Supports Item No. 3
CS&B Committee Agenda
May 25, 2006

CITY OF **VANCOUVER**

ADMINISTRATIVE REPORT

Report Date:	May 09, 2006
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Meeting Date:	May 25, 2006

TO: Standing Committee on City Services and Budgets

FROM: General Manager of Engineering Services

SUBJECT: 2006 Engineering Basic Capital Budget and Close-outs

RECOMMENDATION

A. THAT the 2006 Streets, Street Lighting and Communications Basic Capital Budget totalling $31,885,000 as summarized in this report and detailed in Appendix 1 be approved, with funding as follows:

- $28,630,000 to be provided from borrowing approved by plebiscite as part of the 2006–2008 Capital Plan for Streets, Communications and Street Lighting components of the budget; and
- $3,255,000 to be provided from 2006 Capital from Revenue.

The total funding includes $4,646,500 for Streets Capital that has been approved in advance by Council in previous reports.

B. THAT Development Cost Levies (DCL's) totalling $2,350,000 be allocated to the Streets program as detailed in Appendix I.

C. THAT the 2006 Sewers Basic Capital Budget totalling $27,912,000 as summarized in this report and detailed in Appendix 1, be approved. Funding to be provided in new borrowing approved under Council authority for the 2006 – 2008 Capital Plan, for the Sewer component of the budget. This funding includes $2,232,53**7** that has been approved in advance.

D. That the 2006 Waterworks Basic Capital Budget totalling $15,194,000 as summarized in this report and detailed in Appendix 1, be approved. Funding, to be provided in new borrowing approved under Council authority for the 2006 – 2008 Capital Plan, for the Water component of the budget.

E. That the transfer of capital funding, as detailed in Appendix 2, for various capital program closeouts be approved

COUNCIL POLICY

In October 2005, Council approved the 2006-2008 Capital Plan which set a level of funding for specific Capital programs over those three years. Through plebiscite, voters approved borrowing authority for the Public Works portion, excluding the Sewers and Waterworks Capital Plans, which are approved by Council.

Funding from the three year Capital Plan is allocated to specific capital programs through annual Capital Budgets. Funding for annual Capital Budgets is provided from a combination of borrowed funds, as approved in the plebiscite, and revenue funds, with the revenue portion being subject to approval of Capital from Revenue in the Operating Budget. Council approval of the annual Capital Budget is required before work can proceed on specific projects.

Closeout of completed Capital projects, whose expenditures exceed $50,000 and 15% of the approved budgets, require Council approval. Allocation of funds in excess of $50,000 requires Council approval.

In June 1995, Council directed departments to use CityPlan to guide policy decisions, corporate work priorities, budgets and Capital Plans.

Major policies for Engineering Services Programs are summarized below:

Streets

Transportation

In 1997 the Vancouver Transportation Plan was approved by Council, and subsequent to this, council also approved the Downtown Transportation Plan, CityPlan, 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

The City has a policy of protecting neighbourhoods from shortcutting with the installation of traffic controls such as traffic circles and right-in/right-out diverters. Both neighbourhood-wide and location-specific traffic calming plans continue to be developed to help communities respond to traffic pressures.

Street Lighting

The Safer City Task Force indicated 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% life cycle 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 2001, Council adopted the regional Liquid Waste Management Plan 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 October 2005, Council approved the 2006 - 2008 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.

SUMMARY

This report seeks Council approval for the 2006 Engineering Basic Capital Budget as well as for account closeouts, allocation of closeout funds and carry forward funding. Details of the

Budget are included in Appendix 1 whereas details and explanations for the account close outs, funding allocations and carry forward funding are contained ion Appendix 2.

The 2006 Engineering Basic Capital Budget, the first year of the 2006-08 Capital Plan, allocates approximately one-third of the funds approved by plebiscite in 2005. Details of the Budget submission appear in Appendix 1. A summary of the proposed Budget of City related funding for each of the areas is provided below:

Table 1
2006 Engineering Basic Capital Budget Summary ($,000)

Area	Basic Capital Budget	DCL Amount
Streets	$ 29,465	$ 2,350
Communications	$ 700	$ 0
Street Lighting	$ 1,720	$ 0
Sewers & Drainage	$ 27,912	$ 0
Waterworks	$ 15,194	$ 0
Total	$ 74,991	$ 2,350

A total of $4,646,500 for Streets Capital has been approved in advance by Council in previous reports. This includes $2,000,000 for Arterial Streets Reconstruction, $1,000,000 for Sidewalk Reconstruction, $1,266,500 for the Traffic Signal Program, $300,000 from the Property Fund and $80,000 from Neighbourhood Traffic Calming. In addition to Streets funding, $2,232,53**7** has been approved in advance for the Sewers Basic Capital Budget. This pre-approved funding is included in the Budget reported herein.

The Capital account closeouts presented in Appendix 2 include all of the accounts for projects that commenced prior to 2000 or remain open from the 2000-02 Capital Plan. This includes the areas of Streets, Yards, Projects and the Landfill. As a result, Council is asked to approve the transfer of capital funding, as detailed in Appendix 2, for various capital program closeouts.

DISCUSSION

2006 Engineering Basic Capital Budget Details

The 2006 Engineering Basic Capital Budget consists of six programs: Streets, Communications, Street Lighting, Sewers, Waterworks, and Yards. These programs are summarized in this report, and detailed in Appendix I.

A. Streets 2006 Budget $ 29,465,000

The 2006 Streets Capital Budget is comprised of a number of programs that reflect Council policy. Adjustments have been made in the 2006 Budget to address current needs and Council's priorities. In addition to the Basic Capital Budget for each area, the Streets program will receive funds from DCL's as detailed in Appendix I. A brief description of the Streets programs are as follows:

A-1 Infrastructure $ 7,550,000

This program addresses the need for reconstruction of arterial streets and is augmented with additional funds, $4,999,285 total from Translink, the Provincial Community Development Initiative Program and the Cement Association (see details in Appendix 1). This program also includes the reconstruction of deteriorated streets and lanes in areas of poor soil conditions and where normal maintenance is not effective. It also provides for replacement of existing facilities, major maintenance of City bridges, and construction materials research. This program does not fund new facilities or reconstruction for capacity increases. Given the significant volume of work required to maintain Vancouver's arterial street network, on January 31, 2006 Council approved City funding of $2,000,000 in advance of the 2006 Streets Basic Capital Budget to permit early commencement of the 2006 Arterial Rehabilitation Program.

In addition to the funding requested to carry out the infrastructure program as summarized above, funding is requested for the following Major Projects:

A total of $11.0 million was approved in the 2006-2008 Capital Plan for design and reconstruction of Granville Street downtown from the Granville Street Bridge to Cordova Street. $500,000 is requested in 2006 in order to retain consultancy to conduct the detailed design. The remainder of the approved funding will be allocated in 2007 and 2008 to retain services to reconstruct the street to the new design which will include curb modifications, new pavement treatments, utility replacement, street furniture, and landscaping. The timing of the construction will be coordinated with the final restoration of the road as a result of Canada Line construction.

As part of the 2006-08 Capital Plan, Council approved $1,000,000 for Renfrew Street Beautification & Enhancement. It is proposed that Council approve all of this funding in 2006 in order to support the changes proposed for Hastings Park. This project will include pedestrian enhancements, improved pedestrian crossings, and street beautification on Renfrew Street between Hastings and McGill Street.

A-2 Pedestrians, Bicycles & Greenways $8,950,000

This program provides for pedestrian and cycling priorities. Funding needs for the construction of new sidewalks, curb ramps, and sidewalk reconstruction are addressed and reflect the goals of the City's sidewalk construction program approved by Council on April 8th, 2004. To improve and maintain the condition of the sidewalks on the sidewalk network, on January 31, 2006 Council approved $1,000,000 in advance of the 2006 Streets Basic Capital Budget to permit early commencement of the 2006 Sidewalk Reconstruction Program. This program is augmented with $298,000 from Translink as part of the Major Road Network OMR program.

Significant progress has been made in creating the City's network of Bikeways and Greenways. For example, approximately 40% of Greenways have now been completed, and over 170 km have been built or are about to be completed as part of the Bicycle network. Vancouver's bikeways and greenways have been effective in encouraging more people to cycle, and further development of these networks will continue in 2006. It is anticipated that the Bikeways program will receive $500,000 from Translink in order to add to this funding

Additional funding of $750,000 from DCL is allocated to this program for Greenways, Curb Ramp and Street Beautification projects.

In addition to the work summarized above, the following Major Projects have been added to this program as further improvements for pedestrians, bicycles and greenways.

> The 2006 Streets Budget includes $1,500,000 to start construction of the Carrall Street Greenway. Works proposed in 2006 include: utility relocation and some street reconstruction as part of the development of a multi-use path along Carrall Street. The Carrall Street Greenway will allow cyclists, rollerbladers, and pedestrians to connect from the existing False Creek seawall through International Village, Chinatown, and Gastown. This water to water connection is a new and innovative design which will accommodate all seawall users along a mixed use path.
>
> Also included is $1,200,000 to perform maintenance and repair of the temporary "Expo Deck" around Science World. This decking was originally installed in 1985 with a design life of approximately 15 years. After more than 20 years, portions of this temporary decking are in poor condition and require repair and maintenance.

A-3 Traffic Signals $ 2,200,000

In April 2006, Council approved $1,266,500 in advance of the 2006 Streets Basic Capital Budget for the 2006 Traffic Signal Program. This funding covers new pedestrian and vehicular signal installations. The remaining funds will be used for modification, renovation and replacement of existing signals. It is also expected that this program will receive $330,000 from Translink as part of the MRN OMR program and the Transit Related Infrastructure Program (TRIPP) which will augment City funding.

A-4 Strategic Transportation $ 4,550,000

This program provides funding to address various transportation priorities to enhance transit and improve safety by making improvements to arterials, bus slabs and landings, and pedestrian crossings. The major focus of this budget is the implementation of the Clark/Knight corridor plan. In order to implement these improvements, funding is provided within this program for property acquisitions. $300,000 was approved by Council for this purpose in advance of approval of the 2006 budget. In addition, DCL funding of $1,500,000 is allocated for Arterial Improvements and it is expected that this program will receive approximately $7,000,000 from external sources, to augment City funding, including Translink (TRIPP and MRN Minor Capital), Federal Government programs and land development projects.

A-5 Local Area $ 6,215,000

This program addresses the need for installation of neighbourhood traffic controls. Neighbourhood Transportation Plans and local street traffic calming measures are integral components of the Transportation Plan. Projects include public consultation and the installation of traffic circles, bulges, diverters, and other traffic calming measures. Examples of projects continuing in 2006 include the installation of speed humps, and additional pedestrian curb bulges at high priority locations identified with the help of the School Traffic Working Group in order to increase the safety of pedestrians. In order to get started on these

projects, Council approved $80,000 in advance of the 2006 budget to begin implementation of the Grandview Woodland Traffic Calming Plan. Additional funding of $100,000 from DCL is allocated to neighbourhood traffic controls.

This program also provides funding for the construction of streets and lanes from our Local Improvements program. The majority of the funding in this area is used to fulfill the demand for property owners to petition for new streets and lanes. In addition to the City's share of funding for this program, it is expected that approximately $1,860,000 will be received from property owners in order to augment City funding.

B. Communications 2006 Budget $ 700,000

The City's communications system is made up of the Engineering radio dispatch system which operates on wide band assignments, as well as a communications cable network. An effective communication system is essential to the efficient operation of the City departments, and is essential to all aspects of emergency response. The 2006 Budget provides funding for the continuation of the underground cable plant replacement and expansion programs. In addition to this, it is anticipated that Industry Canada will require the City to move to new narrow bandwidth technology in the near future. Funding is included within in this program area, plus an additional $100,000 each ($200,000 total) from the Water and Sewers programs, to recommend new equipment to meet these requirements.

C. Street Lighting 2006 Budget $ 1,720,000

The 2006 Street Lighting Capital Budget provides for the ongoing infrastructure replacement program for the street lighting plant. The street lighting plant continues to age, with many components now past their estimated service life. The program will provide for the replacement of street lighting poles, service panels, conduit replacement, and other components. Street lighting outages will also be reduced by rebuilding connections on trolley routes and replacing badly corroded service panels. Funding is also included to upgrade lighting levels in response to local public safety and security concerns, and for the City's share of new lighting projects approved through the Local Improvement process (an additional $228,000 is expected from property owners from this purpose). Funding these initiatives helps create a more secure and pleasant environment for pedestrians and residents.

D. Sewers & Drainage 2006 Budget $ 27,912,000

The Sewers Capital Budget includes the following programs:

D-1 System Replacement/Separation $ 26,903,000

The 2006 Sewers Capital Budget is a continuation of an ongoing infrastructure program that began in the early 1970's. This program consists of the renewal of sewer mains, connections, manholes, catch basins and pump stations. Factors considered in selecting the projects in this category include replacements for physical failure, deterioration from age, inadequate capacity and related flooding problems, environmental benefits, and Liquid Waste Management Plan requirements.

The City has adopted a strategy of continuous sewer replacement to replace 1% of the existing sewer system over a 100-year life instead of periodic large reconstruction programs. The benefits of this strategy include:

- providing for continuous environmental improvements by reducing Combined Sewer Overflows (CSO's);
- meeting the approved Liquid Waste Management Plan's combined sewer overflow (CSO) management goal of gradual reduction and eventual elimination over 50 years;
- avoiding crisis funding and spreading the cost of Capital replacement works to taxpayers more evenly over time;
- maintaining a stable, well-trained workforce; and,
- maintaining an adequate level of service in sewers by providing for the ongoing, timely replacement of older sewers and thus reducing the risk of sewer collapse and sewage flooding of private residences and businesses.

Portions of funding for this program received approval in advance of the Capital Budget. The City's share of the Canoe Creek Sanitary Trunk - Tunnel Section of the Infrastructure Program, $1,142,537, received advance Council approval in its meeting held on February 28, 2006 and $1,090,000 has been approved in advance by Council to construct sewers around the Woodward's site

In addition to the Basic Capital for this program, it is expected that the City will receive $5,373,000 from senior government sources (Canada BC Infrastructure Program and Translink's OMR program) in order to augment City funding.

D-2 System Management $ 323,000

The system management programs provide funds to support a variety of information and research projects. These projects provide key information that is used to prioritize our 1% replacement program and establish routine maintenance programs. This program also provides funds for a variety of tools that support cost-effective capital work programs, including sewer system modelling, 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.

D-3 Other Pollution Abatement $ 586,000

This program funds other pollution abatement initiatives such as Liquid Waste Management Plan initiatives and Sewer Separation on Private Property. The Sewer Separation Program was established by Council in 1978 in order to achieve the pollution control benefits of a separated sewer system. The major benefit of the program has been a reduction in the fecal coliform levels in waters that are adjacent to the City. It also allows us to completely eliminate combined sewer outfalls in the City, by taking advantage of sewers which have been separated in the street area. This work helps the City to achieve the LWMP objectives and minimize costly short-term improvements to reduce Vancouver's sewage overflows. In the first two years of the 2003-2005 Capital Plan, considerable sewer separation work occurred in the West End and other areas of the Downtown to work towards the elimination of the Denman Street combined sewage overflows. Sewers work in 2006 will focus in the Downtown area working towards the elimination of the Burrard Street CSO as well as the south shores of S.E. False Creek to start working towards the elimination of the Crowe Street CSO.

D-5 Public Sewer Connections $ 0

In 2005, the City installed approximately $8.9 million worth of public sewer connections. For 2006, at the similar level of residential and commercial construction activity, and factor in the 5% costs increase, about $9.36 million sewer connections work is anticipated. The costs of this work are recovered from public sewer connection fees charged to developers and builders

D-6 Contribution to Other Engineering Costs $ 100,000

Sewers and Drainage is contributing funds to the Engineering Radio Upgrade program. The radio upgrade will benefit all of Engineering Operating Branches and is required in order to reflect the current and future needs of the Engineering Department.

E. Waterworks 2006 Budget $ 15,194,000

The 2006-2008 Capital Plan is based on the Waterworks Long Range Plan (LRP). The LRP is a strategic planning and work program document outlining the City's plans for water quality improvement, demand growth, demand management, emergency preparedness, infrastructure management, business process improvement and financial planning.

The 2005 Waterworks Capital Budget is composed of the following:

E-1 Aging Infrastructure Replacement $ 13,013,000

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 1440 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 maintain reliable water service and follow a life-cycle replacement program that renews infrastructure components that are suffering from corrosion attack and mechanical wear.

E-2 Addressing Growth $ 1,265,000

This program addresses population growth and development impacts, funding infrastructure upgrades to increase supply capabilities, new connections and meters, and a conservation program to help curb water demand.

E-3 Emergency Planning $ 100,000

The Emergency Planning program for 2006 includes $100,000 for work on the Dedicated Fire Protection System (DFPS). This provides funding to repair damaged architectural features, and to repair valves, piping, and hydrants.

E-4 Investigation, Monitoring and Control $ 383,000

Ongoing components of this program include the installation and replacement of telemetry (water system monitoring) equipment, and engineering investigation in advance of capital projects.

E-5 Water Quality Projects $ 333,000

This program funds capital improvements to ensure adequate water quality throughout the distribution system. Of fundamental importance is the avoidance of waterborne health problems due to bacterial or chemical contamination. Projects typically focus on preventing stagnation in areas where building density is low and water supply capacity far exceeds demand.

E-6 Contribution to Other Engineering Costs $ 100,000

Waterworks is contributing funds to the Engineering Radio Upgrade program. The radio upgrade will benefit all of Engineering Operating Branches and is required in order to reflect the current and future needs of the Engineering Department.

Senior Government Cost Sharing

As described in the sections above, Provincial and regional government funding that is available or may become available to help fund capital projects includes the following:

TransLink Operating, Maintenance and Rehabilitation (OMR) Funding

- For 2006, $3.64 million of capital funding will be available from TransLink for the Major Road Network (MRN) OMR program. This amount is based on 578 lane-km of MRN Roadways

The following table explains the impact of the OMR funding on the Capital budget:

Table 2 - 2006 TransLink MRN OMR Funding Summary

2005 MRN OMR Funding	$ per lane-km	Qualifying lane-km	Operating Budget	Capital Budget
Operating & Maintenance	$5,202	578.00	$3,006,756	**-**
Rehabilitation	$5,202	571.78	-	**$2,974,400**
Other	$2,081	578.00	$541,268	**$661,550**
Total	$12,485		$ 3,548,024	**$ 3,635,950**

Capital Components of the TransLink funding include:

Rehabilitation: $2,974,400

This category covers reconstruction or replacing existing facilities (both pavements and other items). Rehabilitation is required to keep the City's MRN roads up to the average standard of the region.

Other: $ 661,550

This category covers the rehabilitation of MRN sidewalks, curbs, boulevards, traffic signals, and sewer catch basins.

TransLink Minor Capital

Under Translink's definition, this category only includes new works or improvements, on the MRN that generally address congestion, safety, and capacity issues. Translink will fund 50% of the cost of these projects up to a pre-established maximum funding level. The City has submitted 2006 project applications to Translink for Minor Capital funding. However, at the time of writing, project award by Translink has not been received. If project award is granted, funds are received when a project is complete. The City's share of the cost of these projects would be from Council approved budgeted project and program accounts.

TransLink Cycling Infrastructure Capital

In 2006, it is anticipated that Translink will provide $500,000 funding towards development and construction of new roads and facilities in order to enhance Vancouver's Bicycle Network. This funding will assist the City with providing a safe and convenient cycling environment for commuter and recreational cyclist by improving the existing road network to better meet the needs of cyclist, and by promoting the safe and responsible use of bicycles.

Translink Transit Related Infrastructure Funding

The Transit Related Roadway Infrastructure Program (TRRIP) was established to fund roadway infrastructure facilities required for the delivery of transit (bus-based) services in Greater Vancouver. Funding for approved TRRIP projects are cost-shared between the City and Translink and funds are received when project is complete. The City has not received approval from Translink for 2006 projects but expects to receive approximately $2,000,000.

ICBC Safety Programs

Since the early 1990's the Insurance Corporation of British Columbia (ICBC) and the City have participated in reviews of traffic safety along several corridors within the City. As a result of these reviews, ICBC has traditionally contributed funding towards specific Council approved projects having a road safety benefit. Various projects that may qualify for ICBC funding have been identified for 2006, however, at the time of writing, award by ICBC for some projects has not been granted. ICBC funding would complement existing City funding, and is variable as funding depends on suitable projects.

Canada – BC Infrastructure Program

This program, formally announced in 2001, has previously been reported to Council and includes funding for both Sewers projects and Streets projects in the 2006 budget. A total of $18,260,000 in funding was awarded for sewer infrastructure upgrading. Staff estimate that the City will receive in excess of $5 million of the previously awarded funding this year for Sewers projects.

Capital Closeouts and Carry Forwards

The projects to be closed out are all Engineering Capital programs, including Streets, Yards, Projects, and Landfill. Accounts being closed represent projects which commenced prior to the year 2000, and all of the remaining programs/projects provided in the 2000-2002 Capital Plan, for which funding and expenditures occurred over a number of years.

A summary of the account closeout for each capital area is provided Appendix 2. Council authority is required to close all accounts with a variance of more than 15% and $50,000 of the approved budget. Explanations for each account with a significant variance are provided for Council's information.

The net overall unexpended balance resulting from the close-out in each area is summarized in Appendix 2 and in most cases, the overall Capital Programs have unexpended balances. In the case where a group of accounts will be closed with a shortfall in funding, funding sources from the 2006 Budget have been identified for Council approval.

For incomplete projects that are from capital plans earlier than the 2003-2005 Capital Plan, funding for these projects is recommended to be carried forward to the 2006-2008 Capital Plan. The account details for these projects are shown in Appendix 2 with the explanations for those with unexpended balances of more than $50,000 and 15% of the approved budget.

FINANCIAL IMPLICATIONS

Funding shown in Table 3 for Streets, Communications and Street Lighting is from borrowing authorities approved by voters in the October 2005 plebiscites. Funding for Sewers originates from Council approved borrowing authority, and Waterworks is a Council approved, self-funding utility with debt financing through water rates revenues.

There are several projects contained in the 2006 Engineering Capital Budget, such as bike routes, greenways, traffic signals, neighbourhood traffic plans, etc., that will require various forms of maintenance in the future. Increases that may be required to the Engineering Operating Budget for these maintenance items are identified in the detailed submissions in Appendix 1, or will be identified with the individual projects when they are reported to Council.

Table 3 - Engineering Capital Budget Funding Summary ($,000)

Program	2006-08 Funding	2006 Debenture Funding	2006 Funds from Revenue	2006 Basic Capital Budget	DCL Funding
Streets	$ 76,600	$28,630	$835	$29,465	$ 2,350
Communications	$ 1,900	$0	$700	$700	$ 0
Street Lighting	$ 5,150	$0	$1,720	$1,720	$ 0
Sewers	$ 74,430	$ 27,912	$ 0	$27,912	$ 0
Waterworks	$ 54,870	$ 15,194	$ 0	$15,194	$ 0
Yards	$ 300	$0	$0	$0	$0
TOTAL	**$213,250**	**$71,736**	**$3,255**	**$74,991**	**$2,350**

CONCLUSION

This report summarizes the 2006 Engineering Basic Capital Budget for Council's review and approval. While this report provides a summary, the details of the Budget are contained in Appendix 1. In addition to the Budget, this report also provides a brief summary of the Capital Closeouts and carry forwards proposed to be completed this year. These details are provided in Appendix 2 and Council approval is required in order to close the accounts with variances of more than $50,000 and 15%, allocate the closeout balance and provide the funding sources as specified.

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APPENDIX 1 – to City Services & Budgets Committee Report (RTS #05855)

Submissions for …

2006 Engineering Basic Capital Budget

City of Vancouver
May 2006

ENGINEERING SUMMARY

Project Number	Program - 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
A	STREETS	$ 47,102	$ 15,287	$2,350	$ 29,465
B	COMMUNICATIONS	$ 900	$ 200	$0	$ 700
C	STREET LIGHTING	$ 1,948	$ 228	$0	$ 1,720
D	SEWERS	$ 33,285	$ 14,733	$0	$ 27,912
E	WATERWORKS	$ 16,594	$ 1,400	$0	$ 15,194
F	YARDS	$ 0	$ 0	$0	$ 0
	TOTAL – 2006 ENGINEERING	$99,829	$31,848	$2,350	$ 74,991

ENGINEERING STREETS

Project Number	Program - 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
A1	**INFRASTRUCTURE**				
	a) Repair of Deteriorated Arterial Streets	8,999	4,999*	0	4,000
	b) Peat Street Reconstruction	350	0	0	350
	c) Major Maintenance –City Bridges	250	0	0	250
	e) Pavement and Materials Research	100	0	0	100
	g) Reconstruction of Residential Streets and Lanes	1,000	0	0	1,000
	h) Rehabilitation Work Complementing Cut Restoration & Development	350	0	0	350
	SUBTOTAL – INFRASTRUCTURE	**$ 11,049**	**$ 4,999***	**$ 0**	**$ 6,050**
A2	**PEDESTRIANS & BICYCLES**				
	a) New Sidewalks	2,000	0	0	2,000
	b) Sidewalk Reconstruction – Local Improvements	1,967	267**	0	1,700
	d) Curb Ramp Program	681	31**	150	500
	e) Bicycle Network	1,800	500	0	1,300
	f) Beautification and Street Trees	450	0	150	300
	g) Pedestrian & Other Structures	100	0	0	100
	h) Greenways	800	0	450	350
	SUBTOTAL – PEDESTRIANS & BICYCLES	**$ 7,798**	**$ 798****	**$ 750**	**$ 6,250**
A3	**TRAFFIC SIGNALS**				
	a) Traffic Signal Program	1,000	0	0	1,000
	b) Modification of Existing Signals	365	0	0	365
	d) Replace Aging Signal Plant	1,165	330**	0	835
	SUBTOTAL – TRAFFIC SIGNALS	**$ 2,530**	**$ 330****	**$ 0**	**$ 2,200**
A4	**STRATEGIC TRANSPORTATION**				
	a) Arterial Improvements	12,225	7,000	1,500	3,725
	d) Bus Slabs & Landings	150	0	0	150
	e) Property Fund - Transit & Safety	675	0	0	675
	SUBTOTAL – TRANSIT & SAFETY	**$ 13,050**	**$ 7,000**	**$ 1,500**	**$ 4,550**

ENGINEERING STREETS

Project Number	Program – 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
A5	**LOCAL AREA TRAFFIC PLANS & OTHER IMPROVEMENTS**				
	a) Installation of Neighbourhood Traffic Controls	1,000	0	100	900
	b) Higher Zoned Streets – LI	800	300	0	500
	c) Residential Streets – LI	2,350	550	0	1,800
	d) Higher Zoned Lanes – LI	325	260	0	65
	e) Residential Lanes – LI	1,500	750	0	750
	f) Drainage & Utility Relocation Prior to Paving	200	0	0	200
	g) Grade/Open Streets & Lanes	0	0	0	0
	i) Neigbourhood Collector Program	2,000	0	0	2,000
	SUBTOTAL – LOCAL AREA TRAFFIC PLANS & OTHER IMPROVEMENTS	**$ 8,175**	**$ 1,860**	**$ 100**	**$ 6,215**
A6	**MAJOR PROJECTS**				
	d) Carral St Greenway	1,500	0	0	1,500
	h) Expo Deck Replacement	1,200	0	0	1,200
	j) Granville Mall Reconstruction	500	0	0	500
	l) Renfrew St Beautification & Enhancement	1,300	300	0	1,000
	SUBTOTAL – MAJOR PROJECTS	**$ 4,500**	**$300**	**$0**	**$ 4,200**
	DEBENTURE COSTS				
	TOTAL – 2006 STREETS CAPITAL BUDGET	**$ 47,102**	**$15,287*** **	**$2,350**	**$29,465**

**$2,000,000 was received in 2005 but is being used for a 2006 project – see A1a2*

***Recent confirmation from Translink for $461,000 of MRN OMR funding*

2006 CAPITAL BUDGET

Reference# A-1a1

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Arterial Reconstruction - Non-MRN Arterial Streets

SUB-PROGRAM or PROJECT DESCRIPTION:

Rehabilitation and repair of arterial streets not on the Major Road Network (MRN)

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$4,000,000**	**$0**	**$2,000,000**	**$0**	**$2,000,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$600,000	Senior Governments	$0
Materials	$1,720,000	Property Owners	$0
Equipment	$ 760,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$920,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$4,000,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
To maintain and improve the condition of the City funded arterial street network to an acceptable level. These streets include:

- -Portions of Main Street which are not MRN
- -Commercial Drive
- -Richards St, Cordova to Dunsmuir
- -Howe St, Cordova to Hastings
- -Dunsmuir, Viaduct to Burrard

SCOPE:
Street Rehabilitation includes:

- -Grinding off and repaving the surface layer of asphalt to extend the pavement life
- -Reconstructing sidewalk and curb and gutter which are in poor condition
- -Reconstructing the entire road structure if required

Reference**:** Council Advance Approval of $2 million RTS 5686

IMPACT OF DELAY:
The rehabilitation work is planned and scheduled throughout the year to reduce the need for inefficient and costly reconstruction work later, and to minimize disruption to the adjacent businesses and commuters.

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1ABX1 **Order Number**: **30008825**

2006 CAPITAL BUDGET

Reference# A-1a2

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Arterial Reconstruction - Major Road Network (MRN) Arterial Streets

SUB-PROGRAM or PROJECT DESCRIPTION:
Rehabilitation and repair of arterial streets on the Major Road Network (MRN)

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$4,999,285**	**$0**	**$0**	**$4,999,285**	**$0**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$749,900	Senior Governments	$0
Materials	$2,149,685	Property Owners	$0
Equipment	$949,900	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$1,149,800	Other External funds –From CB3EA1AAC1, Provincial Community Development Initiative $2,000,000, Cement Association $24,885	$2,024,885
Other (specify basis)	$0	TransLink (MRN – OMR)	$2,974,400
Total	$4,999,285	**Total Other Funding Sources**	$4,999,285

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
OBJECTIVES:
These TransLink funds are used to maintain or improve the pavement quality on MRN arterial streets such as:

-Kingsway, Inverness to Knight
-Howe, Hastings to Georgia
-Main, Union to Terminal
-41st, Larch to S/W Marine Drive
-Sections of Broadway, Cambie to Nanaimo

The reconstruction of Broadway from Cambie Street to Nanaimo Street is partially funded from the Provincial Community Development Initiative. This funding was received in 2005 but will be used in 2006 as the street reconstruction work is anticipated to start this summer.

SCOPE:
The rehabilitation will include:
-Grinding off and repaving the surface layer of asphalt to extend the pavement life
-Reconstructing sidewalk and curb and gutter which are in poor condition
-Reconstructing the entire road structure if required

IMPACT OF DELAY:
The rehabilitation work is planned and scheduled throughout the year to reduce the need for inefficient and costly reconstruction work later, and to minimize disruption to the adjacent businesses and commuters.

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1AAX1 **Order Number: 30008826, 30008827 ,30008828, 30008829**

2006 CAPITAL BUDGET

Reference# A-1b

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Peat Street Reconstruction

SUB-PROGRAM or PROJECT DESCRIPTION:
Reconstruction of streets and lanes that have deteriorated primarily due to poor soil conditions such as peat

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$350,000**	**$0**	**$0**	**$0**	**$350,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 84,000	Senior Governments	$0
Materials	$ 94,500	Property Owners	$0
Equipment	$ 91,000	DCL/CAC funding	$0
Contract	$ 0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$ 80,500	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$ 0		$0
Total	$350,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
To reconstruct streets and lanes which have deteriorated due to poor soil conditions. The streets and lanes are usually located over the old peat bog areas in the City or in some areas where there is extreme pavement settling. This condition may present some safety concerns for motorists and cyclists. The work in 2006 includes: Carolina St. from 16th to 17th, and Lane east of Knight St. from 39th to 41st.

SCOPE:
The total reconstruction will include:
- -installation of an engineered road structure designed for poor soil conditions.
- -installation of a new asphalt surface
- -reconstructing sidewalk and curb and gutter which are in poor condition

IMPACT OF DELAY:
Delays for this work may lead to risk management concerns and an inconvenience to motorists, cyclists and area residents.

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1BX1 **Order Number**: **30008830**

2006 CAPITAL BUDGET

Reference# A-1c

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Major Maintenance of City Structures - Bridges

SUB-PROGRAM or PROJECT DESCRIPTION:
This program funds major maintenance projects for the City's 34 bridges and other structures.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$250,000**	**$0**	**$0**	**$0**	**$250,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$62,500	Senior Governments	$0
Materials	$62,500	Property Owners	$0
Equipment	$40,000	DCL/CAC funding	$0
Contract	$30,000	Internal (please specify e.g. CFF Loan)	$0
Overhead	$55,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$250,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 0**

This funding is provided to address ongoing maintenance. By completing this work, operating costs should be maintained at current levels.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
To conduct maintenance to the major structures within the City. This includes work such as reconstruction of expansion joints, and other required work in order to keep them safe and to avoid the possibility of future major works.

SCOPE:
Several expansion joints on the roadways of the City's major bridge decks have deteriorated from repetitive traffic impacts and need to be rebuilt. Joint replacement will be on an as needed basis to address the most urgent locations. Preliminary inspections show that Granville and Cambie Bridges will require some work. Maintenance related to rebar corrosion, pedestrian railings and resurfacing will also be completed as funds permit. Some contracted design review of these works may be required.

IMPACT OF DELAY
There may be some risk management concerns and future budgets would require a sizable increase to address outstanding maintenance issues.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): Dec 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1CX1 **Order Number**: **30008831**

2006 CAPITAL BUDGET

Reference# A-1e

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Pavement and Recycled Materials Research - Construction Materials, Urban Sustainment and Energy Conservation

SUB-PROGRAM or PROJECT DESCRIPTION:
This category funds 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.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$100,000**	**$0**	**$0**	**$0**	**$100,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$38,000	Senior Governments	$0
Materials	$5,000	Property Owners	$0
Equipment	$25,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$17,000	Other External (please specify e.g. ICBC)	$0
Other (engineering, design, inspection)	$15,000		$0
Total	$100,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
The objective of this program is to generate economic and other benefits to the City through the implementation of improved materials, technology and increased use of recycled materials.

SCOPE:
In 2006, the following objectives are currently proposed:

-quality control and assurance testing of reclaimed asphalt pavement (RAP)
-research alternate types of asphalt products to improve quality and increase the proportion of RAP
-test trials and review of recycled crushed concrete and asphalt as a construction aggregate.
-test trials and review of concrete mixes with recycled crushed concrete and flyash.
-research opportunities for energy savings in asphalt production.

PROJECT TIMING:
Start Date (month/year) : May 2006
Completion Date(month/year): Dec 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1EX1 **Order Number**: **30008832**

2006 CAPITAL BUDGET

Reference# A-1g

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Reconstruction of Residential Streets and Lanes

SUB-PROGRAM or PROJECT DESCRIPTION:
Reconstruction of deteriorated non-arterial streets and lanes

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,000,000**	**$0**	**$0**	**$0**	**$1,000,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$110,000	Senior Governments	$0
Materials	$470,000	Property Owners	$0
Equipment	$190,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$230,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,000,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
To reconstruct deteriorated non-arterial streets and lanes. The costs for temporary fixes and ongoing maintenance of these streets and lanes are significant and it would be more economical in the long term to reconstruct. Therefore, the lifecycle of the streets and lanes have been realized and reconstruction is required.

Some of the Streets and Lanes include:
- numerous blocks of Blenheim St which meet the above criteria (conceptual designs approved in February 2006)
-area west of Granville Island
-various areas in the West End

SCOPE:
The total reconstruction will include:
-installation of a new asphalt surface
-reconstructing the new road structure and/or curb and gutter if required.

IMPACT OF DELAY:
Delays for this work may lead to risk management concerns, an inconvenience to motorists, cyclists, and area residents, and a significant decline in pavement quality.

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1GX1 **Order Number: 30008833**

2006 CAPITAL BUDGET

Reference# A-1h

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Rehabilitation Work Complementing Cut Restoration and Development

SUB-PROGRAM or PROJECT DESCRIPTION:
Reconstruction of the remaining portions of deteriorated local streets and sidewalks in which the majority of the street and sidewalk is being replaced as a result of utility cuts or development.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$350,000**	**$0**	**$0**	**$0**	**$350,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$56,000	Senior Governments	$0
Materials	$154,000	Property Owners	$0
Equipment	$59,500	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$80,500	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$350,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
This program deals with the reconstruction of the remaining portions of deteriorated local streets and sidewalks where the majority of the street and sidewalk is being replaced as a result of utility cuts or development. Funding from this program is used to reconstruct the remainder of the street and/or sidewalk. This process will be more economical in the long term as costs for temporary fixes and ongoing maintenance are expensive and the full width street and/or sidewalk reconstruction will last longer. Some of the Streets and Lanes include:

-Sherbrooke, 41st to 39th
-37th, Windsor to Ross
-Inverness, 33rd to 37th
-E 30th, Fraser to Pr Albert
-3300 Queens

SCOPE:
The total reconstruction will include:

-installation of a new asphalt surface
-reconstructing the new road structure if required.
-reconstructing sidewalk and curb and gutter which are in poor condition

IMPACT OF DELAY:
Delays for this work may lead to risk management concerns, an inconvenience to motorists, cyclists and area residents, and increased maintenance on the deteriorated side of the street.

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA1HX1 **Order Number**: **30008834**

2006 CAPITAL BUDGET

Reference# A-2a

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
New Sidewalks

SUB-PROGRAM or PROJECT DESCRIPTION:
City –wide program to construct sidewalks on arterial streets, pedestrian collector routes, and in residential areas as requested by petitions or on City initiative.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$2,000,000**	**$0**	**$0**	**$0**	**$2,000,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$580,000	Senior Governments	$0
Materials	$580,000	Property Owners	$0
Equipment	$380,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$460,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$2,000,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
The goal of the program was outlined in the City's sidewalk construction program as approved by Council on April 8, 2004. The goals were to work towards completing the sidewalk network on both sides of all streets, to expedite completion of the sidewalk network on both sides of all transit routes by 2007 and on both sides of all developed arterial streets by 2009. The development of the sidewalk network improves pedestrian accessibility which will support transit use. This will also promote pedestrian safety by providing clear and unobstructed pathways for the public.

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

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2AX1 **Order Number: 30008835**

2006 CAPITAL BUDGET

Reference# A-2b

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Sidewalk Reconstruction

SUB-PROGRAM or PROJECT DESCRIPTION:
Reconstruct badly deteriorated sidewalks in commercial and residential areas of high pedestrian use.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,967,000**	**$0**	**$1,000,000**	**$267,000**	**$700,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$570,400	Senior Governments	$0
Materials	$570,400	Property Owners	$0
Equipment	$373,800	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$452,400	Translink (MRN-OMR)	$267,000
Other (specify basis)	$0		$0
Total	$1,967,000	**Total Other Funding Sources**	$267,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
This program addresses the deterioration of our sidewalk network. It deals with the replacement and repair of existing sidewalks. Sidewalk reconstruction work can be initiated by the City, businesses and property owners. In previous years, the costs have been shared between the City and property or business owners. The Local Improvement Process will remain as a mechanism for property owners to help fund petitioned projects which are not identified as priorities. The majority of the funding will be used to fund City prioritized projects which are usually associated with larger street rehabilitation projects. Some of the sidewalk reconstruction projects scheduled for 2006 include Main Street, Commercial Drive and Spyglass Place
Reference: Council Advance Approval of $1.0 million RTS 5686

SCOPE:
Sidewalk reconstruction will include:
- -breaking out existing sidewalk
- -reconstructing the new sidewalk base
- -reconstructing the new sidewalk and/or curb and gutter if required.

IMPACT OF DELAY:
Delays for this work may lead to risk management concerns, and an inconvenience to the public and business owners

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2BX1 **Order Number: 30008836, 30008920**

2006 CAPITAL BUDGET

Reference# A-2d

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Curb Ramp Program

SUB-PROGRAM or PROJECT DESCRIPTION:
Construction of curb ramps at street and lane corners to provide barrier free access to sidewalks

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$681,000**	**$0**	**$0**	**$181,000**	**$500,000**

BUDGET (Include functional breakdown):		OTHER FUNDING SOURCES	
Direct Labour	$320,000	Senior Governments	$0
Materials	$102,000	Property Owners	$0
Equipment	$102,000	DCL funding	$150,000
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$157,000	Translink (MRN-OMR)	$31,000
Other (specify basis)	$0		$0
Total	$681,000	**Total Other Funding Sources**	$181,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	2006	2007	2008
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
This program funds the installation of curb ramps at street and lane corners to provide a level and uninterrupted access to the sidewalks. This program benefits many people including persons with disabilities, seniors with power scooters and the public with walkers or strollers. There has been an increase in the demand for curb ramps as the City is trying to make the sidewalk network more accessible.

SCOPE:
There are approximately 8,800 locations in the City which require ramps. This number will be reduced by approximately 200 during 2006.

IMPACT OF DELAY:
There is currently an extensive list of requests generated by the public and the accessible trolley bus rollout, and delays to the ramp installation schedule will affect the completion of sidewalks on arterials and bus routes throughout the City.

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2DX1 **Order Number: 30008837, 30008838, 30008921**

2006 CAPITAL BUDGET

Reference# A-2e

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Bicycle Network

SUB-PROGRAM or PROJECT DESCRIPTION:
Development and construction of new bicycle routes and facilities as per the City of Vancouver Bicycle Plan and the Vancouver Transportation Plan.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,800,0000**	**$0**	**$0**	**$500,000**	**$1,300,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$522,000	Senior Governments	$0
Materials	$540,000	Property Owners	$0
Equipment	$324,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$414,000	Other External (Translink-Bike Network)	$500,000
Other (specify basis)	$0		$0
Total	$1,800,000	**Total Other Funding Sources**	$500,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 25,000**	**$ 25,000**

Due to the addition of traffic circles, corner bulges and other bike infrastructure, the related additional maintenance requires increases in future operating budgets.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

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.

SCOPE:
Further expansion of the City's bicycle network as outlined in the Vancouver Bicycle Plan. Projects suggested for 2006 include, but are not limited to, the 29th Avenue Bikeway, Balaclava, downtown bike lanes including Dunsmuir and Pender, and trials of coloured bicycle lanes. Events for bike month will include the opening of Richards bike lanes. Updated bicycle maps which include cycling education and tips will be included.

IMPACT OF DELAY
Development and construction of cycling facilities would not be completed in 2006.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): March 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2EX1 **Order Number**: **30008839, 30008840**

2006 CAPITAL BUDGET

Reference# A-2f

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Street Beautification

SUB-PROGRAM or PROJECT DESCRIPTION:
Street beautification projects such as those for the Visioning process or for improving the public realm. Also, used for Local Improvement work such as decorative street and pedestrian lighting projects.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$450,000**	**$0**	**$0**	**$150,000**	**$300,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$139,500	Senior Governments	$0
Materials	$139,500	Property Owners	$0
Equipment	$67,500	DCL funding	$150,000
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$103,500	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$450,000	**Total Other Funding Sources**	$150,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
This program funds non-standard beautification projects within the street right-of-way in commercial and residential areas. These projects generally improve the public realm throughout the City which benefits the City-at-large. With the 2010 Olympics fast approaching, property owners and business associations may be requesting cost sharing funds from the City to improve or beautify their neighbourhoods. This funding is also used for the development of various Neighbourhood Centres in the City. The Kingsway and Knight Neighbourhood centre is currently being completed and has largely been funded from this program.

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2FX1 **Order Number**: **30008841, 30008842**

2006 CAPITAL BUDGET

Reference# A-2g

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Pedestrian & Other Structures

SUB-PROGRAM or PROJECT DESCRIPTION:
Construction and maintenance of pedestrian bridges and other miscellaneous structures

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$100,000**	**$0**	**$0**	**$0**	**$100,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$33,000	Senior Governments	$0
Materials	$25,000	Property Owners	$0
Equipment	$19,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$23,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$100,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 1000**	**$ 1000**

Additional inspections are required as well as minor maintenance items as a result of the inspections**.**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
This program funds the construction, upgrade and maintenace of pedestrian and cyclist based infrastructure such as small bridges, railings, retaining walls, traffic barriers and other minor projects.

SCOPE:
Construction of pedestrian or other small structures such as retaining walls is required on an ongoing basis. Much of this work is related to maintenance and replacement of components. It is proposed that $100,000 be provided for this work in 2006.

IMPACT OF DELAY
Projects would not be completed in 2006. Some issues relating to access and safety would remain unaddressed and may leave the City vulnerable to liability concerns.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): January 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2GX1 **Order Number**: **30008843**

2006 CAPITAL BUDGET

Reference# A-2h

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Greenways

SUB-PROGRAM or PROJECT DESCRIPTION:
Development of Citywide and Neighbourhood Greenways as part of the Council approved Greenways Plan.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$800,000**	**$0**	**$0**	**$450,000**	**$350,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$200,000	Senior Governments	$0
Materials	$165,000	Property Owners	$0
Equipment	$105,000	DCL funding	$450,000
Contract	$150,000	Internal (please specify e.g. CFF Loan)	$0
Overhead	$180,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$800,000	**Total Other Funding Sources**	$450,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 10,000**	**$ 25,000**

Due to increased landscaping, pedestrian level street lighting, and other infrastructure, the related additional maintenance requires increases in future operating budgets.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
Greenways & Neighbourhood Transportation will continue to develop and build ongoing and new greenway projects including, but not limited to, design of the Comox-Helmcken greenway, finalizing the Central Valley Greenway, the East Side Cross-Cut and Neighbourhood Greenways as citizen consultation and participation processes are completed.

SCOPE:
The Greenways Plan is a Council approved program which includes the development of City-wide and Neighbourhood Greenways.

IMPACT OF DELAY
Implementation of Greenways currently in the consultation and design stages would not be completed. The coordination of work with other projects such as redevelopments and the related costs savings, would be lost.

PROJECT TIMING:
Start Date (month/year): June 2006
Completion Date (month/year): May 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA2HX1 **Order Number**: **30008844, 30008845**

2006 BASIC CAPITAL BUDGET

Reference # A-3a

DEPARTMENT: ENGINEERING **PROGRAM: Traffic Signals**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Signal Construction - New Pedestrian and Vehicular Signals

SUB-PROGRAM or PROJECT DESCRIPTION:
On-going program for New Pedestrian and Vehicular Signal Installations

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding	Basic Capital Budget Requested
Project Costs	**$1,000,000**	**$0**	**$901,500**	**$0**	**$98,500**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$330,000	Senior Governments	$0
Materials	$360,000	Property Owners	$0
Equipment	$210,000	DCL/CAC funding	$0
Contract	$0	Other (please specify e.g. Translink, ICBC, donation)	$0
Overhead	$100,000		$0
Other (specify basis)	$0		$0
Total	$1,000,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic)	**$ 0**	**$30,000**	**$30,000**

approximately $2,500 per year per new signal installation

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

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:
There are 10 new signals and 2 new special crosswalks budgeted for 2006: 9 pedestrian signals with an average cost of $90,000 per location, 1 vehicular signal with an average cost of $100,000 per location, and 2 special crosswalks with an average cost of $45,000 per location. Further details on this project is reported as part of the 2006 Traffic Signal Program to council (RTS 5630).

Reference: Council advance approval of $901,500 RTS 5630

IMPACT OF DELAY
Priority crossings identified through the Annual Signal Program would not be installed in 2006. Some of these are school crossings scheduled to be installed before the start of the school in September.

PROJECT TIMING:
Start Date (month/year) : May 2006
Completion Date(month/year): January 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA3AX1 **Order Number**: **30008846**

2006 BASIC CAPITAL BUDGET — Reference # A-3b

DEPARTMENT: ENGINEERING **PROGRAM: Traffic Signals**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Signal Construction – Modification of Existing Signals

SUB-PROGRAM or PROJECT DESCRIPTION:
Modification, Upgrade, and Retrofitting Existing Pedestrian and Traffic Signals

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding	Basic Capital Budget Requested
Project Costs	**$365,000**	**$0**	**$365,000**	**$0**	**$0**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$121,000	Senior Governments	$0
Materials	$156,000	Property Owners	$0
Equipment	$51,000	DCL/CAC funding	$0
Contract	$0	Other (please specify e.g. Translink, ICBC, donation)	$0
Overhead	$37,000		$0
Other (specify basis)	$0		
Total	$365,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:
This program will provide funding for the projects listed below to retrofit existing signals to meet the City's current standards for level of service.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic)	**$ 0**	**$ 0**	**$ 0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
This program provides funding for programs to modify or retrofit existing pedestrian and traffic signals in the City. Further details on these programs are listed on the following page.

SCOPE:

Pedestrian Indicators	$35,000
Left-Turn Phasing	$125,000
Audible Signals	$50,000
Signal Modifications	$55, 000
Intelligent Transportation Systems	$50,000
Tertiary Signal Heads	$50,000
TOTAL	$365,000

Reference: Council advance approval of $365,000 RTS 5630

IMPACT OF DELAY
Signal retrofits scheduled for 2006 would not be completed.

PROJECT TIMING:
Start Date (month/year) : May 2006
Completion Date(month/year): April 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA3BX1 **Order Number**: **30008847**

2006 BASIC CAPITAL BUDGET Reference # A-3b

DEPARTMENT: ENGINEERING **PROGRAM: Traffic Signals**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE
Signal Construction – Modification of Existing Signals

PROJECT SUMMARY (continued)

Pedestrian Indicators
In 1991 Council began a program to retrofit existing signals with pedestrian indicators at traffic signals to improve visibility and safety for pedestrians. This modification program will continue in 2006.

Left-turn Phasing
This program is for the many requests that the City receives to install left-turn flashing arrows at existing signals. Left-turn arrows which assist transit vehicles or reinforce designated truck routes are given priority for installation. A number of locations on the Major Road Network may be funded by TransLink from their Transit Related Road Infrastructure Program (TRRIP) in 2006. The amount of TransLink contribution in 2006 has not been determined at this time.

Audible Signals
Vancouver has been one of the leading cities in North America in terms of the provision of audible signals. The audible signal program provides for the retrofitting of audible signals to existing signals throughout the City. This provides essential information to the visually disabled community to allow safe crossing of an intersection. Current policy provides all new Pedestrian and Fully Activated signals with an audible signal.

Tertiary Signal Heads
Since 1994, tertiary heads were installed at high accident intersections to improve visibility of signal displays. This improvement has achieved significant reduction of traffic collisions at many intersections. The City, together with ICBC, will continue to install tertiary heads at high volume/high collision intersections in an effort to improve road safety. A number of locations will be cost shared with ICBC. At this time, ICBC's contribution in 2006 has not been determined.

Minor Modifications
There are routine modifications required on the present signal system from time to time. Some examples are:

- minor modifications to hardware and software for the controllers and central control system
- modification of overhead signs
- adjustment of signal timings
- purchase of computer hardware and software to allow staff to better manage the existing signal system, utilize database software to inventory pedestrian and vehicle information, and to handle increasing requests from the public for traffic related data .

Intelligent Transportation Systems
Intelligent Transportation Systems are the application and use of technology to optimize the effectiveness of the existing street infrastructure. Intelligent Transportation Systems provide the technology to enable people to make smart travel choices. Initiatives which are being proposed in this program include: testing detection equipment, installation of permanent counting stations, and providing information to the City's public web page.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET

Reference # A-3d

DEPARTMENT: ENGINEERING **PROGRAM: Traffic Signals**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Replace Aging Signal Plant

SUB-PROGRAM or PROJECT DESCRIPTION:
Renovate and replacement of aging signal equipment at existing signalized intersections

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding	Basic Capital Budget Requested
Project Costs	**$1,165,000**	**$0**	**$0**	**$330,000**	**$835,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$326,200	Senior Governments	$0
Materials	$594,200	Property Owners	$0
Equipment	$128,100	DCL/CAC funding	$0
Contract	$0	TransLink-TRRIP	$167,000
Overhead	$116,500	Translink (MRN-OMR)	$163,000
Other (specify basis)	$0		$0
Total	$1,165,000	**Total Other Funding Sources**	$330,000

COST SAVING AND OTHER BENEFITS:
With the proposed systematic renovation and replacement program, we do not expect an increase in operating budget requirements as a reflection of reduction in repair costs.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic)	**$ 0**	**$ 0**	**$ 0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
Some of the existing traffic signals in the City were built in the early 1940's and the maintenance/repair costs (funded through operating budget) have been significantly higher than newer locations. With the proposed systematic renovation and replacement program, we do not expect an increase in operating budget requirements as a reflection of reduction in repair costs.

SCOPE:

Rebuild Traffic Signal Intersection	$721,300
Replace Rusty Traffic Signal Poles	$ 72,100
Underground/Overhead Spans	$ 72,100
Upgrade Signal Heads and Backboards	$ 72,100
Conflict Monitors/Rack/Loop Amplifiers	$227,400
TOTAL	$1,165,000

IMPACT OF DELAY
Aging traffic signals scheduled to be rebuilt in 2006 would not be completed. This would result in an increase in operating costs to maintain these signals in operation.

PROJECT TIMING:
Start Date (month/year) : May 2006
Completion Date(month/year): April 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA3DX1 **Order Number**: **30008848, 30008922**

2006 BASIC CAPITAL BUDGET

Reference # A-3d

DEPARTMENT: ENGINEERING **PROGRAM: Traffic Signals**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE
Replace Aging Signal Plant

PROJECT SUMMARY (continued)

Rebuild Traffic Signal Intersections
Over 25% of all signalized intersections, or 40 locations, are 45 years or older. As part of an on-going program, 3 or 4 intersections will be rebuilt in 2006 at a total cost of $600,000. This amount includes funding for a 12 month Engineering Assistant III position to assist with the designs and construction issues in 2006.

Replace Rusty Traffic Signal Poles
There are over 3,500 traffic signal poles or transit poles with traffic signal equipment in the City. Many of these have suffered rust damage. As part an ongoing program, 10 traffic signal poles will be replaced in 2006 at an approximate cost of $6,000 per pole.

Underground/Overhead Spans
To improve aesthetics, as well as to reduce repair costs associated with the overhead spans being damaged by transit vehicles and severe weather conditions; 2 to 3 intersections will have their overhead spans relocated to underground in 2006.

Upgrade Traffic Signal Heads and Backboards
As a joint venture partner to improve traffic safety, ICBC is willing to cost share this program to upgrade the existing heads and/or replace the existing green backboards with yellow backboards, in order to improve visibility. At this time, the contribution from ICBC in 2006 has not been determined.

Conflict Monitors, Controller Rack Assemblies, and Loop Amplifiers
Conflict monitors, controller rack assemblies, and loop amplifiers are critical components of a traffic signal controller. This provides funding for an on-going program to replace aging equipment which has reaching its design life. The functions that are being impacted include: monitoring of the traffic lights for illegal or abnormal displays called conflicts; detection of pedestrians and vehicles at the intersection; increased signal head capacity; and communication with the central signal system.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 CAPITAL BUDGET

Reference# A-4a1

DEPARTMENT: **Engineering** **PROGRAM:** **Strategic Transportation**
DIVISION: **Transportation**

SUB-PROGRAM or PROJECT TITLE:
Arterial Improvements - Clark/Knight Corridor: Transportation and Livability

SUB-PROGRAM or PROJECT DESCRIPTION:
Implementation of the Clark/Knight Corridor Plan approved by Council in 2005.

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$4,300,000**	**$0**	**$0**	**$2,400,000**	**$1,900,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$600,000	Senior Governments	$500,000
Materials	$600,000	Property Owners	$0
Equipment	$300,000	DCL funding	$600,000
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$800,000	Other External (Translink MRN Minor Capital & TRRIP)	$1,200,000
Other (property acquisition)	$2,000,000	Other External (ICBC)	$100,000
Total	$4,300,000	**Total Other Funding Sources**	$2,400,000

COST SAVING AND OTHER BENEFITS:
Significant cost sharing funding for improved safety, livability and goods movement along the Clark/Knight corridor.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	$0	$4,000	$6,000

Increases related to additional maintenance for landscaping, street trees, lane markings, signage and traffic signals.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs and Functional breakdown).

OBJECTIVES:
To improve safety, livability and goods movement along the Clark/Knight corridor. Implementation of the Clark/Knight Corridor Plan including property acquisition and construction to improve conditions for pedestrians, transit users, trucks, general traffic and residents along the corridor.

SCOPE:
- First phase of boulevard enhancements and tree voucher program along Clark/Knight Street
- Left turn bay and pedestrian connection to park on Knight Street at 33rd Avenue
- Geometric modifications related to diversion on Knight Street between 54th and 57th Avenues
- Minor geometric and safety improvements along Clark/Knight Street

IMPACT OF DELAY:
Lost opportunity to receive significant cost sharing funding to improve the safety, livability, and goods movement along the Clark/Knight corridor.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): December 2007
(additional funds specified in the Clark/Knight Corridor Plan will be sought as part of future Capital Plan submissions)

FOR BUDGET OFFICE USE ONLY:
Order Group: **CC1EA4A1X** **Order Number**:**30008849, 30008850, 30008851, 30008852, 30008853**

2006 CAPITAL BUDGET

Reference# A-4a2

DEPARTMENT: Engineering **PROGRAM: Strategic Transportation**
DIVISION: Transportation

SUB-PROGRAM or PROJECT TITLE:
Arterial Improvements - Pedestrian, Transit, and Neighbourhood Centres

SUB-PROGRAM or PROJECT DESCRIPTION:
Design and construction of geometric and safety modifications to enhance pedestrian crossings, increase transit priority, or improve transportation and livability in Neighbourhood Centres.

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,600,000**	**$0**	**$0**	**$1,000,000**	**$600,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$525,000	Senior Governments	$0
Materials	$425,000	Property Owners	$0
Equipment	$300,000	DCL funding	$400,000
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$350,000	Other External (Translink MRN Minor Capital & TRRIP)	$600,000
Total	$1,600,000	**Total Other Funding Sources**	$1,000,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$2,000**	**$4,000**

Increases related to additional maintenance for landscaping, street trees, lane markings, signage and traffic signals.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
To accelerate the installation of various geometric and safety modifications that enhance pedestrian comfort, provide increased transit priority measures, or improve the transportation and livability in Neighbourhood Centres.

SCOPE:
- Enhancements at Pedestrian Crossings – Existing Program (i.e. bulges, medians, other similar geometric re-designs)
- Transit Bus Bulges – Existing Program (i.e. localized widening at a bus stop include a pedestrian bulge across the street)
- Visioning Implementation (i.e. bulges, medians, other similar geometric re-designs)
- Area Transit Plan Implementation (i.e. transit priority measures, geometric modifications, bus/HOV lanes)

IMPACT OF DELAY:
Slower implementation in addressing resident requests for pedestrian facilities, accelerating increased priority for transit, and improving safety in Neighbourhood Centres.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): December 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA4A2X **Order Number: 30008854, 30008855, 30008856**

2006 CAPITAL BUDGET

Reference# A-4a3

DEPARTMENT: **Engineering** **PROGRAM:** **Strategic Transportation**
DIVISION: **Transportation**

SUB-PROGRAM or PROJECT TITLE:
Arterial Improvements - Geometric and Safety Modifications.

SUB-PROGRAM or PROJECT DESCRIPTION:
Design and construction of geometric and safety modifications on arterial streets.

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$6,325,000**	**$0**	**$0**	**$5,100,000**	**$1,225,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$775,000	Senior Governments	$0
Materials	$750,000	Property Owners	$0
Equipment	$350,000	DCL funding	$500,000
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$950,000	Other External (Translink MRN Minor Capital & TRRIP)	$100,000
Other (property acquisition)	$3,500,000	Other External (development projects)	$4,500,000
Total	$6,325,000	**Total Other Funding Sources**	$5,100,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$2,000**	**$2,000**

Increases related to additional maintenance for landscaping, street trees, lane markings, signage and traffic signals.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs & Functional breakdown).

OBJECTIVES:
To improve the safety and access at selected locations on arterial streets including coordination with other city construction projects and leveraging opportunities for significant cost sharing funding with developments as well as TransLink and ICBC.

SCOPE:
Sample geometric modification projects include realignments, medians, corner bulges, left turn bays, and other alternative streetscape design measures. Potential locations currently being reviewed by staff are as follows:

- Oak Street and Heather Street at 12th Avenue (as part of the VGH development)
- Glen Drive and Broadway (as part of the VCC development)
- Oak Street between 14th and 16th Avenue (related to adjacent development)
- Pender Street between Bute Street and Thurlow Street (as part of the VCCEP development)

IMPACT OF DELAY:
Lost opportunity to receive significant cost sharing funding (more than 50%) and coordination with adjacent developments.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): December 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA4A3X **Order Number: 30008857, 30008858, 30008859, 30008860**

2006 CAPITAL BUDGET

Reference# A-4d

DEPARTMENT: ENGINEERING **PROGRAM: Strategic Transportation**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Bus Pads and Passenger Landings

SUB-PROGRAM or PROJECT DESCRIPTION:
Bus Pads and Passenger Landing Area Improvements at Bus Stops

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$150,000**	**$0**	**$0**	**$0**	**$150,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$39,000	Senior Governments	$0
Materials	$39,000	Property Owners	$0
Equipment	$37,500	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$34,500	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$150,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
This program provides funds to upgrade roadway surface and passenger areas at bus stops. The work includes replacing deteriorated pavement with either an asphalt overlay or a concrete bus pad and the installation of concrete passenger landing areas. There is a need to install bus pads where there is evidence of roadway failure. The installation of the new pads upgrades transit operation and reduces road maintenance. There is a need for passenger area improvements at existing bus stops and at new bus stops for expansion of transit routes as well as for the introduction of the wheelchair accessible trolley buses. The passenger area improvements involve the construction of concrete passenger landing areas and accessibility pads. The installation of new bus pads and passenger landing areas will be planned in conjunction with any new major road or sidewalk reconstruction project. This will be more economical and will minimize the inconvenience to the public and area businesses.

SCOPE:
There is an ongoing requirement to improve roadway surface and passenger areas at bus stops. The new accessible trolley bus fleet is scheduled for implementation over a three year period starting this year and there is projected route expansion under the Vancouver/UBC Area Transit Plan. The goal of the program is to upgrade the transit infrastructure and encourage transit use.

IMPACT OF DELAY:
This would delay the construction of new bus pads which may affect transit operations, passenger rideability and increased road maintenance. This would also delay the construction of passenger landing areas which will reduce the number of bus stops to be designated accessible and reduce the level of service to the public.

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA4DAX1 **Order Number**: **30008861**

2006 CAPITAL BUDGET

Reference# A-4e

DEPARTMENT: ENGINEERING **PROGRAM: Strategic Transportation**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Property Fund

SUB-PROGRAM or PROJECT DESCRIPTION:
Advance funding for property acquisitions.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$675,000**	**$0**	**$300,000**	**$0**	**$375,000**

BUDGET (Include functional breakdown):		OTHER FUNDING SOURCES	
Direct Labour	$0	Senior Governments	$0
Materials	$0	Property Owners	$0
Equipment	$0	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead 10%	$65,000	Other External (please specify e.g. ICBC)	$0
Other (property purchase)	$610,000		$0
Total	$675,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	2006	2007	2008
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
This program primarily funds property purchases for transit and safety related projects in advance of the actual construction. Properties which become available at potential sites can be purchased economically and at a time which is least disruptive to the property owner. This program operates as a rotating fund and therefore is reimbursed by individual street projects that require a portion of the property, and also by the sale of residual property.

IMPACT OF DELAY:
This would reduce the opportunities to purchase the required properties economically and with the least disruptions to the property owner**.**

$300,000 of funding was approved in advance in January 2006.

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA4EX1 **Order Number**: **30008862**

2006 CAPITAL BUDGET

Reference# A-5a

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Neighbourhood Traffic Calming

SUB-PROGRAM or PROJECT 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, bulges, partial closures, diagonal diverters, right-in right-out diverters and speed humps.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,000,000**	**$0**	**$80,000**	**$100,000**	**$820,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$290,000	Senior Governments	$0
Materials	$300,000	Property Owners	$0
Equipment	$180,000	DCL funding	$100,000
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$230,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,000,000	**Total Other Funding Sources**	$100,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 10,000**	**$ 40,000**

Due to the addition of traffic circles, corner bulges and additional streets infrastructure, the related additional maintenance requires increases in future operating budgets.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
To enhance the livability and safety on local neighbourhood streets by developing neighbourhood traffic calming plans in consultation with residents and stakeholders. Also, to create a safe 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:
Projects and programs include neighbourhood traffic calming plans such as Grandview-Woodlands, and annual programs such as the Speed Hump Program. In addition, there are many minor street improvements required that are not covered under the major budget categories. These include intersection modifications, drainage improvements and street changes often coordinated with rezoning and redevelopments.

IMPACT OF DELAY
There are a number of projects and programs which have been developed over the past several years. Delaying the construction of these plans would upset residents and may create some safety concerns.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): March 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5AX1 **Order Number**: **30008863, 30008864**

2006 CAPITAL BUDGET

Reference# A-5b

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Higher Zoned Streets – Local Improvement

SUB-PROGRAM or PROJECT DESCRIPTION:
Street reconstruction and tree planting for industrial, commercial, multiple dwelling and other higher use areas.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$800,000**	**$0**	**$0**	**$300,000**	**$500,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$96,000	Senior Governments	$0
Materials	$96,000	Property Owners	$300,000
Equipment	$64,000	DCL/CAC funding	$0
Contract	$360,000	Internal (please specify e.g. CFF Loan)	$0
Overhead	$184,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$800,000	**Total Other Funding Sources**	$300,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
This program primarily deals with the reconstruction of streets in industrial, commercial, multiple dwelling areas and other higher use areas through the local improvement process. The projects may include paving, curbing and installing trees in these higher use areas. The projects are often initiated by the property owners or tenants. In some higher use areas where there are unusually high maintenance costs, safety issues, or there are a large number of absentee landlords, the projects are initiated by staff.

In higher use areas there are increased traffic loads on the streets. This results in deteriorated streets which require the installation of new pavement that is designed to meet the current higher traffic loads.

IMPACT OF DELAY:
There are currently four local improvement projects planned for 2006. Failure to expedite this request will cause delays in the street construction schedule which may lead to risk management concerns and reduce service to the public.

PROJECT TIMING:
Start Date (month/year) : June 2006
Completion Date(month/year): June 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5BX1 **Order Number**: **30008865**

2006 CAPITAL BUDGET

Reference# A-5c

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Residential Streets – Local Improvements

SUB-PROGRAM or PROJECT DESCRIPTION:
Street reconstruction and tree planting on residential streets.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$2,350,000**	**$0**	**$0**	**$550,000**	**$1,800,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$282,000	Senior Governments	$0
Materials	$282,000	Property Owners	$550,000
Equipment	$188,000	DCL/CAC funding	$0
Contract	$1,057,500	Internal (please specify e.g. CFF Loan)	$0
Overhead	$540,500	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$2,350,000	**Total Other Funding Sources**	$550,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
This program primarily deals with the reconstruction of streets in residential areas through the local improvement process. The projects include paving, curbing and installing trees in residential areas. The projects are usually initiated by the property owners but there are some projects that are initiated by staff. Most of these projects have major maintenance problems and are generally unimproved flankage streets which are difficult to improve under the petition process.

IMPACT OF DELAY:
There are currently fifteen local improvement projects that are planned for 2006. Failure to expedite this request will cause delays in the street construction schedule, increase maintenance costs, increase risk management concerns and disappoint the public initiating this work.

PROJECT TIMING:
Start Date (month/year) : June 2006
Completion Date(month/year): June 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5CX1 **Order Number**: **30008866**

2006 CAPITAL BUDGET

Reference# A-5d

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Higher Zoned Lanes – Local Improvements

SUB-PROGRAM or PROJECT DESCRIPTION:
Lane construction in industrial, commercial, multiple dwelling and higher use areas.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$325,000**	**$0**	**$0**	**$260,000**	**$65,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$94,250	Senior Governments	$0
Materials	$91,000	Property Owners	$260,000
Equipment	$65,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$74,750	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$325,000	**Total Other Funding Sources**	$260,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
This is primarily a staff initiative program which deals with the reconstruction of lanes in commercial, industrial and multiple dwelling areas. It addresses the need to replace lanes which, are in poor condition, require increased maintenance and require improvements to bring them up to current standards. Paving of the lane avoids the long term deterioration of our infrastructure and provides improved drainage which prevents flooding.

IMPACT OF DELAY:
Concerns raised by the public will not be addressed and this will inconvenience the public and businesses. There may also be risk management concerns if there are delays.

PROJECT TIMING:
Start Date (month/year) : June 2006
Completion Date(month/year): March 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5DX1 **Order Number**: **30008867**

2006 CAPITAL BUDGET

Reference# A-5e

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Residential Lanes – Local Improvements

SUB-PROGRAM or PROJECT DESCRIPTION:
Lane construction in residential areas.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,500,000**	**$0**	**$0**	**$750,000**	**$750,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$450,000	Senior Governments	$0
Materials	$435,000	Property Owners	$750,000
Equipment	$270,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$345,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,500,000	**Total Other Funding Sources**	$750,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$0**	**$ 0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
This program primarily deals with the reconstruction of lanes in residential areas. This is primarily a program that is petition based and responds to the requests of property owners to replace their unimproved lanes. These lanes could have problems with dust, potholes, drainage, etc.

Periodically, staff can initiate projects if there are some difficulties with petitions due to absentee landlords, if there are any specific drainage problems or increased maintenance concerns. Paving of the lane avoids the long term deterioration of our infrastructure and provides improved drainage which prevents flooding.

Due to Council's direction in 2004, low cost centre strip paving is now offered as the standard treatment in residential areas. Country Lane treatment is also available, but with increased cost premiums. Long term maintenance issues with the Country Lane treatment are still being evaluated. This Capital Budget request is primarily to fund the City's share of the low cost centre strip paving petitioned or initiated projects. If any Country Lane projects are approved, this would substantially decrease the number of low cost centre strip paving projects that can be funded.

IMPACT OF DELAY:
Concerns raised by the public will not be addressed and this will inconvenience the public.

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5EX1 **Order Number: 30008868**

2006 CAPITAL BUDGET

Reference# A-5f

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Drainage & Utility Relocation Prior to Paving

SUB-PROGRAM or PROJECT DESCRIPTION:
Drainage and utility/design/surveying work required in advance of project approval

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$200,000**	**$0**	**$0**	**$0**	**$200,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$78,000	Senior Governments	$0
Materials	$76,000	Property Owners	$0
Equipment	$0	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$46,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$200,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
This program funds drainage prior to paving, utility relocation, design and surveying work done prior to the approval of the project. Utility and design work is initiated early in order to avoid any delays in the paving schedule. For 2006, funding of $170,000 is requested for Drainage Prior to Paving, and $30,000 for Utility/Design/Surveying work.

IMPACT OF DELAY:
The construction schedule for the various street and lane projects will be impacted. The delays will increase construction costs and will inconvenience the public and businesses**.**

PROJECT TIMING: Throughout the year
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5FX1 **Order Number: 30008869**

2006 CAPITAL BUDGET

Reference# A-5i

DEPARTMENT: ENGINEERING **PROGRAM: Local Area**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Neighbourhood Collector Program

SUB-PROGRAM or PROJECT DESCRIPTION:
In 1997 the Transportation Plan recommended that some low-volume Secondary Arterial streets be reclassified as Neighbourhood Collectors. Further, traffic calming was recommended on Collectors and Secondary Arterial streets with less than 10,000 vehicles per day. Blenheim Street has been recommended as the pilot and was recently approved by Council.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$2,000,000**	**$0**	**$0**	**$0**	**$2,000,000**

BUDGET (Include functional breakdown):		OTHER FUNDING SOURCES	
Direct Labour	$580,000	Senior Governments	$0
Materials	$600,000	Property Owners	$0
Equipment	$360,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$460,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$2,000,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	2006	2007	2008
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 10,000**

Increased annual costs for maintaining additional signage and landscaping within the neighbourhood.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
To complete the implementation of measures as proposed for traffic calming and related streets works on Blenheim Street as part of the pilot project for reclassification to a Neighbourhood Collector. Staff will continue to develop a "tool kit", and identify objective criteria to rank the outstanding requests for similar reclassification and traffic calming projects.

SCOPE:
Council has approved the reclassification of Blenheim Street to a Neighbourhood Collector. Included in this project are a number of traffic calming measures and road works including resurfacing of Blenheim Street.

IMPACT OF DELAY
Having completed a lengthy public process involving all stakeholders, any delays to completing this project could upset numerous residents.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): June 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA5IX1 **Order Number**: **30008870**

2006 CAPITAL BUDGET

Reference# A-6d

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians & Bicycles**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Carrall Street Greenway

SUB-PROGRAM or PROJECT DESCRIPTION:
Design and Construction of the Carrall Street Greenway linking False Creek to Coal Harbour. This innovative design will provide a connection through historic areas such as Chinatown and Gastown providing a route around the downtown core along Vancouver's Seawall.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,500,000**	**$0**	**$0**	**$0**	**$1,500,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$435,000	Senior Governments	$0
Materials	$450,000	Property Owners	$0
Equipment	$270,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$345,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,500,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 10,000**	**$ 55,000**

With increased landscaping, pedestrian level lighting, trials of new innovative materials, increased funding is required for future operating budgets.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
The completion of the Carrall Street Greenway will allow cyclists, rollerbladers, and pedestrians to connect from the existing Seawall through International Village, Chinatown, and Gastown and access Coal Harbour. This water to water connection is a new and innovative design which will accommodate all Seawall users along a mixed use path.

SCOPE:
Carrall Street will be reconstructed to allow for the accommodation of all transportation modes currently utilizing the Seawall and provide access from False Creek to Coal Harbour. Works proposed as part of this project include: utility relocation, street reconstruction, development of a multi-use path along Carrall Street, installation of street trees, and public art. This funding will allow the initiation of the construction which is planned for completion in 2007 – subject to budget approval.

IMPACT OF DELAY
A lengthy public process undertaken by a multi-departmental team has been underway for several years. Delays would postpone construction and may cause some concern amongst those involved in the process.

PROJECT TIMING:
Start Date (month/year): June 2006
Completion Date (month/year): March 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA6DX1 **Order Number**: **30008871**

2006 CAPITAL BUDGET

Reference# A-6h

DEPARTMENT: ENGINEERING **PROGRAM: Pedestrians and Bicycles**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Expo Deck Replacement

SUB-PROGRAM or PROJECT DESCRIPTION:
Maintenance and repair of the temporary decking structure near Science World. This decking has exceeded its design life; maintenance is now required in order to ensure ongoing public safety now and through the 2010 timeframe. Until replacement of the deck, ongoing repairs will be required every 3-5 years at a cost of approximately $2 million

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,200,000**	**$0**	**$0**	**$0**	**$1,200,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$228,000	Senior Governments	$0
Materials	$245,000	Property Owners	$0
Equipment	$144,000	DCL/CAC funding	$0
Contract	$480,000	Internal (please specify e.g. CFF Loan)	$0
Overhead	$103,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,200,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
To ensure ongoing public safety along this important link of Vancouver's Seawall, repairs and maintenance to the temporary decking is required.

SCOPE:
This project will maintain and repair the structural components of the temporary decking near Science World. This decking was originally installed in 1985 with a design life of approximately 15 years. After more than 20 years, portions of this temporary decking are in poor condition and require repair and maintenance. Subject to 2007 budget approval the remaining works will be completed.

IMPACT OF DELAY
If this work is not completed, public safety may be compromised, the temporary decking may then need to be closed and additional funding may be required to address repairs.

PROJECT TIMING:
Start Date (month/year): September 2006
Completion Date (month/year): June 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA6HX1 **Order Number: 30008872**

2006 CAPITAL BUDGET

Reference# A-6j

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Granville Mall Reconstruction

SUB-PROGRAM or PROJECT DESCRIPTION:
In 2002, Council approved the preparation of an urban design and streetscape concept for Granville Street that would enhance the transit and pedestrian environment. The total project is estimated at $11 million with this first phase allowing for preparatory work relating to utility concerns and addressing design details. Complete reconstruction of Granville Street will be coordinated with the activity relating to the Canada Line and the associated rapid transit stations.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$500,000**	**$0**	**$0**	**$0**	**$500,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$80,000	Senior Governments	$0
Materials	$82,000	Property Owners	$0
Equipment	$50,000	DCL/CAC funding	$0
Contract	$200,000	Internal (please specify e.g. CFF Loan)	$0
Overhead	$88,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$500,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 0**

New and upgraded infrastructure may create future increases in operating funding. This initial capital budget request will not require any increases in future operating costs.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.)

OBJECTIVES:
The reconstruction of Granville Street would include a wide variety of changes to the sidewalk and roadway that would enhance the transit and pedestrian environment, and revitalize this centre of the downtown. The construction activity would be coordinated with the closure of Granville Street as required for Canada Line construction.

SCOPE:
Preliminary work will focus on addressing design details and utility concerns in advance of the majority of the reconstruction work (planned for 2007/2008). Ultimately, complete reconstruction of the roadway and sidewalks will create a new and enhanced streetscape and urban realm for Granville Street in the Downtown core.

IMPACT OF DELAY
As reconstruction of Granville Street is being scheduled with other construction activity it is important that this work progress in a coordinated manner. There could be significant financial impacts should this work not be coordinated.

PROJECT TIMING:
Start Date (month/year): May 2006
Completion Date (month/year): May 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA6JX1 **Order Number: 30008873**

2006 CAPITAL BUDGET

Reference# A-6l

DEPARTMENT: ENGINEERING **PROGRAM: Infrastructure**
DIVISION: STREETS

SUB-PROGRAM or PROJECT TITLE:
Renfrew Street Beautification & Enhancement

SUB-PROGRAM or PROJECT DESCRIPTION:
Pedestrian enhancements, improved pedestrian crossings, and street beautification are proposed for Renfrew Street between Hastings and McGill Street.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,300,000**	**$0**	**$0**	**$300,0000**	**$1,000,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$380,000	Senior Governments	$300,000
Materials	$410,000	Property Owners	$0
Equipment	$210,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$300,000	Other External (TransLink, ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,300,000	**Total Other Funding Sources**	$300,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 35,000**

Added landscaping, improved lighting and pedestrian enhancements will require increased maintenance funding.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
Improvements planned for the Agrodome, Pacific Coliseum, and Hastings Park will increase the pedestrian activity in this area. This project will enhance the pedestrian realm and streetscape, while providing enhanced pedestrian crossings and improved access to transit.

SCOPE:
Improvements to Renfrew Street between Hastings and McGill will highlight this important gateway to Hastings Park. Improvements planned include: improved pedestrian crossings, wider sidewalks, improved transit access, minor geometric changes to the street, and enhancements to the streetscape.

IMPACT OF DELAY
Improvements will take advantage of other construction activity in the area thereby adding value in a cost effective manner. Should funding be delayed, the economic benefits would be lost and the pedestrian crossings would remain unimproved. Related safety concerns would not be addressed and street beautification would not be completed.

PROJECT TIMING:
Start Date (month/year): September 2006
Completion Date (month/year): June 2007

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EA6LX1 **Order Number**: **30008874**

ENGINEERING COMMUNICATIONS

Project Number	Program - 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
B2	**UNDERGROUND CABLE REPLACEMENT**	**$ 200**	**$ 0**	**$ 0**	**$ 200**
B3	**UNDERGROUND CABLE EXPANSION**	**$ 400**	**$ 0**	**$ 0**	**$ 400**
B4	**RADIO SYSTEM UPGRADE**	**$ 300**	**$ 200**	**$ 0**	**$ 100**
	DEBENTURE COSTS				
	TOTAL – 2006 COMMUNICATIONS CAPITAL BUDGET	**$ 900**	**$ 200**	**$ 0**	**$ 700**

2006 CAPITAL BUDGET

Reference# B-2

DEPARTMENT: ENGINEERING **PROGRAM: COMMUNICATIONS**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Underground Cable replacement

SUB-PROGRAM or PROJECT DESCRIPTION:
Program for replacing aging copper and upgrading fibre cable.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$200,000**	**$0**	**$0**	**$0**	**$200,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$58,500	Senior Governments	$0
Materials	$90,000	Property Owners	$0
Equipment	$31,500	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$20,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$200,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:
The program provides an improved telephone service for voice communications and speed for data communications.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
Funding is required to replace worn out copper cable with fiber cable for 2006 – 2008. The program provides service for replacing and upgrading existing telephone circuits and cable, as well as service for the TSMS controlling the traffic signal system. The program assists Traffic Management and Information Services with traffic monitoring and surveillance as well as an improved telephone service for voice communications and speed for data communications.

SCOPE:
Approximately 5% of the cable plant is replaced annually. Locations are selected in conjunction with Information Services and Telecommunications companies.

IMPACT OF DELAY:
The cable plant is ageing and requires ongoing replacement and upgrading. Delays increase service failures in communications due to cable breakdowns.

PROJECT TIMING:
Start Date (month/year) : January 2006
Completion Date(month/year): December 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EB2 **Order Number**: **10025873**

2006 CAPITAL BUDGET Reference# B-3

DEPARTMENT: ENGINEERING **PROGRAM: COMMUNICATIONS**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Underground Communications – Cable Network Expansion

SUB-PROGRAM or PROJECT DESCRIPTION:
Ongoing program for cable network expansion with fiber optic based service.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$400,000**	**$0**	**$0**	**$0**	**$400,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$121,500	Senior Governments	$0
Materials	$148,500	Property Owners	$0
Equipment	$90,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$40,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$400,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:
Cost recovery in 18 months on the cost of installation versus using leased lines. In addition, this provides a more reliable, secure network, improvements in TSMS networks, no limitations on bandwidth use, fibre-optics system in place to provide VOIP telephone service, and the ability to handle the new City data storage site.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
This project provides fiber optic based service to new sites. It assists a joint private/ public partnership with other Telecom service providers to expand the City owned fiber network. This program funds the expansion of conduit and fiber cable to new sites and buildings which provide service for TMS camera installations, additional telephone circuits and security camera monitoring. In conjunction with Information Services, planning to expand fiber optics is coordinated with other Telecom providers (Urban Network, Bell Canada).

SCOPE:
We have completed installation to 66 sites, while 200 remain to be done. This will provide funding for approximately 25 sites to be connected in 2006.

IMPACT OF DELAY:
Projects that are planned to expand fiber optic service with other Telecom providers and Information Services would be unfunded. This would result in delays of service to new sites and buildings, which would then have to lease lines from other Telecom providers.

PROJECT TIMING:
Start Date (month/year) : January 2006
Completion Date(month/year): December 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EB3 **Order Number**: **10025874**

2006 CAPITAL BUDGET

Reference# B-4

DEPARTMENT:ENGINEERING **PROGRAM:COMMUNICATIONS**
DIVISION:TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Engineering Radio System Upgrade

SUB-PROGRAM or PROJECT DESCRIPTION:

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$300,000**	**$0**	**$0**	**$200,000**	**$100,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$98,400	Senior Governments	$0
Materials	$123,000	Property Owners	$0
Equipment	$24,600	DCL/CAC funding	$0
Contract	$0	Internal ($100,000 each from Water and Sewer)	$200,000
Overhead	$54,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$		$0
Total	$300,000	**Total Other Funding Sources**	$200,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

Depending on the recommendations of the consultant, there may be additional airtime fees, licensing fees, maintenance costs, and various lease costs.

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
The existing radio system no longer meets current regulatory standards. A study is underway to determine how to address this. Depending on the recommendations of the consultant, the existing system will be phased out and replaced with a new system which meets current standards and meets the operational requirements of the radio users.

SCOPE:
The radio system is comprised of 4 transmitters, 30 receiver sites, 330 vehicular radios and 120 handheld radios. Approximately 70% of the vehicular radios now meet current regulatory standards**.**

IMPACT OF DELAY:
If this program is delayed, Engineering could be faced with the possibility of being forced to change the entire radio system to be fully compliant with the new regulations within 90 days notice.

PROJECT TIMING:
Start Date (month/year) : January 2006
Completion Date(month/year): December 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EB4X1 **Order Number**: **30008875, 30008876**

2006 CAPITAL BUDGET Reference # B-4

DEPARTMENT:ENGINEERING **PROGRAM:COMMUNICATIONS**
DIVISION:TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE
Engineering Radio System Upgrade

PROJECT SUMMARY (continued)

The Engineering radio system needs to be upgraded to reflect the change in Industry Canada's equipment type approvals. The current system operates on wide band assignments. All radio equipment including repeaters, portables and mobiles is affected. Industry Canada has new legislation requiring users, upon notification, to upgrade their equipment to reflect new narrow band assignments. However, Industry Canada has indicated that it will only mandate radio users to change out their equipment when there is an operational need to do so. Given the general lack of unoccupied radio channels in the Lower Mainland for expanded or new services, it is very likely that the City will be notified in the near future.

A study is currently underway to review operational needs and available technologies, and then recommend a telecommunications system to meet current and anticipated needs. The purpose of this submission is to secure funds to provide a replacement system. The value of this submission represents funding to pay for a study and a portion of the cost towards a replacement system. The entire Engineering Radio System requires replacement with an up-to-date communications system that not only meets the specifications for new radio equipment but also provides additional capabilities and benefits to enhance operations. Additional funding will be required.

ENGINEERING STREET LIGHTING

Project Number	Program - 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
C1	RENOVATE AND REPLACE PLANT	$ 1,670	$ 0	$ 0	$ 1,670
C2	NEW LOCAL IMPROVEMENTS	$ 278	$ 228	$ 0	$ 50
	DEBENTURE COSTS				
	TOTAL – 2006 STREET LIGHTING CAPITAL BUDGET	$ 1,948	$ 228	$ 0	$ 1,720

2006 CAPITAL BUDGET

Reference# C-1

DEPARTMENT: ENGINEERING **PROGRAM: STREET LIGHTING**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Renovate and Upgrade Plant

SUB-PROGRAM or PROJECT DESCRIPTION:
Ongoing program to address issues related to the Street Lighting Plant

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$1,670,000**	**$0**	**$0**	**$0**	**$1,670,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$547,760	Senior Governments	$0
Materials	$684,700	Property Owners	$0
Equipment	$136,940	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$300,600	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$1,670,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
This project involves upgrades and renovations to many aspects of the Street Lighting Plant. These include conduit replacement, circuit protection fuses, splices along trolley routes, rusty pole replacements, service panel replacements, embedded pole replacements, luminaire replacements, and improving 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.

SCOPE:
Detailed studies and inspections are undertaken each year to determine locations that need replacement so that funds can be targeted for areas that need immediate action.

IMPACT OF DELAY:
The infrastructure is aging and major portions of it need upgrading. Delays increase the probability that citizens will be exposed to hazards due to falling poles or energized poles and panels.

PROJECT TIMING:
Start Date (month/year) : January 2006
Completion Date(month/year): December 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EC1X1 **Order Number**: **30008877**

2006 CAPITAL BUDGET Reference# C-2

DEPARTMENT: ENGINEERING **PROGRAM: STREET LIGHTING**
DIVISION: TRANSPORTATION

SUB-PROGRAM or PROJECT TITLE:
Local Improvements

SUB-PROGRAM or PROJECT DESCRIPTION:
Ongoing program to address local improvement petitions

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$278,000**	**$0**	**$0**	**$228,000**	**$50,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$94,000	Senior Governments	$0
Materials	$118,000	Property Owners	$228,000
Equipment	$24,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$42,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$278,000	**Total Other Funding Sources**	$228,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown).

OBJECTIVES:
Funding is to address ongoing local improvements for street, lane and pedestrian lighting which will be advanced during the period of 2006-2008 in response to petition requests. The funding could be used by BIAs and other commercial groups as seed money for these types of projects though the local improvement process. This program helps create a more secure and pleasant environment for pedestrians and residents.

This project assists the Police Dept with surveillance and crime detection by adding lighting in poorly lit or unlit places. In addition, this project provides for the upgrade of lighting in conjunction with curb and gutter work done by the Streets Operations Branch

SCOPE:
Projects will be advanced to the Court of Revision scheduled throughout 2006

IMPACT OF DELAY:
Projects that are approved through the Court of Revision would be unfunded.

PROJECT TIMING:
Start Date (month/year) : January 2006
Completion Date(month/year): December 2006

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EC2X1 **Order Number**: **30008919**

ENGINEERING SEWERS & DRAINAGE

Project Number	Program - 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
D1	**SYSTEM REPLACEMENT/SEPARATION**				
	1) Main Sewer Reconstruction	28,840	5,173	0	23,667
	2) Connection and Manhole Reconstruction	934	0	0	934
	3) Local Repairs & Catch Basin and Spur Reconstruction	587	200	0	387
	4) Upgrade and Replacement of Pump Stations	1,915	0	0	1,915
	SUBTOTAL – SYSTEM REPLACEMENT/ SEPARATION	**$ 32,276**	**$ 5,373**	**$ 0**	**$ 26,903**
D2	**SYSTEM MANAGEMENT**				
	1) Television Inspection	215	0	0	215
	2) Investigation for Design	108	0	0	108
	SUBTOTAL - SYSTEM MANAGEMENT	**$ 323**	**$ 0**	**$ 0**	**$ 323**
D3	**OTHER POLLUTION ABATEMENT**				
	1) Liquid Waste Management Plan	0	0	0	0
	2) Sewer Separation on Private Property	554	0	0	554
	3) Still Creek Environmental Initiatives	32	0	0	32
	SUBTOTAL - OTHER POLLUTION ABATEMENT	**$586**	**$ 0**	**$ 0**	**$ 586**
D5	**PUBLIC SEWER CONNECTIONS**	**$9,360**	**$9,360**	**$0**	**$0**
	TOTAL – 2006 SEWERS CAPITAL BUDGET (before contribution to other Engineering Costs)	**$ 42,545**	**$ 14,733**	**$ 0**	**$ 27,812**

ENGINEERING SEWERS & DRAINAGE

Project Number	Program – 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
D6	**CONTRIBUTION TO OTHER ENGINEERING COST**				
	a) Contribution to Radio System Upgrade (B4)	100	0	0	100
	SUBTOTAL – OTHER CONTRIBUTIONS	**$ 100**	**$ 0**	**$ 0**	**$ 100**
	DEBENTURE COSTS				
	GRANDTOTAL – 2006 SEWERS CAPITAL BUDGET	**$ 42,645**	**$14,733**	**$0**	**$ 27,912**
	LESS: Cost Recovery Program – Public Sewer Connections	**($9,360)**	**(9,360)**		
	TOTAL: Excluding Cost Recovery Program	**$33,285**	**$5,373**	**$0**	**$27,912**

2006 BASIC CAPITAL BUDGET

Reference # D-1

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

SUB-PROGRAM or PROJECT DESCRIPTION:
This program consists of the renewal of sewer mains, connections, manholes, street drains and pump stations.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$ 32,276,000**	**$0**	**$2,232,537**	**$ 5,373,000**	**$ 24,670,463**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 6,141,000	Senior Governments	$ 5,173,000
Materials	$ 5,862,000	Property Owners	$ 0
Equipment	$ 5,963,000	DCL/CAC funding	$ 0
Contract	$ 6,900,000	Internal (please specify e.g. CFF Loan)	
Overhead	$ 1,943,000	Other External (Translink - OMR)	$ 200,000
Street Cut & Others	$ 5,467,000		
Total	$ 32,276,000	**Total Other Funding Sources**	$ 5,373,000

COST SAVING AND OTHER BENEFITS:
Optimizes sewer maintenance budgets and reduces flow based GVS&DD levies.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

N/A

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
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 labor 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 Plan submission to the Province in 2000 and 2001.

SCOPE: continued on next page

IMPACT OF DELAY: Delays would restrict the City's ability to continually reduce Combined Sewer Overflows (CSOs) and to eliminate them by 2050, per City commitment in the Liquid Waste Management Plan.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1ED1 **Order Number**

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE
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 are necessary to meet our commitments under the Liquid Waste Management Plan.

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:

Age of the Sewers System

Year of Construction	Length (kilometres)	Length (%)	Age*
Pre-1930	618	31	over 75
1930-1959	520	26	46-75
1960 to date	861	43	0-45

* 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 from sanitary lines 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.

The City has also received funding under the Canada-B.C. Infrastructure Program to accelerate sewer separation in order to reduce combined sewer overflows in a shorter time frame. The Federal, Provincial and City governments equally fund these programs. This program started in May 2003 and is about 79% completed at the end of 2005. It is expected the remaining work will be carried out within the next 15 months and be completed by March 2007.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE
Also included in the system replacement program are funds for the renewal of sewer connections and manholes, repairs of catch basins and spurs, and the upgrading or replacement of pump stations

An additional source of funds for system replacement is sewer connection permit fees. Based on the level of building construction in the recent years, staff anticipate that fees of between $7 million and $10 million will be collected annually during the 2006 - 2008 Capital Plan. The City has approximately 100,000 sewer connections totaling over 900 kilometres in length, and these funds are used to rebuild the line between the main sewer and the property being redeveloped.

1. Main Sewer Reconstruction

Summary of the 11 Basin Areas and their estimated 2006 budgets:

Basin Description	2006 Estimates
Fraser River	$ 3,400,000
West Point Grey	$ 600,000
Balaclava	$ 2,100,000
Kitsilano/S. Granville	$ 200,000
Cambie/Heather	$ 5,600,000
Terminal Avenue	$ 1,100,000
Downtown Pennisula	$ 1,350,000
Grandview-Woodland	$ 2,000,000
Hastings-Sunrise	$ 1,000,000
China Creek	$ 2,450,000
Still Creek	$300,000
Canada BC Infrastructure Program (City + Senior Governments)	$ 8,740,000
Subtotal	$28,840,000

1A Fraser River **$ 3,400,000** **CC1ED11AX1 Order Number: 30008878**

The Fraser River drainage area is comprised of eight distinct basins covering approximately 10,000 acres 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 the remaining sewers will need to be replaced in the first half of this century. Increase in funding allowance has been made for the 2006-2008 Capital Plan to rebuild some of the original sewers in this basin. It is recommended that $3,400,000 be allocated to this basin to carry out major sewer replacements in 2006 in coordination with paving projects on Blenheim Street and West 41st Avenue.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # D-1

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE

1B West Point Grey **$ 600,000** **CC1ED11BX1 Order Number: 30008879**

The 1,300 acre West Point Grey basin lies generally north of 22nd Avenue, between the UEL and Waterloo Street, and is tributary to English Bay. The original sewers were built between 1908 and the mid 1920's, and will need to be replaced over the next 15 years. Our plan is to continue the sewer reconstruction work in this area started in the late 1980's. In the 2006-2008 Capital Plan, major sewer replacement work is scheduled for this basin along West Broadway. This project is planned for 2007 or 2008 in coordination with street repaving. Only a couple of smaller scale projects are scheduled for 2006.

1C Balaclava **$ 2,100,000** **CC1ED11CX1 Order Number: 30008880**

The Balaclava sewer catchment drains more than 2,300 acres of the City's north slope parallel to Puget and Valley Drive. The oldest sewers in the basin, north of 12th Avenue and in Shaughnessy, were built between 1910 and 1916 and are in primarily fair to poor condition. Sewers in the remainder of the area were built during construction programs from the 1920's to the 1960's and will be replaced over the next 50 years. Reconstruction of the most deteriorated sewers began during the 1991-93 Plan. The 2006-2008 Capital Plan has an increased funding provision for sewer replacements in this basin due to a number of areas that are prone to backups from tree roots. Staff recommend that $2,100,000 be allocated to this basin in 2006.

1D Kitsilano-South Granville **$ 200,000** **CC1ED11DX1 Order Number: 30008881**

This 940 acre area drains to English Bay and False Creek. The remaining original sewers were constructed between 1907 and 1914 and are in mostly fair to poor condition. Since its original construction, this area has redeveloped to become a dense multiple dwelling district, west of Burrard Street and south of Broadway, with most of the remaining area comprised of large scale commercial developments. As a result, most of the remaining original sewers are generally undersized for present developments. In addition, combined sewer overflows from this basin discharge to receiving waters serving large numbers of various recreational users. Due to these factors, a program to replace the original sewer system was initiated in 1984. The majority of the construction work planned for this capital plan is scheduled for 2007 and 2008 in conjunction with proposed street paving, and only a couple of small sewer projects are expected for this basin in 2006.

1E Cambie-Heather **$ 5,600,000** **CC1ED11EX1 Order Number: 30008882**

This is a large 2,160 acre basin drains the north slope of the City and extends along the entire south side of False Creek . The original sewers in this area were constructed at various times over a 50 year period beginning around 1900. Many of the oldest sewers were replaced as part of the south False Creek, Fairview Slopes and Fairview Heights redevelopments. Complete replacement of the remaining original sewers is planned over the next 40 years. Reconstruction during the 2006-2008 Capital Plan will focus on those areas which have been rezoned and redeveloped in recent years as well as on the most deteriorated pipes. Most of the work in this basin planned for the 2006-2008 Capital Plan will be carried out in 2006 to separate sewers in the Southeast False Creek area to reduce combined sewer overflows and thereby further improve water quality in False Creek. Only minor work is scheduled for 2007 and 2008.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE

1F Terminal Avenue **$ 1,100,000** **CC1ED11FX1 Order Number: 30008883**

The Terminal Avenue outfall, located at the east side of False Creek, drains over 900 acres of the City. The drainage basin generally is bounded by 15th Avenue, Pender Street, Clark Drive and False Creek. The basin contains one of the oldest industrial areas of Vancouver and many of the original sewers have been replaced in the last 25 years. Subsequent to the 2006-2008 Capital Plan approval, a number of sewer replacements jobs previously not planned are now required to be done in 2006 in coordination with street paving. It is estimated that $1,100,000 will be needed in 2006 to carry out these jobs. Only minor work is scheduled for 2007 and 2008.

1G Downtown Peninsula **$ 1,350,000** **CC1ED11GX1 Order Number: 30008884**

Reconstruction of the original sewer systems of the 1,300 acre Downtown Peninsula is almost complete. This program originally began approximately 30 years ago with the rezoning of the West End and continues during this Plan. Funding for this basin was increased for the 2006-2008 Capital Plan as more paving and sewer work activities are expected with completion of the Downtown Transportation Plan. The 2006 work plan for this basin includes the relocation of the City's sewer main out of the Woodward's site ($1,090,000) and a couple of minor replacement work projects ($260,000). It is estimated that a total budget allocation of $1.35 million will be needed to carry out this work plan.

1H Grandview-Woodlands **$ 2,000,000** **CC1ED11HX1 Order Number: 30008885**

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 1,630 acre 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. The funding allocation is higher in 2006 mainly due to a major sewer replacement project on Commercial Drive that is required prior to the street paving work planned for 2006.

1I Hastings-Sunrise **$ 1,000,000** **CC1ED11IX1 Order Number: 30008886**

The 1,560 acre 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. Staff estimate a budget allocation of $1,000,000 will be required for the sewer work scheduled for 2006 which includes the Pentiction Street project that was started in late 2005.

1J China Creek **$2,450,000** **CC1ED11JX1 Order Number: 30008887**

The China Creek basin comprises about 3,050 acres 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. In 2006, funds are required for the replacement of the deteriorated sewers on East Broadway prior to street paving this summer. It is recommended that $2,450,000 be allocated to this basin for this major sewer replacement work.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE:

The City's share of the Canada-B.C. Infrastructure Program is also funded in this budget. Staff estimate that a budget allocation of $3,567,000 will be required to fund the City's share of the Canada-B.C. Infrastructure Program in 2006. The 2006 work plan for the Canada-B.C. Infrastructure Program can be found in 1L.

1K Still Creek **$ 300,000** **CC1ED11KX1 Order Number: 30008888**

This 2,350 acre separated sewer area drains the extreme east side of Vancouver between the Burrard Inlet and Fraser River watersheds with the area's stormsewer 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. In late 2004, through routine inspection, sewer inspector discovered a block of Cecil/Euclid South that could potentially flow into Still Creek. Staff has since made plans to carry out sewer separation work to eliminate the risk of contaminating the creek. However, the resources that were originally committed to this work were diverted to carry out the Kootenay Street and Charles Street project instead. Staff plan on carrying out the Cecil/Euclid South project in 2006 and a budget of $300,000 is required for this work.

1L Canada-B.C. Infrastructure Program **$ 3,567,000** **CC1ED11AX1 Order Number: 30008889**
30008890

2006 Budget Allocation:	$3,567,000
Senior Governments:	$5,173,000
2006 Gross Budget:	$8,740,000

In 2003 the City was given a $27.4 million Canada-B.C. Infrastructure Program Award for additional sewer separation for three Canoe Creek projects in the China Creek basin. Under the agreement of the Canada-B.C. Infrastructure Program, the Federal, Provincial and the City equally fund this program with a total contribution from the two senior governments at $18.26 million and the remaining $9.14 from the City. The City's share is provided in the annual budget allocations for the China Creek area over the term of the Infrastructure Program.

The City started the Canada-B.C. Infrastructure Program Canoe Creek Sewer Separation work in May 2003. Over the past 30 months, the sewer replacement work has been progressing well and is very close to on target in accordance with our construction plan. As of December 31, 2005, about 79% of the work is completed. It is expected that the remaining work will be carried out within the next 15 months and be successfully completed by March 2007.

Total 2006 construction cost is estimated at $8.74 million. Staff projected that the City will receive approximately $5,173,000 from the senior governments and the balance of $3,567,000 is funded from the City's Main Sewer Reconstruction budget provision. The City's share of the Canoe Creek Sanitary Trunk - Tunnel Section of the Infrastructure Program ($1,142,537) received advance Council approval in its meeting held on February 28, 2006.

Sub-Total Main Sewer Reconstruction: Net City funded: $ 23,667,000/ Gross: $ 28,840,000

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # D-1

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE:

2. Connection and Manhole Reconstruction **$ 934,000** **CC1ED12X1 Order Number: 30008891**

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 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. It is estimated a budget allocation of $934,000 is required for this program in 2006.

3. Local Repairs: Catch Basins and Spurs **$ 387,000** **CC1ED13X1 Order Number: 30008892 30008893**

2006 Budget Allocation:	$ 387,000
Translink (OMR):	$ 200,000
2006 Gross Budget:	$ 587,000

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 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.

Vehicle impact loading, deterioration due to age and tree roots are the main causes of catch basin drain failures. In the past, we have only been able to address the most critical failures. We are finding that it is better to repair more of the problem areas now than it is to leave them as ongoing maintenance problems. The 2006-2008 Capital Plan has made a gross budget provision of $1,255,000 for the core work with $600,000 funding expected from Translink through the Major Road Network (MRN) Operation, Maintenance and Repair (OMR) program and an additional budget provision of $450,000 for upgrading and redirecting certain City drainage facilities in specific situations. It is recommended that a gross budget of $587,000 be allocated to this program in 2006.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # D-1

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Replacement/Separation

PROJECT SUMMARY (continued)

SCOPE:

4. <u>Upgrade and Replacement of Pump Stations</u> $ 1,915,000 CC1ED14X1 Order Number: 30008894

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 are near the end of their service lives. Because of the age of these stations as well as the need for increased pumping capacity due to growth, a number of pump stations needs to be replaced over the next ten years.

The 2006-2008 Capital Plan has a budget provision for a total of five pumping station replacements and the replacements of worn equipment at various stations, structural stability and integrity testing of all old force mains, as well as an upgrade of the Supervisory Control and Data Acquisition (SCADA) system.

Work plan has been in place to carry out the replacement of the Oak and Sixth Pumping Station, and the design work for the Granville Pumping Station and the Boundary and 1st Pumping Station replacement. Several system upgrades have also been included in the 2006 work plan. It is recommended that $1,915,000 be allocated to carry out this work plan in 2006.

<u>FOR BUDGET OFFICE USE ONLY</u>:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET

Reference # D-2

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
System Management

SUB-PROGRAM or PROJECT DESCRIPTION:
Projects, data collection and analysis necessary to support cost-efficient work programs.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$ 323,000**	**$0**	**$0**	**$0**	**$ 323,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 73,000	Senior Governments	$ 0
Materials	$ 8,000	Property Owners	$ 0
Equipment	$ 32,000	DCL/CAC funding	$ 0
Contract	$ 147,000	Internal (please specify e.g. CFF Loan)	$ 0
Overhead	$ 27,000	Other External (please specify e.g. ICBC)	$ 0
Other	$ 36,000		
Total	$ 323,000	**Total Other Funding Sources**	$ 0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

N/A

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

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: continued on next page

IMPACT OF DELAY:
Needs to be done to support System Replacement/Separation D1

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # D-2

DEPARTMENT:ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SERVICES

SUB-PROGRAM or PROJECT TITLE
System Management

PROJECT SUMMARY (continued)

1 **TV INSPECTION OF SEWERS** **$ 215,000** **CC1ED21X1 Order Number: 30008895**

The ongoing closed-circuit television inspection program allows us to visually inspect and assess the condition of our 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 us to optimize our replacement program by potentially preventing the collapse of some sewers and extending the useful life of others.

Additionally, this visual inspection enables us to optimize our maintenance programs by determining which sewers are prone to maintenance problems. Maintenance problems such as tree-root clogged sewers can go undetected until problems, such as flooding, occur. It is recommended that $215,000, which is approximately 1/3 of the budget available in the 2006-2008 Capital Plan be allocated to this program in 2006.

2 **INVESTIGATION FOR DESIGN** **$ 108,000** **CC1ED22X1 Order Number: 30008896**

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. It is recommended that $108,000, which is approximately 1/3 of the budget available in the 2006-2008 Capital Plan be allocated to this program in 2006.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET

Reference # D-3

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SERVICES

SUB-PROGRAM or PROJECT TITLE:
Other Pollution Abatement

SUB-PROGRAM or PROJECT DESCRIPTION:
Pollution abatement achieved through Liquid Waste Management Plan and Sewer Separation on Private Property.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$ 586,000**	**$0**	**$0**	**$ 0**	**$586,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 205,000	Senior Governments	$ 0
Materials	$ 117,000	Property Owners	$ 0
Equipment	$ 129,000	DCL/CAC funding	$ 0
Contract	$ 29,000	Internal (please specify e.g. CFF Loan)	$ 0
Overhead	$ 48,400	Other External (please specify e.g. ICBC)	$ 0
Other	$ 57,600		
Total	$ 586,000	**Total Other Funding Sources**	$ 0

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
OBJECTIVES:

This program compliments the City's combined sewer reduction initiatives by providing immediate separation benefits. This program is particularly important because of the Provincial requirements to eliminate combined sewer overflows by the year 2050 and because of the 1995 change in the GVRD's cost allocation method.

SCOPE: continued on next page

IMPACT OF DELAY: This is an integral part of System Replacement/Separation (D1) to continually reduce and eliminate CSOs in important water bodies (e.g. False Creek).

PROJECT TIMING:
Start Date (month/year) :
Completion Date(month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1ED33 **Order Number:**

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Other Pollution Abatement

PROJECT SUMMARY (continued)

SCOPE

1. LIQUID WASTE MANAGEMENT PLAN $ 0

The Liquid Waste Management Plan (LWMP) was approved by the Province in 2002. This plan establishes commitments for sewage treatment, combined sewer overflows, and stormwater discharges for both Regional and municipal systems under the Province's Waste Management Act. The City and the GVRD are now working on implementing key commitments outlined in the Plan for Vancouver. Funds for this work are included in current budgets.

During 2006, the City will be required to continue analyzing and developing detailed planning scenarios for our sewer system to support the work program which has been outlined in the LWMP. This includes additional joint GVRD and City studies examining combined sewer overflow reduction methods and strategies with the aid of computer modelling as well as the initial development of an Integrated Stormwater Management Plan for the Still Creek Watershed. While we have been successful over the past several years in supporting the LWMP efforts without additional staff, some non-professional technical assistance is required in 2006. In previous Capital Budgets, approval was given for a temporary Engineering Assistant II. It is proposed that this position be extended in 2006. There are unspent funds in the amount of $57,500 from previously approved LWMP budgets and therefore no additional funding is required in this budget.

2. SEWER SEPARATION ON PRIVATE PROPERTY $ 554,000 CC1ED3X1 Order Number: 30008897

This program was established by Council in 1978 in order to achieve the pollution control benefits of a separated sewer system. This program also allows for a maximum $1,000 reimbursement towards the cost of plumbing alterations on private property and provides for a separated connection to the main sewer. 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 stormsewer system.

Today, there are additional benefits from this program. The approved LWMP requires the reduction and elimination of combined sewer overflows in Vancouver by the year 2050. This program is needed to achieve these goals and minimize Provincial requirements for more costly short-term improvements to reduce Vancouver's sewage overflows.

In addition, because the program helps to reduce dry weather flows to the Iona Sewage Treatment Plant, it will help offset the Regional District's annual sewerage levy to Vancouver.

In 1995, sewer separation was completed in the Yaletown drainage basin resulting in the elimination of the Drake Street combined sewer overflow. Similarly, in 1999 sewer separation was completed in the downtown South Granville area resulting in the elimination of the Granville Street combined sewer overflow. In 2000 and 2001 considerable separation work occurred west of Granville Street in the West End eliminating the Parklane CSO and reducing combined sewer overflows at the Denman Street outfall.

It is recommended that $554,000, which is approximately 1/3 of the budget available in the 2006-2008 Capital Plan be allocated to this program in 2006.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # D-3

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Other Pollution Abatement

PROJECT SUMMARY (continued)

SCOPE

3. STILL CREEK ENVIRONMENTAL PROGRAM $32,000 CC1ED35X1 Order Number: 30008898

The City, in conjunction Burnaby and the GVRD, is developing an Integrated Stormwater Management Plan for the Still Creek drainage basin. This plan will examine 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 may 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.

This work complements the sustainability principle requiring "integrated decision-making that takes into account economic, ecological and social impacts as a whole", adopted by Council in 2002. It also compliments the CityPlan directions for "Clean Air and Water", "Vancouver and the Region", "New and More Diverse Places", and "Transit, Walking, & Biking as a Priority" by enhancing the Still Creek corridor as described above. Furthermore, it also follows the Provincially approved Liquid Waste Management Plan requiring integrated stormwater management plans to be developed.

It is recommended that $32,000, which is approximately 1/3 of the budget available in the 2006-2008 Capital Plan be allocated to this program in 2006.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET

Reference # D-5

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Public Sewer Connections

SUB-PROGRAM or PROJECT DESCRIPTION:
Installation of public sewer connections on residential and commercial properties

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$ 9,360,000**	**$0**	**$0**	**$ 9,360,000**	**$ 0**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 3,309,000	Senior Governments	$ 0
Materials	$ 1,075,000	Property Owners	$ 9,360,000
Equipment	$ 2,033,000	DCL/CAC funding	$ 0
Contract	$ 0	Internal (please specify e.g. CFF Loan)	$ 0
Overhead	$ 1,123,000	Other External (please specify e.g. ICBC)	
Street Cut & Others	$ 1,820,000		
Other	$ 0		
Total	$ 9,360,000	**Total Other Funding Sources**	$ 9,360,000

COST SAVING AND OTHER BENEFITS: n/a

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

N/A

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
In 2005, the City installed approximately $8.9 million worth of public sewer connections. For 2006, at the similar level of residential and commercial construction activity, and factor in the 5% costs increase, about $9.36 million sewer connections work is anticipated. The costs of this work are recovered from public sewer connection fees charged to developers and builders

SCOPE:

IMPACT OF DELAY:

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1ED5 **Order Number:**

2006 BASIC CAPITAL BUDGET

Reference # D-6

DEPARTMENT: ENGINEERING **PROGRAM: Sewers & Drainage**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Contribution to Radio System Upgrade

SUB-PROGRAM or PROJECT DESCRIPTION:
Contribution to Radio System Upgrade

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$ 100,000**	**$0**	**$0**	**$ 0**	**$ 100,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 0	Senior Governments	$ 0
Materials	$ 0	Property Owners	$ 0
Equipment	$ 0	DCL/CAC funding	$ 0
Contract	$ 0	Internal (please specify e.g. CFF Loan)	$ 0
Overhead	$ 0	Other External	$ 0
Other	$ 100,000		
Total	$ 100,000	**Total Other Funding Sources**	$ 0

COST SAVING AND OTHER BENEFITS:

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

N/A

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
OBJECTIVES:
The existing Engineering Radio System has exceeded its design life, but remains viable due to its low maintenance costs. The current technology has been superceded by new technologies that offer similar performance but require less bandwidth. Bandwidth is a finite commodity which is shared by the public. Industry Canada now has legislated authority to require radio users to change out their systems for narrow bandwidth equipment and is very likely to advise the City to do so.

While the change to a narrower bandwidth radio system may appear an unrewarding expense, it does present some opportunities. New technologies provide attractive features such as data transmission, geographical positioning, automatic vehicle location and cellular-like communications. Many areas in Engineering operate exclusively with cellular radios. Other areas are now using data communications. The concept of a mobile office is becoming more of a reality. There are opportunities to integrate mobile data communications as part of the recently approved Infrastructure Management System (IMS) project.

A radio study is currently underway to recommend a replacement system which reflects the current and future needs of the Engineering Department. The funding requested represents the costs for a consultant's study to advise the Department on a replacement to the existing Engineering Radio system, as well as partial funding towards a replacement system.

It is estimated that a budget of $300,000 is required for 2006 under B-4 Communications Radio System Upgrade program for this undertaking. Staff recommend that one-third of this program ($100,000) be funded from Sewer's capital budget provision.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1ED6A **Order Number: 30008899**

ENGINEERING WATERWORKS

Project Number	Program – 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
E1	**AGING INFRASTRUCTURE REPLACEMENT**				
	a) Distribution Main Replacement	9,200	0	0	9,200
	b) Transmission Main Replacement	350	0	0	350
	c) Replacement of Meters & Services	3,200	0	0	3,200
	d) Replacement for Fire Hydrants	183	0	0	183
	d) PRV Stations	80	0	0	80
	SUBTOTAL – AGING INFRASTRUCTURE REPLACEMENT	**$ 13,013**	**$ 0**	**$ 0**	**$ 13,013**
E2	**ADDRESSING GROWTH**				
	a) Transmission Capacity Program	400	0	0	400
	b) Fire Upgrading for Development	67	0	0	67
	c) Conservation Capital Projects	83	0	0	83
	d) New Meters & Services	1,915	1,400	0	515
	e) Minor Improvements to the System	200	0	0	200
	SUBTOTAL – ADDRESSING GROWTH	**$ 2,665**	**$1,400**	**$0**	**$ 1,265**
E3	**EMERGENCY PLANNING**				
	a) Dedicated Fire Protection System	100	0	0	100
	SUBTOTAL – EMERGENCY PLANNING	**$100**	**$0**	**$0**	**$100**
E4	**INVESTIGATION, MONITORING & CONTROL**				
	a) Telemetry System	133	0	0	133
	b) Engineering & Site Investigation	250	0	0	250
	SUBTOTAL – OTHER WORKS	**$ 383**	**$ 0**	**$ 0**	**$ 383**
E5	**WATER QUALITY PROJECTS**				
	a) Rechlorination Stations	333	0	0	333
	SUBTOTAL – WATER QUALITY PROJECTS	**$333**	**$ 0**	**$ 0**	**$333**
	TOTAL – 2006 WATERWORKS CAPITAL BUDGET (before contribution to other Engineering Costs)	**$ 16,494**	**$ 1,400**	**$ 0**	**$ 15,094**

ENGINEERING WATERWORKS

Project Number	Program - 2006	Estimated Gross Cost $(000)	Grants & External Sources $(000)	DCL/CAC Funding $(000)	Basic Capital Budget $(000)
E7	**CONTRIBUTION TO OTHER ENGINEERING COST**				
	a) Contribution to Radio System upgrade (B4)	100	0	0	100
	SUBTOTAL – OTHER CONTRIBUTIONS	**$100**	**$0**	**$0**	**$100**
	DEBENTURE COSTS				
	GRAND TOTAL – 2006 WATERWORKS CAPITAL BUDGET	**$ 16,594**	**$ 1,400**	**$ 0**	**$ 15,194**

2006 BASIC CAPITAL BUDGET — Reference # E-1

DEPARTMENT: ENGINEERING — **PROGRAM: Waterworks**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Aging Infrastructure Replacement

SUB-PROGRAM or PROJECT DESCRIPTION:
Replacement of the City's Aging Distribution and Transmission Mains, Meters and Services, and Fire Hydrants

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$13,013,000**	**$0**	**$0**	**$0**	**$13,013,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$3,124,000	Senior Governments	$ 0
Materials	$3,123,000	Property Owners	$ 0
Equipment	$2,082,000	DCL/CAC funding	$ 0
Contract	$0	Internal (please specify e.g. CFF loan)	$ 0
Overhead	$2,472,000	Other External (please specify e.g. ICBC)	$ 0
Other (specify basis) Street Cutting, Traffic Control, Dump charges & Others	$2,212,000		
Total	$ 13,013,000	**Total Other Funding Sources**	$ 0

COST SAVING AND OTHER BENEFITS:
Prevent leak and break repair costs from increasing. Reduces cost of purchasing water that leaks from the system, and reduces damages to other utilities and private property.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)

OBJECTIVES:
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 1440 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: continued on next page

IMPACT OF DELAY:
This program proactively replaces aging infrastructure to prevent 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.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EE1 — **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # E-1

DEPARTMENT: ENGINEERING **PROGRAM: Water Works**
DIVISION: WATER& SEWERS

SUB-PROGRAM or PROJECT TITLE
Aging Infrastructure Replacement

PROJECT SUMMARY (continued)

SCOPE:

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 at the end of life-cycle expectancy.

The recommended 2006 allocations are as follows:

1a) Distribution Main Replacement: $9,200,000 **CC1EE1AX1 Order Number: 30008900**

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 watermains 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. It is recommended that $9,200,000 be allocated to this program in 2006 with similar amount of budget allocation for each of the next two budget years.

1b) Transmission Main Replacement: $ 350,000 **CC1EE1BX1 Order Number: 30008901**

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. The $350,000 required for 2006 will fund such rehabilitation activities.

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. Replacement construction activities are scheduled to take place in 2007 and 2008.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # E-1

DEPARTMENT: ENGINEERING **PROGRAM: Water Works**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Aging Infrastructure Replacement

PROJECT SUMMARY (continued)

1c) Aging Water Meter & Service Replacement: $3,200,000

1c-1) Aging Water Service Replacement: $2,970,000 **CC1EE1D2X1 Order Number: 30008902**

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 the life cycle costs of this inventory. It is recommended that steady repair and replacement work be carried out through out the 2006-2008 Capital Plan with $2,970,000 allocated to each of the three budget years.

1c-2) Aging Water Meter Replacement: $230,000 **CC1EE1D1X1 Order Number: 30008903**

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 2006-2008 Capital Plan. To fund this work, $230,000 allocated to each of the three capital budget years.

1d) Aging Fire Hydrant Replacement: $183,000 **CC1EE1E1X1 Order Number: 30008904**

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 2006-2008 Capital Plan also includes funds to replace 0.5% of the hydrant inventory in response to failures and unserviceable leaks. To fund this work, $183,000 allocated to each of the three capital budget years.

1e) PRV Stations : $80,000 **CC1EE1CX1 Order Number: 30008905**

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 will begin in 2006, with modernization of the entire inventory to be completed by 2014.

In 2006, $80,000 is needed to upgrade two stations to a modern standard and decommission four aging stations that are no longer needed.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET — Reference # E-2

DEPARTMENT: ENGINEERING — **PROGRAM: Waterworks**
DIVISION: WATER & SEWERS

SUB-PROGRAM \PROJECT TITLE:
Addressing Growth

SUB-PROGRAM\ PROJECT DESCRIPTION:
Addresses increased domestic and fire fighting water demands created by population growth, including metering and conservation to manage the resulting demands.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$2,665,000**	**$1,400,000**	**$0**	**$0**	**$1,265,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$666,000	Senior Governments	$0
Materials	$613,000	Property Owners	$0
Equipment	$453,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF loan)	$0
Overhead	$426,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis) Street Cutting, Traffic Control, Dump charges & Others	$507,000	Carry forward from 2005 CE3EE2DT New Meter & Services	$1,400,000
Total	$ 2,665,000	**Total Other Funding Sources**	$1,400,000

COST SAVING AND 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 costs and allow for the deferral of transmission watermain construction and the need for additional storage capacity.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$ 0**	**$ 0**	**$ 0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
OBJECTIVES:
This section of the Capital Plan addresses increased domestic and fire fighting water demands created by population growth, including metering and conservation to manage the resulting demands. The Greater Vancouver region is currently experiencing rapid growth.

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 (smaller) water distribution mains in the immediate neighbourhood of the development. New developments also require new water services and meters.

Vancouver's population growth has slowed somewhat from previous Plans and there have been few instances of large scale densification. The water system is reasonably robust at this point in time and capacity upgrades are not anticipated. Water conservation and customer equity have become primary concerns and the 2006-2008 Capital Plan has provision for funding a number of programs to address these concerns.

SCOPE: continued on next page

IMPACT OF DELAY: This program is necessary to maintain the City's ability to accommodate new development.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EE2 — **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # E-2

DEPARTMENT: ENGINEERING **PROGRAM: Water Works**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Addressing Growth

PROJECT SUMMARY (continued)

SCOPE:

2a) Transmission Capacity Program: $400,000 **CC1EE2AX1 Order Number: 30008906**

The 2006-2008 Capital Plan includes a funding provision for the construction of connection piping to link the City transmission system with the GVRD's new Boundary No. 5 supply main. Construction of the GVRD Boundary #5 main began in early 2006, and will improve flow capacity and reliability of water supply from Seymour Lake. It is recommended that $400,000 be allocated to this program in 2006 with similar budget allocation for each of the next two budget years.

2b) Fire Upgrading for Developments: $67,000 **CC1EE2BX1 Order Number: 30008907**

This program funds the local system improvements that are sometimes necessary to accommodate the increases in fire-flow water demand brought by new high density development projects. The City's practise is to seek cost-sharing from developers for any upgrades required. In areas where a deficiency exists prior to redevelopment, the City funds the upgrades to eliminate the current deficiency and the developer is charged for the additional work that is required because of the redevelopment. This program provides funding for the City's share of the water system upgrade cost.

Projects in this program are difficult to predict. They depend upon the amount of development activity in the City and the specific locations of those developments. In accordance with the Waterworks Long Rang Plan, an annual budget of $67,000 is a good estimate for this program during the 2006-2008 Capital Plan.

2c) Conservation Capital Projects: $83,000 **CC1EE2CX1 Order Number: 30008908**

This program funds projects that provide economic savings through reductions in the amount of bulk water purchased from the GVRD. Water conservation is a key element in the GVRD and City strategies to support the sustainable use of regional water resources.

Water conservation now provides significant economic benefits. In recent years, conservation initiatives such as summertime sprinkling regulations has allowed for significant per capita water demand reductions, and has resulted in significant savings through the avoidance and deferral of regional and City infrastructure capacity increasing projects. In addition, the City's bulk water cost is increasing significantly due to large scale GVRD water quality enhancing projects such as the Seymour-Capilano Filtration Plant. The cost of bulk water has increased by 64% since the year 2000, and in 2006 the City will spend approximately $37.6 million on water purchases from the GVWD.

There are a number of potential opportunities for the City to save drinking water through water reduction initiatives for civic facilities. Recent projects have resulted in significant economic savings through water use reductions at Trout Lake and Charleson Park. It is recommended that $83,000 be allocated to this program for each of the three years in the 2006-2008 Capital Plan to achieve further savings.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET Reference # E-2

DEPARTMENT: ENGINEERING **PROGRAM: Water Works**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Addressing Growth

PROJECT SUMMARY (continued)

SCOPE:

2d) New Meters & Services $315,000

2006 Budget Allocation:	$ 515,000
Transfer from 2003-05 Capital Plan:	$1,400,000
2006 Gross Budget:	$1,915,000

The City owns the water meters used to measure our customers' water consumption. These meters are also used for the purpose of billing sewage discharge. This program provides funding to purchase meters for new metered services. The replacement costs of these meters are recovered through the meter rental charges billed to customers along with their water consumption charges. The City also funds water service upgrades associated with the construction of legal secondary suites.

2d-1) Voluntary Metering Program: $0

2006 Budget Allocation:	$ 0	
Transfer from 2003-05 Capital Plan:	$1,400,000	**CC1EE1D3X Order Number: 30008909**
2006 Gross Budget:	$1,400,000	

In October 2004 City Council approved a number of drinking water conservation measures which included the consideration of a plan to meter the water used in one and two family dwellings. Staff have been conducting a strategic business review of the Voluntary Metering for a report to City Council in the Spring of 2006. This budget is to make a funding provision should Council choose to proceed with the voluntary metering program.

If a voluntary metering program proceeds, home owners could volunteer to have a meter installed for their home. Staff estimate a budget of $1,400,000 would allow a subscription rate of 2000 homes in 2006. This funding can be made available by a transfer of funds approved for the Voluntary Metering Program in the 2003 to 2005 Capital Plan.

This program does not cover operating budget changes for any additional staff positions would be required or the ongoing maintenance of the new meters. These costs will be identified as appropriate in the Voluntary Metering Program Council Report.

2d-2) Additional AMR installations: $300,000 **CC1EE1D4X1 Order Number: 30008910**

In 2005, the City began testing radio read technologies for the water metering system. The initial intent of the program is to choose the technology that best suits the City's needs and provide radio reading for up to 3000 of the most difficult to access water meters. This program proposes to add another 2000 AMR units to commercial water meter inventories. It is recommended that $300,000 be allocated to this program in 2006.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

DEPARTMENT: ENGINEERING **PROGRAM: Water Works**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Addressing Growth

PROJECT SUMMARY (continued)

SCOPE:

2d-3) Park Board Metering: $165,000 **CC1EE1D5X1 Order Number: 30008911**

With the exception of revenue generating facilities, the majority of Parks Board water connections are unmetered. Initial estimates indicate 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. To find opportunities for water use reductions, this program installs meters to measure and understand consumption for irrigation and ornamental water features. It is recommended that $165,000 be allocated to this program in 2006.

2d-4) New Meter Purchase: $50,000 **CC1EE1D6X1 Order Number: 30008912**

The City purchases meters for the regular metering program and recovers costs through the rental of the meter to the building owner. It is recommended that $50,000 be allocated to the purchase of new meters for installation in new developments in 2006.

2e) Minor Improvements to the System: $200,000 **CC1EE2EX1 Order Number: 30008913**

This is an ongoing program of miscellaneous minor works that are not associated with the major capital programs. Work typically includes items such as valve chambers, short watermain extensions, system metering, additional fire hydrants requested by Fire & Rescue Services (on existing mains), and launch points for watermain cleaning. It is recommended that $200,000 be allocated to this program in 2006.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 CAPITAL BUDGET Reference# E-3

DEPARTMENT: **PROGRAM: Water Works**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Emergency Planning

SUB-PROGRAM or PROJECT DESCRIPTION:
Dedicated Fire Protection System

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$100,000**	**$0**	**$0**	**$0**	**$100,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$26,000	Senior Governments	$0
Materials	$40,000	Property Owners	$0
Equipment	$15,000	DCL/CAC funding	$0
Contract	$0	Internal (please specify e.g. CFF Loan)	$0
Overhead	$19,000	Other External (please specify e.g. ICBC)	$0
Other (specify basis)	$0		$0
Total	$100,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$**	**$**	**$**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown.

OBJECTIVES:
The Dedicated Fire Protection System (DFPS) construction began in 1993, and was completed in 2003. The pumping stations are now 10 years old and some equipment needs to be replaced.

SCOPE:

1a) Dedicated Fire Protection System: $100,000

A work plan is in place to repair damaged architectural features, and to repair valves, piping, and hydrants. To fund this work, $100,000 allocated to each of the three capital budget years.

IMPACT OF DELAY
Delays in repair and replacement work will increase the risk of the pumping stations not working properly in responding to emergency situations.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EE3AX1 **Order Number: 30008914**

2006 BASIC CAPITAL BUDGET

Reference # E-4

DEPARTMENT: ENGINEERING **PROGRAM: Waterworks**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Investigation, Monitoring & Control

SUB-PROGRAM or PROJECT DESCRIPTION:
This program gathers Waterworks information for system design and control. It also provides funding for investigation of new materials and technologies.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$383,000**	**$0**	**$0**	**$0**	**$383,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$57,000	Senior Governments	$
Materials	$23,000	Property Owners	$
Equipment	$19,000	DCL/CAC funding	$
Contract	$0	Internal (please specify e.g. CFF loan)	$
Overhead	$61,000	Other External (please specify e.g. ICBC)	$
Other (specify basis) Street Cutting, Traffic Control, Dump charges & Others	$223,000		
Total	$383,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:
Provides funds for research and investigation of new products, materials and technology that may lead to greater efficiency.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
OBJECTIVES:
This program gathers information for water system system design and control. It also provides funding for investigation of new materials and technologies. This program funds the waterworks telemetry system, as well as other engineering and site investigations, including new waterworks technologies.

SCOPE: continued on next page

IMPACT OF DELAY: Delays to this program would reduce the City's ability to plan improvements to ensure continued acceptable service levels, and provide real-time alerts to problems with the water system.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EE4AX1/4BX1 **Order Number**: **30008915, 30008916**

2006 BASIC CAPITAL BUDGET Reference # E-4

DEPARTMENT: ENGINEERING **PROGRAM: Water Works**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Investigation, Monitoring & Control

PROJECT SUMMARY (continued)

SCOPE:

4a) Telemetry System: $133,000 **CC1EE4AX1 Order Number: 30008915**

This is an ongoing program to upgrade and expand telemetry infrastructure, which relies on computer and communications systems to monitor water system operations. This information is used to alert staff to potential water quality problems, minimize damage due to pipeline failures, and optimize operations and planning activities. The information that is collected and stored by the telemetry system is essential for monitoring water demands, system breaks, and system performance, as it alerts staff to problem areas.

The Waterworks Long Range Plan outlines a work plan for the telemetry system that requires funding for hardware and software upgrades, and the installation of new monitoring sites. These upgrades are needed to replace obsolete technological components and improve reliability. New monitoring sites are needed in critical locations where water pressure is likely to decrease due to new building development and population growth. To fund this work, $133,000 allocated to each of the three capital budget years.

4b) Engineering and Site Investigation: $250,000 **CC1EE4BX1 Order Number: 30008916**

This program funds investigations aimed at improving construction processes, evaluating emerging technologies, planning of water system improvements and testing of waterworks materials.

Funds are requested annually to provide for various engineering investigations, such as product evaluations, materials testing, soils testing, bacterial monitoring, computer design tools, and pilot tests of new rehabilitation tools. It is recommended that $250,000 be allocated to this program in 2006 with the similar amount of budget allocation for each of the next two capital budget years.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET

Reference # E-5

DEPARTMENT: ENGINEERING **PROGRAM: Waterworks**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Water Quality Projects

SUB-PROGRAM or PROJECT DESCRIPTION:
Capital Projects that reduce the number of dead end, low flow and tuberculated watermains.

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$333,000**	**$0**	**$0**	**$0**	**$333,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$66,600	Senior Governments	$ 0
Materials	$9,990	Property Owners	$ 0
Equipment	$39,960	DCL/CAC funding	$ 0
Contract	$0	Internal (please specify e.g. CFF loan)	$ 0
Overhead	$53,280	Other External (please specify e.g. ICBC)	$ 0
Other (specify basis) Street Cutting, Traffic Control, Dump charges & Others	$163,170		
Total	$ 333,000	**Total Other Funding Sources**	$0

COST SAVING AND OTHER BENEFITS:
Improving water quality to adhere to Canadian Drinking Water Guideline limits.

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
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 the GVRD. The GVRD 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 that 50% of waterborne disease outbreaks have originated in distribution systems. Therefore, it is critical that the City of Vancouver have a proactive program to in place to ensure high quality safe drinking water.

SCOPE: continued on next page

IMPACT OF DELAY: Delay's 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 Canadian Drinking Water Quality Guidelines.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EE5BX1 **Order Number: 30008917**

2006 BASIC CAPITAL BUDGET Reference # E-5

DEPARTMENT: ENGINEERING **PROGRAM: Waterworks**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE
Water Quality Projects

PROJECT SUMMARY (continued)

SCOPE:

The City purchases its water from the GVWD, who is responsible for source protection and primary water treatment. However, the issues within the local distribution system are the City's responsibility. These include maintaining adequate chlorine residuals, addressing areas with chronic low flows, providing suitable monitoring, addressing cross-connection risks, and other distribution system issues which create 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.

5a) Miscellaneous Water Quality Projects: $333,000 **CC1EE5BX1 Order Number: 30008917**

In areas where building density and demand is low, a water system built to provide high volume flows for fire fighting can experience stagnation problems. This can adversely affect taste and odour of drinking water and leave little residual chlorine for protection against contaminants. To address this, the Waterworks Long Range plan recommends a proactive program of capital works oriented towards improving flow circulation and water freshness in the low demand end-nodes of the water system. To fund this work, $333,000 allocated to each of the three budget years in the 2006 to 2008 Capital Plan.

FOR BUDGET OFFICE USE ONLY:
Order Group: **Order Number**:

2006 BASIC CAPITAL BUDGET

Reference # E-7

DEPARTMENT: ENGINEERING **PROGRAM: Waterworks**
DIVISION: WATER & SEWERS

SUB-PROGRAM or PROJECT TITLE:
Contribution to Radio System Upgrade

SUB-PROGRAM or PROJECT DESCRIPTION:
Contribution to Radio System Upgrade

CROSS FUNCTIONAL PROJECT – NAME OTHER DEPARTMENTS

	Project Total Cost	Previous Years Funding Carried Forward	2006 Advance Approval	Other Sources of Funding (from below)	Capital Budget Requested
Project Costs	**$ 100,000**	**$0**	**$0**	**$ 0**	**$100,000**

BUDGET (Include functional breakdown):		**OTHER FUNDING SOURCES**	
Direct Labour	$ 0	Senior Governments	$ 0
Materials	$ 0	Property Owners	$ 0
Equipment	$ 0	DCL/CAC funding	$ 0
Contract	$ 0	Internal (please specify e.g. CFF Loan)	$ 0
Overhead	$ 0	Other External	$ 0
Other	$ 100,000		
Total	$ 100,000	**Total Other Funding Sources**	$ 0

COST SAVING AND OTHER BENEFITS:

IMPACT ON OPERATING BUDGET:	**2006**	**2007**	**2008**
(Added Basic – provide estimate details)	**$0**	**$0**	**$0**

N/A

PROJECT SUMMARY: (Consider Objectives, Scope, Timing, Costs, & Functional breakdown)
OBJECTIVES:
The existing Engineering Radio System has exceeded its design life, but remains viable due to its low maintenance costs. The current technology has been superceded by new technologies that offer similar performance but require less bandwidth. Bandwidth is a finite commodity which is shared by the public. Industry Canada now has legislated authority to require radio users to change out their systems for narrow bandwidth equipment and is very likely to advise the City to do so.

While the change to a narrower bandwidth radio system may appear an unrewarding expense, it does present some opportunities. New technologies provide attractive features such as data transmission, geographical positioning, automatic vehicle location and cellular-like communications. Many areas in Engineering operate exclusively with cellular radios. Other areas are now using data communications. The concept of a mobile office is becoming more of a reality. There are opportunities to integrate mobile data communications as part of the recently approved Infrastructure Management System (IMS) project.

A radio study is currently underway to recommend a replacement system which reflects the current and future needs of the Engineering Department. The funding requested represents the costs for a consultant's study to advise the Department on a replacement to the existing Engineering Radio system, as well as partial funding towards a replacement system.

It is estimated that a budget of $300,000 is required for 2006 under B-4 Communications Radio System Upgrade program for this undertaking. Staff recommend that one-third of this program ($100,000) be funded from Waterworks' capital budget provision.

PROJECT TIMING:
Start Date (month/year):
Completion Date (month/year):

FOR BUDGET OFFICE USE ONLY:
Order Group: CC1EE7A **Order Number: 30008918**

Pre-2000 & 2000-02 Engineering Capital Closeouts and Carry Forwards

City of Vancouver
May 2006

INTRODUCTION

The following section summarizes the;

- capital closeouts of projects and the proposed reallocation of the unexpended capital; and
- the carrying forward of funding for ongoing projects from previous capital plans.

Closeouts

The projects to be closed out are all Engineering Capital programs, including Streets, Yards, Projects, and Landfill. Accounts being closed represent projects which commenced prior to the year 2000, and all of the remaining programs and projects provided in the 2000-2002 Capital Plan, for which funding and expenditures occurred over a number of years.

A summary of the account closeout for each capital area is provided herein. Council authority is required to close all accounts with a variance of more than 15% and $50,000 of the approved budget. Explanations for each account with a significant variance are provided for Council's information.

The net overall balance resulting from the close-out in each area is summarized in this report and in most cases, the overall Capital Programs have unexpended balances. In the case where a group of accounts will be closed with a shortfall in funding, funding sources from the 2006 Budget have been identified for Council approval. This report further explains the reason for the unexpended balance and also specifies how the balance is proposed to be allocated.

Carry forwards

For incomplete projects that are from capital plans earlier than the 2003-2005 Capital Plan, funding for these projects is recommended to be carried forward to the 2006-2008 Capital Plan. The account details for these projects are shown on the following pages with the explanations for those with unexpended balances of more than $50,000 and 15% of the approved budget.

A summary of the close out position for each area is as follows:

Table 1 – Closeout position and Carry Forward funding by Program Area

AREA	BUDGET	BALANCE	CARRY FORWARD ongoing projects	Closeout Balance
Streets	$14,486,414	$1,118,396	$656,348	$462,048
National Yards	$24,612,250	$50,945		$50,945
Kent Yard	$3,807,012	$752,731	804,806	($52,075)
Projects	$7,146,021	$278,586		$278,586
Landfill	$3,805,000	$1,530,286	$1,530,286	
TOTAL	**$53,856,697**	**$3,730,944**	**$2,991,440**	**$739,504**

STREETS Capital Account Closeout Summary

The purpose of this summary is to close and balance the remaining programs still open from the 2000-2002 Capital Plan. This includes projects from the Infrastructure, Pedestrians and Bikes, Transit and Safety, Local Area Traffic Plans and Major Projects programs. The Streets accounts for these programs totaling $14.5 million from the 2000 – 2002 Capital Plan should be closed. These accounts represent projects for which, as a group, funding and expenditures occurred over a number of years.

This Streets Capital Closeout summary, as detailed in Table 2, completes the accounting for streets construction work involving net expenditures of over $13.4 million. These expenditures funded various projects including bikeways, greenways, traffic calming, street reconstruction, Local Improvement street paving and curbing, lane paving, sidewalk reconstruction, a variety of transit roadway improvements, property acquisition and minor street alterations. This work resulted in an overall 2000-2002 Streets Plan unexpended balance of $1.12 million. This unspent funding is primarily due to the increase in external funding (i.e. Translink and ICBC) and the fact that some projects have not been completed and are still underway.

Although there is funding remaining in some of the program areas (for example, A2 – Pedestrians and Bicycles), other areas have a funding shortfall (for example, A1 – Infrastructure). In order to maintain the funding balance and priorities set by Council, it is proposed that closeout balances primarily stay in the program areas in which they occur. The alternative is to use funding from programs with surpluses (i.e. bikeways) to fund programs with insufficient funding (i.e. Arterial Improvements). A summary of how the funding closeouts are proposed to be handled for each of the program areas is listed below and the details of the carry forwards and other allocations are listed in Table 3:

A1 Infrastructure– While the funding for the Pavement and Materials Research is proposed to be allocated to 2006 for continuing work, funding for the deficit to the overall program is proposed to be taken from the 2006 Basic Capital Budget for A1a Non-MRN arterial Reconstruction.

A2 Sidewalks – This program has been divided into 2 groupings for the purposes of dealing with the funding surpluses, one to represent the 3 sidewalk sub-programs and another for greenways, bikeways and pedestrians. The unexpended balance in the sidewalk grouping is primarily due to cancellation of a sidewalk project on Cambie Street. This project has been cancelled due to the new City cost sharing policy for sidewalk re-construction and it will be reinitiated with the City will be responsible for 100% of the costs. It is proposed that the balance of $244,506 from this project and the remaining funding in this grouping be transferred to 2006 as unallocated funds for Sidewalk Reconstruction. Staff will report back to Council as required to allocate the funds within the program.

A2 Bikeways, Greenways and Pedestrians - The unexpended balance in the greenways, bikeways and pedestrian grouping is primarily due to incomplete projects and higher than expected external funding. It is proposed that $656,348 be carried forward to complete ongoing work and that the remaining funding be allocated to 2006 for future Bikeway and Greenway projects. Staff will report back to Council as required to allocate the funds within the programs.

A4 Transit & Safety– This program is in a deficit position primarily due to recoveries expected to be received in the near future from developments. The recoveries are expected to provide approximately $375,000. The remaining funding will come from 2006 Arterial Improvement program. Also within this program, the funding for the property fund is proposed to be allocated to 2006 as this fund acts as a revolving fund from year to year.

A5 and A6 Local Area Traffic & Major Projects– These two categories should be combined for close out purposes as they involve similar work carried out on residential streets. The balance should be allocated to 2006 funding for the Residential Streets program.

An explanation of variances in excess of established limits (i.e. $50,000 and 15% of the approved budget) is provided in Table 3. In instances where a project is funded with more than 60% external funding the budget totals and variance indicated are based on the grossed up total to provide a better indication of the size of the project.

Table 2 – Streets Accounts Closeout Summary (Actuals as of May 1, 2006)

Program or Project Description	Budget ($)	Actual ($)	Balance ($)	Variance
A1 – Infrastructure				
Arterial Reconstruction*	0	222,542	(222,542)	n/a
Local Street Reconstruction	18,000	7,890	10,110	56%
Major Maintenance - Structures	0	103	(103)	n/a
Pavement & Materials Research	60,000	44,464	15,536	26%
Subtotal	**78,000**	**275,000**	**(197,000)**	**(253%)**
A2 - Pedestrians & Bikes				
New Sidewalks*	429,471	480,885	(51,414)	(12%)
Sidewalk Reconstruction*	848,810	216,829	631,981	74%
Sidewalk Partial Block*	1,185,000	1,369,037	(184,037)	(16%)
Bicycle Network*	1,988,492	1,079,812	908,681	46%
Pedestrian & Other Structures	208,600	219,448	(10,848)	(5%)
Greenway Projects*	1,845,199	1,560,885	284,314	15%
Subtotal	**6,505,572**	**4,926,895**	**1,578,677**	**24%**
A4 - Transit & Safety				
Arterial Improvement Program*	2,736,750	3,221,111	(484,361)	(18%)
Bus Slabs & Landing Areas	65,000	0	65,000	100%
Property Fund	465,621	398,435	67,186	14%
Subtotal	**3,267,371**	**3,619,546**	**(352,175)**	**(11%)**
A5 - Local Area Traffic Plan				
Neighborhood Traffic Control	462,000	449,009	12,991	3%
Higher Zone Streets - Local Improvement	21,000	25,624	(4,624)	(22%)
Residential Streets - Local Improvement	3,655,919	3,536,541	119,378	3%
Residential Lanes - Local Improvement	55,000	53,970	1,030	2%
Minor Property Acquisition	191,552	211,633	(20,081)	(10%)
Traffic Circles/Speed Bump	0	8,804	(8,804)	n/a
Miscellaneous Projects	0	(58,595)	58,595	n/a
DCL Projects	0	18,197	(18,197)	n/a
Subtotal	**4,385,471**	**4,245,183**	**140,288**	**3%**
A6 - Major Projects				
Other Projects	250,000	266,157	(16,157)	(6%)
CAC/DCL Funds-Sidewalks	0	35,237	(35,237)	(28%)
Subtotal	**250,000**	**301,394**	**(51,394)**	**(14%)**
TOTAL UNEXPENDED BALANCE/ (DEFICIT)	**14,486,414**	**13,368,018**	**1,118,396**	**8%**

** Indicates Programs that have projects with a variance of more that 15% and $50,000. See Table 3 for explanations.*

Table 3 – Carry Forward Funds and Allocation of Close Out Balances

Carry Forward for Ongoing Projects	**Budget ($)**
A2e - Bicycle Network - Inverness Bikeway	92,000
A2e - Bicycle Network - Kent Bikeway	300,000
A2h -Greenway Projects - Ontario Greenway	210,000
A2h - Greenway Projects - Wellness Walkway Phase 2	20,000
A2h - Greenway Projects - Greenlinks	34,348
Subtotal	**656,348**
Allocation of Close Out Balance	
A1c – 2006 Pavement and Materials Research - Materials Research	15,536
A2b – 2004 New Sidewalks	80,095
A2b - 2006 Sidewalk Reconstruction	316,435
A2e - 2006 Bicycle Network	510,833
A2h - 2006 Greenways	14,966
A4e - Property Fund	67,186
A5c - 2006 Residential Streets - Local Improvement	73,281
A6 - Downtown Heritage Railway	15,613
Subtotal	**1,093,945**
Funding Sources from 2006 BCB	
A1a - 2006 Non-MRN Arterial Reconstruction	(212,536)
A4a - Arterial Improvements	(419,361)
Subtotal	**(631,897)**
TOTAL	**1,118,396**

Table 4 – Street Capital Account Variance Explanations

Order Group	**Program**	**Budget ($)**	**Actual ($)**	**Balance ($)**	**Variance**
2000-02	**Infrastructure**				
CA3EA1A009	Arterial Reconstruction – 15th/Wolfe, Granville to 16th	0	222,542	(222,542)	(100%)
The 2000-02 Arterial Reconstruction Program was Closed out in 2005 even though one project was still on-going. The variance represents charges for 15th/Wolfe, Granville to 16th project.					

2000-02	**Pedestrian & Bikes**	**Budget ($)**	**Actual ($)**	**Balance ($)**	**Variance**
CA2EA2A001	New Sidewalks – June 2001 Court of Revision	96,136	158,582	(62,446)	(65%)
In this Court of Revision (June 2001), the Great Northern Way project was approved in 2001 and the construction of the sidewalks were not completed until 2003, therefore there were increased costs due to inflation, labour and materials.					

2000-02	Pedestrian & Bike (continued)	Budget ($)	Actual ($)	Balance ($)	Variance
CA2EA2AXX1	New Sidewalks – 2001 BCB	80,095	0	80,095	100%
There were fewer new sidewalk projects initiated by City staff or petitioned by property owners in 2001 which resulted in an unexpended balance of $80,095. This funding was reallocated to the 2004 New Sidewalk Program as there was a greater emphasis on the construction of new sidewalks that year. This was approved by Council in November 2004.					
CA3EA2B001	S/W Reconstruction – December 2001 Court of Revision	125,658	52,063	73,594	59%
The Commercial St. sidewalk reconstruction project from the December 2001 Court of Revision has been recently cancelled due to the changes in the Local Improvement cost sharing formula. In the past, the cost sharing was 50/50 and it is now 100% City. If this project is pursued in the future, additional funding will be required as sidewalks on both sides of the block will be reconstructed instead of just one side. The funding remaining after closeout should be allocated to the 2006 program.					
CA3EA2B002	S/W Reconstruction – June 2002 Court of Revision	350,044	61,449	288,594	82%
In this Court of Revision (June 2002), the sidewalk reconstruction costs were previously charged to a Closed-out Arterial Paving project (Broadway, Heather to Laurel). The project is complete and the remaining balance will be used to offset insufficient funding in the other sidewalk programs with the balance transferred to the 2006 program.					
CA3EA2B004	S/W Reconstruction – December 2001 Court of Revision (Cambie Street)	245,340	833	244,506	100%
In this Court of Revision (December 2001), the Cambie St. sidewalk reconstruction project was postponed due to the Canada Line construction on Cambie St. During this period there was a new City cost sharing policy approved by Council and this project was formally cancelled. The remaining balance will be allocated to the 2006 Sidewalk Reconstruction program.					
CAEA2C	S/W Partial Block	1,185,000	1,369,037	(184,037)	(16%)
In 2000, there was a greater demand for partial sidewalk reconstruction work than what was planned due to the Vancouver Transportation Plan's directive to promote walking as one of its priorities. Additional sidewalk reconstruction work was combined with other capital projects as well as utility cut repairs which resulted in this deficit. There was reduced spending In 2001 and 2002 to help offset the deficit from 2000.					
CA1EA2E002	Pender Temporary Bikeway	100,000	28,168	71,832	72%
This project has been delayed and the unexpended funds represent work not completed due to scope changes. Remaining funding will be transferred to Unallocated account. Staff will report back to Council after the design for Pender St is further developed and coordinated with other downtown initiatives.					

2000-02	Pedestrian & Bike (continued)	Budget ($)	Actual ($)	Balance ($)	Variance
CA2EA2E004-023	Inverness Bikeway-Carry Forward	500,000	309,626	190,374	38%
Approximately $92,000 will be required to be carried forward to complete this project which has been delayed due to coordination of utility work. This project is anticipated to be complete by the end of 2006. The remaining funding, $98,374, will be transferred to Unallocated account for future bikeway projects.					
CA3EA2EAX1-26	Kent Bikeway-Carry Forward	995,000	350,292	644,708	65%
There was a reduction in the scope of the project and also some additional Translink recoveries which contributed to the overall surplus in 2002. Approximately $300,000 will be required to be carried forward to complete this project. The remaining funding, $344,708, will be transferred to Unallocated account for future bikeway projects.					
CAEA2H	2000-02 Greenway Program-Carry Forward	1,830,233	1,560,885	269,348	15%
This program includes a number of Greenway projects including the Ontario Street Greenway, 11th Ave. Greenway and the Central Valley Greenway. There is still some outstanding work related to the existing Wellness Walkway and Ontario Greenway (2000-2002) projects, and also funding obligations to Greenlinks. Of the funding remaining in these accounts after close out, $210,000 will be required to finish the Ontario Greenway, while $20,000 and $34,348 should remain in with the Wellness Walkway and Greenlinks projects, respectively. The remaining funding will be transferred to an Unallocated account for future Greenway projects.					

2000-02	Transit & Safety	Budget ($)	Actual ($)	Balance ($)	Variance
CA2EA4A008	Arterial Improvement Program – 1st and Boundary Improvements	31,250	223,308	(192,058)	(615%)
The budget for the 1st Ave and Boundary Road intersection was only for curb and gutter work. There was an increase in the scope of the work during the construction of the project. It was determined that 1st Ave from Boundary Road to the freeway overpass needed to be paved. It was more efficient, more cost effective and least disruptive to the public to combine the curb and gutter, and the paving work. This deficit will be offset by unexpended balances in other programs.					
CA3EA4A002	Arterial Improvement Program – Marine at Elliot	212,500	372,380	(159,880)	(75%)
The original estimate and budget was based on a conceptual design for the construction of the wall on Marine Drive. The actual detailed design and construction of the wall was much more expensive than first anticipated, requiring more material (rebar and concrete) because it was not a "standard" wall.					
CA2EA4A006	Arterial Improvement Program – Grandview Hwy and Skeena LTB	935,000	679,886	255,113	27%
The budget included an estimate for lowering the watermain. This work was not required and therefore there was a cost saving of approximately $120,000. The traffic signal work was also not as extensive as what was originally anticipated. The coordination of the street and traffic signal work led to operational efficiencies which resulted in cost savings.					

2000-02	Transit & Safety (continued)	Budget ($)	Actual ($)	Balance ($)	Variance
CA2EA4A002-005	Arbutus and Valley Improvements	115,000	398,860	(283,860)	(247%)
Waiting for $255,000 from the Developer in order to pay for these improvements. With this recovery, gross budget is $370,000 and project has only a 8% variance.					
CA3EA4A009-12	Granville Island Traffic Calming Project	970,000	1,130,920	(135,920)	(14%)
These four order groups are part of the Granville Island traffic calming and roadway modification Project. The work included geometric changes, traffic signal modifications, traffic calming, landscaping and pedestrian improvements. The deficit is due to increases in the scope of the project and ongoing geometric changes during the construction. There were also some site access issues which led to changes in scope and increased costs. The project is complete and the deficit will be offset by unexpended balances in other program areas.					

2000-02	Local Area Traffic Plan	Budget ($)	Actual ($)	Balance ($)	Variance
CA3EA5J009	Carolina Relocation	-	(94,762)	94,762	n/a
This project involved a land swap that was budgeted to net out at zero cost to the City. However, land values and soil conditions were favourable to the City, resulting in a net recovery. The balance will be allocated within the Local Area Traffic program to the 2006 Local Improvement Program for Residential Streets.					

NATIONAL YARD Capital Account Closeout Summary

The National Works Yard located at 701 National Avenue is the replacement to the former Cambie Works Yard located on False Creek. A new facility at a new location was necessary due to the buildings at the old Cambie Yard reaching the end of their useful life and due to pressure from adjacent residential developments.

Funding for the National Yard was provided in the 2000 – 2002 Capital Plan. Staff from Cambie Yard have now moved into the National Yard and the yard is fully operational. Staff and facilities include Electrical and Traffic Operations (sign shop, traffic signal shop, radio shop, street lighting, process controls, design), Streets Operations, Equipment Services with a repair garage, fuel station and car wash, Parking Operations (meter maintenance and coin collection), Sanitation operations (night shift) and a stores warehouse.

Sustainability principles were incorporated into the design of the yard resulting in the City of Vancouver receiving LEED™ Gold certification, a first for the City of Vancouver and the first project under the newly established Canadian Green Building Council.

The purpose of the following summary is to closeout and balance the 2000-02 National Yards Capital Accounts. As detailed in Table 5, there was a net $50,945 (0.2%) unexpended balance on a budget of $24,561,305. The unexpended balance of $50,945 is recommended to be transferred to the 2006-08 Yards Capital plan.

Table 5 National Yards Closeout Summary (Actuals as of March 31, 2006)

Program or Project Description	Budget ($)	Actual ($)	Balance ($)	Variance
Total National Yards 2000-02	24,612,250	24,561,305	50,945	0.2%

KENT YARD Capital Account Closeout Summary

A number of engineering facilities are located at the Kent Works Yard. Beginning in 1998 with the pending closure of the Cambie Yard, the City's asphalt plant and aggregate yard was moved to the Kent Yard. A number of other facilities were moved (or are just being moved) from temporary or trial operations into permanent facilities in Kent Yard. These include the Abandoned Autos operation, the Rubble operation, the Precast / Ready Mix plant from Cambie Yard, and the blue box recycling yard. The Kent Yard is the central facility for engineering's construction supplies such as asphalt, aggregates, concrete, precast materials, recycled aggregates and excavated waste recycling.

The purpose of the following summary is to closeout and balance the 2000-02 Kent Yard Capital Accounts. As detailed in Table 6, there was a net $752,731 (20%) unexpended balance on a budget of $3,807,012. Further detailed in Table 7, it is recommended that $804,806 be carried forward for the Precast Plant and Rubble Operations, which are ongoing projects. The Recycling site is the receiving yard for blue box recycling program. There was a net shortfall of $52,075 (9%) on a budget to $598,000. This project was funded from the Solid Waste Capital reserve, it is recommended that the shortfall be funded from the current Solid Waste Capital reserve.

Table 6 Kent Yards Closeout Summary (Actuals as of March 31, 2006)

Program or Project Description		Budget ($)	Actual ($)	Balance ($)	Variance
CA3EFA2A	Frontage Road Construction	331,512	331,512	0	0%
CA3EFA2B	Abandoned Autos	686,000	686,074	(74)	0%

CA3EFA2C	Precast Plant*	1,306,000	652,797	653,203	50%
CA3EFA2D	Rubble Operation*	789,000	640,211	148,789	19%
CA3EFA2E	Recycling Site (trf from CA1EG)*	598,000	650,075	(52,075)	(9%)
Electrical Improvements		96,500	93,612	2,888	3%
	TOTAL KENT YARD	**3,807,012**	**3,054,281**	**752,731**	**20%**

** Indicates Programs that have projects with a variance of more that 15% and $50,000. See Table 7 for explanations.*

Table 7 – Carry Forward Projects and Allocation of Close out Balance

Carry Forward for Ongoing Projects	**Budget ($)**
Precast Plant	656,017
Rubble Operation	148,789
Subtotal	**804,806**
Funding Sources	
Recycling site to be funded from the Solid Waste Capital Reserve	(52,075)
Subtotal	**(52,075)**
TOTAL	**752,731**

Table 8 – Kent Yards Accounts Variance Explanations

Order Group	Program	Budget ($)	Actual ($)	Balance ($)	Variance
CA3EFA2C	Precast Plant – Carry Forward	1,306,000	652,797	653,203	50%
Precast Plant construction was delayed due to design and tendering issues. Construction is now underway with occupancy planned for fall 2006 and completion of all equipment commissioning in 2007. Existing approved funding is to be carried forward into the 2006-2008 plan for completion of the project.					

CA3EFA2D	Kent Yard Rubble Operation – Carry Forward	789,000	640,211	148,789	19%
The Rubble operation is a material transfer facility. Excavated material from sewer and water trenches and road construction are brought to the yard in small loads then transferred to more efficient larger vehicles for transport to the landfill for disposal. Recyclable material is pulled from the waste stream and crushed to make aggregate for construction crews. After successful trial operations were completed on temporary sites, a permanent facility was developed in the Kent Yard. The rubble yard is now complete and operational with the exception of a water system to contain and control site dirt and dust. This will be completed in 2006 from funding carried forward.					

CA3EFA2E	Recycling Site (trf from CA1EG)	598,000	650,075	(52,075)	(9%)
This facility is a receiving yard for the City blue box recycling program. City trucks deliver the blue box material to the site where it is placed into its appropriate bin prior to shipment in larger transfer trucks to a processor. This project completes the development of a permanent site to replace the previous operation on a temporary site. Site development of the recycling yard involved extensive over excavation of poor soils and buried wood waste. This material was removed and replaced with clean granular material at a cost of $71,000. This has resulted in a net over expenditure of the project of $52,075 (9%); it is recommended that this shortfall be funded by Solid Waste Capital Reserve.					

PROJECTS Capital Account Closeout Summary

These accounts represent infrastructure development programs (new streets, sidewalks, traffic signals, street lighting, and greenways that are externally funded (over a number of years) and are a result of development permit, subdivision and rezoning applications/requirements. The accounts are intended to be fully cost recovered and net out to a zero balance with surpluses carried forward to pay for unfinished work and/or work that is to occur at a future date.

To close and balance the accounts for the pre-2000 and 2000-02 Projects Capital Closeout, the following summary has been prepared. The net overall unexpended balance resulting from the closeout is $278,586 (4%) as detailed in Table 9. It is recommended that the balance be allocated to 2006-08 Projects Capital as detailed in Table 10.

Table 9 Projects Closeout Summary (Actuals as of March 31, 2006)

Program or Project Description	Budget ($)	Actual ($)	Balance ($)	Variance (%)
C07A Collingwood Village	281,175	281,175	0	0%
C07JB Arbutus Lands	184,239	185,585	(1,346)	(1%)
C07JC 6th & Granville	2,576,784	2,704,784	(128,000)	(5%)
C07JD Woodwards Parkade	175,701	175,701	0	0%
C07JE Pacific Place	1,253,148	1,234,673	18,474	1%
C07JF Minor Projects *	397,261	77,847	319,414	80%
C07JH Rapid Transit Project 2000	1,468,697	1,494,260	(25,563)	(2%)
C07JI Flatland Project	36,130	2,398	33,732	93%
CA2EJA City Gate	44,922	56,182	(11,259)	(25%)
CA2EJB Powell Street Lighting Upgrade	92,690	87,921	4,769	5%
CA2EJC Main Sewer Work for Others	67,282	86,475	(19,192)	(29%)
CA3EJA Park Board Work *	395,125	308,549	86,576	22%
CA3EJB Main St Work for Others	81,003	79,733	1,270	2%
CA3EJC Sewers Special Projects	11,872	12,160	(288)	(2%)
CA3EJD 858 Beatty Street	79,992	79,992	-	0%
TOTAL PROJECTS	**7,146,021**	**6,867,436**	**278,586**	**4%**

** Indicates Programs that have projects with a variance of more that 15% and $50,000. See Table 10 for explanations.*

Table 10 – Allocation of Close Out Balance to 2006

Program	Balance ($)
Concord Pacific Phase 1B (C07JEDF)	(50,377)
City Gate (CA2EJA)	(11,259)
CN Land Phase 1 (CA3EJA2/3)	76,369
Finnings Land Phase 1 (CA3EJA1)	10,208
Champlain Mall (CA3EJB)	1,270
Bayshore Gardens (C07JEA)	11,601
Coal Harbour (C07JEB)	46,573
2006 Projects unallocated	194,201
TOTAL	**$ 278,586**

Table 11 - Projects Accounts Variance Explanations

Program or Project Description	Budget ($)	Actual ($)	Balance ($)	Variance (%)
CA3EJA Park Board Work – CN Phase 2	210,425	133,187	77,237	37%
This balance represents funding collected from developers in order to install and repair City infrastructure on new streets. The City is waiting to complete this work and the funds remaining after the completion of that work will be returned to the developers. These funds need to be carried forward.				
C07JF Miscellaneous Minor Projects	397,261	77,847	319,414	80%
Unexpended balance is a carry forward from pre-2000 Projects. These funds should be transferred into 2006 in order to give the City a source of funds, other than the Contingency Reserve, for miscellaneous projects related to land developments and other major projects. Research studies and other consultancies are examples of the type of work that this funding could support.				

LANDFILL Accounts Summary

In 2001, Council approved three capital projects at the Landfill; leachate collection and containment upgrades, landfill gas system expansion, and waterline extension. Operational capital projects at the Landfill are funded with loans from the Solid Waste Capital Reserve and repaid by landfill users through tipping fees.

The total budget for these projects was $3,805,000. The leachate collection and containment upgrades and landfill gas system expansion projects have been completed well under budget. The leachate collection system project was under budget because the original budget included a provision for a new pumpstation, which was not required in the final design. The gas system construction budget was under budget in part because part of the system was new to the City, specifically lateral gas collection lines. Savings were achieved in constructing the system by using free materials such as demolition material as backfill. Additionally, the winning bid on the project was approximately $200,000 less expensive than the competing bids resulting in lower than anticipated construction costs The waterline extension has not been completed because the leachate collection ditches needed to be rerouted prior to extending the waterline. The ditches have now been rerouted and the project is expected to be completed in 2006/2007. The surplus for these two projects will result in a lower loan requirement from the Solid Waste Capital Reserve.

As the Waterline Extension project in landfill is ongoing, it is recommended that $700,000 (Table 13) be carried forward to complete the project as originally approved by council.

Table 12 Landfill Closeout Summary (Actuals as of March 31, 2006)

Program or Project Description	Budget ($)	Actual ($)	Balance ($)	Variance
Leachate and Gas Collection Systems	**3,105,000**	**2,274,714**	**830,286**	**27%**

Table 13 Landfill projects to Carry forward to 2006 Landfill

Program or Project Description	Budget ($)	Actual ($)	Balance ($)
Waterline Extension	**700,000**	**0**	**700,000**