

Appendix 1A: Engineering Additional Information & Submission Forms

Council Policy relating to Engineering Basic Capital Budget

Streets

Transportation

In 1997, the Vancouver Transportation Plan was approved by Council; subsequent to this, Council also approved the Downtown Transportation Plan, Vancouver Transit Strategy, and Vancouver/UBC Area Transit Plan. The policies created by these plans provide priority for pedestrians, bikes and transit while recognizing a need to improve goods movement and safety in existing corridors. Many of these policies have Capital Budget implications.

Bicycles/Greenways

The Clouds of Change Report (1990), CityPlan (1995), the Vancouver Greenways Plan (1995), the Vancouver Transportation Plan (1997), the Bicycle Plan (1999) and the Downtown Transportation Plan (2002) establish the City's policy prioritizing pedestrians and promoting and encouraging cycling as a transportation alternative. Greenways also address the growing need of communities to have a voice in the design and use of the urban landscape.

Sidewalks

Council policy identifies sidewalks as a high priority; this includes the following:

- Establish and maintain a sidewalk network which includes sidewalks on both sides of all blocks;
- Establish priorities for completion of the sidewalk network based on sidewalk classifications which include transit, pedestrian collector, higher zoned and local residential routes;
- Expedite completion of sidewalks on all transit routes by 2007 and on all arterial streets by 2009.

Neighbourhood Traffic Calming

In May 1997, Council approved the Vancouver Transportation Plan that highlighted the need to mitigate the effects of traffic in local neighbourhood areas and to give priority to streets and neighbourhoods where traffic impacts are most serious.

Street Lighting

The Safer City Report (1993) approved by Council indicates the importance of making the public feel secure. This involves taking proactive measures to provide appropriate light levels on streets and at bus stops to assist in the protection of citizens from theft and violence. The Infill Lighting Program funds the improvements to low levels of lighting on residential streets and around bus shelters.

Sewers & Drainage

In the early 1970's, Council approved the policy of separating sanitary and storm sewers, starting in the West End and Downtown areas, for the purpose of reducing and eliminating combined sewer overflows (CSOs).

In 1981, this policy was reaffirmed with the adoption of the 1% Lifecycle Replacement policy for sewer mains as part of the Sewers Long Range Capital Plan.

Both of the previously mentioned policies were reaffirmed in the 1991 Policy Report on Vancouver's "Design and Service Level Standards for Sewer Collection Infrastructure," and the current Capital Plan provides funding to continue this long-range plan.

In 2002, Council approved the regional Liquid Waste Management Plan (2002 LWMP) which continues the 1% Replacement program in order to provide continuous CSO reductions, with the goal of the elimination of CSOs by 2050.

Waterworks

In September 2008, Council approved the 2009-2011 Waterworks Capital Plan. The Capital Plan focuses on the proactive replacement of aging infrastructure, water system upgrading to keep pace with development, emergency preparedness, technology upgrades, and water quality improvement work.

Sustainability

In April 2002, the City adopted a formal position, definition, and principles on sustainability to guide the City's work considering environmental, economic, and social impacts.

The focus of the 2009 Engineering Capital Budget is the rehabilitation of existing infrastructure and the implementation of programs and projects related to the Council-approved Transportation Plan and Council's resolution for staff to examine and recommend measures to minimize the impacts of climate change.

Sustainability Implications

Sustainable practices and technologies have been incorporated into many aspects of the planning, design, and constructions processes for capital works within Engineering Services.

Projects in the Streets program highlight sustainable modes of transportation in accordance with the Transportation Plan. Methods to increase permeability, such as installing infiltration galleries/catch basins and using permeable materials, are continually being investigated.

The majority of the Sewer and Water programs are based on lifecycle replacement of infrastructure, which supports economic sustainability. Within the Waterworks program, water conservation initiatives such as recirculation systems for City-owned ornamental water features complement the main distribution replacement program which replaces leak-prone unlined cast-iron pipe with contemporary concrete-lined ductile iron pipe. The water quality program improves drinking water, while avoiding the cost and environmental implications of additional chlorination facilities. Storm water management and environmental improvements, through the reduction of combined sewer overflow (CSO) into the City's receiving waters, are

focuses within the Sewers program. Water and sewer installation crews use trenchless methods wherever possible, to minimize street damage, backfill needs and public inconvenience. The Streets, Sewers and Waterworks programs additionally incorporate the use of recycled materials, such as concrete and asphalt, in construction activities when technically and economically feasible.

Many capital programs also provide significant climate change mitigation and adaptation benefits. The City's Transportation Plan priorities focus on transportation modes that reduce GHG production, such as walking, cycling and transit. The Street Lighting program improves pedestrian amenity and safety, while upgrading light sources to improve energy efficiency. The Traffic Signal program continually improves pedestrian and bicycle crossings. Planning and design for replacement Yards facilities incorporate extensive green building measures to achieve LEED Gold certification, reducing energy and water consumption, storm water runoff, etc.

The Sewer System Replacement/Separation program invests approximately \$20 million per year to construct new sewers with much greater adaptive capacity than our existing combined sewer system. New storm sewers have approximately 40% greater capacity than our old combined sewers had; this capacity is constructed as standard practice because of the small cost of installing a slightly larger pipe compared to other fixed construction costs such as excavation, backfill, and street repair. The City's system is approximately 40% separated. With the continuation of our lifecycle uniform replacement program, we expect to eliminate CSOs by 2050 and have the system completely separated within a decade thereafter.

Other capital programs provide additional "no-regrets" climate change adaptation benefits. For example, Greenways and other street and lane improvements improve storm water permeability and thereby increase the capacity of our storm sewer system. The Drinking Water Conservation program reduces water demand, extending the life of our region's water supplies and mitigating climate change impacts that may reduce our water supply.

2009 Budget Request Summary and Detailed Submission Forms

Summary - 2009 Basic Capital Budget Requests (\$000's)								
Ref #	Department	Operating Funding	Debtenture Funding	Financial Limit Funding	DCL / CAC Funding	2009 Request	Other Funding	Gross Funding
Utilities								
D	PUBLIC WORKS - SEWERS	0	36,147	36,147	0	36,147	9,225	45,372
F	PUBLIC WORKS - WATERWORKS	0	20,779	20,779	0	20,779	0	20,779
	Total Utilities	0	56,926	56,926	0	56,926	9,225	66,151
Other Public Works								
A	PUBLIC WORKS - STREETS	1,120	24,124	25,244	6,619	31,863	12,046	43,909
B	PUBLIC WORKS - ELECTRICAL PLANT	1,275	5,290	6,565	0	6,565	1,738	8,303
	Total Other Public Works	2,395	29,414	31,809	6,619	38,428	13,784	52,212
TOTAL 2009 REQUEST		2,395	86,340	88,735	6,619	95,354	23,009	118,363

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SEWERS		Operating	Debenture	DCL/CAC	TOTAL	External /	2009
Ref #	Program / Sub-program / Project	Funding	Funding	Funding	CITY	Other	Gross Budget
D1	System Replacement						
D1a1	Main Sewer Reconstruction		\$24,800		\$24,800		\$24,800
D1a2	BC Community Water Improvement Program - Sewer Sep				\$0		\$0
D1b	Connection & Manhole Reconstruction		\$1,160		\$1,160		\$1,160
D1c	Local Repairs, Catch Basins & Spurs		\$650		\$650	\$200	\$850
D1d	Upgrading & Replacement of Pump Stations		\$6,650		\$6,650		\$6,650
D1	Total System Replacement	\$0	\$33,260	\$0	\$33,260	\$200	\$33,460
D2	System Management						
D2a	Television Inspection		\$238		\$238		\$238
D2b	Investigation for Design		\$149		\$149		\$149
D2	Total System Management	\$0	\$387	\$0	\$387	\$0	\$387
D4	Pollution Abatement						
D4b	Sewer Separation on Private Property		\$650		\$650		\$650
D4d	Stormwater Management & Adaptation		\$100		\$100		\$100
D4e	Still Creek Environmental Initiative		\$50		\$50	\$100	\$150
D4f	CSO Monitoring, Baffles and Screens		\$200		\$200		\$200
D4	Total Pollution Abatement	\$0	\$1,000	\$0	\$1,000	\$100	\$1,100
D5	Special Projects						
D5a	Special Events		\$300		\$300		\$300
D5b	Research/Implement Sustainable Sewer Constr. Processes		\$100		\$100		\$100
D5c	Contribution to E2c and E2d		\$1,100		\$1,100		\$1,100
D5	Total Special Projects	\$0	\$1,500	\$0	\$1,500	\$0	\$1,500
D6	Public Sewer Connections	\$0	\$0	\$0	\$0	\$8,925	\$8,925
	Sub-total excluding debenture costs	\$0	\$36,147	\$0	\$36,147	\$9,225	\$45,372
	Debenture Costs		\$407		\$407		\$407
	TOTAL SEWERS	\$0	\$36,554	\$0	\$36,554	\$9,225	\$45,779

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D1a1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	System Replacement	PROJECT / WBS	
ASSET CLASS	Sewer Mains		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	System Replacement
SUB-PROGRAM / PROJECT	Main Sewer Reconstruction
DESCRIPTION	Replacement and separation of sewer mains

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$24,800,000	\$ 0	\$ 0	\$	\$24,800,000	\$24,800,000	\$				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$5,068,000	Other Levels of Government			\$				
Materials		\$4,588,000	Property Owners			\$				
Equipment		\$4,108,000	Other (specify below)							
Contract		\$3,224,000				\$				
Overhead		\$2,480,000				\$				
Other (specify below)						\$ 0				
Street Cuts		\$2,008,800	OTHER FUNDING (specify below; e.g., CFF)							
Miscellaneous		\$3,323,200				\$				
		\$				\$				
		\$24,800,000				\$ 0				
CASH FLOW / SPENDING TIMELINE ¹			2009	\$19,000,000	2010	\$5,800,000	2011+	\$	Total	\$24,800,000
COMMENTS			Some funding remains from the 2006-08 due to the 2007 work stoppage. These funds will be spent in the first quarter of 2009.							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Optimizes sewer maintenance budgets and reduces flow-based GVS&DD levies.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
To execute the strategic plan of continuous sewer replacement that spreads the costs of capital work more evenly among taxpayers over time and allows staff to maintain a stable, well-trained labour force in accordance with the City's goal of replacing 1% of the system annually based on an anticipated 100 year life for the new pipes being constructed. This strategic plan was approved by Council in 1981 as part of the Sewers Long Range Plan and reaffirmed by Council in 1991 as part of the City's Design and Service Level Standards. It was also approved in each subsequent Capital Plan and reaffirmed when Council endorsed the Liquid Waste Management Plan (LWMP) submission to the Province in 2000

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

and 2001. The City's commitment under the regional LWMP is to eliminate all combined sewer overflows by the year 2050.

SCOPE OF WORK / DELIVERABLES

This program is effective in preventing serious collapse of sewers and in addressing major flooding problems in the City. It also has a major environmental benefit by addressing Vancouver's sewage overflows to our local waters. As this program progresses, sewage overflows will be reduced and eventually eliminated. It complies with Provincial policy and objectives for combined sewer overflow reduction and elimination, and is necessary to meet our commitments under the LWMP.

Vancouver's first sewers were constructed in about 1890, and the system has continued to expand over the last century to its present configuration. The first significant replacement of our original sewers began in the early 1960s. Throughout the 1970s, higher levels of annual replacement of up to 2% of the system occurred. During this busy period, for example, much of the original West End sewers were reconstructed.

The table below summarizes the age of our sewer system:

<u>Age of the Sewers System</u>			
<u>Year of Construction</u>	<u>Length (kilometres)</u>	<u>Length (%)</u>	<u>Age*</u>
Pre-1930	612	30	over 76
1930-1959	514	26	47-76
1960 to date	<u>885</u>	<u>44</u>	0-46
	2055 (Note 1)	100%	
Note 1: Sewer + Sanitary + Combined			
* Many sewers built prior to 1930 have unknown ages, particularly those located in the former municipalities of South Vancouver and Point Grey			

In selecting sewers to be replaced in our annual program, a number of factors are considered including the age, condition and capacity of the pipes, flooding risk reduction and pollution abatement benefits. Information from television inspections, flow monitoring, and maintenance programs is used to identify sewers that need to be rebuilt due to physical deterioration or inadequate service. Engineering analysis such as computer flow modelling is also used to assess the system's capacity.

In conjunction with the replacement program, the sewer infrastructure is being changed from a combined system (single pipes which carry storm water and sewage mixed together) to a separated system (separate storm pipes and sanitary pipes). This reduces combined sewage overflows by either concentrating the sanitary sewage in the lines discharging to the sewage treatment plant or relieving the system by redirecting storm water into the surrounding waters. Sewage that overflows into the local waters increases fecal coliform levels and other pollutants that can affect human health and marine life.

Summary of the 11 Basin Areas and their estimated 2009 budgets:

Basin Description	2009 Estimates	# of KM (Storm + Sanitary)
Fraser River	5,100,000	5.6
West Point Grey	3,500,000	3.6
Balaclava	3,200,000	3.2
Kitsilano/S. Granville	1,000,000	1.0
Cambie/Heather	5,000,000	5.5
Terminal Avenue	200,000	0.2
Downtown Peninsula	300,000	0.3
Grandview-Woodland	1,000,000	1.0
Hastings-Sunrise	300,000	0.3
China Creek Trunk	5,000,000	5.5
Still Creek	200,000	0.2
Total Budget:	\$24,800,000	26.4
% of Replacement	0.9 % (Note 2)	Note 2: % of original, single combined pipe system

Fraser River

\$ 5,100,000

CES-00026-09

The Fraser River drainage area is comprised of eight distinct basins covering approximately 4,080 hectares of Vancouver, between Burnaby and the UEL, on the south slope of the City. The original sewers were built at various times starting in the 1910's (on the west side and in Marpole), right up to present day (Fraser Lands). Previous Capital Plans have provided for the replacement of many of the old combined sewers in Marpole and undersized and/or deteriorated sewers in miscellaneous basins. The long range plan for sewer replacement anticipates that the majority of

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Separation of the original sewer system of the 525 hectare Downtown Peninsula is virtually complete. The program originally began about 35 years ago with the rezoning of the West End. Certain small sections were held up pending development and the Downtown Transportation Plan project. Further reconstruction work can now proceed over this Plan.

Grandview-Woodlands \$1,000,000 CES-00033-09

The original sewer system in the Grandview/Woodlands area was constructed around 1910 and today serves mostly dense industrial, commercial and multiple dwelling developments. This 660 hectare basin is generally between Clark Drive and Nanaimo Street, and north of the Grandview Cut draining to Burrard Inlet. The area is also tributary to the Clark Drive outfall which is the largest combined sewer overflow point in the City. Sewer separation in this area is a high priority as it provides pollution reduction benefits at Clark Drive.

To date, two of three sub-basins of the Grandview/Woodlands area have been separated. Funding in this Plan will focus on the separation of the remaining sub-basin, with completion anticipated by 2040.

Specifically, this will include the following work for 2009:

- 1) 3rd Avenue; Clark to Woodland
- 2) McLean Drive; 3rd - 4th Ave

Hastings-Sunrise \$300,000 CES-00034-09

The 630 hectare Hastings Sunrise basin lies east of Nanaimo Street and generally north of First Avenue and drains north to Burrard Inlet. Almost all of the original sewers, which were built at various times between about 1900 and the late 1920's, are still in service today. The sewer's long range plan projects the replacement of sewers in this area to be carried out over a 20 year period. Work in this area will reduce and eventually eliminate combined sewer overflows at the Cassiar outfall as well as provide environmental benefits at the Clark Drive outfall.

During 2009, work will continue on the most deteriorated sewers. In addition, the work will direct additional stormwater and underground drainage into the new pond which has been constructed in Hastings Park. Establishment of Hastings pond has provided aesthetic and recreational benefits and the possible future re-establishment of the original Hastings stream will benefit from the increased stormwater flow. This work will also result in some reductions in combined sewer overflows and flows to the Iona Sewage Treatment Plant.

Specifically, in 2009 this will include Nootka Street from Turner to Adanac.

China Creek Trunk \$5,000,000 CES-00035-09

The China Creek basin comprises about 1,235 hectares of mostly single family homes in an area bounded roughly by Main Street, 12th Avenue, Nanaimo and 41st Avenue. This north sloping area lies immediately west of the Still Creek basin and drains to Burrard Inlet through the Clark Drive outfall. The original sewers in the area were built at various times between the 1910's and the 1960's. Many sewers are damaged due to settlement of the peat found in pockets within the area.

Funds are required to continue scheduled replacement of deteriorated main sewers in the remainder of the basin. With Metro Vancouver's recent construction of a new sanitary trunk sewer through the China Creek basin, continued reductions in combined sewer overflows will result from the City's continued main replacement program in this basin.

In 2009 this will include work on Victoria Drive from 13th Avenue to Victoria Diversion.

Still Creek \$200,000 CES-00036-09

This 950 hectare separated sewer area drains the extreme east side of Vancouver between the Burrard Inlet and Fraser River watersheds with the area's storm sewer system draining to Still Creek. Except for the Kingsway corridor built in the 1920's and 30's, most of the area's sewer system was built in the 1950's and should be adequate for another 30 to 40 years.

The only work expected over the next several decades is replacement of sewers developing structural defects due to poor soil conditions and replacement or relining of porous sanitary sewers which might contaminate the creek. Funds are provided in this budget for repairing sanitary pipes with structural defects.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	March, 2009	Completion (mm/yy)	March, 2010
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IMPACT OF DELAY

Delays would restruct the City's ability to continually reduce Combined Sewer Overflows (CSO's) and eliminate them by 2050 per the City's commitment to the Liquid Waste Management Plan.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D1b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	System Replacement	PROJECT / WBS	CES-00039-09
ASSET CLASS	Sewer - Mains, Services & Access Chambers		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	System Replacement
SUB-PROGRAM / PROJECT	Connection & Manhole Reconstruction
DESCRIPTION	Reconstruction of sewer connections and manholes

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$1,160,000	\$ 0	\$ 0	\$	\$1,160,000	\$1,160,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$430,000	Other Levels of Government		\$	
Materials		\$170,000	Property Owners		\$	
Equipment		\$328,000	Other (specify below)			
Contract		\$			\$	
Overhead		\$116,000			\$	
Other (specify below)					\$ 0	
Street Cuts		\$58,000	OTHER FUNDING (specify below; e.g., CFF)			
Miscellaneous		\$58,000			\$	
		\$			\$	
		\$1,160,000			\$ 0	
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$1,160,000	\$		\$	\$1,160,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Reduces connection failures and reducing the need to increase liability payouts.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

Connection failures can result in sewage backing up into homes causing major inconveniences to owners as well as health concerns and potential liability for the City. Preventative maintenance programs have limited the number of emergency sewer back-ups. However, in cases where pipes have deteriorated to the point where maintenance is no longer cost effective, this program provides funding for repairs and/or replacement.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

The City has approximately 100,000 sewer connections totalling about 935 kilometres in length. Many of these have structurally failed or have been blocked by penetrating tree roots. This results in sewage backing up into homes on a periodic basis causing major inconveniences to home owners as well as health concerns and potential liability for the City. Through our public sewer connection permits fees, many of the old and inadequate connections are rebuilt when new buildings are constructed or substantial renovations are undertaken. However, a number of old connections to existing houses that are not being redeveloped experience blockages that cannot be dealt with cost effectively with preventative maintenance. This program provides funding to reconstruct approximately 175-200 connections to these properties.

In addition to connections, the City also has over 25,000 sewer manholes. While they are replaced at the time of main sewer reconstruction, there is an ongoing need to repair or construct existing manholes in areas not scheduled for main sewer replacement. Approximately 5% of the program funds are for manhole reconstruction.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Possibility of connection failures and higher maintenance costs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D1c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	System Replacement	PROJECT / WBS	CES-00040-09
ASSET CLASS	Sewer Mains		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	System Replacement
SUB-PROGRAM / PROJECT	Local Repairs, Catch Basins and Spurs
DESCRIPTION	Prevent failure of catchbasins and spurs and upgrade drainage facilities

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST				Funding Approved in Advance of 2009 BCB	
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$850,000	\$200,000	\$ 0	\$	\$650,000	\$650,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$374,000	Other Levels of Government			\$		
Materials		\$119,000	Property Owners			\$		
Equipment		\$255,000	Other (specify below)					
Contract		\$	Translink OMR			\$200,000		
Overhead		\$85,000				\$		
Other (specify below)						\$200,000		
Street Cuts		\$17,000	OTHER FUNDING (specify below; e.g., CFF)					
		\$				\$0		
		\$				\$		
		\$850,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	\$	Total	\$850,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program is for the replacement of catch basins and spurs (catch basin leads connecting them to the mains) as well as upgrading drainage facilities.

SCOPE OF WORK / DELIVERABLES

There are about 45,000 catch basins in the City and about 320 kilometres of spur sewers that connect them to the mains. This street drainage

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

system has been developed (since 1900) in conjunction with our street paving program and some of it is starting to fail, with resulting street drainage problems. This results in increased liability for flooding which can cause property damage and hazards to vehicle travel. Poor drainage also permits water penetration into the road base which causes a weakening and deterioration of the road structure. Repairs have extended the life of some sections, but replacement or relining of the worst sections is necessary as they become apparent. Funding requested will provide repairs to approximately 100-125 catch basins, depending on whether spurs (or leads) are also replaced.

Vehicle impact loading, deterioration due to age, and tree roots are the main causes of catch basin drain failures. In the past, only the most critical failures have been addressed. Staff recommend repairing more of the problem areas now rather than leaving them as ongoing maintenance problems. The 2009-2011 Capital Plan includes a gross budget provision of \$1,950,000 for the core work, with \$600,000 funding expected from Translink through the Major Road Network (MRN) Operation.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	February, 2009	Completion (mm/yy)	March, 2010
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IMPACT OF DELAY

Increased liability for flooding which can cause property damage and hazards to vehicle travel.
Water penetration into the road base which causes a weakening and deterioration of the road structure.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D1d

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	System Replacement	PROJECT / WBS	CES-00041-09
ASSET CLASS	Sewer - Pump Stations		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	System Replacement
SUB-PROGRAM / PROJECT	Upgrading and Replacement of Pump Stations
DESCRIPTION	Upgrade and replace pump stations

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$6,650,000	\$ 0	\$ 0	\$	\$6,650,000	\$6,650,000	\$				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$35,000	Other Levels of Government			\$				
Materials		\$56,000	Property Owners			\$				
Equipment		\$26,500	Other (specify below)							
Contract		\$6,200,000				\$				
Overhead		\$332,500				\$				
Other (specify below)						\$ 0				
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$				
		\$				\$				
		\$				\$				
		\$6,650,000				\$ 0				
CASH FLOW / SPENDING TIMELINE ¹			2009	\$6,650,000	2010	\$	2011+	\$	Total	\$6,650,000
COMMENTS			Work must be completed prior to 2010 Winter Games.							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
The upgrade and replacement of pump stations that are at the end their useful economic lives thereby increasing capacity and mitigating growing maintenance costs.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

There are 26 sanitary sewage-pumping stations of various capacities and sizes within the City's sewage collection system. In the course of normal operations, partial or complete replacement of pumps and valves, as well as other mechanical, electrical, control and instrumentation equipment is required as they wear out over time.

A comprehensive assessment of stations conducted in 2003 identified that ten out of the 26 stations were near the end of their economic service lives, with inadequate capacities and unacceptable maintenance requirements and therefore need replacement over the next ten years. The required rate of replacement was determined to be at least one station per year. In addition to the age of the stations and the increasing frequency of equipment failures, these prefabricated underground stations have compact confined space designs, which make refurbishing them very difficult and operator unfriendly. They have relatively higher maintenance costs and expose operations personnel to undue risk of asphyxiation, engulfment, electrocution and mechanical injury. Other key areas of concern have been the old state of a number of our force mains, as well as our supervisory control and data acquisition (SCADA) system.

Work planned in the 2009 budget includes:

- | | | |
|----|---|--------|
| 1) | Burrard Pump Station rehabilitation | \$150k |
| 2) | Cambie Forcemain Tie-in Relocation | \$250k |
| 3) | Cambie Pump Station (in conjunction with the NEU project) | \$5.3M |
| 4) | Cambie Forcemain (on Wiley Street) | \$200k |
| 5) | Sewer SCADA rollout | \$750k |

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Inadequate capacity and unacceptable high levels of maintenance requirements.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D2a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	System Management	PROJECT / WBS	NES-00011-09
ASSET CLASS	n/a		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	System Management
SUB-PROGRAM / PROJECT	Television Inspection
DESCRIPTION	Projects, data collection, and analysis necessary to support cost efficient work programs

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$238,000	\$ 0	\$ 0	\$	\$238,000	\$238,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$102,000	Other Levels of Government			\$
Materials		\$2,180	Property Owners			\$
Equipment		\$27,000	Other (specify below)			
Contract		\$64,570				\$
Overhead		\$23,800				\$
Other (specify below)						\$ 0
Miscellaneous		\$18,450	OTHER FUNDING (specify below; e.g., CFF)			
		\$				\$
		\$				\$
		\$238,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$201,000	\$37,000	\$		\$238,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
The System Management Program provides funds to support information gathering and research projects. This provides key information that is used to prioritize our 1% Replacement Program and establish routine maintenance programs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

The ongoing closed-circuit television inspection program allows visual inspection and assessment of the condition of sewers from the inside. It provides essential information for planning sewer design and maintenance programs and in establishing priorities for the reconstruction program. This inspection allows for the optimization of the replacement program by potentially preventing the collapse of some sewers and extending the useful life of others.

Additionally, this visual inspection allows for the optimization of maintenance programs by determining which sewers are prone to maintenance problems such as tree-root clogged sewers, which can go undetected until problems such as flooding occur.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	February, 2010

IMPACT OF DELAY

Supports System Replacement/Separation (Capital Plan Ref #D1a)

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D2b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	System Management	PROJECT / WBS	NES-00012-09
ASSET CLASS	n/a		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	System Management
SUB-PROGRAM / PROJECT	Investigation for Design
DESCRIPTION	Projects, data collection, and analysis necessary to support cost efficient work programs

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$149,000	\$ 0	\$ 0	\$	\$149,000	\$149,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$64,000	Other Levels of Government		\$			
Materials		\$1,200	Property Owners		\$			
Equipment		\$17,000	Other (specify below)					
Contract		\$40,400			\$			
Overhead		\$14,900			\$			
Other (specify below)					\$ 0			
Miscellaneous		\$11,500	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$			
		\$			\$			
		\$149,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$149,000	2010	\$	2011+	\$	Total	\$149,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
The System Management Program provides funds to support information gathering and research projects. This provides key information that is used to prioritize our 1% Replacement Program and establish routine maintenance programs.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

This program provides funds for a variety of tools that support cost-effective capital work programs. Tools consistently used for this purpose include sewer system modeling, field monitoring of sewer flows, construction site exposures, soundings of underground facilities, and investigation of new products and technical standards for sewer design and construction and the improvement of field survey and data collection methods. This work often requires consultants to provide current technical expertise in the field of structural, environmental, and municipal engineering.

Designers also rely on facilities management tools to monitor the changes in the capacity of the sewer system caused by new development and/or blockages in the system. Past flooding events in the City highlighted the need for more effective data collection and retrieval methods to ensure limited capital resources are applied most cost-effectively to maintain system capacity.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	February, 2010
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IMPACT OF DELAY

Supports System Replacement/Separation (Capital Plan Ref #D1a)

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D4b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Pollution Abatement	PROJECT / WBS	CES-00042-09
ASSET CLASS	n/a		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Pollution Abatement
SUB-PROGRAM / PROJECT	Sewer Separation on Private Property
DESCRIPTION	Programs to reduce overflows, manage climate change impacts, and meet future regulatory requirements

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$650,000	\$ 0	\$ 0	\$	\$650,000	\$650,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$350,000	Other Levels of Government		\$0			
Materials		\$45,100	Property Owners		\$			
Equipment		\$122,000	Other (specify below)					
Contract		\$	Property Owners		\$0			
Overhead		\$65,000			\$			
Other (specify below)					\$ 0			
Miscellaneous		\$67,900	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$			
		\$			\$			
		\$650,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$650,000	2010	\$	2011+	\$	Total	\$650,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
This program complements the City's combined sewer reduction initiatives by providing immediate separation benefits. This program is particularly important because of the Provincial requirements to reduce and eventually eliminate combined sewer overflows by the year 2050.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

This program was established by Council in 1978 in order to achieve the pollution control benefits of a separated sewer system and has had major success in the English Bay/False Creek and Vancouver Harbour areas. This program also allows for a maximum \$1,000 reimbursement towards the cost of plumbing alterations on private property and the provision for a separated sewer connection to serve the property. This program is an essential element needed to meet our commitments under the Liquid Waste Management Plan to continuously reduce combined sewer overflows and achieve their commitment to address the Clark Drive SCO impacts and in continuing False Creek water quality improvements.

The program has mainly focused on the False Creek area and the West End, and to a lesser degree on the Downtown Eastside/Strathcona, Still Creek, and Fraser River areas. The major benefit of the program has been a reduction in the fecal coliform levels in adjacent waters as well as the removal of other industrial pollutants which may inadvertently be discharging through the storm sewer system. In 1995 and 1999, sewer separation was completed in the drainage basins in the Yaletown and Granville areas, respectively. The resulted in the elimination of the Drake Street and Granville Street combined sewer overflows. In 2005, most of the West End area separation was completed and the Parklane combined sewer overflow was eliminated, and in 2006, the Denman Street SCO was eliminated. To date, the separation program has also resulted in a modest reduction in Regional District levies.

This program complements the City's combined sewer reduction initiatives by providing immediate separation benefits. There is also increased environmental awareness by the public, especially with the redevelopment of industrial lands in the Coal Harbour/False Creek areas, and greater pressure from senior governments to improve water quality by reducing combined sewer overflows. The major focus of the program during 2009 will be on the continuation of reducing pollution discharges to Vancouver Harbour at Canada Place and False Creek, elimination of the Crowe Street CSO and continuation of reducing flows to the Iona Sewage Treatment Plant.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Delay would impede progress in reducing and eliminating combined sewer overflows into important water bodies and in meeting our obligations under the Integrated Storm Management Plan.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D4d

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Pollution Abatement	PROJECT / WBS	NES-00017-09
ASSET CLASS	n/a		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Pollution Abatement
SUB-PROGRAM / PROJECT	Stormwater Management and Adaptation
DESCRIPTION	Programs to reduce overflows, manage climate change impacts, and meet future regulatory requirements

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$100,000	\$ 0	\$ 0	\$	\$100,000	\$100,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$53,600	Other Levels of Government			\$0		
Materials		\$7,000	Property Owners			\$		
Equipment		\$19,000	Other (specify below)					
Contract		\$	Property Owners			\$0		
Overhead		\$10,000				\$		
Other (specify below)						\$ 0		
Miscellaneous		\$10,400	OTHER FUNDING (specify below; e.g., CFF)					
		\$				\$		
		\$				\$		
		\$100,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$100,000	2010	\$	2011+	\$	Total	\$100,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
This program complements the City's combined sewer reduction initiatives by providing immediate separation benefits. This program is particularly important because of the Provincial requirements to reduce and eventually eliminate combined sewer overflows by the year 2050.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

The management of stormwater is becoming more important as our knowledge of environmental issues and climate change impacts increases. In 2002, the Provincial Government, as part of the regional LWMP, required all municipalities in the Greater Vancouver Regional District (now Metro Vancouver) to develop Integrated Stormwater Management Plans (ISMP) for their watersheds by the year 2014. To date, we have developed an ISMP for the Still Creek drainage basin, in conjunction with Burnaby and Metro Vancouver. The LWMP is also currently being updated with Provincial approval anticipated in early 2009. It is clear that the revised LWMP will make stormwater management an even greater priority.

In addition, new information is emerging on the effect of climate change on the City's infrastructure. The combination of sea level rise and changing rainfall intensities will likely have significant effects in Vancouver. Studies are required to evaluate existing City standards and practices in particular at the building and site level, and the need to change our planning and design methods to adapt to this global change.

Work in 2009 will include proceeding with a City wide ISMP, the Musqueam Creek ISMP, and initial studies on how we need to adapt to climate change effects.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Delay would impede progress in reducing and eliminating combined sewer overflows into important water bodies and in meeting our obligations under the Integrated Storm Management Plan.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D4e

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Pollution Abatement	PROJECT / WBS	NES-00014-09
ASSET CLASS	n/a		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Pollution Abatement
SUB-PROGRAM / PROJECT	Still Creek Environmental Initiative
DESCRIPTION	Programs to reduce overflows, manage climate change impacts, and meet future regulatory requirements

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$150,000	\$100,000	\$ 0	\$	\$50,000	\$50,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$80,850	Other Levels of Government		\$15,000			
Materials		\$10,500	Property Owners		\$			
Equipment		\$28,000	Other (specify below)					
Contract		\$	Property Owners		\$85,000			
Overhead		\$15,000						
Other (specify below)			\$100,000					
Miscellaneous		\$15,650	OTHER FUNDING (specify below; e.g., CFF)					
		\$						
		\$						
		\$150,000	\$ 0					
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$150,000	2010	\$	2011+	\$	Total	\$150,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
This program complements the City's combined sewer reduction initiatives by providing immediate separation benefits. This program is particularly important because of the Provincial requirements to reduce and eventually eliminate combined sewer overflows by the year 2050.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

2009 Gross Budget	\$ 150,000
Funding from other sources	<u>(100,000)</u>
2009 Budget Request	\$ <u>50,000</u>

The City, in conjunction with Burnaby and the GVRD, has been implementing the Integrated Storm Water Management Plan for the Still Creek drainage basin. This plan examines initiatives in the basin to reduce flooding risks, protect and enhance the environment and improve the social value of the Still Creek corridor. Recommendations in the plan include initiatives or pilot projects to: reduce stream flooding, increase permeability, reduce pollutant discharges, provide public education, add walking and cycling routes, and enhance greenways, trails, view points, and other public amenities.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Delay would impede progress in reducing and eliminating combined sewer overflows into important water bodies and in meeting our obligations under the Integrated Storm Management Plan.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D4f

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Pollution Abatement	PROJECT / WBS	NES-00015-09
ASSET CLASS	n/a		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Pollution Abatement
SUB-PROGRAM / PROJECT	Combined Sewer Overflow Monitoring, Baffles, Screens
DESCRIPTION	Programs to reduce overflows, manage climate change impacts, and meet future regulatory requirements

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$200,000	\$ 0	\$ 0	\$	\$200,000	\$200,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$108,000	Other Levels of Government		\$0			
Materials		\$14,000	Property Owners		\$			
Equipment		\$37,000	Other (specify below)					
Contract		\$	Property Owners		\$0			
Overhead		\$20,000			\$			
Other (specify below)					\$ 0			
Miscellaneous		\$21,000	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$			
		\$			\$			
		\$200,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$200,000	2010	\$	2011+	\$	Total	\$200,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
This program complements the City's combined sewer reduction initiatives by providing immediate separation benefits. This program is particularly important because of the Provincial requirements to reduce and eventually eliminate combined sewer overflows by the year 2050.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Over the past few years, the Canadian Council of Ministers on the Environment has been developing a draft Canada-wide Strategy for the Management of Municipal Wastewater Effluent. This new strategy is intended to provide a minimum level of environmental protection across Canada.

Regulations to implement the CCME Strategy are being developed under Provincial and Federal legislation and are expected to take effect in 2010. Under the proposed new regulations, it is expected that all combined sewer overflows must be monitored (volume and frequency) and recorded. In addition, it proposes that baffles or screens be required on all CSO outfalls by 2015.

This budget will be required for the start of the installation of monitors on CSO outfalls, as well as design work on the baffles or screens at CSO outfalls.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Delay would impede progress in reducing and eliminating combined sewer overflows into important water bodies and in meeting our obligations under the Integrated Storm Management Plan.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D5a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Special Projects	PROJECT / WBS	NES-00016-09-01
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Special Projects
SUB-PROGRAM / PROJECT	Special Events
DESCRIPTION	Contribution for Sewers infrastructure improvements at Festival parks

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$300,000	\$ 0	\$ 0	\$0	\$300,000	\$300,000	\$0

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$	Other Levels of Government	\$
Materials	\$	Property Owners	\$
Equipment	\$	Other (specify below)	
Contract	\$		\$
Overhead	\$		\$
Other (specify below)			\$ 0
Contribution to Community Service Group Special Project - Festival Sustainability (N5b)	\$300,000	OTHER FUNDING (specify below; e.g., CFF)	
	\$		\$
	\$		\$
	\$300,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	2010	2011+	Total
	\$100,000	\$100,000	\$100,000	\$300,000
COMMENTS				

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES For over 30 years various major festivals and events have enlivened many large public spaces through out the City. The Vancouver International Children's Festival and Bard on the Beach inhabit Vanier Park for almost six months of the year and have a combined total attendance exceeding 133,000. The Vancouver International Folk Festival at Jericho Park, The Powell Street Festival at Oppenheimer Park and Illuminares at John Hendry Park have accumulated attendance of over 520,000 annually.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Popular free public events like these require resources not easily or economically available at these locations. They can also leave a significant environment imprint which is costly to remedy. Arrangements to provide water, sanitation and electrical services, all necessary to produce these events, can be expensive and the methods of delivery themselves are not always environmentally friendly or create public safety challenges which require further costly mitigation.

The 2009-11 Capital plan approved a funding contribution of \$300,000 in Sewers Basic capital for improvements to the sewers infrastructure at several city parks that host large publicly attended events. The following four parks were identified as the most publicly used space, requiring infrastructure improvements to sewer, water and electrical plants: Jericho Park, Vanier Park, John Hendry Park/Trout Lake, and Oppenheimer Park. (2009-11 Capital Plan Reference #N-5b).

SCOPE OF WORK / DELIVERABLES

- planning of detailed project scope and coordination of work with the other City departments
- RFP for consultant with expertise in this area to be advertised and secured

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Community Services Group/Cultural Services

TIMELINE	Start (mm/yy)	May, 2009	Completion (mm/yy)	June, 2010
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IMPACT OF DELAY

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D5b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Special Projects	PROJECT / WBS	NES-00016-09-A5
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Special Projects
SUB-PROGRAM / PROJECT	Research/Implement Sustainable Construction Processes
DESCRIPTION	Development of alternative construction processes which will allow for the reuse of soil

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$100,000	\$ 0	\$ 0	\$	\$100,000	\$100,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$50,000	Other Levels of Government		\$			
Materials		\$	Property Owners		\$			
Equipment		\$	Other (specify below)					
Contract		\$50,000			\$			
Overhead		\$			\$			
Other (specify below)					\$ 0			
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$			
		\$			\$			
		\$100,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$100,000	2010	\$	2011+	\$	Total	\$100,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	Develop alternative construction processes allowing for the reuse of soil which will reduce costs, emissions and landfill use.
SCOPE OF WORK / DELIVERABLES	
	The majority of soil removed during the trenching process of sewer construction is currently sent to landfill locations in the Lower Mainland.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

This amount is in excess of 200,000 tonnes a year and results in over 25,000 truck loads from the various construction sites to the landfills. There are a corresponding number of truck trips hauling imported fill material back to the construction sites. Engineering Services is developing alternate construction processes which will allow for the reuse of the native soil in sewer trenches. The development of these processes will help reduce the amount of material movement on surface streets related to sewer construction. This will reduce traffic impacts on neighbourhoods and residents, reduce the number of trucks required for sewer construction, and reduce the amount of material being sent to local landfills, thereby lowering costs and vehicle emissions and extending the life of the landfills.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Delay would forego an opportunity to lower costs, reduce vehicle emissions, reduce landfill use and decrease traffic congestion and noise.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D5c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Special Projects	PROJECT / WBS	NES-00016-09-02
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Special Projects
SUB-PROGRAM / PROJECT	Contribution to E2C & E2D (Yards)
DESCRIPTION	Contribution to Manitoba Yards infrastructure improvements

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$1,100,000	\$ 0	\$ 0	\$0	\$1,100,000	\$1,100,000	\$0				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$	Other Levels of Government			\$				
Materials		\$	Property Owners			\$				
Equipment		\$	Other (specify below)							
Contract		\$				\$				
Overhead		\$				\$				
Other (specify below)						\$ 0				
Contribution		\$1,100,000	OTHER FUNDING (specify below; e.g., CFF)							
		\$				\$				
		\$				\$				
		\$1,100,000				\$ 0				
CASH FLOW / SPENDING TIMELINE ¹			2009	\$1,100,000	2010	\$	2011+	\$	Total	\$1,100,000
COMMENTS										

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
The 2009-11 Capital Plan approved a funding contribution of \$1,100,000 from Sewers Basic Capital for improvements to the Manitoba Yards emergency power supply and replacement of the Manitoba Yards Central Stores main transformer. (Capital Plan 2009-11 Reference Nos.: E-2c & E-2d)
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Improvements to the Manitoba Yards emergency power supply and Central Stores main transformer.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

May, 2009

Completion (mm/yy)

June, 2010

IMPACT OF DELAY

A delay in replacing the emergency power supply and the main transformer would result in higher costs to replace on short notice and would also create avoidable operational disruptions.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

D6

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Sewers	PROJECT / WBS	CEC-00013-09
ASSET CLASS	Sewers-Connections		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Sewers - Special Projects
SUB-PROGRAM / PROJECT	Public Sewer Connections
DESCRIPTION	Installation of public sewer connections on residential and commercial properties

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$8,925,000	\$8,925,000	\$ 0	\$0	\$ 0	\$ 0	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$3,388,000	Other Levels of Government			\$		
Materials		\$1,111,000	Property Owners			\$8,925,000		
Equipment		\$1,850,000	Other (specify below)					
Contract		\$				\$		
Overhead		\$895,000				\$		
Other (specify below)						\$8,925,000		
Street Cuts		\$564,000	OTHER FUNDING (specify below; e.g., CFF)					
Miscellaneous		\$1,117,000				\$		
		\$				\$		
		\$8,925,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$8,925,000	2010	\$	2011+	\$	Total	\$8,925,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
It is anticipated that about \$8.9 million of public sewer connections will be installed in 2009. The cost of this work is recovered from public sewer connection fees charged to developers, builders and property owners.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

WATERWORKS		Operating	Debenture	DCL/CAC	TOTAL	External /	2009
Ref #	Program / Sub-program / Project	Funding	Funding	Funding	CITY	Other	Gross Budget
F1	Aging Infrastructure Replacement						
F1a	Distribution system		\$13,000		\$13,000		\$13,000
F1b	Transmission system		\$50		\$50		\$50
F1c	Services, PRV's & Hydrant Connections		\$4,679		\$4,679		\$4,679
F1	Total Aging Infrastructure Replacement	\$0	\$17,729	\$0	\$17,729	\$0	\$17,729
F2	Addressing Growth						
F2a	Storage & Transmission Optimization		\$1,000		\$1,000		\$1,000
F2b	Fire Upgrading for Developments		\$75		\$75		\$75
F2c	Water Conservation Capital projects		\$75		\$75		\$75
F2d	New Services & Meters		\$850		\$850		\$850
F2e	Minor Improvements to the system		\$200		\$200		\$200
F2	Total Addressing Growth	\$0	\$2,200	\$0	\$2,200	\$0	\$2,200
F3	Emergency Planning						
F3c	Alternate Water Sources		\$50		\$50		\$50
F3	Total Emergency Planning	\$0	\$50	\$0	\$50	\$0	\$50
F4	Investigation, Monitoring & Control						
F4b	Engineering & Site Investigations		\$250		\$250		\$250
F4	Total Investigation, Monitoring & Control	\$0	\$250	\$0	\$250	\$0	\$250
F5	Water Quality						
F5b	Miscellaneous Water Quality Projects		\$250		\$250		\$250
F5	Total Water Quality	\$0	\$250	\$0	\$250	\$0	\$250
F8	Special Projects						
F8a	Contribution to Special Events		\$300		\$300		\$300
F8	Total Special Projects	\$0	\$300	\$0	\$300	\$0	\$300
	Sub-total excluding debenture costs	\$0	\$20,779	\$0	\$20,779	\$0	\$20,779
	Debenture Costs		\$233		\$233		\$233
	TOTAL WATERWORKS	\$0	\$21,012	\$0	\$21,012	\$0	\$21,012

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F1a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00033-09
ASSET CLASS	Water Mains, Hydrants, Services & Meters		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Aging Infrastructure Replacement
SUB-PROGRAM / PROJECT	Distribution System
DESCRIPTION	Replacement of the City's aging distribution and transmission mains, fire hydrants, services and meters

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$13,000,000	\$ 0	\$ 0	\$	\$13,000,000	\$13,000,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$1,728,000	Other Levels of Government			\$		
Materials		\$2,388,000	Property Owners			\$		
Equipment		\$1,624,000	Other (specify below)					
Contract		\$2,000,000				\$		
Overhead		\$1,300,000				\$		
Other (specify below)						\$ 0		
Street Repairs		\$2,420,000	OTHER FUNDING (specify below; e.g., CFF)					
Miscellaneous (traffic control, dump charges, etc.)		\$1,540,000				\$		
		\$				\$		
		\$13,000,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹	2009	\$13,000,000	2010	\$0	2011+	\$0	Total	\$13,000,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Prevent leak and break repair costs from increasing and reduces the risk of damage to private property and other utilities. Reduces the cost of purchasing water by reducing leaks from the system. Increases reliability of the water system to provide safe drinking water and adequate flow for fire protection.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

A key strategic objective of the Waterworks Long Range Plan is to manage infrastructure proactively. The City's water system has an estimated replacement value of \$1.5 billion. It consists of approximately 1,458 km of water mains, plus associated facilities such as pressure regulating stations, and appurtenances such as valves, fire hydrants, and service connections. With such an extensive system, it is important to use a life-cycle replacement program to eliminate unmanageably large short-term capital expenditures, minimize risk, and control operating costs.

SCOPE OF WORK / DELIVERABLES

This program provides funding to renew aging water system infrastructure in a sustainable manner. As water system infrastructure ages, corrosion and mechanical wear increase the probability of failure. These failures reduce the reliability of the water system, increase operating costs, and sometimes cause extensive property damage. Using the Waterworks Long Range Plan as a guide, this program conducts infrastructure renewal activities at a sustainable rate, replacing water system components that have reached the end of their life expectancy.

F1a) Distribution Main Replacement: \$13,000,000 CEW-00033-09

This funding is for the systematic replacement and rehabilitation of aging distribution mains. The City's distribution main network covers virtually every street in the City of Vancouver, moving water from transmission pipelines to customer connections. This program reduces pipeline maintenance costs and system leakage, limits damage to City and private property caused by water main failures, and helps to ensure continued safe and reliable water service to customers. Since 1994, Waterworks has replaced numerous water mains to prevent breaks or correct other deterioration problems such as heavy tuberculation (internal corrosion). As a result, the annual number of watermain breaks is now declining, from a peak of about 70 breaks per year in the early 1990's, to an average of about 55 breaks per year, or about 4 breaks/100km of pipe per year. This break rate is considered good for a system the size and age of Vancouver's.

In 2009, a small amount of watermain replacement work related to the Canada Line project will be required. Waterworks will also be tendering a contract in 2009 to complete approximately \$2.0 million of work using private sector forces to establish benchmark pricing and reduce the current backlog of work.

Staff recommends that a budget of \$13.0 million be allocated to this program in 2009. The following major replacement works are planned:

- Culloden Street (41st Avenue to 45th Avenue)
- E. 43rd Avenue (Lanark St. to Inverness Street)
- Fraser Street (18th Avenue to 20th Avenue)
- E. 19th Avenue (Fraser Street to Prince Albert Street)
- E. 21st Avenue (Prince Edward Street to St. George Street)
- King Edward Avenue (Main Street to Prince Albert Street)
- Perry Street (Kingsway to 22nd Avenue)
- Kingsway (Perry Street to Welwyn Street)
- Commercial Drive (Kingsway to 22nd Avenue)
- Beatrice Street (Stainsbury Avenue to Brewers Park)
- Ontario Street (57th Avenue to 60th Avenue)
- W. 66th Avenue (Heather Street to Ash Street)
- Kent Avenue South (Prince Edward Street to St. George Street)
- MacDonald Street (19th Avenue to 21st Avenue)
- Puget Street (King Edward to 29th Avenue)
- 29th Avenue (MacKenzie to Puget Drive)
- Laburnum Street (Creelman Street to Cornwall Street)
- Walnut Street (Creelman Street to Cornwall Street)
- Arbutus Street (Creelman Street to York Avenue)
- Chestnut Street (McNicholl Street to Whyte Street)
- W. 10th Avenue (Tolmie Street to Sasamat Street)
- Arbutus Street (19th Avenue to 21st Avenue)
- W. 39th Avenue (Yew Street to West Boulevard)
- W. 35th Avenue (Cypress Street to Margaurite Street)
- Yukon Street (4th Avenue to 6th Avenue)
- Grant Street (Rupert Street to Nootka Street)
- Kitchener Street (Lillooet Street to Rupert Street)
- Terminal Avenue (Station Street to Begg Street)
- E. 15th Avenue (Rupert Street to Lillooet Street)
- Worthington Street (Rupert Street to Seaforth Drive)
- E. 17th Avenue (Rupert Street to Lillooet Street)
- Windermere Street (22nd Avenue to 25th Avenue)
- Chambers Street (34th Avenue to 37th Avenue)
- Kaslo Street (20th Avenue to 21st Avenue)
- McMullen Street (Valley Street to Haggart Street)
- Townley Street (McMullen Street to Eddington Street)
- Haggart Street (McMullen Street to Eddington Street)
- W. 6th Avenue (Bayswater Street to Stephens Street)
- MacDonald Street (6th Avenue to 7th Avenue)
- Stephens Street (6th Avenue to 7th Avenue)
- W. 14th Avenue (Waterloo Street to MacDonald Street)

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Approximately 12 km in total and equates to approximately 0.8% replacement.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	January, 2010

IMPACT OF DELAY

This program proactively replaces aging infrastructure to prevent future water system failures. A delay to this program would reduce the City's ability to provide a safe and reliable water service to customers and would result in higher property damage and maintenance costs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F1b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00036-09
ASSET CLASS	Water Mains, Hydrants, Services & Meters		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Aging Infrastructure Replacement
SUB-PROGRAM / PROJECT	Transmission System
DESCRIPTION	Replacement of the City's aging distribution and transmission mains, fire hydrants, services and meters

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$50,000	\$ 0	\$ 0	\$	\$50,000	\$50,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour			\$8,000	Other Levels of Government		\$		
Materials			\$9,000	Property Owners		\$		
Equipment			\$5,500	Other (specify below)				
Contract			\$5,700			\$		
Overhead			\$6,000			\$		
Other (specify below)						\$ 0		
Street Repairs			\$9,700	OTHER FUNDING (specify below; e.g., CFF)				
Miscellaneous (traffic control, dump charges, etc.)			\$6,100			\$		
			\$			\$		
			\$50,000			\$ 0		
CASH FLOW / SPENDING TIMELINE ¹	2009	\$50,000	2010	\$0	2011+	\$0	Total	\$50,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Prevent leak and break repair costs from increasing and reduces the risk of damages to private property and other utilities. Reduces the cost of purchasing water by reducing leaks from the system. Increases reliability of the water system to provide safe drinking water and adequate flow for fire protection.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	A key strategic objective of the Waterworks Long Range Plan is to manage infrastructure proactively. The City's water system has an estimated

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

replacement value of \$1.5 billion. It consists of approximately 1,458 km of water mains, plus associated facilities such as pressure regulating stations, and appurtenances such as valves, fire hydrants, and service connections. With such an extensive system, it is important to use a life-cycle replacement program to eliminate unmanageably large short-term capital expenditures, minimize risk, and control operating costs.

SCOPE OF WORK / DELIVERABLES

This program provides funding to renew aging water system infrastructure in a sustainable manner. As water system infrastructure ages, corrosion and mechanical wear increase the probability of failure. These failures reduce the reliability of the water system, increase operating costs, and sometimes cause extensive property damage. Using the Waterworks Long Range Plan as a guide, this program conducts infrastructure renewal activities at a sustainable rate, replacing water system components that have reached the end of their life expectancy.

F1b) Transmission Main Replacement: \$50,000 CEW-00036-09

This funding is for the systematic replacement and rehabilitation of aging transmission mains. The City's transmission pipelines serve as the backbone of the water system, moving bulk water from the GVRD system to feed the distribution mains. As a single transmission watermain typically serves tens of thousands of customers, the tolerance of failures resulting in loss of service is very low. Therefore, this program provides funding for the proactive renewal and rehabilitation to minimize the occurrence of failures.

9% of the City's aging transmission main inventory consists of welded steel pipe. This type of pipe is very strong, but as it ages it suffers from corrosion which results in holes and leakage. The service life of the pipe can be increased by adding sacrificial anodes to prevent further corrosion, or adding a liner to bridge the corrosion holes.

34% of the City's aging transmission inventory consists of riveted steel pipe. Most of this piping began to experience failures in the 1960's and 70's, and was subsequently lined with cement. While this rehabilitation work succeeded by extending the lifespan of pipes by an additional 30 to 40 years, much of this inventory suffers extensive corrosion and must be replaced.

The proposed 2009 workplan includes completing the design of a transmission main along 13th Avenue from Yukon Street to St. George Street to replace the transmission capacity that was lost with the partial abandonment of the 12th Avenue main. Construction for the 13th Avenue transmission main is scheduled to proceed in 2010.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	January, 2010
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IMPACT OF DELAY

This program proactively replaces aging infrastructure to prevent future water system failures. A delay to this program would reduce the City's ability to provide a safe and reliable water service to customers and would result in higher property damage and maintenance costs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F1c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	Multiple (See Scope of Work)
ASSET CLASS	Water Mains, Hydrants, Services & Meters		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Water & Sewers
PROGRAM	Aging Infrastructure Replacement
SUB-PROGRAM / PROJECT	Services, Pressure Reducing Valves & Hydrant Connections
DESCRIPTION	Replacement of the City's aging distribution and transmission mains, fire hydrants, services and meters

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$4,679,000	\$ 0	\$ 0	\$	\$4,679,000	\$4,679,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$641,000	Other Levels of Government			\$
Materials		\$872,000	Property Owners			\$
Equipment		\$603,000	Other (specify below)			
Contract		\$528,000				\$
Overhead		\$561,000				\$
Other (specify below)						\$ 0
Street Repairs		\$911,000	OTHER FUNDING (specify below; e.g., CFF)			
Miscellaneous (traffic control, dump charges, etc.)		\$563,000				\$
		\$				\$
		\$4,679,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$4,179,000	\$500,000	\$0		\$4,679,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Prevent leak and break repair costs from increasing and reduces the risk of damages to private property and other utilities. Reduces the cost of purchasing water by reducing leaks from the system. Increases reliability of the water system to provide safe drinking water and adequate flow for fire protection.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

A key strategic objective of the Waterworks Long Range Plan is to manage infrastructure proactively. The City's water system has an estimated replacement value of \$1.5 billion. It consists of approximately 1,458 km of water mains, plus associated facilities such as pressure regulating stations, and appurtenances such as valves, fire hydrants, and service connections. With such an extensive system, it is important to use a life-cycle replacement program to eliminate unmanageably large short-term capital expenditures, minimize risk, and control operating costs.

SCOPE OF WORK / DELIVERABLES

This program provides funding to renew aging water system infrastructure in a sustainable manner. As water system infrastructure ages, corrosion and mechanical wear increase the probability of failure. These failures reduce the reliability of the water system, increase operating costs, and sometimes cause extensive property damage. Using the Waterworks Long Range Plan as a guide, this program conducts infrastructure renewal activities at a sustainable rate, replacing water system components that have reached the end of their life expectancy.

F1c) Aging Water Meter & Service Replacement: \$4,679,000

F1c-1) Aging Water Service Replacement: \$3,100,000 CEW-00037-09-A1

The City has approximately 105,000 water service pipes, valued at about \$300 million that connect our customers to water distribution mains. The 1950's and 1960's were a period of massive construction in the City. Many of the services installed at this time are now beginning to fail, and the Waterworks Long Range Plan recommends a program of proactive renewal to minimize both the life cycle costs of this inventory and the inconvenience to customers. It is recommended that steady repair and replacement work be carried out throughout the 2009-2011 Capital Plan with a \$3,100,000 budget allocation for 2009, which equates to approximately 7 km of aging water service replacement.

F1c-2) Aging Water Meter Replacement: \$65,000 CEW-00037-09-A2

The City has approximately 14,000 metered water services. As water meters age, they typically under-read water consumption, resulting in lost revenue for the City. The average life of a water meter is 10 to 15 years, depending on size and type. This ongoing program replaces worn out meters on a regular basis to ensure accurate and equitable billing of the City's metered customers. In addition, the replacement of deteriorating meter chambers that are located in the downtown core will also take place during the 2009-2011 Capital Plan. To fund this work, \$65,000 is recommended to be allocated for 2009 which equates to replacement of approximately 120 aging water meters.

F1c-3) Aging Fire Hydrant Replacement: \$210,000 CEW-00040-09

The City owns approximately 6,200 fire hydrants, some with installation dates as early as the 1920's. As hydrants age, corrosion and mechanical wear can result in failures, and unserviceable leakage can be a problem. In addition, older fire hydrants are not as hydraulically efficient as contemporary models, and their unlined connections become constricted by tuberculation. In areas of the City with below-average water pressure, some of these hydrants are inadequate by current Fire Underwriters' guidelines.

Approximately 50 hydrants (0.9% of the total inventory) are replaced annually as part of the distribution main replacement program. Using the Waterworks Long Range Plan as a guide, the 2009-2011 Capital Plan also includes funds to replace 0.5% of the hydrant inventory in response to failures and unserviceable leaks. To fund this work, \$210,000 is recommended to be allocated in 2009.

F1c-4) PRV Stations: \$1,304,000 CEW-00041-09

The City water system has 30 Pressure Reducing Valve (PRV) stations that regulate pressures to control pipe failures and leakage. The PRV station inventory was studied in 2005 and 18 sites were identified that did not meet modern standards. The study included PRV stations with operator safety and accessibility issues, SCADA communication system incompatibilities, corroding mechanical components and poor reliability. To address these issues, capital improvement work began in 2007, with modernization of the entire inventory to be completed by 2014. PRV station construction is expected to begin in 2009 and extend into the first half of 2010. This funding represents plans to complete construction on 3 PRV stations.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED (if applicable)

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	June, 2010
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IMPACT OF DELAY

This program proactively replaces aging infrastructure to prevent future water system failures. A delay to this program would reduce the City's ability to provide a safe and reliable water service to customers and would result in higher property damage and maintenance costs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F2a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00042-09
ASSET CLASS	Water Mains		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Addressing Growth
SUB-PROGRAM / PROJECT	Storage & Transmission Optimization
DESCRIPTION	Addresses increased domestic and firefighting demands created by population growth, including metering and conservation to manage the resulting demands

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$1,000,000	\$ 0	\$ 0	\$	\$1,000,000	\$1,000,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$157,000	Other Levels of Government	\$
Materials	\$216,000	Property Owners	\$
Equipment	\$147,000	Other (specify below)	
Contract	\$		\$
Overhead	\$120,000		\$
Other (specify below)			\$ 0
Miscellaneous (traffic control, dump charges, etc.)	\$220,000	OTHER FUNDING (specify below; e.g., CFF)	
Street Restoration	\$140,000		\$
	\$		\$
	\$1,000,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$1,000,000	2010	\$0	2011+	\$0	Total	\$1,000,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

This program ensures that the City's water system meets new water demand requirements caused by population growth, and addresses existing flow and reliability shortcomings. Water conservation programs reduce bulk water purchase costs and allow for the deferral of transmission watermain construction and the need for additional storage capacity.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	This section of the Capital Plan addresses increased domestic and firefighting water demands created by population growth, including metering and conservation to manage the resulting demands.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Population growth within the City increases domestic water demand, which affects primarily the water transmission system (City and GVWD large mains, storage and pumping). Local densification results in higher fire-flow demands, which affects the water distribution mains in the immediate neighbourhood of the development. New developments also require new water services and meters.

SCOPE OF WORK / DELIVERABLES

The anticipated completion of Metro Vancouver's Boundary Road #5 Transmission main and the 25th Avenue Transmission main in 2009 requires that the City create new connection points (approximately 15) to these pipelines.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The projects required in much of this program are generated in response to projects by third parties, such as Metro Vancouver and property developers. It is very difficult to defer the City's portion of such projects once they are underway. Deferring the Minor Improvements projects will delay necessary improvements to infrastructure and water quality in the system.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F2b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00043-09
ASSET CLASS	Water Mains		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Addressing Growth
SUB-PROGRAM / PROJECT	Fire Upgrade for Development
DESCRIPTION	Addresses increased domestic and firefighting demands created by population growth, including metering and conservation to manage the resulting demands.

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$75,000	\$ 0	\$ 0	\$	\$75,000	\$75,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$12,000
Materials	\$16,000
Equipment	\$11,000
Contract	\$
Overhead	\$9,000
Other (specify below)	\$ 0
Miscellaneous (traffic control, dump charges, etc.)	\$16,500
Street Restoration	\$10,500
	\$
	\$75,000
	\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$75,000	2010	\$0	2011+	\$0	Total	\$75,000
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COMMENTS

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

This program ensures that the City's water system meets new water demand requirements caused by population growth, and addresses existing flow and reliability shortcomings. Water conservation programs reduce bulk water purchase costs and allow for the deferral of transmission watermain construction and the need for additional storage capacity.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	This section of the Capital Plan addresses increased domestic and firefighting water demands created by population growth, including metering and conservation to manage the resulting demands.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Population growth within the City increases domestic water demand, which affects primarily the water transmission system (City and GVWD large mains, storage and pumping). Local densification results in higher fire-flow demands, which affects the water distribution mains in the immediate neighbourhood of the development. New developments also require new water services and meters.

SCOPE OF WORK / DELIVERABLES

Waterworks requires that developers contribute to the costs of upgrading the water system that are directly attributable to the new development. In some instances, the City will cost share the upgrades due to the nature of the development (social housing, health care, etc).

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The projects required in much of this program are generated in response to projects by third parties, such as Metro Vancouver and property developers. It is very difficult to defer the City's portion of such projects once they are underway. Deferring the Minor Improvements projects will delay necessary improvements to infrastructure and water quality in the system.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F2c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	NEW-00006-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Addressing Growth
SUB-PROGRAM / PROJECT	Water Conservation Capital Projects
DESCRIPTION	Addresses increased domestic and firefighting demands created by population growth, including metering and conservation to manage the resulting demands

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$75,000	\$ 0	\$ 0	\$	\$75,000	\$75,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$12,000
Materials	\$16,000
Equipment	\$11,000
Contract	\$
Overhead	\$9,000
Other (specify below)	\$ 0
Miscellaneous (traffic control, dump charges, etc.)	\$16,500
Street Restoration	\$10,500
	\$
	\$75,000
	\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$75,000	2010	\$0	2011+	\$0	Total	\$75,000
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COMMENTS

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

This program ensures that the City's water system meets new water demand requirements caused by population growth, and addresses existing flow and reliability shortcomings. Water conservation programs reduce bulk water purchase costs and allow for the deferral of transmission watermain construction and the need for additional storage capacity.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	This section of the Capital Plan addresses increased domestic and firefighting water demands created by population growth, including metering and conservation to manage the resulting demands.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Population growth within the City increases domestic water demand, which affects primarily the water transmission system (City and GVWD large mains, storage and pumping). Local densification results in higher fire-flow demands, which affects the water distribution mains in the immediate neighbourhood of the development. New developments also require new water services and meters.

SCOPE OF WORK / DELIVERABLES

Water conservation can provide significant capital benefits by reducing the need for larger transmission facilities. Peak hour demand has declined by 25% from historic levels allowing deferral of some construction. These projects can also help mitigate the expected increases in summer water demand that will likely occur as a result of climate change.

There are opportunities to conserve drinking water by addressing the use of ornamental water features. The water consumption at Charleson Park was reduced by 70% through these efforts. Waterworks proposes to continue efforts to manage water use and find alternative sources of water for ornamental water features, vehicle washing, wheel washing, dust control, flushing, etc. The plan also includes for a targeted educational program to measure the effectiveness of promoting water conservation. Funds are also sought to contribute to sustainability initiatives with other City and non-City partners. There are opportunities to review and improve water usage at Trout Lake and Lost Lagoon.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The projects required in much of this program are generated in response to projects by third parties, such as Metro Vancouver and property developers. It is very difficult to defer the City's portion of such projects once they are underway. Deferring the Minor Improvements projects will delay necessary improvements to infrastructure and water quality in the system.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F2d

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00044-09
ASSET CLASS	Water-Services & Meters		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Addressing Growth
SUB-PROGRAM / PROJECT	New Services and Meters
DESCRIPTION	Addresses increased domestic and firefighting demands created by population growth, including metering and conservation to manage the resulting demands

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$850,000	\$ 0	\$ 0	\$	\$850,000	\$850,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$133,000	Other Levels of Government	\$
Materials	\$184,000	Property Owners	\$
Equipment	\$125,000	Other (specify below)	
Contract	\$		\$
Overhead	\$102,000		\$
Other (specify below)			\$ 0
Miscellaneous (traffic control, dump charges, etc.)	\$119,000	OTHER FUNDING (specify below; e.g., CFF)	
Street Restoration	\$187,000		\$
	\$		\$
	\$850,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$850,000	2010	\$0	2011+	\$0	Total	\$850,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

This program ensures that the City's water system meets new water demand requirements caused by population growth, and addresses existing flow and reliability shortcomings. Water conservation programs reduce bulk water purchase costs and allow for the deferral of transmission watermain construction and the need for additional storage capacity.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$42,500	2011	\$42,500	2012	\$42,500	2013	\$42,500
Comments	Approximately 5% of capital cost									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	This section of the Capital Plan addresses increased domestic and firefighting water demands created by population growth, including metering and conservation to manage the resulting demands.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Population growth within the City increases domestic water demand, which affects primarily the water transmission system (City and GVWD large mains, storage and pumping). Local densification results in higher fire-flow demands, which affects the water distribution mains in the immediate neighbourhood of the development. New developments also require new water services and meters.

SCOPE OF WORK / DELIVERABLES

The City owns the water meters that are used to measure a customer's water consumption. These measurements are also used to estimate and bill for sewer discharge fees. This program is separate from the replacement of aging infrastructure and provides for the purchase of new meters for new customers, with costs being recovered over time through the annual meter rental fees in the operating budget.

The New Services and Meters program covers the following sub-programs:

F2d-1) Water Metering for Single Family Homes **\$0**

The City is currently developing the long-range plan for water metering of single family and duplex customers. A preliminary review indicates that no new capital funds will be required for the 2009-11 Capital Plan.

F2d-2) Additional Automated Meter Reading (AMR) Installations **\$700,000**

In 2006, the City implemented a successful pilot program that allows the City to read water meters via radio signal. Building on the success of that program, 2009 will see the installation of 1,000 additional radio read units. It is recommended that \$700,000 be allocated to this program in 2009.

F2d-3) Park Board Metering **\$100,000**

With the exception of revenue generating facilities, the majority of Parks Board water connections are unmetered. Initial estimates indicated that the parks consume approximately 3-4% of the total City water purchased from the GVRD. In 2005, a water conservation program was initiated in partnership with the Parks Board. This program installs meters to measure and understand consumption. It is recommended that \$100,000 be allocated to this program in 2009.

F2d-4) New Meter Purchase **\$50,000**

The City purchases new meters for installation in new buildings as part of the regular metering program and recovers the cost through rental fees. It is recommended that \$50,000 be allocated to this program in 2009. This funding request allows for purchase of approximately 65 new meters.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The projects required in much of this program are generated in response to projects by third parties, such as Metro Vancouver and property developers. It is very difficult to defer the City's portion of such projects once they are underway. Deferring the Minor Improvements projects will delay necessary improvements to infrastructure and water quality in the system.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F2e

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00047-09
ASSET CLASS	Water Mains		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Addressing Growth
SUB-PROGRAM / PROJECT	Minor Improvements
DESCRIPTION	Addresses increased domestic and firefighting demands created by population growth, including metering and conservation to manage the resulting demands

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$200,000	\$ 0	\$ 0	\$	\$200,000	\$200,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$31,000
Materials	\$43,000
Equipment	\$30,000
Contract	\$
Overhead	\$24,000
Other (specify below)	\$ 0
Miscellaneous (traffic control, dump charges, etc.)	\$28,000
Street Restoration	\$44,000
	\$
	\$200,000
	\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$200,000	2010	\$0	2011+	\$0	Total	\$200,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

This program ensures that the City's water system meets new water demand requirements caused by population growth, and addresses existing flow and reliability shortcomings. Water conservation programs reduce bulk water purchase costs and allow for the deferral of transmission watermain construction and the need for additional storage capacity.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	This section of the Capital Plan addresses increased domestic and firefighting water demands created by population growth, including metering and conservation to manage the resulting demands.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F3c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	NEW-00011-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Emergency Planning
SUB-PROGRAM / PROJECT	Alternate Water Source
DESCRIPTION	Dedicated Fire Protection System, Emergency Planning and Emergency Supplies

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$50,000	\$ 0	\$ 0	\$	\$50,000	\$50,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$	Other Levels of Government			\$		
Materials		\$	Property Owners			\$		
Equipment		\$	Other (specify below)					
Contract		\$44,500				\$		
Overhead		\$5,500				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$				\$		
		\$				\$		
		\$50,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$50,000	2010	\$0	2011+	\$0	Total	\$50,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
The 1987 Capilano transmission main failure reduced service levels across the City until it was repaired. The result of the failure was work to improve redundancy, reliability and review alternate sources of water.
The Dedicated Fire Protection System was built to provide firefighting capacity in the event of a significant disaster. The first phase of the system has been completed and there are no current plans for expansion. However, there are a number of minor upgrades and replacements required for the DFPS system.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Waterworks is also seeking to complete extensive emergency planning and review alternate ground water sources in the City.

SCOPE OF WORK / DELIVERABLES

The current Emergency Plan relies upon existing well fields to provide water to hospitals and firefighters in the event of a major disruption to conventional water supplies. A recent review of these wells has indicated that they may not currently be usable for this purpose. This Plan proposes to review, remediate and/or replace certain wells.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2009

IMPACT OF DELAY

Delays in repair and replacement work will increase the risk of pumping stations not working in an emergency situation.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F4b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	NEW-00008-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Investigation, Monitoring & Control
SUB-PROGRAM / PROJECT	Engineering & Site Investigation
DESCRIPTION	Gathers waterworks information for system design and control; also provides funding for investigation of new materials and technologies

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$250,000	\$ 0	\$ 0	\$	\$250,000	\$250,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$36,300
Materials	\$49,000
Equipment	\$34,000
Contract	\$16,500
Overhead	\$30,000
Other (specify below)	\$ 0
Miscellaneous (traffic control, dump charges, etc.)	\$51,200
Street Restoration	\$33,000
	\$
	\$250,000
	\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$250,000	2010	\$0	2011+	\$0	Total	\$250,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Provides funds for research and investigation of new products, materials and technology that may lead to greater efficiencies.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
<p>This program gathers Waterworks information for system design and control. It also provides funding for investigation of new materials and technologies. This program also provides funding for the waterworks telemetry system as well as engineering and site investigations.</p>	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

Funds are requested annually to provide for various engineering investigations, product evaluations, materials testing, soils testing, bacterial monitoring, cathodic protection monitoring, computer design tools, and pilot tests of new technologies. The Plan includes a program to investigate the in situ condition of high pressure concrete water mains. There has been some concern due to recent failures of this type of watermain in other jurisdictions and this program is meant to act as a proactive response in order to gain knowledge about the condition of this type of watermain pipe in Vancouver's environment.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2009

IMPACT OF DELAY

Delays to this program would reduce the City's ability to plan improvements to ensure continued acceptable service levels and provide realtime alerts to problems with the water system.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F5b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	CEW-00050-09
ASSET CLASS	Water - Mains and other water classes		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Waterworks
SUB-PROGRAM / PROJECT	Water Quality Projects
DESCRIPTION	Improve or maintain water quality through a reduction in the number of dead end, low flow, and tuberculated watermains

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$250,000	\$ 0	\$ 0	\$	\$250,000	\$250,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$39,000	Other Levels of Government		\$			
Materials		\$54,000	Property Owners		\$			
Equipment		\$37,000	Other (specify below)					
Contract		\$0			\$			
Overhead		\$30,000			\$			
Other (specify below)					\$ 0			
Miscellaneous (traffic control, dump charges, etc.)		\$35,000	OTHER FUNDING (specify below; e.g., CFF)					
Street Restoration		\$55,000			\$			
		\$			\$			
		\$250,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹	2009	\$250,000	2010	\$0	2011+	\$0	Total	\$250,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Improvement of water quality within the distribution system to maintain quality above the Canadian Drinking Water Guideline limits.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
The provision of clean, safe drinking water is critical for public health. Under operating permits issued by Vancouver Coastal Health, drinking water quality is a joint responsibility of the City of Vancouver and Metro Vancouver. Metro Vancouver delivers bulk treated water to the Vancouver system and the City is responsible for maintaining high quality within the local distribution network. In North America, it is estimated	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

that 50% of waterborne disease outbreaks have originated in distribution systems. Therefore, it is critical that the City of Vancouver have a proactive program in place to ensure high quality, safe drinking water.

SCOPE OF WORK / DELIVERABLES

The City purchases its water from Metro Vancouver, who is responsible for source protection and primary water treatment. However, maintaining water quality within the local distribution system is the City's responsibility. This responsibility includes maintaining adequate chlorine residuals, addressing areas with chronic low flows, providing sufficient water quality monitoring, addressing cross-contamination risks, and other distribution system issues which result in water quality concerns.

This program funds minor capital improvements which will improve water quality, and provides contingency funding for the construction of additional rechlorination stations if and when they are required.

There are several areas of the City where low water demands or pipe network limitations result in low chlorine residuals as well as taste and odour complaints. This program provides funding to eliminate dead-ends by eliminating unnecessary pipe or connecting dead ends to form a loop. The improved flow of water provides fresher water to the residents of the affected area. There are three specific projects scheduled for 2009. The locations are:

Kaslo (20th Avenue to 21st Avenue)
Heather Street (King Edward Avenue to 27th Avenue)
Granville Street & 16th Avenue

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Delays to this program would inhibit the City's ability to reduce stagnation in low flow areas of the water system and ensure the City's long-term compliance with the Canadian Drinking Water Quality Guidelines.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

F8a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Waterworks	PROJECT / WBS	NEW-00013-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Waterworks
PROGRAM	Waterworks - Special Projects
SUB-PROGRAM / PROJECT	Special Events Contribution
DESCRIPTION	Contribution for waterworks infrastructure improvements at Festival parks

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$300,000	\$ 0	\$ 0	\$0	\$300,000	\$300,000	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$	Other Levels of Government			\$		
Materials		\$	Property Owners			\$		
Equipment		\$	Other (specify below)					
Contract		\$				\$		
Overhead		\$				\$		
Other (specify below)						\$ 0		
Contribution to Community Service Group Special Project - Festival Sustainability (N5b)		\$300,000	OTHER FUNDING (specify below; e.g., CFF)					
		\$				\$		
		\$				\$		
		\$300,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$100,000	2010	\$100,000	2011+	\$100,000	Total	\$300,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
For over 30 years various major festivals and events have enlivened many large public spaces through out the City. The Vancouver International Children's Festival and Bard on the Beach inhabit Vanier Park for almost six months of the year and have a combined total attendance exceeding 133,000. The Vancouver International Folk Festival at Jericho Park, The Powell Street Festival at Oppenheimer Park and Illuminares at John Hendry Park have accumulated attendance of over 520,000 annually.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Popular free public events like these require resources not easily or economically available at these locations. They can also leave a significant environment imprint which is costly to remedy. Arrangements to provide water, sanitation and electrical services, all necessary to produce these events, can be expensive and the methods of delivery themselves are not always environmentally friendly or create public safety challenges which require further costly mitigation.

The 2009-11 Capital plan approved a funding contribution of \$300,000 in Waterworks Basic capital for improvements to the waterworks infrastructure at several city parks that host large publicly attended events. The following four parks were identified as the most publicly used space, requiring infrastructure improvements to sewer, water and electrical plants: Jericho Park, Vanier Park, John Hendry Park/Trout Lake, and Oppenheimer Park (2009-11 Capital Plan Reference #N-5b).

SCOPE OF WORK / DELIVERABLES

- planning of detailed project scope and coordination of work with the other City departments
- RFP for consultant with expertise in this area to be advertised and secured

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Community Services Group/Cultural Services

TIMELINE

Start (mm/yy)

May, 2009

Completion (mm/yy)

June, 2010

IMPACT OF DELAY

Delays in providing these infrastructure improvements will mean continued high setup costs to the non-profit organizations holding events in these parks.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

STREETS		Operating	Debenture	DCL/CAC	TOTAL	External /	2009
Ref #	Program / Sub-program / Project	Funding	Funding	Funding	CITY	Other	Gross Budget
A1	Infrastructure						
A1a	Roads and Pavement						
A1a1	Major Streets - City		\$4,500		\$4,500	\$0	\$4,500
A1a2	Major Streets - MRN		\$0		\$0	\$3,200	\$3,200
A1a3	Local Streets		\$650		\$650	\$0	\$650
A1a4	Streets - Local Improvements		\$2,000		\$2,000	\$1,400	\$3,400
A1a5	Lanes		\$325		\$325		\$325
A1a6	Lanes - Local Improvements		\$900		\$900	\$1,100	\$2,000
A1a7	Bus Slabs	\$200			\$200	\$200	\$400
A1a	Total Roads and Pavement	\$200	\$8,375	\$0	\$8,575	\$5,900	\$14,475
A1b	Sidewalks & Boulevards						
A1b1	New Sidewalks & Local Improvement		\$2,700		\$2,700	\$400	\$3,100
A1b2	Sidewalk Reconstruction		\$1,900		\$1,900	\$0	\$1,900
A1b3	Curb Ramps - New		\$1,000		\$1,000	\$0	\$1,000
A1b	Total Sidewalks & Boulevards	\$0	\$5,600	\$0	\$5,600	\$400	\$6,000
A1c	General Programs						
A1c1	Peat Areas		\$500		\$500		\$500
A1c2	Drainage & Utility Relocations	\$100			\$100		\$100
A1c3	Rehabilitation Complementing Cut Restoration & Dev't		\$400		\$400		\$400
A1c5	Investigation for Design		\$400		\$400		\$400
A1c	Total General Programs	\$100	\$1,300	\$0	\$1,400	\$0	\$1,400
A1	Total Infrastructure	\$300	\$15,275	\$0	\$15,575	\$6,300	\$21,875
A2	Bridges and Structures						
A2a	Major Maintenance of City Bridges	\$350			\$350		\$350
A2b	Maintenance of Other Structures						
A2b1	Pedestrian & Other Structures		\$150		\$150		\$150
A2b2	Historic Railway Upgrades		\$200		\$200		\$200
A2b	Total Maintenance of Other Structures	\$0	\$350	\$0	\$350	\$0	\$350
A2c	Special Projects						
A2c2	PCB Removal - Bridges		\$500		\$500	\$250	\$750
A2c3	Granville Bridge Strengthening		\$2,750		\$2,750	\$2,250	\$5,000
A2c	Total Special Projects	\$0	\$3,250	\$0	\$3,250	\$2,500	\$5,750
A2	Total Bridges & Structures	\$350	\$3,600	\$0	\$3,950	\$2,500	\$6,450
A3	Major Projects						
A3d	Carrall Street Greenway			\$2,000	\$2,000		\$2,000
A3l	Pacific Boulevard: Homer to Nelson		\$730		\$730	\$200	\$930
A3p	2nd Ave, Cambie to Quebec Phase 1			\$2,369	\$2,369		\$2,369
A3r	General Allocation (Blueways)	\$400			\$400		\$400
A3	Total Major Projects	\$400	\$730	\$4,369	\$5,499	\$200	\$5,699
A4	Strategic Transportation		\$1,819		\$1,819	\$2,976	\$4,795
A4a1	Arterial Modifications		\$1,174		\$1,174	\$1,721	\$2,895
A4a2	Uncurbed Arterials		\$645		\$645	\$1,255	\$1,900
A4a	Arterial Improvements	\$0	\$1,819	\$0	\$1,819	\$2,976	\$4,795
A4b	Neighbourhood Modifications						
A4b1	Traffic Calming		\$1,000		\$1,000	\$0	\$1,000
A4b2	Neighbourhood Collector Program		\$850		\$850	\$0	\$850
A4b	Total Neighbourhood Modifications	\$0	\$1,850	\$0	\$1,850	\$0	\$1,850
A4c	Greenways Program			\$1,400	\$1,400	\$0	\$1,400
A4d	Cycling Network		\$850	\$850	\$1,700	\$0	\$1,700
A4f	Bus Shelters & Landings	\$70			\$70	\$70	\$140
A4	Total Transit & Safety	\$70	\$4,519	\$2,250	\$6,839	\$3,046	\$9,885
	Sub-total excluding debenture costs	\$1,120	\$24,124	\$6,619	\$31,863	\$12,046	\$43,909
	Debenture Costs		\$277		\$277		\$277
	TOTAL STREETS	\$1,120	\$24,401	\$6,619	\$32,140	\$12,046	\$44,186

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00064-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads and Pavement
SUB-PROGRAM / PROJECT	Major Streets - City
DESCRIPTION	Rehabilitation and repair of arterial streets not on the Major Road Network (MRN)

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$4,500,000	\$ 0	\$ 0	\$	\$4,500,000	\$4,500,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING <i>(Secured)</i>					
Direct Labour		\$1,188,000	Other Levels of Government			\$		
Materials		\$1,782,000	Property Owners			\$		
Equipment		\$990,000	Other <i>(specify below)</i>					
Contract		\$				\$		
Overhead		\$540,000				\$		
Other <i>(specify below)</i>						\$ 0		
		\$	OTHER FUNDING <i>(specify below; e.g., CFF)</i>					
		\$				\$		
		\$				\$		
		\$4,500,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$4,500,000	2010	\$	2011+	\$	Total	\$4,500,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
<p>This program provides for the rehabilitation of the City's arterial streets where major capital restoration work is required to maintain the integrity of the street asset and extend the service life of the entire road structure. There are approximately 1,760 blocks (243 km) of arterial streets within the City, excluding arterial streets that are part of the region's Major Road Network.</p> <p>Streets deteriorate over time due to aging of the pavement materials, loading from traffic, and defects caused from utility cuts. The City's maintenance programs address minor defects to maintain the service life of the pavements, and eventually major work is required to restore</p>	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

these pavements.

Renewing the pavement structure extends the service life of the roadway and provides a restored road surface that facilitates good rideability for all vehicles and road users including transit, goods transporters, vehicles and cyclists in support of the overall objectives of the City's Transportation plan.

SCOPE OF WORK / DELIVERABLES

Rehabilitation typically consists of the removal and replacement of the surface layer of pavement (grind and overlay), and in severe cases may also include reconstruction of the entire pavement structure and/or the reconstruction of damaged or substandard curbs.

The following streets have initially been identified for rehabilitation in 2009:

- Victoria, from 12th Ave to Victoria Diversion
- King Edward, from Cambie to Kingsway
- Hamilton/Mainland (Yaletown)
- Davie, from Denman to Burrard

Additional projects will be identified for inclusion in the 2009 program based on pavement condition and utility coordination opportunities. Funding is expected to provide for the rehabilitation of approximately 70 blocks (10 km) of arterial pavements.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

If streets are not rehabilitated in a timely manner, pavements can deteriorate rapidly and require increasing maintenance expenditures to provide a safe and functional roadway.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00065-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads & Pavement
SUB-PROGRAM / PROJECT	Major Streets-MRN
DESCRIPTION	Rehabilitation and repair of arterial streets on the Major Road Network (MRN)

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$3,200,000	\$3,200,000	\$ 0	\$	\$ 0	\$ 0	\$0
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$844,800	Other Levels of Government			\$
Materials		\$1,267,200	Property Owners			\$
Equipment		\$704,000	Other (specify below)			
Contract		\$	TransLink			\$3,200,000
Overhead		\$384,000				\$
Other (specify below)						\$3,200,000
		\$	OTHER FUNDING (specify below; e.g., CFF)			
		\$				\$
		\$				\$
		\$3,200,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$3,200,000	\$		\$	\$3,200,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides for the rehabilitation of the City's arterial streets that are part of the region's Major Road Network (MRN) where major capital restoration work is required to maintain the integrity of the street asset and extend the service life of the entire road structure. There are approximately 800 blocks (121 km) of MRN arterial streets within the City. It is anticipated that TransLink will continue to provide funding for the operation, maintenance and rehabilitation of these roadways. These roads must be maintained to a regional standard to maintain TransLink funding.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Streets deteriorate over time due to aging of the pavement materials, loading from traffic, and defects caused from utility cuts. The City's maintenance programs address minor defects to maintain the service life of the pavements, and eventually major work is required to restore these pavements.

Renewing the pavement structure extends the service life of the roadway and provides a restored road surface that facilitates good rideability for all vehicles and road users including transit, goods transporters, vehicles and cyclists in support of the overall objectives of the City's Transportation plan.

SCOPE OF WORK / DELIVERABLES

Rehabilitation typically consists of the removal and replacement of the surface layer of pavement (grind and overlay), and in severe cases may also include reconstruction of the entire pavement structure and/or the reconstruction of damaged or substandard curbs.

The following streets have initially been identified for rehabilitation in 2009:

- Hastings, from Carrall to Glen
- Terminal, from Main to Clark
- Granville, from 5th to Broadway

Additional projects will be identified for inclusion in the 2009 program based on pavement condition and utility coordination opportunities. Funding is expected to provide for the rehabilitation of approximately 40 blocks (6 km) of arterial pavements.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

If streets are not rehabilitated in a timely manner, pavements can deteriorate rapidly and require increasing maintenance expenditures to provide a safe and functional roadway.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a3

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00066-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads & Pavement
SUB-PROGRAM / PROJECT	Local Streets
DESCRIPTION	Reconstruction of deteriorated local streets

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$650,000	\$ 0	\$ 0	\$	\$650,000	\$650,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$171,600	Other Levels of Government			\$
Materials		\$257,400	Property Owners			\$
Equipment		\$143,000	Other (specify below)			
Contract		\$				\$
Overhead		\$78,000				\$
Other (specify below)						\$ 0
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$
		\$				\$
		\$				\$
		\$650,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$650,000	\$		\$	\$650,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides for the rehabilitation of the City's local streets where major capital restoration work is required to maintain the integrity of the street asset and extend the service life of the entire road structure. There are approximately 7,800 blocks (1,100 km) of local streets within the City, including industrial, commercial, higher zoned, and residential streets. A majority of the City's local streets were constructed in the 1960's and 1970's and some of these streets have now deteriorated to a point where major rehabilitation is required to reinstate a safe and reliable road surface.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Streets deteriorate over time due to aging of the pavement materials, loading from traffic, and defects caused from utility cuts. The City's maintenance programs address minor defects to maintain the service life of the pavements, and eventually major work is required to restore these pavements.

Renewing the pavement structure extends the service life of the roadway and provides a restored road surface that facilitates good rideability for all vehicles and road users including transit, goods transporters, vehicles and cyclists in support of the overall objectives of the City's Transportation plan.

SCOPE OF WORK / DELIVERABLES

Rehabilitation typically consists of the replacement of the surface layer of pavement (overlay or grind and overlay), and in severe cases may also include reconstruction of the entire pavement structure and/or the reconstruction of damaged or substandard curbs.

Projects will be identified for inclusion in the 2009 program based on pavement condition and utility coordination opportunities. Funding is expected to provide for the rehabilitation of approximately 10-20 blocks of local pavements.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2009

IMPACT OF DELAY

If streets are not rehabilitated in a timely manner, pavements can deteriorate rapidly and require increasing maintenance expenditures to provide a safe and functional roadway.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a4

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00067-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads & Pavement
SUB-PROGRAM / PROJECT	Streets - Local Improvements
DESCRIPTION	Reconstruction of unimproved streets

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$3,400,000	\$1,400,000	\$ 0	\$	\$2,000,000	\$2,000,000	\$				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$897,600	Other Levels of Government			\$				
Materials		\$1,346,400	Property Owners			\$1,400,000				
Equipment		\$748,000	Other (specify below)							
Contract		\$				\$				
Overhead		\$408,000				\$				
Other (specify below)						\$1,400,000				
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$				
		\$				\$				
		\$				\$				
		\$3,400,000				\$ 0				
CASH FLOW / SPENDING TIMELINE ¹			2009	\$2,000,000	2010	\$1,400,000	2011+	\$	Total	\$3,400,000
COMMENTS			Due to the timing of the Local Improvement process (Court of Revisions for 2009) and the availability of construction staffing/equipment resources, some projects scheduled to commence and complete in 2009 could be rescheduled to start early in 2010. In addition, any projects approved from the fall 2009 Court of Revision would likely begin in the spring of 2010. Therefore, funding would need to be secured for either fall 2009 or possibly spring 2010 construction seasons.							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
This program provides for the construction of new road structures on streets that are currently unimproved or undeveloped. The intent of this program is to respond to petition requests for street improvements, and to initiate projects when required or desired to address safety,	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

maintenance, or other City priorities. Adjacent property owners share a portion of the construction costs with the City based on zoning and property details. There is approximately 1,200 blocks (150 km) of unimproved streets in the City. When possible, local improvement projects are coordinated with utility renewal projects.

SCOPE OF WORK / DELIVERABLES

Typically, local improvements include the installation of curbs, corner bulges, street trees, and new pavements as determined by the road classification, local conditions and zoning. These improvements help define the boulevard area, improve the urban forest, improve drainage, provide separation between pedestrians and vehicles, and improve the road surface for all users.

Most projects will be identified and approved by residents through the Local Improvement process. Some projects may be identified for inclusion in the program based on pavement condition and these may be subject to the Local Improvement process. Funding is expected to provide for the reconstruction of approximately 60 blocks of unimproved pavements.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2010
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IMPACT OF DELAY

There will be a delayed response to property owners' requests for improvements to provide safe surfaces and improved accessibility.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a5

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00068-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads & Pavement
SUB-PROGRAM / PROJECT	Lanes
DESCRIPTION	Reconstruction of deteriorated lanes

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$325,000	\$ 0	\$ 0	\$	\$325,000	\$325,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$71,500	Other Levels of Government			\$		
Materials		\$143,000	Property Owners			\$		
Equipment		\$71,500	Other (specify below)					
Contract		\$				\$		
Overhead		\$39,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$325,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$325,000	2010	\$	2011+	\$	Total	\$325,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides for the rehabilitation of the City's lanes where major capital restoration work is required to maintain the integrity of the lane asset and extend the service life of the entire road structure. There are approximately 700 km of improved lanes within the City, including industrial, commercial, higher zoned, and residential areas. Some of these lanes have now deteriorated to a point where major rehabilitation is required to reinstate a safe and reliable road surface.

Streets deteriorate over time due to aging of the pavement materials, loading from traffic, and defects caused from utility cuts. The City's

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

maintenance programs address minor defects to maintain the service life of the pavements, and eventually major work is required to restore these pavements.

Renewing the pavement structure extends the service life of the roadway and provides a restored road surface that facilitates good rideability for all vehicles and road users.

SCOPE OF WORK / DELIVERABLES

Rehabilitation typically consists of the replacement of the surface layer of pavement (overlay or grind and overlay), and in severe cases may also include reconstruction of the entire pavement structure.

Projects will be identified for inclusion in the 2009 program based on pavement condition and utility coordination opportunities. Funding is expected to provide for the rehabilitation of approximately 1-3 km (10-20 blocks) of lane pavements.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

If lanes are not rehabilitated in a timely manner, pavements can deteriorate rapidly and require increasing maintenance expenditures to provide a safe and functional roadway.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a6

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00069-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads & Pavement
SUB-PROGRAM / PROJECT	Lanes - Local Improvements
DESCRIPTION	Reconstruction of unimproved lanes

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$2,000,000	\$1,100,000	\$ 0	\$	\$900,000	\$900,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$440,000	Other Levels of Government	\$
Materials	\$880,000	Property Owners	\$1,100,000
Equipment	\$440,000	Other (specify below)	
Contract	\$		\$
Overhead	\$240,000		\$
Other (specify below)			\$1,100,000
	\$	OTHER FUNDING (specify below; e.g., CFF)	
	\$		\$
	\$		\$
	\$2,000,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$800,000	2010	\$1,200,000	2011+	\$	Total	\$2,000,000
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COMMENTS	Due to the timing of the Local Improvement process (Court of Revisions for 2009) and the availability of construction staffing/equipment resources, some projects scheduled to commence and complete in 2009 could be rescheduled to start early in 2010. In addition, any projects approved from the fall 2009 Court of Revision would likely begin in the spring of 2010. Therefore, funding would need to be secured for either fall 2009 or possibly spring 2010 construction seasons.
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¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides for the construction of new road structures on lanes that are currently unimproved or undeveloped. The intent of this program is to respond to petition requests for lane improvements, and to initiate projects when required or desired to address safety, maintenance, or other City priorities. Adjacent property owners share a portion of the construction costs with the City based on zoning and

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

property details. There is approximately 130km of unimproved lanes in the City. When possible, local improvement projects are coordinated with utility renewal projects.

SCOPE OF WORK / DELIVERABLES

Typically, local improvements include the installation of new pavements as determined by local conditions and zoning requirements. In most residential areas, paving will typically consist of a centre strip paving with vegetated gravel shoulders that will provide increased permeability and opportunities for landscaping. In most commercial and high-use areas, full width paving will likely be required. Lane improvements will help address drainage and run-off within the roadway.

Most projects will be identified and approved by residents through the Local Improvement process. Some projects may be identified for inclusion in the program based on pavement condition and these may be subject to the Local Improvement process. Funding is expected to provide for the reconstruction of approximately 8 km (60 blocks) of unimproved lanes.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2010

IMPACT OF DELAY

There will be a delayed response to property owners' requests for improvements to provide safe surfaces and improved accessibility.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1a7

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00070-09
ASSET CLASS	Roads and Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Roads & Pavement
SUB-PROGRAM / PROJECT	Bus Slabs
DESCRIPTION	Construction of Roadway Bus Pads at Bus Stops

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$400,000	\$200,000	\$ 0	\$	\$200,000	\$200,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$140,800	Other Levels of Government			\$		
Materials		\$105,600	Property Owners			\$		
Equipment		\$105,600	Other (specify below)					
Contract		\$	Translink			\$200,000		
Overhead		\$48,000				\$		
Other (specify below)						\$200,000		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$400,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$400,000	2010	\$	2011+	\$	Total	\$400,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program allows for the installation and rehabilitation of concrete bus pads within the roadway at bus stops. A rigid pavement like concrete can better withstand the type of vehicle loading encountered at bus stops and will provide a better road service for bus operations over a much longer period than typically provided by flexible pavements like asphalt.

The repetitive stopping of transit buses at the same location, combined with the heavy operational weight of loaded transit buses, typically leads to accelerated damage and failure of pavements at bus stops. Concrete bus pads at bus stops have been shown to provide an extended

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

service life compared to asphalt pavement.

SCOPE OF WORK / DELIVERABLES

The bus pad program provides for replacing deteriorated pavement at transit stops with new concrete bus pads. Bus pads are typically installed in conjunction with major road works. The installation of the pads improves transit operations and reduces road maintenance at bus stops.

Projects will be identified for inclusion in the 2009 program based on pavement condition and coordination opportunities with paving projects. Funding is expected to provide for the installation of approximately 12 standard length bus pads.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Pavements at bus stops can deteriorate rapidly and require increasing maintenance expenditures to provide a safe and functional roadway.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1b1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00071-09
ASSET CLASS	Sidewalks		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Sidewalks & Boulevards
SUB-PROGRAM / PROJECT	Sidewalks - New & Local Improvements
DESCRIPTION	Construction of new sidewalks to complete the City's pedestrian network

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$3,100,000	\$400,000	\$ 0	\$	\$2,700,000	\$2,700,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$1,091,200	Other Levels of Government	\$
Materials	\$818,400	Property Owners	\$400,000
Equipment	\$818,400	Other (specify below)	
Contract	\$		\$
Overhead	\$372,000		\$
Other (specify below)			\$400,000
	\$	OTHER FUNDING (specify below; e.g., CFF)	
	\$		\$
	\$		\$
	\$3,100,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$600,000	2010	\$2,500,000	2011+	\$	Total	\$3,100,000
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COMMENTS	Due to the timing of the Local Improvement process (Court of Revisions for 2009) and the availability of construction staffing/equipment resources, some projects scheduled to commence and complete in 2009, could be rescheduled to start early in 2010. In addition, any projects approved from the fall 2009 Court of Revision would likely begin in the spring of 2010. Therefore, funding would need to be secured for either fall 2009 or possibly spring 2010 construction seasons.
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¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides funding for the installation of new sidewalks to facilitate the completion of the City's sidewalk network in support of the City's Transportation Plan. Most projects are completed through the City's Local Improvement process. Council policy is to complete the

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

sidewalk network to include sidewalks on both sides of all blocks based on the following priorities: transit routes, arterial streets, pedestrian collector routes, higher zoned streets, and local residential streets.

There are approximately 3,700 block-faces (500 km) of sidewalks remaining to be developed and/or improved within the City.

The intent of this program is to respond to petition requests for new sidewalks, and to initiate sidewalk projects on priority sidewalk routes in accordance with Council policy. Adjacent property owners share a portion of the sidewalk construction costs with the City. Completion of the sidewalk network supports the City's Transportation Plan priority to promote pedestrian mobility.

SCOPE OF WORK / DELIVERABLES

Typically, local improvements include the installation of concrete sidewalks and curb ramps as determined by local conditions, zoning, and streetscape standards.

Some projects will be identified and approved by residents through the Local Improvement process. Most projects will be identified for inclusion in the program based on pedestrian needs and these may be subject to the Local Improvement process. Funding is expected to provide for the construction of approximately 100 block faces of new sidewalks.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2010

IMPACT OF DELAY

Delays for this work may lead to risk management concerns, delays to pedestrian accessibility to transit routes and inconvenience the public.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1b2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00072-09
ASSET CLASS	Sidewalks		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Sidewalks & Boulevards
SUB-PROGRAM / PROJECT	Sidewalks - Reconstruction
DESCRIPTION	Reconstruction of deteriorated sidewalks

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$1,900,000	\$ 0	\$ 0	\$	\$1,900,000	\$1,900,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$668,800	Other Levels of Government			\$
Materials		\$501,600	Property Owners			\$
Equipment		\$501,600	Other (specify below)			
Contract		\$				\$
Overhead		\$228,000				\$
Other (specify below)						\$ 0
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$
		\$				\$
		\$				\$
		\$1,900,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$1,900,000	\$		\$	\$1,900,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides funding to rehabilitate sidewalks where major reconstruction of the sidewalk is required to provide a safe and functional pedestrian area. Priority will be given to reconstructing sidewalks where there are higher levels of pedestrian activity, such as in commercial areas, transit routes, and pedestrian collector routes.

There are approximately 16,800 block-faces (2,350 km) of permanent sidewalks within the City. Significant numbers of these sidewalks have deteriorated primarily due to tree roots creating heaved and uneven surfaces. Commercial and neighbourhood centres are another priority for

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

rehabilitation. Projects would also include the extra costs of replacing trees as required, particularly in commercial areas. Typically, sidewalk projects will be coordinated with major rehabilitation projects. The local improvement process will remain available as a mechanism for property owners to identify and cost-share projects that are not a priority.

SCOPE OF WORK / DELIVERABLES

Rehabilitation typically consists of the replacement of concrete sidewalks and curb ramps as determined by local conditions, zoning, and streetscape standards.

Sidewalk reconstruction will include:

- breaking out the existing sidewalk
- reconstructing the new sidewalk base
- reconstructing the new sidewalk and/or curb and gutter, if required

Projects will be identified for inclusion in the 2009 program based on sidewalk condition and project coordination opportunities. Funding is expected to provide for the rehabilitation of approximately:

- 20 blocks of commercial sidewalk OR
- 60 blocks of local sidewalks OR
- mixture of both commercial or local sidewalks

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Delays for this work may lead to risk management concerns, delays to pedestrian accessibility to transit routes, and inconvenience the public.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1b3

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00073-09
ASSET CLASS	Sidewalks		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	Sidewalks & Boulevards
SUB-PROGRAM / PROJECT	New Curb Ramps
DESCRIPTION	Installation or reconstruction of curb ramps to provide accessible sidewalks

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$1,000,000	\$ 0	\$ 0	\$	\$1,000,000	\$1,000,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$352,000	Other Levels of Government			\$
Materials		\$264,000	Property Owners			\$
Equipment		\$264,000	Other (specify below)			
Contract		\$				\$
Overhead		\$120,000				\$
Other (specify below)						\$ 0
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$
		\$				\$
		\$				\$
		\$1,000,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$1,000,000	\$		\$	\$1,000,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program funds the installation or rehabilitation of curb ramps at street and lane intersections to provide accessible access to the sidewalks. This program benefits many pedestrians including people with disabilities, people who use mobility aids and people with strollers and shopping trolleys. There has been an increase in the demand for curb ramps as the City endeavours to complete the sidewalk network for seamless travel throughout the pedestrian environment.

The program's priority is to provide ramps adjacent to bus stops, arterial streets, pedestrian collector routes, higher zoned streets, and local

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

residential streets. Locations are identified based on public requests and coordination with other street construction.

SCOPE OF WORK / DELIVERABLES

Work will include installation of dropped curbs at intersection corners with scored ramp surfaces that will connect smoothly to adjacent sidewalk areas to make intersection corners accessible and safe for pedestrians with limited mobility and/or limited vision.

There are approximately 8,200 locations throughout the City that still require curb ramps.

Projects will be identified for inclusion in the 2009 program based on requirements to complete/rehabilitate curb ramps on key routes, coordinate with other rehabilitation projects, and to address public requests. Funding is expected to provide for the installation of approximately 200 curb ramps.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

There is currently an extensive list of requests generated by the public and the accessible trolley bus rollout. Delays to the program schedule will affect the completion of the sidewalk network throughout the City.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1c1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00075-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	General Programs
SUB-PROGRAM / PROJECT	Peat Areas
DESCRIPTION	Reconstruction of Streets, Lanes and Sidewalks that have deteriorated primarily due to poor peat-related soil conditions

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$500,000	\$ 0	\$ 0	\$	\$500,000	\$500,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$198,000	Other Levels of Government			\$		
Materials		\$132,000	Property Owners			\$		
Equipment		\$110,000	Other (specify below)					
Contract		\$				\$		
Overhead		\$60,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$500,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$500,000	2010	\$	2011+	\$	Total	\$500,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	This program provides for the rehabilitation of improved local streets and sidewalks that, due to local soil conditions, have deteriorated to the point of failure and therefore require a full reconstruction. These streets are typically located in areas where peat bogs and historic waterways previously existed, and failure of these streets and sidewalks typically results from extreme settlement of the roadway. There are an estimated 200 blocks of streets located in peat areas. These roads and sidewalks are a source of many public complaints. These areas need to be reconstructed frequently to maintain a safe asset.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Special reconstruction methods are used to strengthen the road and sidewalk structures to help prolong the life of the reconstructed asset. This program is fully funded by the City. Rehabilitation is required to reduce the City's liability and improve safety. As well as improving vehicular travel, the improved surfaces also benefit cyclists and pedestrians.

SCOPE OF WORK / DELIVERABLES

Projects involve the total reconstruction of roads and sidewalks, including:

- installation of an engineered road structure designed for poor soil conditions
- installation of a new asphalt road surface, typically with an asphalt curb and gutter (concrete curb and gutter on arterial streets)
- reconstructing sidewalks which are in poor condition

Projects will be identified for inclusion in the 2009 program based on pavement condition and utility coordination opportunities. Funding is expected to provide for the rehabilitation of approximately 2-3 blocks of peat area pavements or sidewalks.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

April, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Delays may lead to risk management concerns and inconvenience to road users and area residents.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1c2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00076-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	General Programs
SUB-PROGRAM / PROJECT	Drainage & Utility Relocations
DESCRIPTION	Drainage improvements and utility relocations for street and lane paving projects

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$100,000	\$ 0	\$ 0	\$	\$100,000	\$100,000	\$				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$39,600	Other Levels of Government			\$				
Materials		\$26,400	Property Owners			\$				
Equipment		\$22,000	Other (specify below)							
Contract		\$				\$				
Overhead		\$12,000				\$				
Other (specify below)						\$ 0				
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$				
		\$				\$				
		\$				\$				
		\$100,000				\$ 0				
CASH FLOW / SPENDING TIMELINE ¹			2009	\$50,000	2010	\$50,000	2011+	\$	Total	\$100,000
COMMENTS			Program work in 2010 is coordinated with other street/paving programs and funding is required to be secured to allow projects to begin immediately when staffing/equipment resources become available in the event these projects commence prior to the approval of the 2010 Engineering Capital Budget.							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
This program funds drainage improvements and utility relocations for proposed street and lane paving projects as required. The drainage and utility work for proposed projects must be initiated early to reduce lead times and avoid construction delays once projects are approved. Work would address concerns requiring attention regardless of whether the related proposed paving projects proceed.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

Work may include relocation of existing utilities that would be impacted by new road construction. Drainage improvements may include regrading pavements, installation of new catch basins, or improvements to other drainage facilities as required.

Projects will be identified for inclusion in the 2009 program based on utility relocation needs in advance of street and lane paving projects or based on requirements to address drainage issues within roadways.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

The construction schedule for the various street and lane projects could be impacted and/or delayed. The delays will increase construction costs and will inconvenience the public and businesses. Delayed drainage improvements may lead to risk management concerns.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1c3

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	CER-00077-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	General Programs
SUB-PROGRAM / PROJECT	Rehabilitation Complementing Cut Restoration and Development
DESCRIPTION	Reconstruction of portions of deteriorated local streets and sidewalks where the majority of the street and/or sidewalk is being replaced as a result of utility cuts or developments.

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$400,000	\$ 0	\$ 0	\$	\$400,000	\$400,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$105,600	Other Levels of Government	\$
Materials	\$158,400	Property Owners	\$
Equipment	\$88,000	Other (specify below)	
Contract	\$		\$
Overhead	\$48,000		\$
Other (specify below)			\$ 0
	\$	OTHER FUNDING (specify below; e.g., CFF)	
	\$		\$
	\$		\$
	\$400,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$300,000	2010	\$100,000	2011+	\$	Total	\$400,000
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COMMENTS

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program funds the reconstruction of the remainder of the street/sidewalk after utility cuts or after development work. Street and sidewalk repairs are initiated by underground utility work. Frequently, large utility cuts (e.g., Sewers, Water, Terasen, telcos, etc.) may damage the majority of the street or sidewalk leaving very little of the previous street or sidewalk intact. This program supplements cut repairs funds to result in new full-width asphalt surface or full-block sidewalk reconstruction where the existing asset conditions warrant extending these repairs

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

to the undamaged areas.

Often developers are required to construct the portion of street and sidewalk adjacent to their development. These funds would be used to ensure that other street and sidewalk work associated with the developer's new work is completed at the same time.

SCOPE OF WORK / DELIVERABLES

Projects will be identified where cut restoration or development reconstruction would be improved through extending the scope of the rehabilitation area. Reconstruction may include pavement rehabilitation, sidewalk rehabilitation, and/or curb and gutter rehabilitation.

The levels of utility and construction development work underway in the City provide opportunities to leverage these repairs to obtain a full rehabilitation of the affected assets and therefore extend their service life.

This program will fund approximately:

- 5 blocks of commercial sidewalk or streets, OR
- 15 blocks of local streets/sidewalks, OR
- Mixture of commercial and local streets/sidewalks complementary rehabilitation work annually.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2010

IMPACT OF DELAY

Delays for this work would lead to risk management concerns, increased maintenance costs and a reduced life cycle for the deteriorated side of the street, and inconvenience to road users and area residents.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A1c5

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Infrastructure	PROJECT / WBS	NER-00007-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Streets
PROGRAM	General Programs
SUB-PROGRAM / PROJECT	Investigation for Design
DESCRIPTION	Materials Management and Asset Management

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST				Funding Approved in Advance of 2009 BCB	
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$400,000	\$ 0	\$ 0	\$	\$400,000	\$400,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$91,000	Other Levels of Government			\$		
Materials		\$131,000	Property Owners			\$		
Equipment		\$77,000	Other (specify below)					
Contract		\$				\$		
Overhead		\$48,000				\$		
Other (specify below)						\$ 0		
Consultant		\$33,000	OTHER FUNDING (specify below; e.g., CFF)					
Engineering, design, inspection		\$20,000				\$		
		\$				\$		
		\$400,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	\$	Total	\$400,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program is divided into 2 sub-programs: Materials Management and Asset Management. The Materials Management program covers the research and investigation of engineering materials. This includes the cost of researching and implementing new paving materials, material technology, recycled construction materials and energy conservation in the production and use of these materials.

The Asset Management program provides for the investigation of new design standards, design procedures, and asset management tools and processes for related streets infrastructure. The objective of this program is to generate economic and infrastructure benefits to the City

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

through the implementation of designed construction products, technology, and increased use of sustainable materials.

SCOPE OF WORK / DELIVERABLES

Materials Management: A budget of \$100,000 is proposed for 2009, to continue with projects in the following areas:

- quality control and assurance testing of reclaimed asphalt cement;
- field evaluation of pavement performance;
- research and evaluation of alternative cold patch material;
- research and testing of alternate types of asphalt products such as warm asphalt;
- test trials of recycled crushed concrete and asphalt;
- research and field trials of polymer modified asphalt;
- review of de-icing salt alternatives, including asphalt additives;
- lab trials and investigation of plastic bags and plastic chips with asphalt cement;
- research opportunities for energy savings in asphalt production.

Asset Management: A budget of \$300,000 is proposed for 2009 for work to support the development of the Long Range Plan for Streets Assets, which is anticipated to include developing new asset inspection methodologies, asset data collection processes, work tools, and rehabilitation practices.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	March, 2009	December, 2010

IMPACT OF DELAY

The Materials Management component of this program is responsible for quality control and assurance of construction materials and reviews new products to improve material quality. Delaying this work could place the City at financial risk as a result of the use of substandard materials or delays in improving material quality.

Delaying the Asset Management component of this program could result in higher operating and rehabilitation costs over time since new standards, processes and applications for asset management would not be implemented or developed in a timely manner to efficiently meet ongoing infrastructure needs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A2a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Bridges & Structures	PROJECT / WBS	CEB-00003-09
ASSET CLASS	Bridges		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Streets Division / Structures
PROGRAM	Bridges and Structures
SUB-PROGRAM / PROJECT	Major Maintenance of City Bridges
DESCRIPTION	Major maintenance and/or capital improvements to City bridges

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$350,000	\$ 0	\$ 0	\$0	\$350,000	\$350,000	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$15,200	Other Levels of Government		\$0			
Materials		\$22,800	Property Owners		\$0			
Equipment		\$	Other (specify below)					
Contract		\$270,000			\$0			
Overhead		\$42,000			\$0			
Other (specify below)					\$ 0			
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$0		
		\$				\$0		
		\$				\$0		
		\$350,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$350,000	2010	\$	2011+	\$	Total	\$350,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
To conduct necessary major maintenance on the City's bridges and related infrastructure.
SCOPE OF WORK / DELIVERABLES
Major maintenance planned for 2009 includes: <ul style="list-style-type: none"> • Repairing Cambie bridge footings to maintain seismic stability;

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

- Developing rehabilitation options for the Grandview Viaduct;
- Developing slope stabilization options for the deteriorated (fire damaged) Woodland Drive bridge base;
- Continuing expansion joint seal replacement program (2-3 expansion seals);
- Timely replacement of deteriorated bridge materials.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The work identified has been deferred for many years and can no longer be deferred:

- Without seismic stability reinstatement, the Cambie bridge will be at increased risk of failure during a seismic event, with potential damages in the range of \$1-\$2 million. Actual costs for reinstatement will exceed current funding and may require alternative funding sources.
- Without slope stabilization, the Woodland Drive bridge will be at increased risk of slope failure, with potential damages in the range of \$250,000 to \$500,000.
- The bearings and joints have seized at the Grandview Viaduct and complete consultative work is required to review options to prevent further damage to the structure and develop plans for the necessary rehabilitation work.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A2b1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Bridges & Structures	PROJECT / WBS	CEB-00004-09
ASSET CLASS	Retaining Walls		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Streets Division / Streets Operations
PROGRAM	Bridges and Structures
SUB-PROGRAM / PROJECT	Maintenance of Other Structures / Pedestrian and Other Structures
DESCRIPTION	Major maintenance and/or capital replacement of structures located on City Street including stairs, retaining walls, fencing, clocks

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$150,000	\$ 0	\$ 0	\$0	\$150,000	\$150,000	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$49,241	Other Levels of Government		\$0			
Materials		\$62,759	Property Owners		\$0			
Equipment		\$	Other (specify below)					
Contract		\$20,000			\$0			
Overhead		\$18,000			\$0			
Other (specify below)					\$ 0			
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$0			
		\$			\$0			
		\$150,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$150,000	2010	\$	2011+	\$	Total	\$150,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Steam Clock - Reduced callout charges Retaining walls - Replacement of infrastructure at the end of serviceable life Skytrain bridges - Opportunity to revise contractual maintenance obligations and clarify currently ambiguous legal contract
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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
Replace failed/failing aging infrastructure and minimize risk exposure to the City and its population.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Replacement of 3 deteriorated wood retaining walls (3589 Commercial, 107 E 20th Avenue, Tolmie Avenue, 3005 St. Catherines);
Overhaul of Gastown Steam Clock mechanical system - (materials only; labour supplied by BCIT);
Bridge fence enclosure on South East False Creek;
Improve wear surface on pedestrian bridges;
Translink bridge deck repairs (related to Skytrain bridges).

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Steam Clock - Increased callouts/nuisance to public (malfunctioning tourist attraction)
Retaining walls - Increased risk of structural failure

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A2b2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Bridges & Structures	PROJECT / WBS	CEB-00005-09
ASSET CLASS	Rail Network		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Streets Division / Structures- Streets Operations
PROGRAM	Maintenance of Other Structures
SUB-PROGRAM / PROJECT	Historic Railway Upgrades
DESCRIPTION	Major Maintenance and Safety Upgrades to Downtown Historic Railway rolling stock and Right of Way

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$200,000	\$ 0	\$ 0	\$0	\$200,000	\$200,000	\$0

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$24,000
Materials	\$72,000
Equipment	\$
Contract	\$80,000
Overhead	\$24,000
Other (specify below)	\$ 0
	\$
	\$
	\$
	\$200,000

CASH FLOW / SPENDING TIMELINE ¹	2009	\$200,000	2010	\$	2011+	\$	Total	\$200,000
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COMMENTS

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Timing opportunity - inactive rolling stock due to construction makes major maintenance and motor overhaul more convenient
 Safety upgrades to corridor and maintenance facility are compatible with 2010 Olympic Line - Demonstration Streetcar project.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

- Complete deferred maintenance on Historic Railway (Federal regulation).
- Ensure major mechanical and electrical system is in operating condition by completion of overhaul system.
- Manufacture specialty replacement parts (vintage turn-of-the-century interurbans).

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

- Safety upgrades to maintenance shed (WCB requirements).
- Rail corridor upgrades (safety enhancements)

SCOPE OF WORK / DELIVERABLES

- Major mechanical and electrical maintenance of rolling stock.
- Refurbishment of Vintage electric motor (Car 1231)
- Manufacturing/ordering of specialty/custom parts (brake shoes, fuses)
- Purchase of safety equipment for maintenance shed (blower, secured lock up for flammable materials)
- Rail corridor fencing and signage upgrades

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Failing to complete upgrades on time may cause the City to be in contravention with Federal Railway Act.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A2c2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Bridges & Structures	PROJECT / WBS	CEB-00006-09
ASSET CLASS	Bridges		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Streets Division / Streets Operations
PROGRAM	Bridge and Structures
SUB-PROGRAM / PROJECT	Special Projects / PCB Removal Bridges
DESCRIPTION	PCB Removal for Granville and Burrard Bridges

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$750,000	\$250,000	\$ 0	\$0	\$500,000	\$500,000	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$5,000	Other Levels of Government		\$0			
Materials		\$	Property Owners		\$0			
Equipment		\$	Other (specify below)					
Contract		\$670,000	Translink		\$250,000			
Overhead		\$75,000			\$0			
Other (specify below)					\$250,000			
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$0			
		\$			\$0			
		\$750,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$750,000	2010	\$	2011+	\$	Total	\$750,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Translink MRN Minor Capital Program funding of \$250,000 is available for Granville Bridge bearing replacement design.
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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
In order to comply with Provincial and Federal Regulations, the bridge bearings on the Burrard St. bridge and the Granville St. bridge will need to be replaced. The timeline for compliance is 2014 and has been established in order for Canada to meet international commitments regarding the elimination of PCB from the environment. This involves: <ul style="list-style-type: none"> • Development of PCB removal plan for City bridges; • Completion of PCB removal by 2014.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

- Granville Bridge bearing replacement design
- Burrard Bridge pilot bridge bearing decontamination
- Burrard Bridge soil management plan

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

May, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

The Granville Bridge Bearing Replacement Design was deferred from 2008 due to lack of funding and can no longer be deferred. There is an increased difficulty in obtaining approval for end-of-use extension requests for bridge bearing decommissioning. There is also an increasing potential for further soil contamination for the Burrard bridge and additional contamination to bridge piers, resulting in increased exposure to environmental contamination and possible environmental fines.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A2c3

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Bridges & Structures	PROJECT / WBS	CEB-00007-09
ASSET CLASS	Bridges		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Streets Division / Structures- Streets Operations
PROGRAM	Bridges & Structure - Special Projects
SUB-PROGRAM / PROJECT	Granville Bridge Strengthening
DESCRIPTION	Rehabilitation of concrete approach spans of the Granville Street bridge to upgrade the bridge's shear capacity.

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$5,000,000	\$2,250,000	\$ 0	\$0	\$2,750,000	\$2,750,000	\$2,750,000				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$9,000	Other Levels of Government			\$0				
Materials		\$22,000	Property Owners			\$0				
Equipment		\$9,000	Other (specify below)							
Contract		\$4,460,000	Translink			\$2,250,000				
Overhead		\$500,000				\$0				
Other (specify below)						\$2,250,000				
		\$	OTHER FUNDING (specify below; e.g., CFF)							
		\$				\$0				
		\$				\$0				
		\$5,000,000				\$ 0				
CASH FLOW / SPENDING TIMELINE ¹			2009	\$5,000,000	2010	\$	2011+	\$	Total	\$5,000,000
COMMENTS			See RTS#07743 - Council date Feb 3 rd for advance budget request.							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Translink MRN Minor Capital Program funding of \$1 million has been approved and a further \$1.25 million is anticipated.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
To upgrade the load capacity of the Granville Street bridge to accommodate future changes in loading conditions or new traffic (heavier vehicles), and providing another truck and bus crossing across False Creek. Upon completion of the bridge strengthening, the posted load limit of 27 tonnes will comply with the current Canadian Highway Bridge Design Code.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Preparation and installation of externally applied steel stirrups to bridge girders to upgrade the bridge's shear capacity.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

N/A -- Council approved the City's \$2.75 million portion of the bridge strengthening budget and awarded the rehabilitation contract in February 2009 (RTS 7159).

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

for more community interaction.

SCOPE OF WORK / DELIVERABLES

The Greenway design includes flexible sidewalk commercial zones, more public plazas and a high level of streetscape beautification. Since approval of the 2006-2008 Capital Plan, the project scope has increased to include installation of an electrical system which will support future programming on Carrall Street. The electrical system was identified as an integral component in activating the public realm by providing electricity for community programming and events that are anticipated to occur on the Greenway.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Engineering, Planning, Parks and the Office of Cultural affairs

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Construction is currently being completed on the Carrall Street Greenway between Expo Boulevard and Water Street. A delay in funding would cause a stoppage of work and additional costs and delays for demobilization and re-mobilization of crews and equipment.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A3I

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Major Projects	PROJECT / WBS	CER-00079-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Rapid Transit Office
PROGRAM	Major Projects
SUB-PROGRAM / PROJECT	Pacific Boulevard Great Streets Reconstruction - Homer to Nelson
DESCRIPTION	Implementation of Pacific Boulevard improvements between Drake Street and Cambie Street: constructing new median and tree planting

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$930,000	\$ 0	\$200,000	\$	\$730,000	\$730,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$327,000
Materials	\$327,000
Equipment	\$164,000
Contract	\$
Overhead	\$112,000
Other (specify below)	\$ 0
	\$
	\$
	\$
	\$930,000
	\$200,000

CASH FLOW / SPENDING TIMELINE ¹	2009	\$930,000	2010	\$	2011+	\$	Total	\$930,000
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COMMENTS	Work is planned to commence in May 2009 and all of the proposed median work is scheduled to be completed by August 2009
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¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Timing this construction with the Canada Line restoration work in the vicinity will allow the City to capitalize on cost efficiencies. The design of the tree planting includes closely spaced trees, providing a wall of green space which creates a buffer zone between vehicle traffic, the buildings and a calmed access to the residences.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
On April 10, 1990, Council adopted an "overall pedestrian and boulevard area treatment scheme for False Creek North that included portions of Pacific Boulevard between Richards Street and Griffiths Way. The construction of Yaletown Station for the Canada Line has damaged the curbs

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

along Pacific Boulevard, east and west of Davie Street. Since Canada Line is required to restore damaged areas, this presents a timely opportunity for the City to implement the proposed improvements.

SCOPE OF WORK / DELIVERABLES

Median construction on Pacific Boulevard, from Drake Street to Cambie Street, including:

- tree planting,
- pedestrian push buttons,
- new wheelchair ramps,
- 1.8m sidewalk in the median,
- traffic signal reconstruction at Pacific Boulevard and Davie Street,
- bike lanes, and
- paving (grind and overlay of the top 50mm)

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

May, 2009

Completion (mm/yy)

August, 2009

IMPACT OF DELAY

A delay would increase the cost of the improvements as the opportunity to leverage the Canada Line contribution to restoring the area would be foregone. It would also mean that area businesses and residents would face disruptions once again when funding does become available.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A3p

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Major Projects	PROJECT / WBS	CER-00078-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Strategic Transportation Planning
PROGRAM	Major Projects
SUB-PROGRAM / PROJECT	2 nd Ave, Cambie to Quebec Phase 1
DESCRIPTION	Enhancement of 2 nd Avenue, Ash to Columbia Street

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$2,369,000	\$ 0	\$ 0	\$2,369,000	\$ 0	\$2,369,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$751,000	Other Levels of Government			\$
Materials		\$777,000	Property Owners			\$
Equipment		\$557,000	Other (specify below)			
Contract		\$				\$
Overhead		\$284,000				\$
Other (specify below)						\$ 0
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$
		\$				\$
		\$				\$
		\$2,369,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$2,369,000	\$0	\$0	\$0	\$2,369,000
COMMENTS			Work is planned to be completed in 2009 in conjunction with completion of the Canada Line.			

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Savings relate to coordination of constructing this section of 2nd Ave. with adjacent reconstruction work for the Canada Line; also, there are benefits in improving suitability for use by pedestrians, cyclists, bus transit service, and motorists.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$0	2010	\$5,000	2011	\$5,000	2012	\$5,000	2013	\$5,000
Comments	New landscaping requires maintenance. Impact on operating budget is calculated based on cost of annual maintenance for total areas of landscaping in project at \$25/m ² .									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

Implementation of the west portion of the "Great Street Design" approved by Council for 2nd Avenue between Cambie and Quebec Streets, including beautification and reconfiguration of the arterial in concert with completion of the Olympic Village Canada Line Station, and featuring improved sidewalks, raised medians, and landscaping.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

- Enhance the streetscape, improve safety and operations by reconfiguring intersections at Wylie and Yukon, and improve connections to the Cambie Bridge and Canada Line station for pedestrians and cyclists.
- Improved public realm (medians, enhanced sidewalks, and landscaping), and a more efficient and safe segment of the arterial network.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	April, 2009	October, 2009

IMPACT OF DELAY

Delay would lead to increased costs and inconvenience as it would be less efficient to construct this section of 2nd Avenue separately from the restoration work being completed for the Canada Line; delay would also leave unresolved the poor configuration of Yukon/2nd/Wylie, and fail to accommodate the anticipated increase in pedestrians, cyclists, and transit users that will be present once Canada Line opens.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A3r

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Major Projects	PROJECT / WBS	CER-00082-09
ASSET CLASS	Waterfront Structures		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation
PROGRAM	General Allocation
SUB-PROGRAM / PROJECT	Blueways Program Improvements
DESCRIPTION	To preserve and improve Vancouver's waterfront environments in and around False Creek

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$400,000	\$ 0	\$ 0	\$0	\$400,000	\$400,000	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$114,400	Other Levels of Government			\$		
Materials		\$109,600	Property Owners			\$		
Equipment		\$68,000	Other (specify below)					
Contract		\$60,000				\$		
Overhead		\$48,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$				\$		
		\$				\$		
		\$400,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$400,000	2010	\$	2011+	\$	Total	\$400,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$10,000	2011	\$20,000	2012	\$20,000	2013	\$20,000
Comments	Operating funds are needed for maintenance of passenger ferry docks in False Creek and also for Improved signage, advertising and print material to inform public of anchoring restriction in False Creek area. The increase in 2011 and onwards is due to planned addition of two new ferry docks.									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	Funding is requested to investigate and improve accessibility to docks in False Creek, develop a new anchoring permit system, and install marker bouys.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

The City of Vancouver currently owns and/or manages five ferry docks in False Creek, with plans to install an additional three, and relocate one. The existing docks are currently not wheelchair accessible during some tidal ranges. Funding is requested to investigate and improve wheelchair accessibility. The installation of accessible docks in all locations will be phased over multiple capital plans. Funding requested for 2009 will allow for a consultant to review the applicable design criteria and investigate current practices of other jurisdictions, perform local assessments for each dock, develop a preliminary budget to implement the recommended design at each dock site, and estimate annual maintenance costs.

Included in this request is funding to improve the False Creek anchoring experience and maintain compliance through initiatives like improved signage, buoys, (e.g., channel marker, underwater utility protection/no anchor, short term moorage), improved shelter for permit self-registration and dock improvements required for enforcement.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2009

IMPACT OF DELAY

Continued challenges or lack of accessibility to passenger ferry docks by disabled passengers.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A4a1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Transit & Safety	PROJECT / WBS	CER-00083-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Strategic Transportation Planning
PROGRAM	Arterial Improvements
SUB-PROGRAM / PROJECT	Clark Knight Corridor
DESCRIPTION	Implementation of the Clark Knight Corridor Plan

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$2,895,000	\$1,721,000	\$ 0	\$0	\$1,174,000	\$1,174,000	\$492,000

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$307,000
Materials	\$428,000
Equipment	\$302,000
Contract	\$60,000
Overhead	\$348,000
Other (specify below)	
Property Acquisition	\$1,450,000
	\$
	\$
	\$2,895,000

OTHER FUNDING (specify below; e.g., CFF)			
Sale of 4854 Knight residual property	\$346,000		
Translink	\$1,375,000		
	\$1,721,000		
		\$	
		\$	
		\$ 0	

CASH FLOW / SPENDING TIMELINE ¹	2009	\$1,250,000	2010	\$1,645,000	2011+	\$0	Total	\$2,895,000
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COMMENTS	Work is planned to commence late in 2009 with property acquisition(s) and the creation of a public art plan for the corridor. Construction of the left turn bay at Knight St. and 33 rd Avenue and the installation of some public art is planned to commence and complete early in 2010, prior to the approval of the 2010 Engineering Capital Budget.
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¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Improves safety, liveability and goods movement on Clark/Knight. Enhances public realm space and helps makes the corridor more friendly for pedestrians and transit users.
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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
To enhance safety, livability and goods movement along the Clark/Knight Corridor. Implementation of the Corridor Plan includes property	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

acquisition to improve conditions for pedestrians, residents, transit users, trucks and general traffic along the corridor. Moreover, engages the community and begins delivering the Public Art Corridor Strategy to the communities, residents, businesses and others who access the corridor.

SCOPE OF WORK / DELIVERABLES

- Left turn bays on Knight St. at 33rd Avenue (\$2,795,000)
- Public Art Plan and public art installations for the Clark Knight Corridor (\$100,000).

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Cultural Affairs, Community Planning

TIMELINE

Start (mm/yy)

June, 2009

Completion (mm/yy)

March, 2011

IMPACT OF DELAY

Increasing risk of pedestrian injuries and vehicular collisions as well as delaying the implementation and the delivery of public art to the communities, residents, businesses and others who use the corridor. Possible loss of government funding (Translink and Federal) totalling \$1.375 million.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A4a2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Transit & Safety	PROJECT / WBS	CER-00083-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Strategic Transportation Planning
PROGRAM	Arterial Improvements/Uncurbed Arterials
SUB-PROGRAM / PROJECT	Downtown Transportation Plan Spot Improvement
DESCRIPTION	Widen travel lanes on W. Hastings St. between Bute and Burrard to improve access to businesses, implement streetscape design, and reduce collision rates

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$1,900,000	\$1,200,000	\$55,000	\$0	\$645,000	\$645,000	\$0

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$627,000	Other Levels of Government	\$
Materials	\$731,500	Property Owners	\$
Equipment	\$313,500	Other (specify below)	
Contract	\$	Fairmont development contribution	\$1,150,000
Overhead	\$228,000	Westbank development contribution	\$50,000
Other (specify below)			\$1,200,000
	\$	OTHER FUNDING (specify below; e.g., CFF)	
	\$	ICBC Road Improvement	\$55,000
	\$		\$
	\$1,900,000		\$55,000

CASH FLOW / SPENDING TIMELINE ¹	2009	\$1,900,000	2010	\$	2011+	\$	Total	\$1,900,000
COMMENTS	Work is planned to commence in May 2009 and be completed in September 2009.							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Reduce collisions, improve movement for trucks and buses, and improve pedestrian experience.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program addresses the need for increased accessibility to businesses and reduced congestion in the Downtown through spot improvements.

SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

Project includes widening West Hastings Street between Bute and Burrard. Construction to include:

- removing existing curb, sidewalk, and any street trees that cannot be replanted
- grinding asphalt
- placing new curb, sidewalk, and street trees at setback location
- placing asphalt and line markings, including left turn bay at West Hastings Street and Burrard Street
- removing parking restrictions between Thurlow and Burrard on West Hastings Street

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Streets and Planning

TIMELINE	Start (mm/yy)	May, 2009	Completion (mm/yy)	September, 2009
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IMPACT OF DELAY

Increasing risk of collisions, inconvenience for business owners, and delay of implementation of transit routes on West Hastings Street

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A4b1

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Transit & Safety	PROJECT / WBS	CER-00084-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Greenways and Neighbourhood Transportation
PROGRAM	Neighborhood Modification
SUB-PROGRAM / PROJECT	Traffic Calming
DESCRIPTION	Neighbourhood traffic calming plans and local residential street-segment traffic calming measures are integral components of the Transportation Plan. These may include traffic circles, partial closures, corner bulges, diagonal diverters, right-in right-out diverters and speed humps

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$1,000,000	\$ 0	\$ 0	\$0	\$1,000,000	\$1,000,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$343,000	Other Levels of Government			\$		
Materials		\$331,000	Property Owners			\$		
Equipment		\$206,000	Other (specify below)					
Contract		\$				\$		
Overhead		\$120,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$1,000,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$750,000	2010	\$250,000	2011+	\$	Total	\$1,000,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

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IMPACT ON OPERATING BUDGET

Added Basic	2009	\$0	2010	\$20,000	2011	\$45,000	2012	\$45,000	2013	\$45,000
Comments	Due to the addition of traffic calming measures and streets infrastructure, the related additional maintenance requires increases in future operating budgets. Operating impact is based on approximately 1/7 th material cost portion of capital budget request.									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
To enhance the liveability and safety on local neighbourhood streets by developing traffic calming plans in consultation with residents and

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

stakeholders. Also, to create a safer pedestrian environment for school children by managing school and playground traffic safety issues in consultation with the school community (staff and parents) and the Police.

SCOPE OF WORK / DELIVERABLES

Curb bulges provide pedestrians with a shorter crossing distance and an enhanced vantage point from which to judge crossing opportunities. Bulges prevent view obstruction caused by parked vehicles violating corner clearances and can also prevent passing on the right, a significant cause of pedestrian collisions. Drivers are afforded better visibility of pedestrians and experience a perceived traffic calming effect. The intent of the school bulge program is to install pedestrian curb bulges at high priority locations identified with the help of the School Traffic Working Group (consisting of School Board, Police and Engineering staff). Support of the One Day One School Program (which recommends the installation of corner bulges, crosswalks, pedestrian lights and traffic calming measures), the annual speed hump program (54 humps for 2009), and many neighbourhood traffic calming improvements are also included in this submission.

Neighbourhood traffic calming projects which are currently underway include the Grandview Woodlands area and Marpole West. Greenways and Neighbourhoods must also be able to respond to problems which arise in neighbourhoods where traffic calming is required to relieve traffic safety related issues.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Coordination of work occurs with many areas of the City including Engineering Projects, Sustainability, Planning (Visioning), and the Vancouver Police School Safety Patrol.

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	May, 2009	April, 2010

IMPACT OF DELAY

Safety benefits of this program would not be realized within the community. Lack of coordination with planned programs and development underway would increase costs to the City.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A4b2

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Transit & Safety	PROJECT / WBS	CER-00085-09
ASSET CLASS	Roads & Pavements		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Greenways and Neighbourhood Transportation
PROGRAM	Neighborhood Modification
SUB-PROGRAM / PROJECT	Neighbourhood Collector Program
DESCRIPTION	Neighbourhood traffic calming plans along collector and secondary arterial streets are integral components of the Transportation Plan. These may include traffic circles, corner bulges, and speed humps.

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$850,000	\$ 0	\$ 0	\$0	\$850,000	\$850,000	\$0

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$291,000	Other Levels of Government	\$
Materials	\$282,000	Property Owners	\$
Equipment	\$175,000	Other (specify below)	
Contract	\$		\$
Overhead	\$102,000		\$
Other (specify below)			\$ 0
	\$	OTHER FUNDING (specify below; e.g., CFF)	
	\$		\$
	\$		\$
	\$850,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$700,000	2010	\$150,000	2011+	\$	Total	\$850,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$0	2010	\$20,000	2011	\$40,000	2012	\$40,000	2013	\$40,000
Comments	Increased annual budget for maintaining landscaping and signage. Impact on operating budget is based on approximately 1/7 th material cost portion of capital budget request.									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	To enhance the liveability and safety on collector and secondary arterial neighbourhood streets by developing traffic calming plans in consultation with residents and stakeholders.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

Specific measures that will be constructed are dependant on public consultation and detailed design work. Areas that have been outlined where public consultation will likely occur and detailed designs will be completed include: Dundas Street from Nanaimo Street to Renfrew Street and modifications to the traffic calming on Blenheim Street. Once public consultation has taken place detailed designs will be completed and corner bulges, traffic circles and speed humps may be constructed.

Curb bulges provide pedestrians with a shorter crossing distance and an enhanced vantage point from which to judge crossing opportunities. Bulges prevent view obstruction caused by parked vehicles violating corner clearances and can also prevent passing on the right, a significant cause of pedestrian collisions. Drivers are afforded better visibility of pedestrians and experience a perceived traffic calming effect.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	May, 2009	Completion (mm/yy)	April, 2010
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IMPACT OF DELAY

Safety benefits of this program would not be realized within the community. Lack of coordination with planned programs and development underway would increase costs to the City.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

Greenways and Neighbourhood Transportation will continue to develop and build ongoing and new greenway projects such as the North Arm Trail and the Windsor Castle Neighbourhood Greenway, Public Spaces and approximately six new Community Gardens. Funds are required to improve existing greenways where problems have been raised by the public; improvements this year will include 3 traffic diverters and 2 locations with major curb work.

The North Arm Trail will require substantial funding as it is currently under design and construction will start this summer. Funds are required to improve 59th Avenue as a greenway by reducing vehicle speeds and volumes through the installation of traffic calming, including 10 traffic circles, 2 diagonal diverters, 4 Right in/Right out diverters and numerous corner bulges. For a successful greenway, pedestrian and cyclist facilities will be improved by constructing new and wider sidewalks where applicable, 5 new plaza areas with street furniture, landscaping and major street improvements at Granville St & 59th, Argyle St & 59th, Upland St & Victoria Dr, Knight St and 59th and 59th from Cambie to Ontario.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Greenways are developed as a coordinated plan with a combined team of staff from Engineering and Planning.

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	April, 2009	March, 2011

IMPACT OF DELAY

Implementation of greenways currently under consultation and design stages would not be completed. The opportunity to coordinate this work with other projects, such as redevelopment, and related cost savings would be lost.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A4d

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Transit & Safety	PROJECT / WBS	CER-00087-09
ASSET CLASS	Roads & Pavement		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Strategic Transportation
PROGRAM	Cycling Network
SUB-PROGRAM / PROJECT	Cycling Network
DESCRIPTION	Development and construction of new and existing bicycle facilities as per the City of Vancouver Bicycle Plan and the Vancouver Transportation Plan

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$1,700,000	\$ 0	\$ 0	\$850,000	\$850,000	\$1,700,000	\$0

GROSS BUDGET - SUB-PROGRAM / PROJECT		EXTERNAL FUNDING (Secured)	
Direct Labour	\$583,000	Other Levels of Government	\$
Materials	\$563,000	Property Owners	\$
Equipment	\$350,000	Other (specify below)	
Contract	\$		\$
Overhead	\$204,000		\$
Other (specify below)			\$ 0
	\$	OTHER FUNDING (specify below; e.g., CFF)	
	\$		\$
	\$		\$
	\$1,700,000		\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$1,500,000	2010	\$200,000	2011+	\$	Total	\$1,700,000
COMMENTS	I							

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$0	2010	\$30,000	2011	\$60,000	2012	\$90,000	2013	\$90,000
Comments	Due to the construction of new infrastructure related to cycling facilities (e.g., traffic calming measures, cyclist actuated signals) the related maintenance will require increases in future operating budgets. The operating budget increase is gradual over a few years with the full annual operational impact based on approximately \$20,000 per installed bikeway.									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	To provide a safe and convenient cycling environment for the commuter and recreational cyclist by improving the existing road network to better meet the needs of cyclists and by promoting the safe and responsible use of bicycles for transportation and recreation.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

The Cycling Network Program includes funding for public consultation, education and increased usage of road stencils, signs, and signal loop detectors.

Funding is required to expand the cycling network. New routes to be constructed this year include 59th Avenue, 29th Avenue, Yukon St, Balaclava St, the Valley Bikeway and the Heather St extension. All of the new cycle routes will require capital funds to improve traffic calming, signage and paint. Funds for specific bikeways are requested as the projects develop and are completed.

Funds are also required to respond to opportunities to make cycling improvements in conjunction with other programs such as Greenways, Visioning Plans, Canada Line Construction and road works. Improvements to the existing bikeway network planned for this year include 8 traffic circles, 9 diverters, 5 curb changes and 2 speed hump installations.

This funding would also be used to expand the Count Program and upgrade existing facilities. Expansion to the cycling count program (manual and automatic) allows for monitoring of functionality of new systems and operational concerns raised by the community. This funding would allow for two additional permanent count locations per year (\$50,000 each).

Funding for upgrading existing systems and connecting neighbourhood centres would allow for local street repair, additional bike buttons (23 units costing approximately \$7,500 each) and partnering with Translink for improvements to regional connections such as the BC Parkway.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	May, 2009	Completion (mm/yy)	April, 2010
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IMPACT OF DELAY

Development and construction of new cycling facilities would not be completed.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

A4f

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Transit & Safety	PROJECT / WBS	CER-00088-09
ASSET CLASS	Sidewalks		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Strategic Transportation Planning
PROGRAM	Bus Shelters & Landings
SUB-PROGRAM / PROJECT	Bus Shelters & Landings
DESCRIPTION	Construction of Passenger Landing Areas at Bus Stop Locations

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$140,000	\$70,000	\$ 0	\$	\$70,000	\$70,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$46,200	Other Levels of Government			\$		
Materials		\$38,500	Property Owners			\$		
Equipment		\$38,500	Other (specify below)					
Contract		\$	TransLink- 2009 TRRIP			\$70,000		
Overhead		\$16,800				\$		
Other (specify below)						\$70,000		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$140,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$140,000	2010	\$	2011+	\$	Total	\$140,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

This program upgrades landing areas for transit passenger use including universal accessibility. The construction of the landing areas reduces maintenance of the screenings type landing areas. The installation of the landing areas is planned in conjunction with new road or sidewalk reconstruction projects.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	To improve passenger areas at bus stop locations to upgrade the transit infrastructure and encourage transit use.
SCOPE OF WORK / DELIVERABLES	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

The installation of concrete (or equivalent) passenger landing areas upgrades surface condition at bus stops. There is a need for these passenger area improvements at existing bus stops and at new bus stops for transit service revisions. This would include installation of landing areas at bus stops on the 33 and the C19 transit routes which were implemented last year.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	February, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Will delay the construction of passenger landing areas and the designation of accessible bus stops which will reduce the level of service to the public.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

ELECTRICAL PLANT		Operating	Debenture	DCL/CAC	TOTAL	External /	2009
Ref #	Program / Sub-program / Project	Funding	Funding	Funding	CITY	Other	Gross Budget
B1	Communications						
B1a	Underground Cable Replacements	\$225			\$225		\$225
B1b	Underground Communications Network Expansion	\$450			\$450		\$450
B1c	Underground Communications				\$0		\$0
B1d	Engineering Radio System Upgrade				\$0		\$0
B1e	Logging Recorder				\$0		\$0
B1f	Systems Project				\$0		\$0
B1	Total Communications	\$675	\$0	\$0	\$675	\$0	\$675
B2	Street Lighting						
B2a	Renovate and Upgrade Plant		\$2,000		\$2,000		\$2,000
B2b	Local Area Projects	\$50			\$50	\$228	\$278
B2c	Olympic Decorative Pedestrian Lighting		\$1,000		\$1,000	\$1,300	\$2,300
B2	Total Street Lighting	\$50	\$3,000	\$0	\$3,050	\$1,528	\$4,578
B3	Traffic Signal Program						
B3a	New Signal Construction		\$400		\$400		\$400
B3b	Signal Modification	\$250	\$500		\$750		\$750
B3c	Traffic Signal Management System (TSMS)	\$200			\$200		\$200
B3d	Renovate and Replace Aging Signal Plant		\$1,140		\$1,140	\$160	\$1,300
B3e	Uninterrupted Power Supply (UPS)		\$250		\$250	\$50	\$300
B3f	Retrofit Signal Hangers				\$0		\$0
B3g	Signal Controller Cabinet Security	\$100			\$100		\$100
B3	Total Traffic Signal Program	\$550	\$2,290	\$0	\$2,840	\$210	\$3,050
	Sub-total excluding debenture costs	\$1,275	\$5,290	\$0	\$6,565	\$1,738	\$8,303
	Debenture Costs		\$58		\$58		\$58
	TOTAL ELECTRICAL PLANT	\$1,275	\$5,348	\$0	\$6,623	\$1,738	\$8,361

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B1a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Communications	PROJECT / WBS	CEE-00005-09
ASSET CLASS	Conduit & Cable		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation/Traffic & Electrical Operations Branch
PROGRAM	Communications
SUB-PROGRAM / PROJECT	Underground Cable Replacement
DESCRIPTION	Program for replacing aging copper cable and upgrading fibre cable

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$225,000	\$ 0	\$ 0	\$	\$225,000	\$225,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$59,200	Other Levels of Government			\$		
Materials		\$88,700	Property Owners			\$		
Equipment		\$29,850	Other (specify below)					
Contract		\$				\$		
Overhead		\$47,250				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$225,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$225,000	2010	\$	2011+	\$	Total	\$225,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
Funding is required to replace aging copper cable with fibre cable. The program provides service for replacing and upgrading existing telephone circuits and cable as well as service for the Traffic Signal Management System controlling the traffic signal network. The program assists Traffic Management with traffic monitoring and surveillance capabilities and provides Information Services with improved telephone service for voice communications and speed for data transmission.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

This funding represents replacement of cable plant and related infrastructure. Locations are selected in consultation with Information Services, telecommunications companies and opportunities made available through other projects.

Some of the projects included in this funding for spring and summer 2009 include:

- Cambie and Granville Street redevelopment, cables and conduit systems
- City Hall major network upgrade and out of service cut over
- Cable replacement and upgrade for 4-5 community centres

Projects scheduled for fall and winter are currently being reviewed.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The cable plant is aging and requires ongoing replacement and upgrading to remain a viable utility. Delays increase the risk of service failures in communications due to cable faults and breakdowns.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B1b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Communications	PROJECT / WBS	CEE-00006-09
ASSET CLASS	Conduit & Cable		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation/Traffic & Electrical Operations Branch
PROGRAM	Communications
SUB-PROGRAM / PROJECT	Underground Communications - Network Expansion
DESCRIPTION	Program for cable network expansion with fibre based service.

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$450,000	\$ 0	\$ 0	\$	\$450,000	\$450,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$135,000	Other Levels of Government		\$			
Materials		\$166,500	Property Owners		\$			
Equipment		\$103,500	Other (specify below)					
Contract		\$			\$			
Overhead		\$45,000			\$			
Other (specify below)					\$ 0			
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$			
		\$			\$			
		\$450,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$450,000	2010	\$	2011+	\$	Total	\$450,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

Recovery of installation costs is estimated at 18 months. Long term significant savings compared to using leased lines from other providers. This service provides a more reliable, secure network with no limitations on bandwidth use. The expanded network will provide VOIP telephone service and the ability to handle the City data storage site as well as the anticipated demands of the 2010 Olympic Winter Games.

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program provides for the expansion of fibre optic based service to new sites. It assists a joint private/public partnership with other telecomm service providers in an effort to expand the City-owned fibre network. Funding allows for the installation of conduit and fibre cable to new sites and buildings which in turn provides service for TMS camera installations, additional telephone circuits and security camera monitoring. Plans to expand fibre optic cable service are coordinated with Information Services as well as other telecomm service providers.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

This funding is expected to provide service to approximately 30 sites in 2009.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Projects already planned to expand fibre optic service in cooperation with Information Services and other telecomm providers would be unfunded resulting in delays of service to new sites and buildings. These customers would then have to lease lines from other providers and incur higher costs.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B2a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Street Lighting	PROJECT / WBS	CEL-00004-09
ASSET CLASS	Street Light		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation/ Traffic & Electrical Operations Branch
PROGRAM	Street Lighting
SUB-PROGRAM / PROJECT	Renovate and Upgrade Plant
DESCRIPTION	Ongoing program to address issues related to the street lighting plant

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$2,000,000	\$ 0	\$ 0	\$	\$2,000,000	\$2,000,000	\$
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)			
Direct Labour		\$770,000	Other Levels of Government			\$
Materials		\$600,000	Property Owners			\$
Equipment		\$285,000	Other (specify below)			
Contract		\$				\$
Overhead		\$345,000				\$
Other (specify below)						\$ 0
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$
		\$				\$
		\$				\$
		\$2,000,000				\$ 0
CASH FLOW / SPENDING TIMELINE ¹			2009	2010	2011+	Total
		\$2,000,000	\$		\$	\$2,000,000
COMMENTS						

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program involves upgrades and renovations to many aspects of the Street Lighting Plant. These include conduit replacement, splices along trolley routes, rusty pole replacements, service panel replacements, embedded pole replacements, luminaire replacements and improved lighting levels. The program objectives are to ensure that the existing plant is upgraded and maintained to a level that provides safe and effective operation to meet the needs of the City of Vancouver and its residents.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

<p>B2A5) Rusty Pole Replacement The estimated life of a pole is typically 50 years, but this varies according to its physical construction and location. This is an ongoing program which incorporates inspection and replacement of street lighting poles. There are approximately 25,000 anchor-based street lighting poles in the City, in addition to decorative light poles, lights on trolley poles and lane lights. This budget represents the replacement of about 280 poles at an estimated unit cost of \$1,800. This project works in conjunction with the rust pole inspection program so that the worst poles are replaced first.</p>	<p>\$500,000</p>	<p>CC2EB2A</p>
<p>B2A6) Trolley Pole Replacement Translink and the City are co-owners of the trolley poles used in the City. This budget represents the costs associated with the replacement of approximately 13 poles at an estimated unit cost of \$7,000.</p>	<p>\$90,000</p>	<p>CC2EB2A</p>
<p>B2A7) Service Panel Replacement There are 1,265 service panels in the City that distribute power to street lighting circuits. This is an ongoing program to replace service panels that have become corroded and have exceeded their service life. The program includes inspections and replacements of approximately 20 of the worst panels. The anticipated service life of the panels is 50 years; this budget represents a 2% replacement at a unit cost of \$7,200.</p>	<p>\$140,000</p>	<p>CC2EB2A</p>
<p>B2A8) Embedded Pole Replacement This is an ongoing program to replace street light poles that have been installed by direct burial. These poles and their direct-buried, lead-sheathed wiring are some of the oldest street lighting plant in the City. These poles are corroding and underground wiring is fragile. They cannot be serviced when faults occur because the wires are not accessible. This program upgrades the poles to the City standard which consists of a pole base and a pole which can be removed as required as well as having holes to access the wires inside the poles. This budget reflects the replacement of 20 poles. Previously, it was estimated that there are 1,000 poles. Since we are setting up a new pole inspection program, this information will be captured at the same time so that we will have a more accurate count and locations of these embedded poles.</p>	<p>\$120,000</p>	<p>CC2EB2A</p>
<p>B2A9) Luminaire Replacement The City maintains approximately 55,000 luminaires. Previously, luminaire replacements were done primarily to take advantage of technological improvements rather than the luminaires having reached the end of their useful lives. The current fixtures were installed approximately 25 years ago and have exceeded the manufacturer's recommended life of 17 years; however, maintenance costs have been tracked and are showing signs of increase. At some point, the age of the equipment will be a major factor of this program. For now, a limited number of fixture replacements are planned, usually in coordination with other City initiatives. In addition, newer luminaire designs also offer a solution to deal with growing public concerns over light pollution. This budget will replace approximately 290 fixtures.</p>	<p>\$50,000</p>	<p>CC2EB2A</p>
<p>B2A12) Conduit Replacement This is an ongoing program for the replacement of aging street lighting conduit. During sidewalk construction or other roadway construction, opportunities are created to upgrade aging street lighting conduit, rather than digging up the sidewalks to replace the conduit. The life expectancy of conduit is tied to the life expectancy of the sidewalks, which has been generally accepted as 50 years. The scope of the program is driven by the work done under the Streets program. This budget represents approximately 6 kilometers of city blocks.</p>	<p>\$500,000</p>	<p>CC2EB2A</p>
<p>B2B1) Inventory Mgmt & Electrical Design This program partially funds an Engineering Assistant as well as costs associated with managing the street lighting plant; this category is used for investigating the potential use of new lighting products and technical standards and the development of computerized and other tools to assist in the effective management and development of our capital programs. This program is also used to develop records on inventory and plant condition that will assist in the management of the street lighting inventory. This item funds an ongoing program.</p>	<p>\$100,000</p>	<p>CC2EC1B1</p>
<p>B2B2) Non-Destructive Pole Inspection This program partially funds an Engineering Assistant as well as electrical crews to conduct non-destructive inspections of the City's street lighting poles. Based on the results of this inspection, the worst poles are replaced. A new method of testing poles has been adopted using non-destructive test methods. Meters measuring thicknesses of poles have been purchased and a regular ongoing program is needed to measure the condition of the poles. This budget represents the inspection of one third of the plant. In addition to testing the poles, trolley arms will be inspected as part of this program while the crews are in the field. Other inventory information will also be captured during this program to improve the quality of the data.</p>	<p>\$200,000</p>	<p>CC2EC1B2</p>
<p>B2B3) Asbestos Inspection & Database Update This program funds an Engineering Assistant as well as costs associated with managing the street lighting plant; WorkSafe BC identified a weakness in the City's inventory program which lists ducts used by the City. The current information does not contain asbestos information. In order to comply with the requirements, a new program is needed to identify asbestos duct currently underground. This is a preliminary budget required to investigate the magnitude of asbestos duct still underground.</p>	<p>\$150,000</p>	<p>CC2EC1B3</p>
<p>B2C) Infill Lighting During roadway construction, an opportunity is created to add additional lighting in areas which are below recommended guidelines. Typically it has been on north/south running streets which have fewer lights. This ongoing program provides funding to take advantage of this opportunity. In addition, this ongoing problem funds lighting in areas requested by the Police department for areas where they feel lighting would improve safety and security. This budget represents the addition of approximately 25 street lights which includes poles and pole bases.</p>	<p>\$150,000</p>	<p>CC2EC1C</p>

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

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OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

The infrastructure is aging and major portions of it need upgrading. Delays increase the risk of hazards due to falling poles or energized poles and panels.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B2b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Street Lighting	PROJECT / WBS	CEL-00005-09
ASSET CLASS	Street Light		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation/ Traffic & Electrical Operations Branch
PROGRAM	Street Lighting
SUB-PROGRAM / PROJECT	Local Area Projects
DESCRIPTION	This is an ongoing program to address local improvement petitions and initiatives for street, lane and pedestrian lighting

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)	
\$278,000	\$228,000	\$ 0	\$	\$50,000	\$50,000	\$

GROSS BUDGET - SUB-PROGRAM / PROJECT	EXTERNAL FUNDING (Secured)
Direct Labour	\$87,500
Materials	\$110,000
Equipment	\$22,000
Contract	\$
Overhead	\$58,500
Other (specify below)	\$228,000
	\$
	\$
	\$
	\$278,000
	\$ 0

CASH FLOW / SPENDING TIMELINE ¹	2009	\$139,000	2010	\$139,000	2011+	\$	Total	\$278,000
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COMMENTS	Due to possible staffing and equipment resources allocated for Olympic related projects in 2009, Street Lighting Local area projects scheduled to complete in 2009, may be rescheduled to start and complete early in 2010, prior to the approval of the 2010 Engineering Capital Budget.
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¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	Funding is to address ongoing local improvements for street, lane and pedestrian lighting which will be advanced in response to petition requests. The funding is used by BIAs and other commercial groups as seed money for these types of projects through the local improvement process. This program helps create a more secure and pleasant environment for pedestrians and residents.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

Projects will be advanced to the Court of Revision scheduled throughout 2009.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Streets

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Local improvement petitions and initiatives for stree, lane and pedestrian lighting will not be completed.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B2c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Street Lighting	PROJECT / WBS	CEL-00006-09
ASSET CLASS	Street Light		

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Electric Plant
PROGRAM	Street Lighting
SUB-PROGRAM / PROJECT	Olympic Decorative Pedestrian Lighting
DESCRIPTION	Creation of highly decorative celebratory lighting displays to animate two key free-to-the-public Olympic spaces, namely the pedestrian corridor linking the two City of Vancouver live sites and a portion of Cambie Street.

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB				
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)					
\$2,300,000	\$1,000,000	\$300,000	\$	\$1,000,000	\$1,000,000	\$				
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)							
Direct Labour		\$408,000	Other Levels of Government		\$					
Materials		\$1,019,000	Property Owners		\$					
Equipment		\$265,000	Other (specify below)							
Contract		\$125,000	Olympic Legacy Fund (approved in 2008)		\$1,000,000					
Overhead		\$483,000			\$					
Other (specify below)					\$1,000,000					
		\$	OTHER FUNDING (specify below; e.g., CFF)							
		\$	BC Hydro Funding		\$300,000					
		\$			\$					
		\$2,300,000			\$300,000					
CASH FLOW / SPENDING TIMELINE ¹			2009	\$2,100,000	2010	\$200,000	2011+	\$0	Total	\$2,300,000
COMMENTS										

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

partnering with Hydro creates significant cost savings

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$15,000	2011	\$15,000	2012	\$15,000	2013	\$15,000
Comments	Increased energy usage and maintenance for new lights. Impact on operating budget is based on \$375 per year per unit which includes poles and 2 additional lights									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

To enable the addition of the celebratory lighting to our streets there is a need for upgraded infrastructure and new street and pedestrian scale lights for the Yaletown Historic District. This will provide the power and physical support for the celebratory Olympic lighting. Cambie Street

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

does not require the same infrastructure upgrades as the work was done as part of the recent Canada Line reconstruction. The legacy to the City is the celebratory lighting in both locations and new infrastructure in Yaletown.

SCOPE OF WORK / DELIVERABLES

Design and install decorative lighting for up to 32 blocks of Downtown pedestrian Corridor and Cambie Street (amounts are approximate):

- \$600,000 Infrastructure upgrades in Yaletown (including new conduits, 40 poles and lighting kiosks)
- \$300,000 Lamps for poles (street and pedestrian scale light per pole)
- \$170,000 Consultant design and installation of decorative lighting
- \$980,000 Procurement (fabrication and delivery) of decorative lighting
- \$250,000 Overheads and additional costs

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Engineering/Transportation/ Traffic and Electrical Operations

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

February, 2010

IMPACT OF DELAY

Entire scope of work must be delivered prior to the start of the 2010 Olympics.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B3a

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Traffic Signal	PROJECT / WBS	CET-00009-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering Services
DIVISION / BRANCH	Transportation / Traffic Management
PROGRAM	Traffic Signals
SUB-PROGRAM / PROJECT	New Signal Construction
DESCRIPTION	Ongoing program for new pedestrian and vehicular signal installations

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$400,000	\$ 0	\$ 0	\$0	\$400,000	\$400,000	\$0		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$111,500	Other Levels of Government			\$		
Materials		\$126,000	Property Owners			\$		
Equipment		\$70,500	Other (specify below)					
Contract		\$				\$		
Overhead		\$92,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$400,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$400,000	2010	\$	2011+	\$	Total	\$400,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$10,000	2011	\$10,000	2012	\$10,000	2013	\$10,000
Comments	Council approved 6 new signals in 2008 with an operating budget increase of \$15,000; approximately \$2,500/signal. This budget is for 4 proposed new signals to be installed in 2009.									

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES	
	Detailed studies are undertaken each year to determine locations that require pedestrian or traffic signal controls. Users of the transportation system, including pedestrians, cyclists, transit vehicles, trucks and automobiles, are considered in these studies.
SCOPE OF WORK / DELIVERABLES	

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

There are 4 new pedestrian and cyclist signals installation planned for 2009 as part of the City's greenways and bicycle network at a cost of approximately \$200,000 each. The cost of new signal construction is 50% cost-shared between Greenways/Bicycle network and Traffic Signals programs. Further details on these signals will be reported as part of the greenway and bike route reports to Council.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

Engineering Services / Transportation / Greenways & Neighbourhood Transportation

TIMELINE

Start (mm/yy)

May, 2009

Completion (mm/yy)

June, 2010

IMPACT OF DELAY

Priority pedestrian and cyclist crossings identified as part of various bikeway and greenway routes would not be installed in 2009 or early 2010

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B3b

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Traffic Signals	PROJECT / WBS	CET-00010-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation / Traffic Management
PROGRAM	Traffic Signal Program
SUB-PROGRAM / PROJECT	Signal Modification
DESCRIPTION	Modification, upgrade, and retrofitting existing pedestrian and traffic signals

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$750,000	\$ 0	\$ 0	\$	\$750,000	\$750,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$203,500	Other Levels of Government			\$		
Materials		\$272,000	Property Owners			\$		
Equipment		\$102,000	Other (specify below)					
Contract		\$				\$		
Overhead		\$172,500				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$750,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$750,000	2010	\$	2011+	\$	Total	\$750,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
This program provides funding for programs to modify or retrofit existing pedestrian and traffic signals to meet operational demands of the City street network.
SCOPE OF WORK / DELIVERABLES
<ul style="list-style-type: none"> • Pedestrian Indicators (50,000)

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

- Left Turn Phasing (\$150,000)
- Audible Signals (\$50,000)
- Signal Modifications (\$250,000)
- Intelligent Transportation Systems (\$250,000)

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

Signal retrofits and upgrades scheduled for 2009 would not be completed.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B3c

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Traffic Signals	PROJECT / WBS	CET-00011-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation / Traffic Management
PROGRAM	Traffic Signal Program
SUB-PROGRAM / PROJECT	Traffic Signal Management System
DESCRIPTION	Modification, upgrade, and retrofitting of the City's Traffic Signal System

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$200,000	\$ 0	\$ 0	\$	\$200,000	\$200,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$64,000	Other Levels of Government			\$		
Materials		\$27,000	Property Owners			\$		
Equipment		\$63,000	Other (specify below)					
Contract		\$				\$		
Overhead		\$46,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$200,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$200,000	2010	\$	2011+	\$	Total	\$200,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
The City's current Traffic Signal Management System was implemented in 1999. This program will provide funding for upgrades to the TSMS software and hardware.
SCOPE OF WORK / DELIVERABLES
These upgrades will focus on providing higher levels of security, remote accessibility, and increased level of service during emergencies and

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

special events. Funding is also provided to integrate the traffic cameras into a comprehensive city-wide camera system project currently underway in partnership with the Emergency Management Division.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2009

IMPACT OF DELAY

Signal retrofits and upgrades scheduled for 2009 would not be completed.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B3d

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Traffic Signals	PROJECT / WBS	CET-00012-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation / Traffic Management
PROGRAM	Traffic Signal Program
SUB-PROGRAM / PROJECT	Renovate & Replace Aging Signal Plant
DESCRIPTION	Renovate & Replacement of Aging Signal Equipment at existing Traffic Signals

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$1,300,000	\$160,000	\$ 0	\$	\$1,140,000	\$1,140,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$353,000	Other Levels of Government		\$			
Materials		\$471,000	Property Owners		\$			
Equipment		\$177,000	Other (specify below)					
Contract		\$	Translink (OMR)		\$160,000			
Overhead		\$299,000			\$			
Other (specify below)					\$160,000			
		\$	OTHER FUNDING (specify below; e.g., CFF)					
		\$			\$			
		\$			\$			
		\$1,300,000			\$ 0			
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$1,300,000	2010	\$	2011+	\$	Total	\$1,300,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES
Some of the traffic signals in the City were built in the early 1940s and the maintenance/repair costs (funded through the operating budget) have been significantly higher than those for newer locations. With the proposed systematic renovation and replacement program, we do not expect a significant increase in operating budget requirements as a reflection of reduction in repair costs.
SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

- Rebuild Traffic Signal Intersection (\$700,000)
- Replace Rusty Traffic Signal Poles (\$150,000)
- Underground/Overhead Spans (\$150,000)
- Upgrade Signal Heads and Backboards (\$50,000)
- Replace Conflict Monitors/Racks/Loop Amplifiers (\$250,000)

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	January, 2009	Completion (mm/yy)	December, 2009
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IMPACT OF DELAY

Aging traffic signals scheduled to be rebuilt in 2009 would not be completed. This may result in an increase in operating costs to maintain these signals in operation.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B3e

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Traffic Signals	PROJECT / WBS	CET-00013-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation / Traffic Management
PROGRAM	Traffic Signal Program
SUB-PROGRAM / PROJECT	Uninterrupted Power Supply (UPS)
DESCRIPTION	Installation of Battery Backup at Signalized Intersections

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$300,000	\$50,000	\$ 0	\$	\$250,000	\$250,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$68,000	Other Levels of Government			\$		
Materials		\$41,000	Property Owners			\$		
Equipment		\$122,000	Other (specify below)					
Contract		\$	ICBC			\$50,000		
Overhead		\$69,000				\$		
Other (specify below)						\$50,000		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$300,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$300,000	2010	\$	2011+	\$	Total	\$300,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

This program will provide funding to install Uninterrupted Power Supply (UPS) systems at approximately 20 signalized intersections in the City at key junction points in 2009. At present, during periods of power failure caused by weather or equipment failure, Vancouver's traffic signals are not equipped to sustain power to facilitate the safe movement of pedestrians or vehicles. An intersection equipped with UPS will provide battery backup power until a service crew can attend or power is restored. UPS systems are now becoming standard practice for agencies responsible for operating signals along major corridors and key junction points across the region. As these systems have proven to increase safety at intersections, ICBC is willing to partner with the City in this program.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

SCOPE OF WORK / DELIVERABLES

This program will provide funding to install Uninterrupted Power Supply (UPS) systems at approximately 20 signalized intersections in the City at key junction points in 2009.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE

Start (mm/yy)

January, 2009

Completion (mm/yy)

December, 2009

IMPACT OF DELAY

UPS would not be installed at intersections in 2009.

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

CAPITAL PLAN REFERENCE #

B3g

TO BE COMPLETED BY CORPORATE BUDGET SERVICES or ENGINEERING BUDGETS & ADMINISTRATION

PROGRAM	Traffic Signals	PROJECT / WBS	CET-00014-09
ASSET CLASS			

TO BE COMPLETED BY DEPARTMENT / DIVISION / BRANCH

DEPARTMENT	Engineering
DIVISION / BRANCH	Transportation / Traffic Management
PROGRAM	Traffic Signal Program
SUB-PROGRAM / PROJECT	Signal Controller Cabinet Security
DESCRIPTION	Installation of Remote Alarm System and New Locks at Signal Controller Cabinets

SUB-PROGRAM / PROJECT BUDGET & SOURCES OF FUNDING

GROSS BUDGET for 2009	EXTERNAL FUNDING for 2009	OTHER FUNDING for 2009	2009 BASIC CAPITAL BUDGET REQUEST			Funding Approved in Advance of 2009 BCB		
			DCL/CAC FUNDING	REVENUE / DEBENTURE FUNDING	TOTAL (incl. Advance Funding)			
\$100,000	\$ 0	\$ 0	\$	\$100,000	\$100,000	\$		
GROSS BUDGET - SUB-PROGRAM / PROJECT			EXTERNAL FUNDING (Secured)					
Direct Labour		\$23,000	Other Levels of Government			\$		
Materials		\$13,000	Property Owners			\$		
Equipment		\$41,000	Other (specify below)					
Contract		\$	ICBC			\$0		
Overhead		\$23,000				\$		
Other (specify below)						\$ 0		
		\$	OTHER FUNDING (specify below; e.g., CFF)			\$		
		\$				\$		
		\$				\$		
		\$100,000				\$ 0		
CASH FLOW / SPENDING TIMELINE ¹								
	2009	\$100,000	2010	\$	2011+	\$	Total	\$100,000
COMMENTS								

¹ Anticipated timing of cash spending for 2009 Gross Budget total

COST SAVINGS & OTHER BENEFITS

IMPACT ON OPERATING BUDGET

Added Basic	2009	\$	2010	\$	2011	\$	2012	\$	2013	\$
Comments										

SUB-PROGRAM / PROJECT INFORMATION

OBJECTIVES

Each of the City's 750 traffic signals are controlled by a computerized traffic signal controller located adjacent to the intersection. This program will provide funding to install a door switch and remote warning system at the controller cabinet to alert the operator if the cabinet is open, reducing the risk of tampering/vandalism of the controller hardware.

SCOPE OF WORK / DELIVERABLES

2009 BASIC CAPITAL BUDGET (BCB) REQUEST

This program will provide funding to install new locks and remote alarming systems at approximately 300 signalized intersections in the City at key junction points in 2009.

OTHER DEPARTMENTS / DIVISIONS / BRANCHES INVOLVED *(if applicable)*

TIMELINE	Start (mm/yy)	Completion (mm/yy)
	January, 2009	December, 2009

IMPACT OF DELAY

Alarms and Locks would not be implemented at intersections in 2009.

