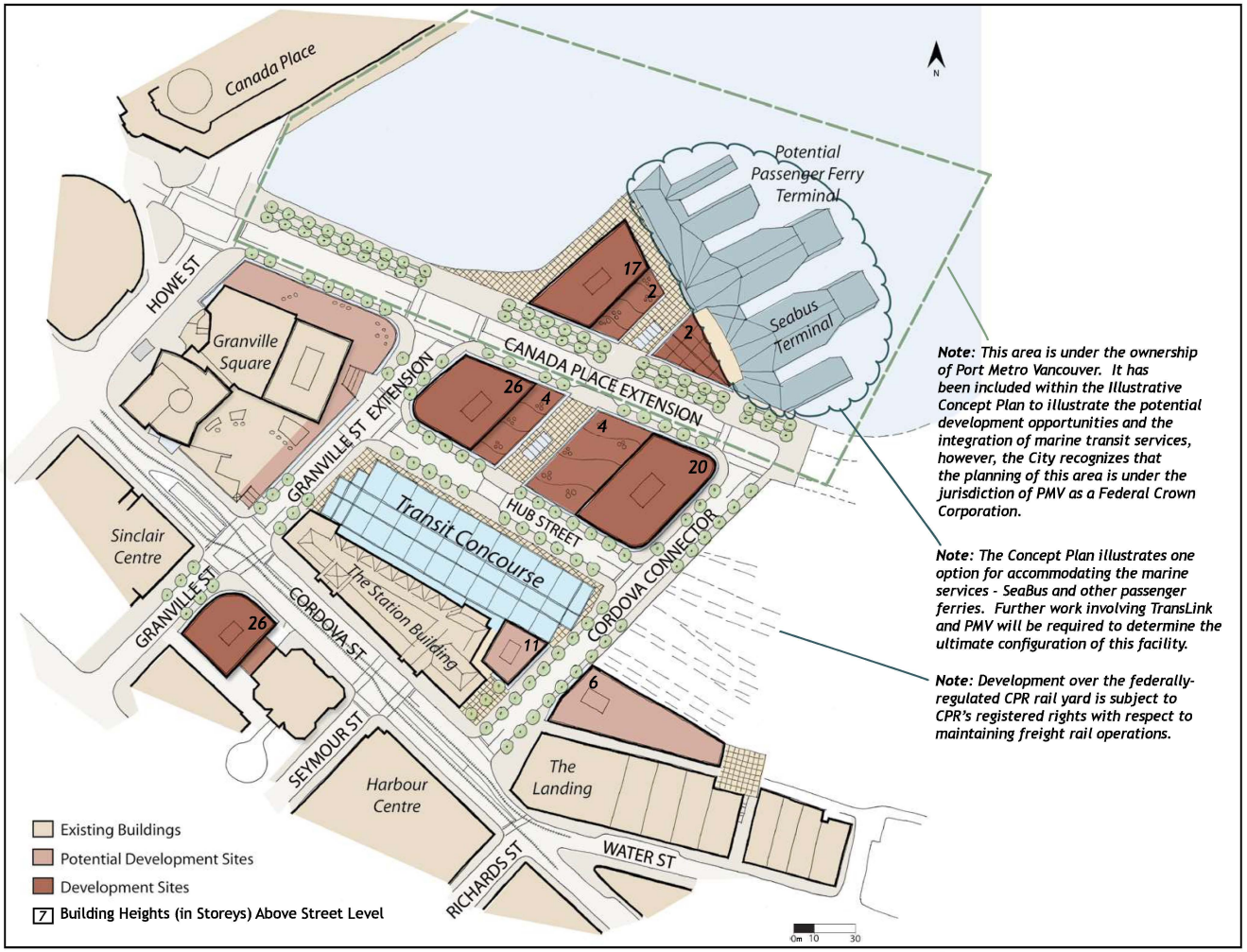


Figure 31: Illustrative concept plan

STREET LEVEL

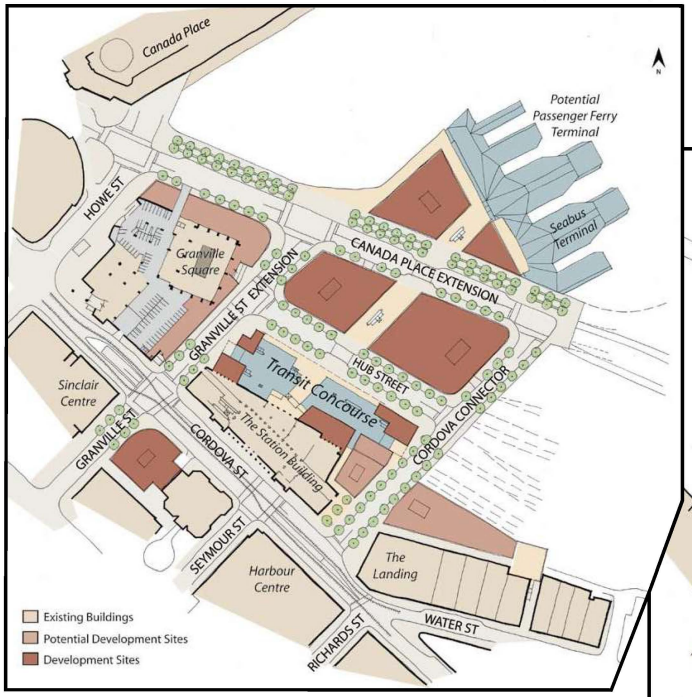


Figure 32: Illustrative plan, street-level

CONCOURSE LEVEL

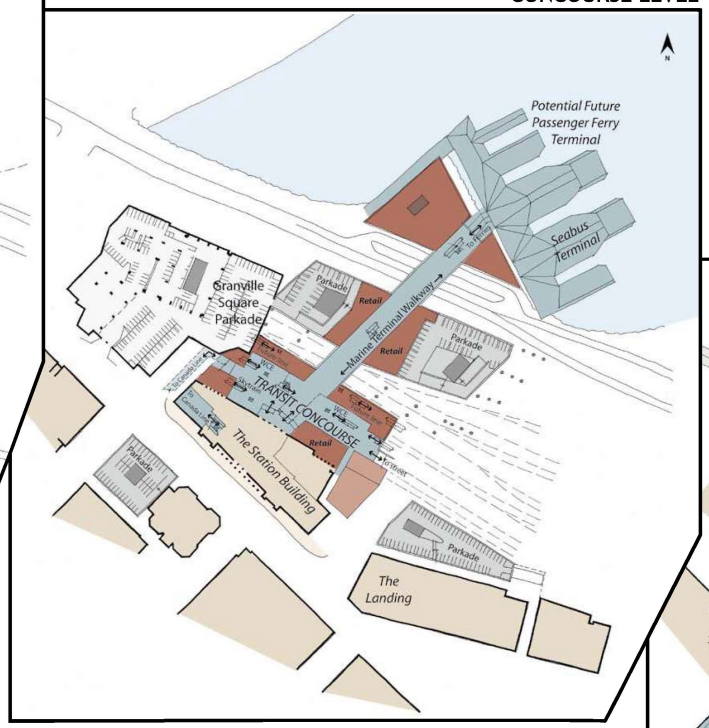


Figure 33: Illustrative plan, concourse-level

TRACK LEVEL

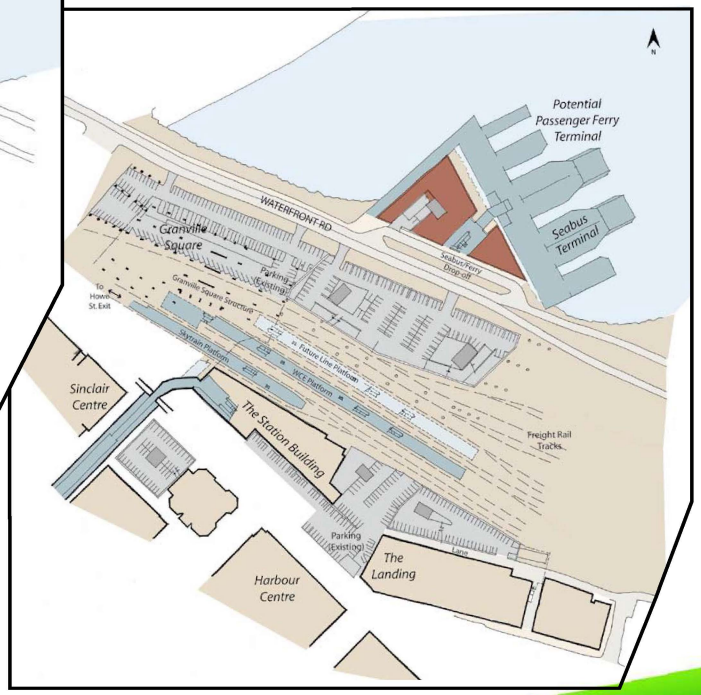


Figure 34: Illustrative plan, track-level

These plans illustrate one way in which the transit infrastructure and new development could be configured at the three key levels: Street Level, Concourse Level, and Track Level. A variety of alternative approaches could also be considered. More detailed discussion and technical work, involving the landowners, TransLink, CPR, and the City, will be required to determine the configuration of these plans.

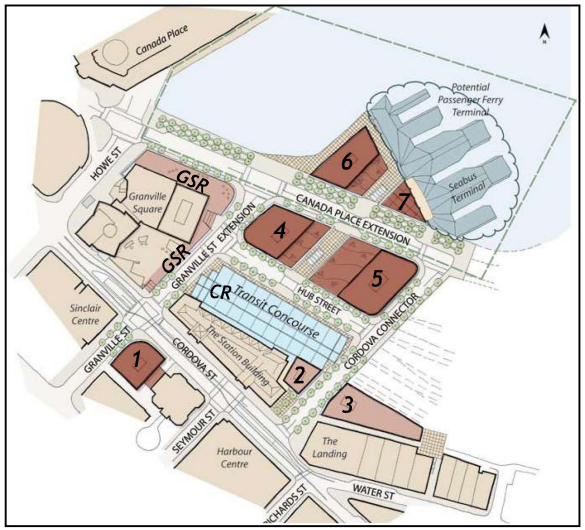


Figure 35: Key plan for height/floorspace table.

Site (See Plan Above)	Indicative Building Height (storeys above street level)	Approximate Floor Area* (m^2)
1	26	30,300
2	11	6,100
3	6	11,100
4	26	39,000
5	20	46,600
6	17	29,500
7	2	2,800
GSR (Granville St Retail)	1	2,200
CR (Concourse Retail)	N/A	2,800
TOTAL	**-**	**170,400**
Total outside Downtown ODP (excludes Sites 1 and 2)	**-**	**134,000**

* Includes below street level commercial floorspace but excludes parkade areas.

Figure 36: Table of floorspace and building heights

Figure 37: 3D rendering, view from Burrard Inlet

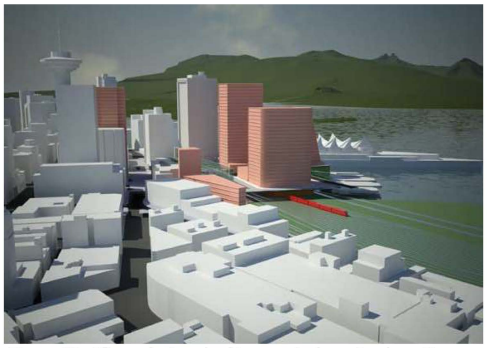


Figure 38: 3D rendering, looking west along Cordova St.

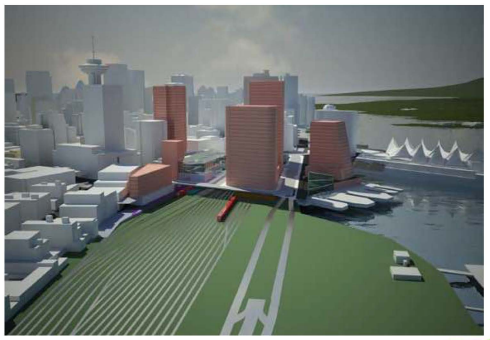


Figure 39: 3D rendering, looking west along Canada Place Extension

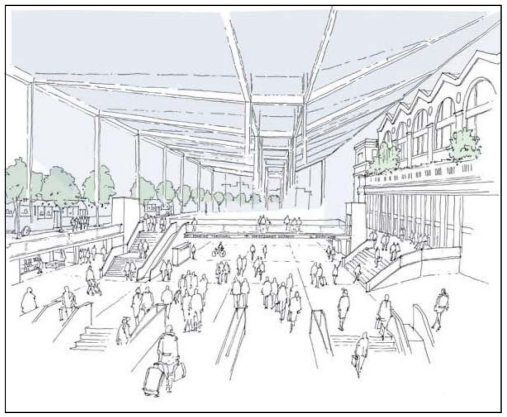


Figure 40: Artist's Rendering of Transit Concourse

Figure 41: Artist's Rendering of the Hub from Burrard Inlet

Figure 42: Artist's Rendering of Granville Street Extension

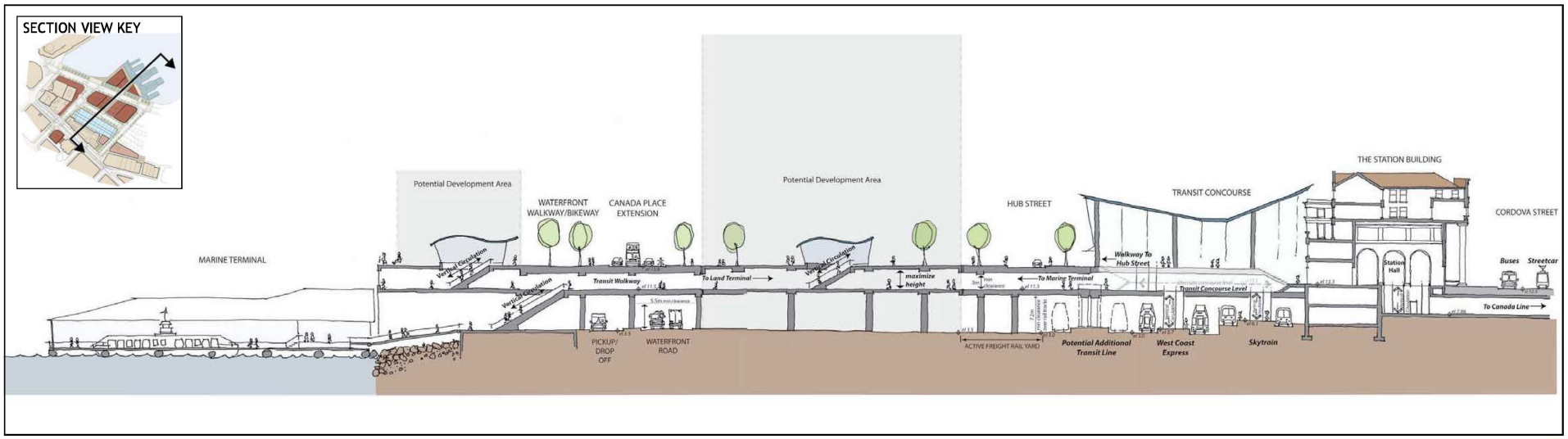


Figure 43: Illustrative section view through Framework area

9. IMPLEMENTATION AND PHASING

9.1 GUIDANCE ON ISSUE RESOLUTION

The Hub Study has established a vision for the Framework area which has many benefits for the city and the region as a whole, however, it has also identified several significant and complex challenges to the implementation of that vision. In summary, these challenges take a number of forms, including:

- Complex engineering issues, such as structural design challenges, impacts of construction over the CPR rail yard on rail capacity, development site servicing, and mitigation of risks from dangerous goods movement in the rail yard.
- The expense of developing over the rail yard relative to expected development revenues.
- The difficulties inherent in the need to coordinate interrelated development between multiple landowners and stakeholders.

It is generally in the interests of the Framework area landowners to collaborate towards the resolution of these challenges as development potential in the area will otherwise remain severely limited. One of the keys to moving forward will be to identify a "champion" for the project. This could be either a single party, or a consortium, with financial and organizational capacity for multi-year involvement, lengthy negotiations and significant financial investment at the "front end". The City of Vancouver cannot function as this champion due to its regulatory role, however, the City is committed to participating as helpfully as possible in the realisation of the vision established in this Framework. It is likely that senior levels of government will also need to become involved to support and facilitate development in the Framework area.

The purpose of this section is to provide summary information and guidance on these key challenges, which will need to be further studied and resolved before development in the Framework area can be undertaken. Further information on each of these issues is contained within the Central Waterfront Hub Technical Document.

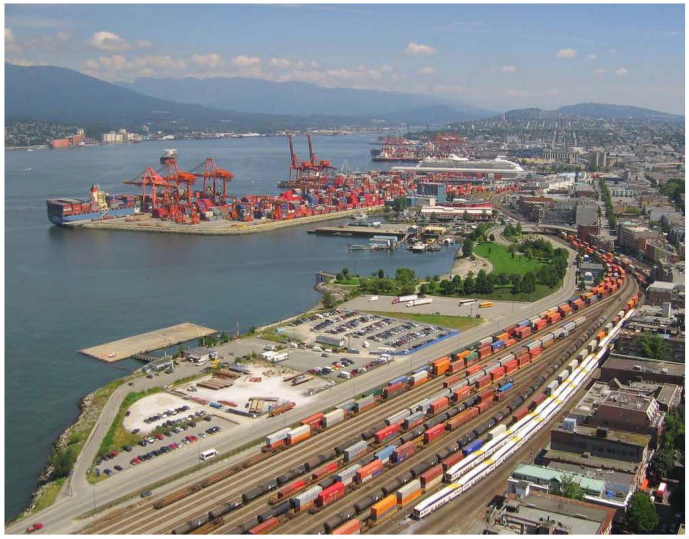
9.1.1 Structural / Construction Challenges

Several structural design and construction challenges are presented by the need to develop over the active freight rail yard and existing transit operations. As part of the preparation of this document a structural feasibility study was undertaken to ensure that it is possible to construct the transportation interchange, extend the street network and create development sites within the Framework area. This study determined that construction is structurally feasible, however, more detailed work will be required to resolve issues in the following areas:

- Offsetting the impacts of development on the capacity of the CPR rail yard
- Minimizing impacts on transit services during construction
- Structural implications resulting from infrastructure ownership
- Water and Sewer Servicing

9.1.1.1 Impacts on Capacity of CPR Rail Yard

The CPR rail yard is used as a support facility for rail operations related to the Centerm and Vanterm container terminals on the south shore of the Burrard Inlet. It also provides an overflow facility for other industrial rail traffic along the waterfront. Maintaining the functions and capacity of the rail yard is critical to the flow of goods through the container terminals and is therefore of major importance to the city and regional economies. CPR and PMV have indicated that the rail yard will be required over the long term and that the capacity of the yard may in fact have to be increased to meet future growth in container throughput at Centerm and Vanterm.



Central Waterfront, Vancouver BC

The requirements for building over the rail yard are addressed in an agreement initiated in 1985 between CPR and Marathon Developments which established a statutory right-of-way for rail operations within the yard. This is referred to as the "Front Yard Agreement" and the rights and responsibilities contained within it have been transferred to the current owner, the Vancouver Whitecaps. In summary, the Front Yard Agreement allows for development to occur over the rail yard (at least 7.2m above the top of the rails) including the necessary foundations and columns placed within the yard, provided that there is no loss in the quality of the rail facility. This implies that any rail capacity that is lost due to column placement or other disruption caused by the development would need to be replaced.

The structural feasibility study included a preliminary investigation of the impacts on the rail yard likely to result from the development anticipated in this framework document, using the Illustrative Concept Plan as a basis for the analysis. It was initially thought that some portions of the rail tracks would be able to pass below the development sites, however on further exploration it was determined that the required structural components for earthquake resistance would preclude the ability to maintain rail lines under the buildings. The study concluded that there would be a loss of up to one third of the existing rail track length within the yard to accommodate the development in the Illustrative Concept Plan.

It may be possible to offset some of this loss through the provision of additional tracks to the north of the yard, however, these additional tracks may be required just to address additional demand for yard capacity resulting from the anticipated increase in container throughput at the port terminals. Further work will need to be undertaken to examine ways to maintain the capacity of the yard, including:

- Further analysis to explore the potential to reduce the impact of development on the rail yard e.g. through alternative structural design and/or reduction in building footprint.
- A comprehensive study of options for offsetting capacity losses within the yard and increasing capacity at other locations within the Burrard Inlet South Shore rail system.

This work will need to involve the developer(s) of the sites over the rail yard in close collaboration with CPR and PMV, and will need to include the development of a workable operating plan for the yard. Further work will also be required to determine how to mitigate temporary impacts on the rail operations during construction. Addressing these issues to the satisfaction of all parties is expected to be a major challenge.

9.1.1.2 Minimizing Impacts on Transit Services During Construction

One of the challenges of construction in the framework area is minimizing impacts on existing transit services. It is anticipated that construction could occur with minimal disruption to the operations of SeaBus, Canada Line and West Coast Express. However, some disruption to SkyTrain service and the linkages between transit modes are probable during certain phases of construction. Detailed discussions between TransLink and the developer(s) will be required to determine how these impacts could be mitigated.

9.1.1 3 Structural Implications of Infrastructure Ownership

Typically any structures that are owned and maintained by the City are required to be structurally independent from private infrastructure. The structural analysis undertaken for this framework document assumed that this would be the case. With respect to the street viaducts over the rail yard, structural independence requires an increased number of columns to extend down to the rail yard, which has additional impacts on the tracks below.

Further discussion between the City, TransLink and landowners is needed to determine whether the transit infrastructure will also need to be structurally independent from City street viaducts. The structural analysis undertaken for this document assumed that structural independence would be required.

9.1.1.4 Water and Sewer Servicing

City streets are typically used to accommodate utilities serving adjacent development. However, the Framework area street network will be built on viaducts, which can be problematic for locating sewer and water services due to space constraints, risk of freezing and the desire to create a looping system to ensure service can be maintained if problems occur from one direction. Further work will be needed to fully explore the options for providing utilities to serve new development within the Framework area. This may require portions of Waterfront Road to become City-owned to provide for utility space, as is the case with development to the west of the Framework area where roadway viaducts are present.

9.1.2 Development Funding

The Hub Study included a preliminary financial analysis of potential development within the Framework area, using the land use and floorspace figures illustrated in the Illustrative Concept Plan as its basis. In order to simplify the analysis it was assumed that a single entity (e.g. a development consortium) would build the street and public transit infrastructure and sell the development sites which are created.

The structural feasibility study provided preliminary estimates of the costs of providing the infrastructure in the Framework area - including the street viaducts, transit concourse shell, site preparation, soft costs and contingencies. The study indicated that these would be in the order of $130M (in 2008 dollars, with an accuracy of -15% to +30%). It is important to note that some costs were not included in the analysis as they are currently difficult to quantify with any degree of accuracy. The most significant of these are likely to be the costs associated with: mitigation measures to address impacts on the capacity of the CPR rail yard caused by the development, provision of utilities and services, and environmental remediation.

A net present value financial analysis indicated that, based on the estimated revenues from the development contained within the Illustrative Concept Plan, there would be a significant shortfall in meeting the costs of the street and transit infrastructure.

The financial analysis undertaken as part of the Hub Study was a highly preliminary, 'order of magnitude' exercise based on cost and revenue estimates and assumptions that are subject to considerable variation, however, some general conclusions can be drawn, as follows:

- Revenues generated from private development within the Framework area (as indicated by the Illustrative Concept Plan) will likely not be sufficient to cover the costs of the street infrastructure needed to service the new development sites, which is the City's typical expectation in major development projects.
- As a result, development revenues are highly unlikely to be able to make a contribution towards the delivery of the public transit infrastructure.
- The high costs and significant market risks associated with the development would make it extremely challenging for a single, private enterprise to undertake.

These conclusions suggest that the realisation of the City's vision for the Framework area will require government involvement and support, including public funding for infrastructure to supplement contributions from private development revenues. This government support would be instrumental in the delivery of significant public benefits, including a regionally important transportation interchange; new job space capacity in downtown Vancouver; and development of a critical section of the downtown waterfront, which would in turn facilitate development of the adjacent Central Waterfront Port Lands.

The next stages of work for the Framework area will need to include investigation of potential City, Provincial and Federal sources of support and funding for development, as well as discussions involving the landowners and other interested parties (e.g. the three levels of government, CPR and TransLink) aimed at creating an appropriate model for the coordination of public and private endeavours towards the goals set out in this document.

9.1.3 Dangerous Goods

A wide variety of goods are moved through the rail yard, from regular household products to industrial goods, some of which are identified as 'Dangerous Goods' by Transport Canada, the agency responsible for regulation, containment, handling and identification procedures.

There are a number of procedures currently in place to reduce the risk of incidents involving dangerous goods, including:

- Emergency Response Assistance Plans (ERAPs) - These are required for the most potentially harmful dangerous goods such as explosives, flammable substances and toxic gases which may present widespread hazards in the event of an accident. An ERAP outlining the actions a shipper would take in the event of an accident is approved by Transport Canada before a shipment containing Dangerous Goods is authorized.
- Cargo Screening: The Canadian Border Services Agency provides cargo screening at the Port of Vancouver, to detect dangerous goods and contraband on all containers before they leave the terminal.
- Security: PMV employs various technologies to enhance the physical security on and around Port properties, including intelligent fencing, optical intrusion detection devices, video surveillance and thermal imaging equipment to provide automated threat identification.
- Container inspections: Containers are inspected as they come off the cargo ships for imports and before they are loaded with items identified by Transport Canada as 'Dangerous Goods' for exports. Tank cars containing liquids or gases are constructed using double-walled steel and regularly inspected by CPR to prevent leaks.

In 2008 the City of Vancouver's Office of Emergency Management undertook a city-wide Hazard Risk and Vulnerability Assessment. This assessment was completed with hazard experts and stakeholders from within the City of Vancouver and outside organizations providing input to determine the likelihood and expected impacts of hazard events through hazard ranking workshops. As part of these workshops, the likelihood of an incident relating to dangerous goods transported by rail was determined to be low (1001 years +).

Nevertheless, concern over the risks posed by dangerous goods has been raised by City Council and members of the public, therefore, a study by a qualified professional will be required to assess the risks posed to new development in the Framework area by dangerous goods movement within the rail yard. This study should include identification of all potential hazards and quantification of the risks associated with each in terms of consequences and likelihood. The study should also take into consideration CPR's 'common carrier' obligations to transport Dangerous Goods. Based on the results of this study, mitigation measures and/or revised emergency management procedures may be required to address risks to new development within the Framework area to the satisfaction of the City's Office of Emergency Management.

9.1.4 Granville Street Extension

The extension of Granville Street from Cordova to the Canada Place Extension is of fundamental importance to the City's vision for the framework area and as such it is identified as a Specific Requirement within this document. The key benefits of the Granville Street Extension include:

- Enabling the creation of a complete street network within the Framework area to facilitate efficient vehicle circulation.
- Enabling a direct link between the Hub and Granville Street, a significant downtown bus corridor.
- Provision of an additional entry/exit point for the Framework area street network to supplement the constrained intersections at Cordova/Cordova Connector and Howe/Canada Place Extension.
- Opening up views of the Burrard Inlet and North Shore mountains at the end of one of Vancouver's principal streets.
- Provision of a major pedestrian link between downtown and the waterfront.
- Significant enhancement of the fabric and character of The Station Building by removing the insensitive addition of the Granville Square parkade from its western façade.

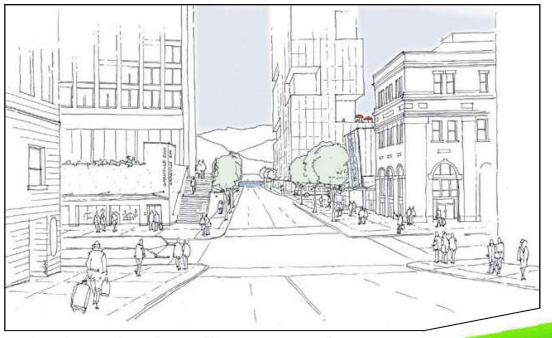
The City commissioned a study to assess the options for the extension of Granville Street in 2003 (see Central Waterfront Hub Technical Document). Based on the findings of this study, the City concluded that the 'mid-level' option was preferable. This option would involve the removal of part of the P1 parking level at Granville Square to accommodate the new roadway, which would result in the loss of approximately 150 parking spaces. While acknowledging the potential for disruption and loss of parking revenue to the Granville Square property owners (Ontrea Inc) and tenants caused by the street extension, the City believes that the negative impacts could be significantly mitigated through:

- Replacement of the lost parking spaces in new development within the Framework area.
- Creation of a new entrance to the Granville 200 tower from the Granville Street Extension, thereby providing it with a Granville Street 'address' and excellent access to the proposed transit interchange.
- Provision of new retail space at Granville Square along the Granville Street Extension (which would also mask the parkade edge and animate the street).
- Provision of an improved stairway connection up to the Granville Square plaza from the Granville/Cordova intersection to better integrate this space with street level.

Nevertheless, there is no existing obligation (e.g. a statutory right-of-way) for the owners to allow the street extension. Extensive dialogue will be needed between the City and Ontrea Inc (Cadillac Fairview Corporation Ltd), as well as the developer(s) of the Framework area, to explore all available mechanisms, design solutions and mitigation measures to enable the extension of Granville Street to be realised.

Granville Street, 1940s.
(Photo by J. Lindsay, City of Vancouver Archives CVA1184-3447)

Granville Street, 2008



Artist's impression of Granville Street Extension

9.2 PHASING

The nature and scale of development planned for the Framework area suggests that a phased approach is likely, however, the number, sequence and timing of individual phases is uncertain at this stage. Recognizing this uncertainty, the Framework document establishes broad principles to guide the phasing strategy that will emerge through subsequent work. The following sets out general phasing principles as well as guidance for securing the delivery of the key transit facilities and other infrastructure required within the Framework area in tandem with other new development.

General Planning Principles

- The phasing of development within the Framework area should ensure that the transit interchange is delivered concurrently with new development.
- All incremental changes to the existing transit interchange, including the introduction of new transit facilities and modifications to existing facilities, should be planned to fit into the overall vision for the future of the transit interchange established in this document.
- Development phasing should seek to minimise disruption to both transit and freight rail operations.
- Each phase should be complete and self-sufficient in terms of the infrastructure and parking requirements of that phase.
- Development phasing should ensure efficient implementation of the infrastructure and utilities required to support new development.
- Development phasing should seek to minimize disruption caused to existing businesses and residents in the area by construction activities.

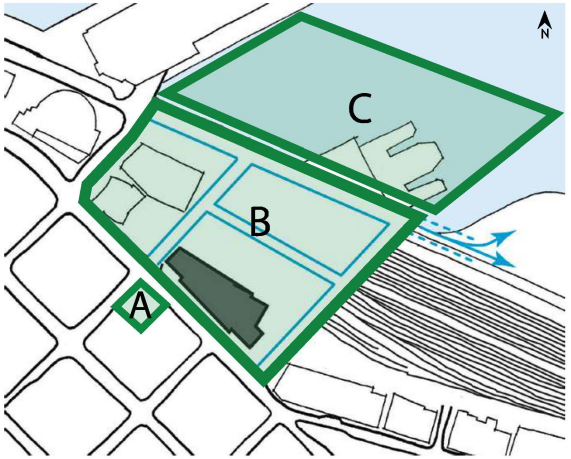


Figure 44: Framework area sub-areas

9.3.1 Delivery of Transit Facilities and Other Infrastructure

Figure 44 divides the Framework area into three sub-areas. Figure 45 identifies the transit facilities and other infrastructure that should be implemented concurrently with the development of each sub-area. It should be noted that Figure 45 only addresses the phasing of development and infrastructure; reference should be made to section 9.1.2 for information relating to infrastructure funding.

SUB-AREA	TRANSIT FACILITIES	OTHER INFRASTRUCTURE
A Granville/Cordova Parkade site	- n/a	- Utilities and services infrastructure as required to serve new development.
B Cordova Street to Canada Place Extension	- Land Terminal (concourse and transit mode connections). - Land-Marine Terminal connection.	- Framework area street network: Granville Street Extension, Cordova Connector, Canada Place Extension, Hub Street. - Utilities and services infrastructure as required to serve new development.
C North of Canada Place Extension	- Marine Terminal - If Sub Area C precedes Sub Area B, an assessment will be made of the elements of the Land Terminal required to support development in Sub Area C. These elements will be required concurrently with Sub Area C.	- Utilities and services infrastructure as required to serve new development. - If Sub Area C precedes Sub Area B, an assessment will be made of the elements of the Framework area street network required to support development in Sub Area C. These elements will be required concurrently with Sub Area C.

Figure 45: Transit facilities and other infrastructure required with sub area development.