Combined Sewer Systems

Policies

P6. **Combined Sewer Overflows**

No new combined sewers will be constructed in the GVRD geographic area. Existing combined sewers will be replaced by separate sanitary and storm sewers through infrastructure replacement and sewer capacity upgrading programs. Private combined sewer service connections will be replaced with separate sanitary and storm sewer connections when a property is redeveloped or when substantive building or site renovations are undertaken.

The policy of the District is to eliminate all combined sewer overflows from its facilities. Priority will be given to reducing or eliminating those combined sewer overflows identified by the Environmental Monitoring Committee as having significant environmental impact.

P7. **Combined Sewer Overflow Monitoring**

Combined sewer overflow volumes will be monitored and trended at all outfalls under the District's jurisdiction to measure the effect and progress of combined sewer replacement programs. Environmental monitoring and assessment will determine risks and the need for any additional interim measures at combined sewer outfalls.

District Commitments

C12. **CSO Monitoring**

The District will install monitors at all 14 CSO outfall sites under its jurisdiction to determine depth and duration of combined sewer overflows and an estimate of volume.

C13. **Operational Improvements**

In respect to the Clark Drive Outfall, the District and municipalities will implement the following projects:

- Vernon Relief Drain CSO storage;
- Copley / Collingwood sanitary sewer extension to 8th Avenue Interceptor;

- Redirection of Columbia Pump Station discharges to downstream of Yukon Gate;
- City of Vancouver Thornton pump station and forcemain realignment (completed in 2000)
- City of Vancouver Hastings Park lost-stream daylighting (part of combined sewer separation – Commitment C15)
- Combined sewer separation programs (Commitment C15)

In addition, the District will, in consultation with stakeholders, investigate further site-specific CSO management options at the Clark Drive Outfall location. The District will also investigate further operational improvements for the Clark Drive catchment.

The District will complete feasibility studies and detailed cost-benefit analysis for the following projects that offer potential operational benefits, overflow frequency or loading reductions, or receiving environment improvements:

- Glenbrook Trunk Sewer separation;
- New Westminster Interceptor West Branch sewer separation;
- English Bay Outfall and Alma-Discovery Outfall storage and disconnection of storm inflow to Alma-Discovery outfall;
- Jervis and Chilco Pump Stations forcemain and control improvements;
- Operational Improvements – Fraser River North Arm;
- Operational Improvements – New Westminster Area;
- Operational Improvements – Westridge Area; and
- Source control initiatives targeting mercury and silver reductions.

Based on environmental data, which indicates that there are measurable near-field impacts at the Clark Drive outfall into Burrard Inlet, the District will undertake further environmental assessments at Clark Drive to assess the benefits of the improvements. This work will be conducted under the supervision of the Environmental Monitoring Committee (see Commitment C2). The municipalities of Vancouver and Burnaby and the District will also undertake a review of combined sewer separation and system upgrade schedules necessary to fast-track the elimination of Clark Drive CSOs earlier than 2050.

In addition to the ongoing monitoring program at the Glenbrook Outfall, the District and the City of New Westminster will undertake assessment of all other CSOs on the New Westminster waterfront for quality and environmental impact on a 5-year frequency, commencing in 2001, and thereafter as part of the 5-year plan review process, in order to evaluate program progress and effectiveness and determine

the need for further action by New Westminster in accordance with Policy P2.

C14. **Biennial Liquid Waste Management Plan Progress Report**
The District will summarize the CSO monitoring results, CSO environmental monitoring and assessment results, sewerage and drainage expenditures for CSO projects, and results of CSO operational improvement investigations and implementation in a Liquid Waste Management Plan biennial progress report. The biennial reporting period will end on December 31st of every second calendar year and the report will be due by the end of March (90 days to compile). The first reporting period will end in the second whole year (not less than 24 months and not more than 36 months) following the year a LWMP is approved. An interim annual report will be submitted in March and will summarize the key achievements that occurred in the previous year.

Municipal Commitments

C15. **Combined Sewer Overflow Elimination**
The cities of Vancouver, Burnaby, and New Westminster will implement combined sewer separation programs that will replace aging combined sewers with separate sanitary and storm sewers and lead to the elimination of combined sewer overflows based on the following targets:

1. The City of Vancouver will continue with the present combined sewer system separation program at approximately 1 percent of the system per year to target elimination of combined sewer overflows in the Vancouver Sewerage Area by 2050.

2. The City of Burnaby will implement a combined sewer separation program that proceeds on an annual basis, at a uniform rate, and that targets elimination of combined sewer overflows in the Vancouver Sewerage Area by 2050 and in the Fraser Sewerage Area by 2075.

3. The City of New Westminster is committed to implementation of Combined Sewer Overflow (CSO) reduction measures which meet or exceed 1% per year, resulting in long-term CSO elimination by means of sewer separation as well as by other means (e.g. detention storage, source controls, etc.). The city will complete the installation of storm sewers within 22 percent of the combined sewer area by 2012. This effort will focus on the lower Columbia catchment. Opportunistic sewer separation will

also occur in other areas where capacity is an issue with existing combined sewers. The entire sewer system will be video inspected by 2012 and infiltration and inflow reduction achieved through sewer rehabilitation. In addition, source control projects (such as removal of rainwater roof leaders from direct connection to the sewer system) will be implemented, and the effectiveness of these methods will be evaluated. Overall, this program will produce CSO reductions at a rate in excess of 1% per year.

C16. **Operational Improvement Investigations**

Municipalities will complete feasibility studies and detailed cost-benefit analysis for the following projects that offer potential operational benefits, overflow frequency or loading reductions, or receiving environment improvements:

- Cambie Pump station and outfall improvements (Vancouver);
- 1st and Boundary pump station realignment (Vancouver and Burnaby); and
- Stormwater redirection to Grandview Cut (Vancouver).

C17. **Best Management Practices**

The Cities of Vancouver, Burnaby, and New Westminster will continue with best management practices such as catch basin cleaning that reduce loads to combined sewers at source and rain barrel, impervious area reduction, or on-site storage that reduces peak flows or volumes of stormwater runoff to sewers.

C18. **Biennial Liquid Waste Management Plan Progress Report**

Every two years municipalities with combined sewers will summarize and forward to the District for inclusion in a biennial Liquid Waste Management Plan progress report the following information:

- Sewer system mapping that indicates the overall extent of combined, sanitary, and storm sewers, the extent of combined sewers replaced by separate sewers in the past two years, the location of new storm outfalls, and the extent of private property combined service connections replaced by separate service connections.

- A summary of sewerage and drainage system expenditures for the past two years.

The biennial reporting period will end on December 31st of every second calendar year and the report will be due by the end of March (90 days to compile). The first reporting period will end in the second whole year (not less than 24 months and not more than 36 months)

following the year a LWMP is approved. An interim annual report will be submitted in March and will summarize the key achievements that occurred in the previous year.

Implementation Schedule – Combined Sewer Systems

Commitments / Initiatives	Budget	Year Completed
C12 - CSO Monitoring		
CSO Monitors – 14 sites (12 sites installed to date)	$70,000	2002
C13 – Operational Improvements		
Projects specific to the Clark Drive Outfall location:		
Vernon Relief Drain CSO storage	$1,600,000	2002
Copley / Collingwood sanitary sewer extension to 8th Avenue Interceptor	$15,000,000	2004
Redirection of Columbia Pump Station discharges to downstream of Yukon Gate	$4,300,000	2002
City of Vancouver Hastings Park lost-stream daylighting (part of combined sewer separation – Commitment C15)		
Combined sewer separation programs (Commitments C15)		
Clark Drive Outfall site-specific management options and operational plan improvements	$150,000	2001
Feasibility studies for:		
Glenbrook Trunk Sewer Separation	$50,000	2003
New Westminster Interceptor West Branch Sewer Separation	$50,000	2004
English Bay Outfall and Alma-Discovery Outfall Storage and Disconnection of Storm Inflow to Alma-Discovery Outfall	$100,000	2002

Jervis and Chilco Pump Stations Forcemain and Contol Improvements	$50,000	2004
Operational Improvements – Fraser River North Arm	$150,000	2002
Operational Improvements – New Westminster Area	$150,000	2001
Operational Improvements – Westridge Area	$50,000	2002
Source Control Initiatives Targeting Mercury and Silver Reductions	$60,000	2002
GVRD, Vancouver and Burnaby – Review of Combined Sewer Separation and System Upgrade Schedules to Fast-track Elimination of Clark Drive CSOs Earlier than 2050	Included in annual budget	2002
Assessment of CSOs on the New Westminster Waterfront for Quality and Environmental Impact and Environmental Assessments at Clark Drive	$90,000 (2001 budget)	2006
C14 – Biennial Liquid Waste Management Plan Progress Report		
First Interim Annual Report	Included in annual budget	2002
First Biennial Report	Included in annual budget	2003
C15 – Combined Sewer Overflow Elimination		
City of Vancouver Combined Sewer Separation Program	$16,150,000 / year (2000 budget)	2050
City of Burnaby Combined Sewer Separation Program:	$3,000,000 / year (2001 budget)	
Vancouver Sewerage Area		2050
Fraser Sewerage Area		2075

City of New Westminster CSO Reduction Measures:		
Lower Columbia Catchment Storm Sewers	$300,000 / year	2012
Opportunistic Sewer Separation	varies $170,000 (2000)	ongoing
Sewer System Video Inspection and Sewer Rehabilitation	$700,000 (2001 budget)	ongoing
Source Control Projects	$25,000/ year	ongoing
C16 – Operational Improvement Investigations		
Cambie Pump Station and Outfall Improvements (Vancouver)	Included in annual budget	2002
1st and Boundary Pump Station Realignment (Vancouver and Burnaby)	Included in annual budget	2003
Stormwater Redirection to Grandview Cut (Vancouver)	Part of sewer separation program – see C15	2004
C17 – Best Management Practices		
City of Vancouver	$630,000 / year (2001 budget)	ongoing
City of Burnaby	$260,000 / year (2001 budget)	ongoing
City of New Westminster	$50,000 / year (2001 budget)	ongoing
C18 – Biennial Liquid Waste Management Plan Progress Report		
First Annual Report	Included in annual budget	2002
First Biennial Report	Included in annual budget	2003