

# CHAPTER 14: COMMUNITY INFRASTRUCTURE



The provision, maintenance and renewal of the City's road and utilities infrastructure are critical to the well being and quality of life in Port Moody. The key components of City infrastructure to be discussed in this chapter include roads, storm and sanitary sewers, water, street lighting, traffic control, utility and telecommunications networks. The City, through the Engineering and Operations Department, is responsible for water, sewers, roads, transportation, fleet maintenance, recycling, and waste disposal.

The infrastructure issues facing Port Moody include the provision of new systems in areas experiencing population growth and the maintenance and renewal of existing aging systems in those neighbourhoods where little change is taking place. The City is continually working to ensure community infrastructure is of a high standard and is sustainable following leading best management practices.

One of the primary goals of this OCP is the creation of complete and compact communities. When compared to more sprawling forms of development, complete communities, which feature a densification of mixed land uses within close proximity, have many advantages including the requirement for less infrastructure investment per capita.

## 14.1 WATER SYSTEM

The City of Port Moody receives bulk treated water from the Greater Vancouver Water District (GVWD). Metro Vancouver uses a combination of watersheds, dams, reservoirs and water mains to provide water to municipalities. The regional district maintains the supply, treats it to drinking quality and delivers it to municipalities for distribution. Member municipalities are responsible for the operation and maintenance of a water distribution system in order to provide water to all residences and businesses in the municipality. Map 8 shows the water system plan for Port Moody.

The City of Port Moody and other municipalities in Metro Vancouver are working collaboratively to reduce the per capita

water consumption in the region. When compared with other North American cities, the region has an above average per capita consumption pattern which, combined with the additional stress placed on this resource by the region's growing population, could lead to substantial infrastructure costs to meet future demand.

Reducing water consumption can delay infrastructure expansion, save money and reduce environmental impacts over the long term. Water conservation programs have been developed including a range of activities from public education to initiatives such as the Rain Barrel Program, water sprinkling regulations, and water system upgrades through leak detection and repair. Conservation is desirable from both an environmental and economic perspective.



## 14.2 STORM SEWERS, DRAINAGE AND SANITARY SEWERS

The City of Port Moody maintains separated storm sewers and sanitary sewer systems. Rainfall runoff is captured in storm sewers and released into major watercourses or receiving water bodies. Sanitary sewage is collected in a separated sewer system and conveyed to the Metro Vancouver trunk sewer and treatment facilities.

In 2011 Metro Vancouver's updated Integrated Liquid Waste and Resource Management Plan was approved by Metro Vancouver's Board and the BC Ministry of Environment. Liquid waste management from sources such as on-site treatment and septic systems, agricultural runoff, and marine pump-out facilities for pleasure craft is cross-jurisdictional. Their management is addressed in the plan by Metro Vancouver and members through collaboration with senior government agencies and stakeholders.

Metro Vancouver manages liquid waste by operating and maintaining the network of trunk sewers, pumping stations and wastewater treatment plants. To protect the quality of the region's water bodies, most wastewater is treated before it is released into the ocean environment. This treatment occurs at one of Metro Vancouver's five wastewater treatment plants. Port Moody sanitary sewage is treated at the Metro Vancouver Annacis Island treatment plant. Map 9 shows the sanitary sewer plan for Port Moody.

The regional district, through the Greater Vancouver Sewerage and Drainage District (GVS&DD), also maintains waterways and drainage facilities within the Port Moody — Coquitlam Drainage Area. This drainage area encompasses a significant portion of southern Port Moody from Schoolhouse Creek east to Dallas Creek, including the Chines escarpment. The GVS&DD's primary responsibility within this drainage area is to prevent flooding by ensuring that culverts, drains, and grills are kept clear and functioning properly. The Port Moody — Coquitlam Drainage Area has a highly developed land base and stormwater flows can be significantly affected by moderate to heavy rain storms.

The majority of the Integrated Liquid Waste and Resource Management Plan's actions are specific to Metro Vancouver's wastewater collection and treatment systems, and the users connected to these systems, including municipalities, businesses, and homeowners. In addition, the plan sets specific action for GVS&DD members regarding their management of stormwater runoff. This plan outlines the steps and commitments from Metro Vancouver and member municipalities to protect the



health of the region's water sources in preparation for future population growth. Regional storm water and sanitary sewage management policy and planning services are provided to member municipalities as part of the region's Liquid Waste and Resource Management Plan.

## 14.3 INTEGRATED STORMWATER MANAGEMENT

Stormwater management is the planning, analysis and control of storm runoff. It involves the planning and design necessary to mitigate the hydrological impacts of land development or land use changes. As communities grow, the percentage of our watersheds that are covered in impervious surfaces tends to increase.

Impervious surfaces such as rooftops, roads, sidewalks and parking lots prevent rainwater from being absorbed by the soil and increase the amount of water entering streams through the storm water system. Adverse hydrological impacts include increased peak runoffs and frequency of flows, erosion, sedimentation, flooding, reduced surface infiltration, reduced groundwater recharge and stream baseflows, water quality deterioration, and degradation of fish and wildlife habitat. Measures can be implemented to reduce these impacts through improved stormwater management practices.

Urbanization and increased impervious areas can also reduce base flows in streams, particularly during dry summer months. Impervious surfaces tend to collect pollutants deposited from the atmosphere, leaked from vehicles or other sources such as illegal spills. Reducing the effective impervious areas recognizes the role of watercourses as both a drainage and flood control system and as an ecosystem that provides valuable fish habitat.

Port Moody shares many of its watersheds with other municipalities. For example, both Mossom and Noons Creeks have their headwaters in Anmore and Coquitlam, respectively. Therefore, any effort to maintain watershed health must involve and be coordinated over a larger area with neighbouring municipalities. An Integrated Stormwater Management Plan, specific to the south shore (i.e. the Chines) of Port Moody was recently completed, to provide direction for future development plans and identify infrastructure needs. The goal of this plan is to ensure a balance of land use planning, stormwater engineering, flood and erosion protection, and environmental protection.

## 14.4 ROADS

Roads, including bridges, serve many functions within the City. While primarily thought of as a way to get from one place to another, roads also establish the spatial organization of a community contributing to its character and identity. Road design dictates the pace and safety of traffic and serves as an important public space that can accommodate pedestrian and cyclist activity as well as the use of the private automobile and transit. Accompanying street trees, boulevard landscaping, lighting and street furniture further contribute to creating an environment that is safe and comfortable for both pedestrians and motorists.

Roads manage surface drainage and serve as a conveyance route for surface water from adjacent lands. Roads also act as service and utility corridors accommodating a wide range of municipal services and private utilities. This function necessitates the provision of adequate horizontal, vertical, above-grade and below-grade space for the location and maintenance of this infrastructure and landscaping within the existing rights-of-way.

The City has a road pavement management program which assesses pavement conditions on a regular basis and identifies an annual work program for pavement repairs and rehabilitation. The City of Port Moody is responsible for the operations and maintenance of all roads within the City totalling over one hundred and twenty-five kilometres. Roads included as part of the region's Major Road Network are also maintained by the City with partial funding from TransLink.

## 14.5 SOLID WASTE AND RECYCLING

In July 2009, the City of Port Moody initiated an in-house automated collection system for garbage, recycling and green waste pickup. To reduce the amount of garbage destined for landfills, the new system includes larger carts for recycling and green materials.

In 2007, Metro Vancouver initiated the Zero Waste Challenge in an effort to engage residents, businesses and industry to reduce the amount of solid waste that is going into landfills. The challenge involves a regional material disposal ban on all recyclable materials. The program also involves expanding the region's waste management strategy and services to give the people living and working in metropolitan Vancouver more options to help them meet the Zero Waste Challenge.

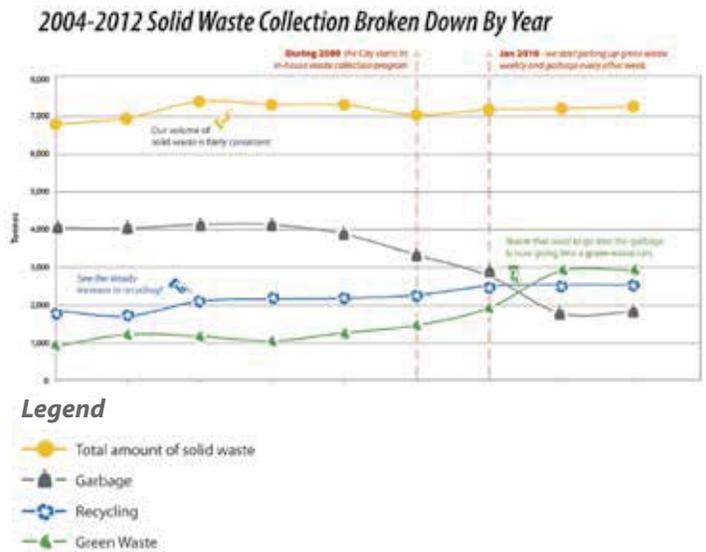
The management of materials and waste is an important way to improve cost efficiencies and reduce GHG emissions. Improved recycling programs and waste reduction means fewer materials entering landfills. Each tonne of material recycled reduces carbon emissions by nearly 3 metric tonnes.



There are no waste processing facilities or operating disposal sites within Port Moody as these services are provided by Metro Vancouver or private companies. The City will investigate opportunities to partner with neighbouring communities to encourage the building of local mixed waste material recovery facilities.

Canadians are among the highest per capita generators of solid waste in the world. The City of Port Moody, as a member of Metro Vancouver, has committed to reducing solid waste generation in the region through a broad array of waste reduction programs. In 2011 the province approved the Integrated Solid Waste Resource Management Plan (formerly the Regional Solid Waste Management Plan). Currently about 57% of Metro Vancouver's solid waste is being recycled. Further reductions in solid waste will be achieved through expanded recycling and refund programs, packaging reduction legislation and other initiatives. An early priority in the Integrated Solid Waste Resource Plan is to reduce the waste we each generate by 10% of 2010 volumes, per capita, by 2020. The plan will incorporate the goals and strategies of the Zero Waste Challenge including a new interim target of 70% by 2015 and 80% by 2020.

### 2004 – 2012 SOLID WASTE COLLECTION BROKEN DOWN BY YEAR



This graph shows the yearly totals for garbage, recycling and green waste. In 2008, the City collected more garbage than recycling and green waste combined. Since then the City has cut its 2008 garbage levels by over 50%. A big factor in this shift is weekly green waste collection. A huge variety of material can now go in a green waste cart.

As of 2011, Port Moody has achieved the goal of 70% waste diversion, with an average of 75% diversion since 2011, for all municipally collected waste. A major factor in achieving this goal was through the increase to weekly green waste collection. The City has also adopted a Waste Management Bylaw, the purpose of which is to encourage the appropriate diversion of construction and demolition waste from the region's landfills.



## 14.6 ASSET MANAGEMENT

The City of Port Moody is currently in the process of completing an asset management system which includes maintenance management, financial asset reporting, infrastructure lifecycle management, fleet maintenance and facility management. The goal of this system is to monitor the condition of assets over their life cycle, project future demand, predict needs and costs, develop operation, maintenance and replacement plans, and establish sustainable financial plans.

Once completed, the asset management system will include the ability to plan, track and estimate the resources required to maintain, repair and replace the City's water system, sewer system, road system and parks facilities and optimize capital and maintenance program expenditures. The facility management component will be used to maintain information on the age and condition of all major systems, such as electrical, mechanical, and structural, attached to each building the City owns. It is proposed that energy and GHG emissions be linked to the asset management system to allow for integrated life cycle decisions.

### GENERAL POLICIES

1. The City will provide the required range of public utility services in partnership with senior levels of government to support current and future urban development.
2. The City will consider the impacts of climate change on infrastructure planning and identify ways to adapt local systems to ensure safety and quality of life, as well as reduce long-term costs.

3. The City will identify necessary improvements to water, sewer, drainage, and transportation infrastructure, as well as parks and recreation facilities, required as a result of future development in Moody Centre and update the City's Development Cost Charges to fund these improvements.
4. The City will explore opportunities for incorporating green infrastructure alternatives where feasible.

### ROADS AND BRIDGES

5. The City will ensure that roads and bridges are designed to industry best practices and are efficient to maintain over their life-cycle.
6. The City will employ best practices to manage roads and bridges in a cost-effective manner to provide a desirable level of service for all users and optimize their lifespan.

### ASSET MANAGEMENT

7. Through the City's Asset Management System, community infrastructure will be effectively managed in keeping with industry best practices and provincial requirements.
8. The City will seek to integrate energy and GHG reduction goals with asset management analyses.

## WASTE MANAGEMENT

9. The City will encourage resource conservation and waste reduction by continued emphasis on the 3-R's: Reduce, Reuse, Recycle and by community education initiatives with respect to recycling and composting options.
10. In coordination with Metro Vancouver, the City will continue to encourage all property sectors to reduce solid waste generation and increase recycling towards the target of zero waste.
11. The City supports Metro Vancouver's Zero Waste Initiative. The City has developed a position on waste to energy within its community boundaries (see Appendix 5).
12. The City will phase in recycling facilities and waste reduction initiatives in all major parks and sports facilities.
13. The City will work with Metro Vancouver to implement the strategies of the Integrated Liquid Waste and Resource Management Plan and the Integrated Solid Waste and Resource Management Plan.
14. The City will continue to provide appropriate education programs to public and private sectors emphasizing the importance of waste reduction.
15. The City will include sustainability considerations within the Corporate Purchasing Policy that emphasize the purchase of recycled products over non-recycled products and prevent waste at the source through purchasing policies.



## WATER CONSERVATION

16. The City will encourage water conservation measures including sprinkling regulations, the distribution of educational material which encourages water use reduction, metering of businesses, the use of drought resistant landscaping and the promotion of rain barrels and low flow fixtures in buildings. The City will meter industrial, commercial and institutional consumption and also assess the feasibility of water meters for residential users.
17. The City will demonstrate water conservation best practices in City facilities and seek to pilot innovative systems where appropriate. The City will set water conservation targets for parks, facilities and operations and monitor these on an annual basis.
18. The City will continue to work in cooperation with Metro Vancouver and other Tri-City municipalities with respect to conservation efforts.

## STORM WATER MANAGEMENT

19. Integrated stormwater management plans will be developed prior to the development of any neighbourhood plans.
20. The City will work to implement the recommendations of the Integrated Stormwater Management Plan (ISMP) for the south shore watersheds (i.e. the Chines) of Port Moody as per Metro Vancouver's Integrated Liquid Waste and Resource Management Plan.
21. The City plans to develop Integrated Stormwater Management Plans (ISMP) specific to the north shore watersheds of Port Moody.
22. The City will support the development and implementation of Integrated Stormwater Management Plans that recognize and integrate the role of watercourses both as drainage and flood control systems and as ecosystems that provides valuable fish habitat.
23. The City will work in co-operation with neighbouring municipalities, Metro Vancouver and senior government agencies to develop an integrated watershed management approach to manage shared watersheds based on sound science related to hydrology and hydraulics.
24. Developers will be required to develop Stormwater Management Plans and Erosion and Sediment Control Plans to ensure that pre-development, construction and post-development stream flows remain the same and that any suspended solids in the runoff from a development site are controlled, treated and monitored.
25. Contractors will be required to control construction sedimentation and erosion from runoff water in accordance with the City's Stream and Drainage System Protection Bylaw.

26. The City will require treatment of all “first-flush” waters from impervious surfaces prior to discharge to watercourses (e.g. oil/water separators for parking lots) for newly created parking facilities.
27. The City will continue the community-wide storm drain marking program to remind residents that materials dumped into storm drains may result in the death of fish and damage habitat.
28. The City will examine its Zoning Bylaw and Subdivision and Development Servicing Bylaw from the perspective of reducing the amount of impervious surfaces in accordance with the ESA Management Strategy, Integrated Stormwater Management Plans, and Metro Vancouver’s Integrated Liquid Waste and Resource Management Plan.
29. The City will encourage innovations in development form, alternative design standards, and efficient transportation planning to reduce the amount of effective impervious surfaces and the overall impact of urban development on watershed health where feasible.
30. The City will investigate opportunities within road maintenance and construction to manage stormwater in place and retain water for re-use in landscape watering.
31. The City will require the use of features such as permeable pavement systems, landscaped features (e.g. vegetated buffers or swales, natural infiltration basins) and encourage green roofs to reduce stormwater runoff from building sites.
32. Where feasible, the City will consider setting impervious area targets for development or redevelopment within watersheds.
33. The City will encourage, where feasible, the permeability of grassed or landscaped areas by protecting native soil, preventing soil compaction and aerating or loosening compacted soils.
34. The City is committed to the application of the latest stormwater management best practices to maintain or improve biodiversity in watercourses and to meet objectives of overall improvement to watershed health. The design of drainage systems will incorporate techniques such as:
- Minor-major drainage systems;
  - Parcel grading;
  - Source controls such as infiltration facilities, rain gardens, swales, absorbent landscapes, green roofs;
  - Subsurface disposal;
  - Detention retention storage;
  - Erosion control;
  - Sediment removal;
- and other acceptable methods to mitigate the runoff impacts due to changes in land use (refer to Metro Vancouver’s Stormwater Source Control Design Guidelines, 2012, for additional information).
35. The City will require a Stormwater Management Plan for all subdivisions, which includes all drainage facilities, parcel grading (showing pre and post-development ground elevations), major flood path routing and other appropriate information to the design unless otherwise included in a watershed study or Integrated Stormwater Management Plan adopted by Council.
36. The City will require that all downstream drainage infrastructure is not adversely affected by runoff from new developments.
37. The City will require that new development applications are in accordance with the Fisheries and Oceans Canada (DFO) Lower Fraser Mainland Stormwater Guidelines which are intended to protect the receiving environment from erosion and deterioration of aquatic habitat.

