

Appendix C:

1997 LWMP Summary of Commitments



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	1997 LWMP COMMITMENTS	MET	COMMENT
SOURCE CONTROL PROGRAM	A district sewer use bylaw to regulate the admission of wastewater into the sanitary sewer systems.	☑	Sewer Use Bylaw No. 1225 "A Bylaw to Regulate the Discharge of Waste Into All Sewers Connected to Sewage Facilities Operated by the Regional District of Nanaimo" was adopted in March 2002.
	An educational program to support the sewer use bylaw.	☑	The Source Control education and outreach program was developed by Wastewater Services' staff to support the sewer use bylaw.
	A cost benefit study to evaluate the merits of various source control program elements and prioritize program elements.	☑	The report 'Cost-Benefit Analysis for Source Control In the Regional District of Nanaimo' was finalized in June of 1998. Recommendations in the report include: preparing an inventory of non-domestic discharges to the sewer system (completed in-house); developing educational materials (garburators; FOGS/restaurant sector; dental sector); Amending the sewer-use bylaw (completed in 2002); collecting material from other jurisdictions related to codes of practice (ongoing); establishing and maintaining contacts with source control programs in other jurisdictions (ongoing).
	<i>Conditional on findings in cost-benefit study:</i>		
	• Inventory non-domestic discharges to sewer systems; budget \$90,000.	☑	An inventory of non-domestic discharges into the sewer systems was completed internally and formed the basis of Bylaw 1225.
	• Monitor discharges to characterize wastewater in the District; budget \$72,000.	☑	Monitoring formed the basis of the inventory of non-domestic discharges into the sewer system and served to characterize wastewater within the district. From this, Bylaw No. 1225 and public outreach materials were developed and distributed (garburators, FOGS/restaurant sector; dental sector).
	• Determine contaminant levels to be contained in the bylaw; budget \$60,000.	☑	Based on the outcomes of the inventory, a complete list of contaminant levels were included in Bylaw No. 1225.
	• Initiate collection and development of educational material as part of the overall education program; budget \$30,000.	☑	Publications were collected and used to develop the RDN's own source control communication material on issues such as fats, oils, greases and garburators.
• Consider developing codes of practice, <i>if warranted</i> , following analysis of inventory results.	☑	Through an in-house inventory of non-domestic discharges to the sewer system, elevated levels of mercury were found in biosolids and traced to the dental sector. Codes of practice were considered for the dental sector. However, a comprehensive outreach program targeted at the dental sector resulted in significant and measurable reductions in mercury concentrations in biosolids. Based on the positive impact of the outreach program, codes of practice were not adopted for the dental sector.	
• Establish and maintain contact with knowledgeable representatives of other jurisdictions to share information on successful/unsuccessful source control strategies, educational approaches, and data collection.	☑	The RDN has and continues to share information with other jurisdictions regarding successful/unsuccessful source control strategies, educational approaches, and data collection. For example, Wastewater Services is a member of the Source Control Working Group facilitated by the BC Water and Waste Association.	
VOLUME REDUCTION PROGRAM	Develop a volume reduction program to control inflow and infiltration and to reduce water use within buildings.	☑	Since 2005, volume reduction programs (water conservation in homes/businesses/building) have been guided by the WaterSmart initiative under the guidance of Water Services (formerly Utilities). Activities have included public outreach, communication, and workshops to support or enhance water conservation activities across the Region.
	Establish a committee to coordinate and oversee all water conservation activities within the District.	☑	Through the Drinking Water and Watershed Protection function, a committee meets regularly to review, update and pursue opportunities for water quality improvement and water conservation initiatives.
	Cost benefit study to evaluate the merits of various volume reductions measures, to set priorities for recommended volume reduction measures and to define scope and budget; budget \$35,000.	☑	The WaterSmart initiative was launched in 2005, with financial support from Land and Water BC. The 'Team Water Smart Final Report' (2005) outlines various strategies and priorities to support water conservation and volume reduction throughout the RDN. Through the Drinking Water and Watershed Protection function, a committee meets regularly to review, update, and pursue opportunities for water quality improvement and water conservation initiatives.
	Continue and expand I&I programs in Nanaimo, Parksville and Qualicum Beach.	☑	The RDN continues to meet with municipalities to monitor flow and address I&I issues on a semi-annual basis.
	Install flow monitoring equipment at Lee Road pumping station for I&I analysis of French Creek; budget \$30,000.	☑	Flow monitoring stations were located at the Ocean Place meter (on the interceptor line) and at the Johnstone Road meter. These flow meters facilitate flow monitoring and I&I analysis for flows into the FCPC.
	Flow analysis in the District's interceptor sewer system.	☑	Flow monitoring stations are closely monitored, checked, and calibrated to evaluate flows from Parksville and Qualicum Beach. The RDN has established a comprehensive flow monitoring program that includes analysis of flows through the interceptor system. Flows from Municipalities is reviewed at the semi-annual flow monitoring meetings.
	Comprehensive I&I analysis study program by the City of Nanaimo; budget \$500,000.	☑	The RDN contracted Associated Engineering to complete two phases of a Wet Weather Flow Management Strategy in 2001 and 2004. The City of Nanaimo has and continues to establish capital plans to address inflow and infiltration at critical locations within Municipal boundaries. Progress towards inflow and infiltration continues to be shared at semi-annual flow monitoring meetings.
	Enhance RDN's existing water conservation education program; budget \$30,000.	☑	The RDN's Water Services department is responsible for 8 drinking water systems in the RDN. As part of this service, Water Services has developed a region-wide water conservation program that offers education and outreach to homeowners and businesses with respect to indoor and outdoor water conservation.

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STORMWATER MANAGEMENT	The RDN will approach member municipalities, neighbouring Regional Districts and federal/provincial agencies to discuss formation of a committee to coordinate stormwater management issues and foster regional stormwater management planning.	<input checked="" type="checkbox"/>	The RDN worked with Environment Canada, BC Ministry of Community, Aboriginal and Women's Services and Water, Land, and Air Protection, and the Georgia Basin Ecosystem Initiative to produce 'Stormwater Planning: A Guidebook for British Columbia'.
	Cost benefit study to determine the District's role in coordinating stormwater management activities in the District; budget \$20,000.	<input checked="" type="checkbox"/>	A draft stormwater management plan was prepared in 2002. The 5-year action plan established a budget and cost/benefit analysis for basic stormwater planning, public awareness, and regulation of land development. Implementation of the plan was hindered by a lack of political, financial, and staff resources. A more comprehensive Drinking Water and Watershed Protection Action Plan(DWWP) was adopted in 2008. All electoral areas and member municipalities participate in the DWWP.
	Include discharges into the storm drain system in the inventory of non-domestic discharges to the sanitary sewer; budget \$20,000.	<input checked="" type="checkbox"/>	Storm water system discharges are reported under Bylaw no. 1225 "A Bylaw to Regulate the Discharge of Waste Into All Sewers Connected to Sewage Facilities Operated By the Regional District of Nanaimo", including source, quality, volume and possible contaminants.
	The RDN, as part of its overall education plan, will develop materials to inform domestic and non-domestic dischargers to the storm drainage systems about the need for source controls, and what specific groups can do to ensure that the program results in reduced contaminant loading to receiving waters: budget \$20,000.	<input checked="" type="checkbox"/>	As part of the Drinking Water and Watershed Protection, the RDN will be developing a comprehensive program that includes outreach/education, low impact development standards, and other strategies to safeguard watershed health through stormwater management.
	Establish and maintain contact with representatives of other jurisdictions to share information on regulatory, educational, data collection and funding sources for water quality monitoring programs.	<input checked="" type="checkbox"/>	The RDN, through the Drinking Water and Watershed Protection Plan, continues to liaise with other jurisdictions to share information on water quality monitoring programs. For example, the RDN is an active participant with Convening for Action Vancouver Island's water management and sustainability initiative.
	Create local service area to facilitate construction, operation, and maintenance of stormwater facilities <i>when necessary</i> . The RDN will undertake measures to protect or enhance watershed areas, riparian zones, identified areas of aquifer recharge, beaches and protect marshland from drainage or infill.	<input checked="" type="checkbox"/>	Under Bylaw No. 1363 'A Bylaw to Establish a Service Area in a Portion of Electoral Areas 'F' and 'G' for the Purposes of Providing a Community Storm Water Management Service' (2004), the RDN has established in the River's Edge Community. Across the District, however, stormwater infrastructure is either under jurisdiction of the Ministry of Transportation and Infrastructure, a Municipality, or a private entity (such as in the Fairwinds community).
	The District will continue to monitor the effectiveness of the water stewardship initiatives within the District to coordinate and support similar initiatives elsewhere in the District.	<input checked="" type="checkbox"/>	Through the Drinking Water and Watershed Protection function, member municipalities as well as the Fairwinds development corporation, participate in and advance initiatives that support water stewardship initiatives throughout the Region.
ODOUR CONTROL	When feasible, eliminate odours emitted from it's present and future wastewater treatment plants and associated interceptors and pump stations. The District will undertake to study past, current, proposed and potential odour elimination measures and to establish an effective implementation plan.	<input checked="" type="checkbox"/>	The RDN contracted their engineering consultant to produce an odour reduction strategy for the GNPCC and FCPC, respectively. The odour reduction strategy for the FCPC was updated in 1997, 2000, 2006, and a foul air management strategy was completed in 2008. The odour management strategy for the GNPCC was updated in 2001 and 2003. An application was recently made for a grant to upgrade the GNPCC's odour management strategy in 2012. Odour complaints have been reduced at the FCPC from 227 complaints in 1999 to none in 2011. Odour complaints increased to 14 in 2012, however, the most of the complaints were attributed to decomposing herring roe on the nearby beach. There were only 3 odour complaints at the GNPCC in 2012.
	The District will initiate formal consultation and information sharing and exchange procedures, in continuum with all interested resident associations, or where there is no formal resident association, a group of interested residents living within a 3 kilometer radius.	<input checked="" type="checkbox"/>	The RDN conducted meetings with the French Creek resident associations until mid-2007. After this period, very few odour complaints were reported and residents stopped attending local meetings. The RDN reports on odour control measures and odour complaints in annual reports that are made available to the public and to the Ministry of Environment. Odour complaints are also entered into the environmental management system to track how complaints are addressed through adjustments to infrastructure and personal response to residents.
	The District will approach and maintain contact with local, Provincial, and Federal government agencies and private sector companies knowledgeable in wastewater treatment and other odour emitting processes to discuss and evaluate past, present, proposed, and potential odour eliminating measures.	<input checked="" type="checkbox"/>	The RDN's engineering consultants incorporate the latest in odour control strategies into the pre-design for any wastewater infrastructure.
	The District will research and document studies, proven practices, procedures and physical control facilities that are applicable to wastewater treatment plants, interceptors and associated pump stations.	<input checked="" type="checkbox"/>	Through the Benchmarking initiative, the RDN collaborates and shares odour control strategies and practices with municipalities, districts, and other levels of government.
	Following assessment of the foregoing, the District will evolve a plan which will immediately implement policies, procedures, processes, odour control monitoring and control works for the existing wastewater facilities as well as for future expansions, modifications, and new construction of relevant facilities.	<input checked="" type="checkbox"/>	As above, the RDN has completed and continues to update odour control strategies for the FCPC and the GNPCC. Odour issues at the NBPC are monitored through the software associated with the environmental management system.
	The District will establish odour emission standards for all inplant process stages and within the contiguous communities, for existing and future facilities.	<input checked="" type="checkbox"/>	As reported in the Wastewater Services Annual Reports, odour emissions standards are based on multiple complaint days at (or around) collection and treatment infrastructure.
	Through the OCP updating process will emphasize the need for maintaining appropriate zoning the vicinity of wastewater treatment plants.	<input checked="" type="checkbox"/>	Treatment plants are located on large lots that offer significant visual and odour buffers. Areas around wastewater treatment facilities are zoned institutional or commercial.

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RURAL AREAS	New sewage systems will be restricted to those determined to be necessary under the RGS and updated OCPs, or to address problem areas (such as failed onsite systems) in existing development	<input checked="" type="checkbox"/>	No new collection systems were introduced into areas not designated by an OCP. For example, the new collection system in Cedar services portions of the growth containment boundary. There were servicing studies in areas to address problem areas, including Barclay Crescent, Cedar, Gabriola Island, Extension, Nanoose and Shaw Hill, Deep Bay, Bowser. However, given the per-property costs associated with the installation of and connection to the collection system, with the exception of Barclay Crescent, residents voted against the construction of the collection system. Some properties adjacent to a service area were allowed to connect to the collection system for health and environmental reasons.
	Use a three phase procedure to assess sewage treatment, reuse and disposal facility needs for future Village Centres (now Growth Containment Boundaries) that may be established under OCPs, to assess sewage system needs.	<input checked="" type="checkbox"/>	The three phase process consists of: 1 - Preliminary Assessment; 2- Pre-Design Assessment; 3-Project Implementation. The initial phases of this process has been applied to Wembley Road, Barclay Crescent, Madrona, West Bay Estates/Dolphin Drive, Cedar Estates, and Bowser Village. These areas were identified under OCPs as Village Centres or areas with problem systems.
	The District will be holder of the Permit or OCs for all new sewage systems processed under MOE jurisdiction. The District will review its role with respect to new sewage systems processed under VIHA.	<input checked="" type="checkbox"/>	In a 2007 report, Associated Engineering reviewed the RDN's role relative to new sewage systems processed under VIHA jurisdictions and concluded that the staff and financial resources to acquire and operate package treatment plants would be prohibitive. Further, the acquisition and operation of package treatment plants outside urban containment would contradict the OCP and RGS goals. Private onsite systems that fall under the MWR do not require consultation with or approval from local governments.
	All existing discharges permitted by the MOE must comply with the LWMP. The District may elect to take over an existing permit.	<input checked="" type="checkbox"/>	Private onsite systems that could fall under the purview of the MSR do not require consultation with or approval of local governments.
	The RDN, will establish minimum standards for sewage systems that are under jurisdictions of the MOE, to ensure the use of proven innovative technology, reliability, redundancy and cost effectiveness.	<input checked="" type="checkbox"/>	In 2005, authority to determine the standards for a private sewage systems were devolved to private industry through the Sewerage System Regulation. Again, private onsite systems with flows that require an MOE permit do not require consultation with or approval by local government.
	The RDN will proactively and cooperatively work with VIHA to monitor and to assess sewage system requirements and develop solutions for failed onsite systems that are under MOH jurisdiction.	<input checked="" type="checkbox"/>	The RDN's request to the MOH could not be accommodated. Package treatment plants fall under federal legislation that does not recognize individual local government policies. Further, regulation change in 2005 transferred responsibility for onsite system planning onto authorized persons. The RDN has, however, developed an outreach to inform residents how to properly maintain a septic system.
	The RDN, in consultation with stakeholders and VIHA, will investigate alternate minimum standards for onsite systems to supplement existing MOH sewage disposal regulations.	<input checked="" type="checkbox"/>	In 2005, authority to determine the standards for private onsite systems was devolved to the private sector through the Sewerage System Regulation.
	The District, at its option, may allow finance, design, finance and/or operate by the private sector providing the District's minimum standards for sewage systems are met, and providing financial guarantees in the form of bonding are in place to ensure performance, including ongoing operation and maintenance.	<input checked="" type="checkbox"/>	The RDN does not have authority to allow the private sector to operate private wastewater collection or treatment facilities. In 2011, the RDN drafted a bylaw that stipulated conditions under which the RDN would acquire a package treatment plant from a private entity (a private onsite system).
	The District will establish septage receiving and treatment facilities in conjunction with the private sector.	<input checked="" type="checkbox"/>	To minimize odours around the FCPC, the RDN attempted to establish septage receiving facilities in 1999. In the November 10th, 1998 Board meeting, staff were instructed to prepare a request for proposal for septage handling by a private firm. Following this process, a private firm was identified and the Board directed staff to issue a bylaw "to prohibit septage from being accepted at Regional District Facilities if a private septage handling firm exists that can accept septage from within the RDN for a fee no greater than the price schedule" as it was proposed. It followed that the private firm would build a septage receiving site in south Nanaimo and would have to charge a rate that was \$0.02 to \$0.03 greater than their proposal. It was recommended that the RDN raise septage rates to pay for improvements at facilities, in lieu having only one facility operated by a private firm.
	All sewage systems will be based on user pay, through establishment of a sewer local service area.	<input checked="" type="checkbox"/>	All wastewater infrastructure is paid for by the service area that directly benefits from improvements.
The District will encourage marine operators and Federal small craft harbours to provide boat discharge facilities with a connection or trucking to a District approved sewer system or wastewater treatment facility.	<input checked="" type="checkbox"/>	The RDN amended Bylaw No. 988 (A Bylaw to Amend Regional District of Nanaimo Truck Liquid Waste Disposal), to include marine sewage reception facilities in 2008. In so doing, the RDN reduced the sewage disposal rates for marine sewage reception facilities, encouraging marinas to provide and pump out their discharge facilities.	

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GNPCC	Problem areas that require a sewage system and Village Centres determined through the OCP process to require a sewage system may be connected by trunk sewer to the District's interceptor sewer system.	<input checked="" type="checkbox"/>	In 2005, the provincial government contributed approximately \$2.4 million dollars to connect 250 properties in lower Lantzville to the GNPCC through the RDN's interceptor.
	The District will work with the City of Nanaimo to ensure sewer system planning within the City allows capacity for possible trunk sewer contributions to the District's interceptor sewers from Village Centres and problem areas in the Electoral Areas.	<input checked="" type="checkbox"/>	In 2007, through Bylaw No. 1004, the City of Nanaimo allowed 222 properties in Cedar Village to connect to DPPCC. In 2010/2011, the RDN began working with the City of Nanaimo and the Suneymux First Nation to connect the First Nation to the City's collection system.
	Expand and upgrade GNPCC to provide secondary treatment service for up to 120,000 people. The estimated cost for expansion and upgrading of the GNPCC to service 120,000 people is: \$35,000,000 and associated operating cost is \$2,500,000.	<input checked="" type="checkbox"/>	Process selection for upgrade and expansion, including secondary treatment, at the GNPCC was initiated in 2010. Upgrading the GNPCC facility to provide secondary treatment by a target date of 2018 is suggested for discussion purposes to solicit feedback during the consultation process. Factoring in inflation and an increase in the cost of construction, the estimated costs for upgrade is \$61,800,000.
	Parallel the Chase River forcemain and to upgrade the pump station at an estimated cost of \$830,000. Scheduled for 1998.	<input checked="" type="checkbox"/>	In 1998, a second 450 mm diameter force main was constructed to twin the existing Chase River forcemain.
	Upgrade and expansion of Wellington Pump Station, estimated at \$220,000	<input checked="" type="checkbox"/>	An odour control system has been installed at the Wellington Pump Station. The Wellington Pump Station has historically low flows that has not necessitated facility upgrade or expansion.
	Upgrade and expansion the Chase River Pump Station, estimated at \$790,000	<input checked="" type="checkbox"/>	In addition to twinning the forcemain (noted above), Chase River Pump Station upgrade and expansion projects include: increasing pumping capacity (2000), installation of flow meters (2000), odour control improvements (2000), construction of a septage receiving facility (2001), installation of a new backup generator (2002), influent gate control upgrade (2002), construction of a new chemical storage and chemical feed system, improved ventilation and installation of an ion generator.
	Upgrade and expansion of the Departure Bay Pump Station, estimated at \$1,200,000	<input checked="" type="checkbox"/>	The Departure Bay Pump Station's pump controls have been upgraded (to Allstrom control units) and an odour control system has been installed.
	Interceptor sewer expansion (2000-2005), estimated at \$2,210,000	<input checked="" type="checkbox"/>	Flows have been less than anticipated due to successful I&I reduction and volume reduction programs. Therefore the sewer expansion is not yet necessary.
	The District will continue to investigate and promote additional opportunities for environmentally responsible use of reclaimed water and biosolids, including educational and marketing programs.	<input checked="" type="checkbox"/>	At the GNPCC water reclaimed and used as wash-down water. For nearly a decade, biosolids have been beneficially reused in landfill closures, mine reclamation, and applied on the Vancouver Island University's forest. These activities are promoted on the RDN website and at treatment plant 'open house' events.
	The District will work with the City of Nanaimo to investigate locations and treat requirements for septage receiving facilities.	<input checked="" type="checkbox"/>	A septage receiving facility was built in 2001 at the Chase River pump station.
The District will install additional ferrous chloride (or alternate reactants) facilities to control corrosion and odour potential with the sewage system.	<input checked="" type="checkbox"/>	Ferrous chloride facilities have been operational since 2000.	

1997 LWMP COMMITMENTS		MET	COMMENT
FCPCC	The school District 69 LWMP Phase 1, French Creek Service Area Sewage Treatment and Disposal, that authorized the recent expansion of the FCPC will be revoked when this LWMP is approved.	<input checked="" type="checkbox"/>	Phase 1 was superseded by the approved Liquid Waste Management Plan (see the MOE approval letter as date January 28, 1999).
	Problem areas that require a sewage system and Village Centres determined through the OCP update process to require a sewage system may be connected to the French Creek Local Service Area.	<input checked="" type="checkbox"/>	Barclay Crescent Sewer Service Area was added in 2004. Servicing the Madrona area failed in a referendum.
	Hall Road Pump Station upgrade, estimated at \$170,000	<input checked="" type="checkbox"/>	The Hall Road Pump Station upgrade was completed in 2012.
	Lee Road Pump Station upgrade, estimated at \$230,000	<input checked="" type="checkbox"/>	Upgrade projects at the Lee Road Pump Station have included: twinning of the forcemain, installation of new controls and a new electrical kiosk, installation of a fourth pump, replacement of other pumps, construction of a new sluice gate.
	Lee Road Forcemain twinning, estimated at \$220,000	<input checked="" type="checkbox"/>	The Lee Road forcemain has been twinned when the pump station was upgraded in 2010.
	Bay Avenue Pump Station upgrade, estimated at \$345,000	<input checked="" type="checkbox"/>	Bay Avenue Pump Station continues to handle loads and its performance will be monitored. The upgrade is now scheduled for 2025.
	Isolate low lying areas to Parksville interceptor \$230,000	<input checked="" type="checkbox"/>	In 2006 Associated Engineering determined that the Parksville interceptor was adequately sized to manage flows until 2026. Associated Engineering did not recommend improvements to the interceptor until 2026.
	A later stage expansion (10-15) years will include Stage 3 expansion of FCPCC and paralleling of the outfall at an estimated cost of \$15,900,000 and associated operating cost of \$1,320,000.	<input checked="" type="checkbox"/>	Stage 3 expansion and paralleling the outfall are scheduled for 2015-2025
	The RDN will work with the City of Parksville to review the current OCP growth projections and its distribution with the objective of eliminating the future need to parallel the upstream section of the interceptor sewer. In addition, and as an alternative, Parksville will be encouraged to investigate modifications to its sewer collection system to divert sewage flow from upstream to downstream sections of the interceptor at less cost than paralleling the interceptor.	<input checked="" type="checkbox"/>	In 2006, Associated Engineering used the City of Parksville's OCP to prepare a report detailing improvements required for the interceptor. As above, interceptor, as well as the Bay Avenue Pump Station, are adequately sized to handle increasing flows until 2026 or full build out as estimated by the OCP.
The RDN will continue to investigate and promote additional opportunities for environmentally responsible use of reclaimed water and biosolids, including educational and marketing programs.	<input checked="" type="checkbox"/>	Effluent is used for spray irrigation at the Morningstar Golf Course and is used as wash-down water at the treatment plant. Biosolids are land applied on the Vancouver Island University's forest. Both of these activities are marketed at open house events held at the treatment plant.	
NBPC	Upon completion of the updated OCP, those areas identified for eventual connection to a sewage system will be added to the Fairwinds Sewer Local Service Area. The estimated cost to extend trunk sewer service to these areas is \$4,203,000. The following trunk sewer extensions are included: - Trunk sewer from Nanoose Bay WPCC to Madrona - Trunk sewer from NBPC to Red Gap (serves Red Gap and Garry Oak).	<input checked="" type="checkbox"/>	A sewer servicing study investigating the potential connection of Red Gap to the NBPC was completed in 2008. However, property owners in the area did not proceed with this project because of the costs associated with the new infrastructure. A servicing study for Madrona, undertaken in 2009, indicated that there was greater benefit to connect the Madrona area to the FCPCC. When the issue was put to referendum, it was rejected by residents.
	The District will ensure sewer system planning within the Fairwinds development allows capacity and statutory right of way corridors for the future trunk sewer contributions from the remainder of the Service Area.	<input checked="" type="checkbox"/>	Amendments to the Fairwinds neighborhood plan include provisions for wastewater infrastructure to convey effluent to the NBPC.
	Expansion to service 12,000 people and upgrading of the treatment process to secondary will form the basis for planning improvements to NBPC. The next stage of future expansion and upgrading will be capacity for up to 6,000 people, the provision of secondary treatment, use of reclaimed water for irrigation, process water, and wash-down water, discharge of the remainder of effluent through the existing marine outfall and transport of biosolids to FCPCC for treatment and beneficial reuse. The estimated capital cost ... to service 6,000 people is \$3,210,000 and the associated operating cost is \$200,000/year.	<input checked="" type="checkbox"/>	The approved 1997 LWMP contemplated an upgrade from primary to secondary treatment by 2010. This timeline was not met because there were too few residents in the area to support the additional tax burden. The RDN funds services based on a user pay principle, by establishing service area bylaws. Therefore, the entire cost of upgrading the NBPC must be borne by residents living in the service area. The funding mechanism for the upgrade schedule contemplated in the 1997 LWMP was based on projected growth and service area expansion with a NBPC population base of 6000 by 2010. NBPC currently provides chemically enhanced primary treatment for a population of approximately 1,350 and discharges roughly 273 m ³ /day. The RDN recognizes the importance of upgrading treatment to MWR and WSER standards, and also recognizes the need to do so in a manner that considers the capacity of residents to fund the proposed upgrades. For these reasons, the RDN will submit a LWMP amendment seeking to revise the commitment schedule for upgrade to secondary treatment. Through the LWMP amendment process, the RDN has undertaken scope and cost studies with the objective of establishing a reasonable timeline for implementation of secondary treatment that takes into consideration current utilization, anticipated growth, and regulatory requirements. For discussion purposes during the consultation process, the RDN is proposing options for upgrading the NBPC to secondary

SUMMARY OF COMMITMENTS FROM THE APPROVED LIQUID WASTE MANAGEMENT PLAN (Completed in 1997 and Approved in 1999)

DPPCC	The DPPCC was financed and constructed by the private sector in 1997 and will be turned over to the District to own and operate. Operating costs are estimated at \$60,000/year.	<input checked="" type="checkbox"/>	The DPPCC was transferred to the RDN in 1998.
	Problem areas that require a sewage system and Village Centres determined through the OCP updating process to require a sewage system may be connected by a trunk sewer to the DPPCC.	<input checked="" type="checkbox"/>	The Duke Point Sewer Service Connection Agreement between the RDN and City of Nanaimo was signed in 2007. This agreement allowed properties within Electoral Area 'A' to connect to the DPPCC. The RDN was allowed to connect up to a maximum of 222 equivalent single family units. Bylaw No. 1445 'A Bylaw to Amend the Boundaries of the Cedar Sewer Service Area' was approved in 2007.