AGENDA

COUNCIL WORKSHOP

Monday, July 16, 2012
5:00 p.m.
Committee Room, Municipal Hall
355 West Queens Road,
North Vancouver, BC

Council Members:
Mayor Richard Walton
Councillor Roger Bassam
Councillor Robin Hicks
Councillor Mike Little
Councillor Doug MacKay-Dunn
Councillor Lisa Muri
Councillor Alan Nixon

NORTH VANCOUVER
DISTRICT

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District of North Vancouver
355 West Queens Road
North Vancouver, BC, Canada V7N 4N5
604-990-2311
www.dnv.org

COUNCIL WORKSHOP

5:00 p.m.
Monday, July 16, 2012
Committee Room, Municipal Hall
355 West Queens Road, North Vancouver

AGENDA

1. Opening by the Mayor

2. Review of Solid Waste Operations & Preparation of an Integrated Solid Waste Management Plan
File No. 11.5360.20/020.000

Presentation: Gavin Joyce, General Manger - Engineering, Parks & Facilities
Neil Crellin and Linda Parkinson, Dillon Consulting Ltd.,

3. Utilities Modeling Update
File No. 11.5550.01/000.000

Presentation: Lorn Carter, Manager - Utilities,
Shaun Carroll, Section Manager – Utilities and Technical Services

4. Adjournment

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AGENDA

Council Presentation - Review of Solid Waste Operations & Preparation of an Integrated Solid Waste Management Plan

Prepared By: Dillon Consulting Limited

Date: July 16th, 2012

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1. **Meeting Objectives**: The objective of the presentation is to allow Dillon to engage Council in the early stages of the study and understand their thinking in regard to solid waste management in the community.
2. **Dillon Presentation**: Dillon will provide a short presentation to describe the work completed to date in preparing a "Business As Usual Report" and describe the further intended scope and objectives of the study.
3. **Briefing Note**: Attached with this Agenda, please find a summary briefing note which outlines the background to the study, the scope of the study and provides an illustrative summary of municipal solid waste stream quantities and flows, based on information gathered during the study to date.

Prepared by Neil Crellin, Project Manager, Dillon Consulting Limited.

3820 Cessna Drive, Suite 510, Richmond, B.C. V7B 0A2 – Phone 604-278-7847 -- Fax 604-278-7894

Briefing Note: Solid Waste Operational Review

July 16, 2012

Background

Metro Vancouver's Integrated Solid Waste and Resource Management Plan (ISWRMP) was approved by the Metro Vancouver Board on June 30, 2010, and by the Province on July 22, 2011. Metro Vancouver reports that the region currently recycles about 55% of its waste which is well in excess of the Canadian average rate of 22%. The ISWRMP outlines initiatives to minimize waste generation and to achieve target diversion rates of 70% by 2015 and 80% by 2020[1].

Leading jurisdictions such as Halifax Regional Municipality achieve higher diversion rates, although the calculation methodologies employed vary considerably between jurisdictions. Nova Scotia recently moved to a per capita disposal rate based tracking system as opposed to the traditional diversion rate (*e.g.,* percentage of waste stream recycled or composted) approach. Nova Scotia are targeting a waste disposal rate of 300 kg/person/year in 2015 which means a reduction of one quarter on the current rate of 400kg/person/year. The Metro Vancouver reported waste disposal rate was 455kg/person/year in 2010.

Purpose of Review

The District of North Vancouver ("the District") is undertaking a Solid Waste Operational Review to allow the District to better meet current and future challenges with the objective of developing the District's own Integrated Solid Waste Management Plan (ISWMP). The ISWMP will support waste management policies in section 10.3 of the Official Community Plan (OCP) and balance the financial, environmental and social impacts of these community services over the next 20 years.

Metro Vancouver ISWRMP - Goals and Targets

The ISWRMP has four goals which follow the waste management hierarchy of Reduce, Reuse, Recycle, Energy Recovery and Disposal. The targets for each goal are summarised below:

Goal	Target
1. Minimize waste generation	Reduce per capita waste generated within the region, calculated on a rolling 5-year average, to 90% or less of 2010 volumes by 2020. *2010 waste generation rate: 1,308 kg / person / year* *2020 Target waste generation rate: 1,177 kg / person / year*

[1] Metro Vancouver Link:
http://www.metrovancouver.org/services/solidwaste/planning/Pages/default.aspx#

2. Maximize reuse, recycling and material recovery	Increase average diversion rate from 55% (by weight) to a minimum of 70% by 2015, 80% by 2020. Track diversion rate and waste disposed per-capita each year. Diversion rate targets by sector: • Multi-family – 30% • Single-family – 65% • IC&I – 70% • DCL – 80%
3. Recover energy from the waste after recycling	• Continue to improve performance of WTE facility. • Recover metals and other residue for beneficial use. • Expand use of WTE (from 285k tpy to 500k tpy). • Maximize energy recovery, incorporating into district heating, industrial applications and production of alternative fuels.
4. Dispose remaining waste in landfill	• Committed to reduce the quantity of waste going to Vancouver Landfill to a maximum of 100,000 tonnes per year by 2020.

Metro Vancouver assumes management control of regional disposal facilities so that waste reduction and diversion goals are uniformly applied to ensure equity for all residents and businesses in the region. The ISWRMP identifies approved facilities where MSW in the region can be directed. These include:

Approved Disposal Facilities	Approved Transfer Stations
• Waste-to-Energy Facility in Burnaby • Vancouver Landfill • Cache Creek Landfill • Any disposal facility licensed by Metro Vancouver under the Greater Vancouver Sewerage and Draining District MSW and Recyclable Material Bylaw No. 181, 1996 as amended by Bylaw No. 183, 1996.	• North Shore • Vancouver South • Coquitlam • Surrey • Langley Residential • Maple Ridge Residential • Matsqui

Current DNV position

The Dillon team are currently working to finalise the "Business as Usual" (BAU) report which summarises the current waste management position in the DNV. This BAU report will use all available data to calculate total waste generation within the District and project waste generation volumes, in line with population increases, to 2030. These projections, together with Metro Vancouver's waste diversion targets will be used to form a picture of where the District needs to focus programs and policies over the next 20 years. The overarching challenge is to meet Metro's waste diversion goals while striking a balance between Customer Service and Operational Costs.

The current picture of the flow of waste materials in the District is outlined in the attached Figure. A summary of waste management collection services provided through DNV Operations Centre and North Shore Recycling Program (NSRP) is provided in the attached Table.

Scope of Solid Waste Operational Review

As of July 16th the study is in progress. Key areas of consideration are:

- Development of a consistent methodology to calculate waste disposal and diversion rates in the District;
- Potential policies to meet diversion objectives, particularly in regard to organics (Residential and industrial, commercial & institutional (ICI) sectors);
- Potential policies to address objectives for Multi-Family Residential Sector with emphasis on development planning opportunities (new Town Centres) and opportunities to manage Construction and Demolition Wastes (C&D);
- Potential policies for consideration of service preferences for curbside collection at single family homes, including consideration of local issues (e.g. bear awareness), and preferences in regard to collection frequencies, container sizes etc.;
- Characterization of strategic choices specific to the District such as:
    - Continued operation of in-house single family collection (garbage and organics) or contract it out;
    - Continued operation of a commercial MF&ICI collection arrangement or otherwise; and
    - Consideration of whether the District might develop its own waste treatment capability/facilities.

Activities initiated to date include:

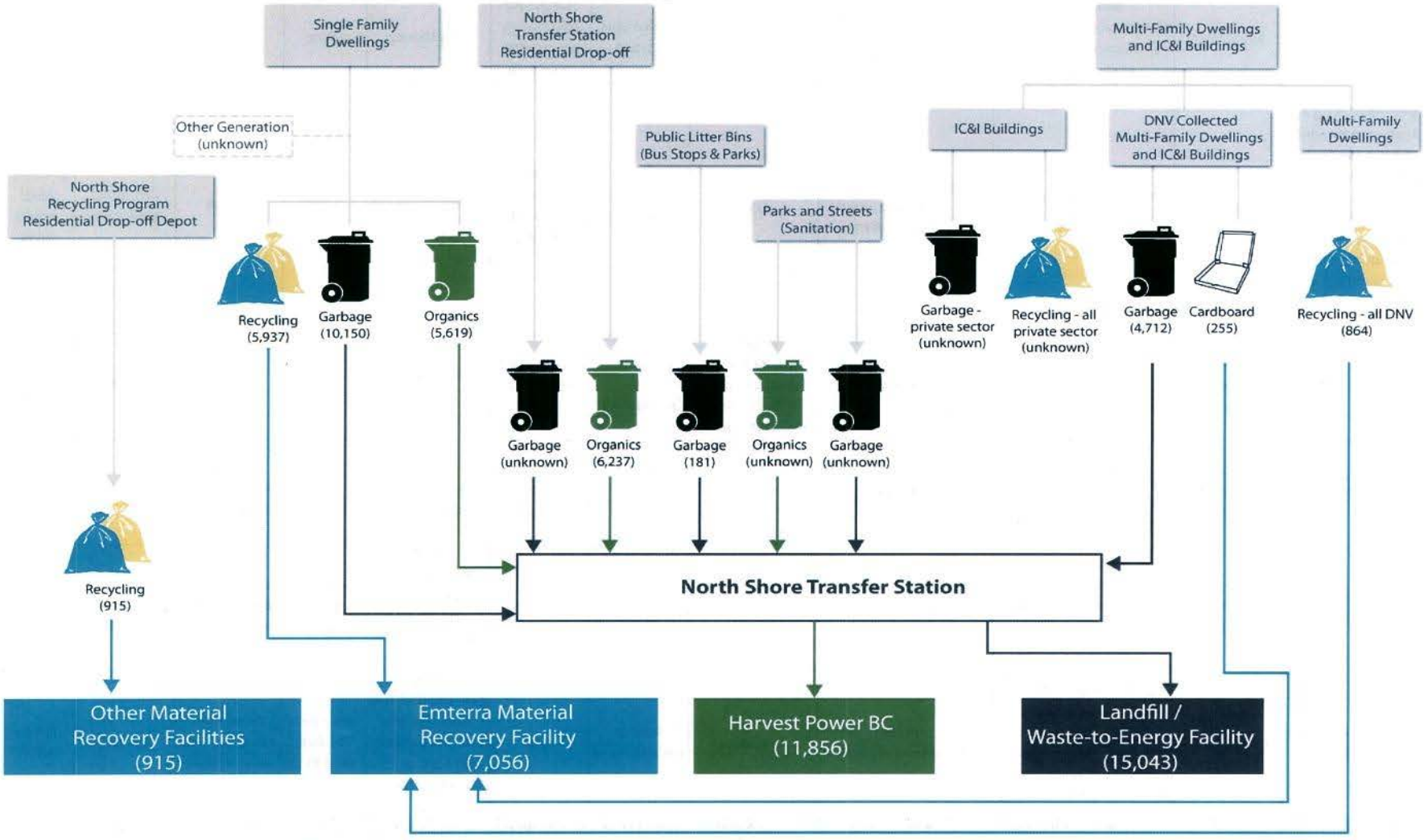
1. Preparation of a "Business As Usual Report" – Draft submitted July 6th
2. "Town Centre Workshop" June 22nd, and Preparation of a Briefing Note – July (TBD)
3. Dillon team member integrated at Operations Centre one day per week
4. Council Presentation, July 16th

Next Steps

1. Undertake Public Phone Survey (385) on Outline Options (10 questions), July (TBD)
2. Options Review with Officers via Agreed Evaluation Criteria - Shortlisting Workshop, July (TBD)
3. Prepare Draft ISWMP for Review by DNV Officers, August
4. Present Report to DNV Executive and Council, September

The final report will be completed in September 2012. Staff plan to seek endorsement of the ISWMP in early fall 2012.

2011 Waste Movements
District of North Vancouver



**Note: All quantities are in tonnes*

Sources of 2011 Waste Quantities: District of North Vancouver, North Shore Transfer Station (Metro Vancouver), North Shore Recycling Program

Table A1 - Summary of Existing Waste Management Collection Programs provided by DNV

Waste Source	Waste Stream(s)	Collection Frequency	Limit	Container	Responsibility	Enforcement	Destination	Final Destination	Additional Comments	Cost to DNV	Cost to Customer
Single Family	Garbage	weekly, same day as SSO and recyclables	40 kg (max 20kg per container)	77L bag/container, 1/2 full 360 L DNV wheeled cart, or 1 full 140 L DNV wheeled cart, or 2 bags	DNV	Y - fluorescent stickers	NSTS	Landfill or Burnaby WTE Facility	One remote area does not receive collection service - must deposit garbage and recyclables at central collection point. Extra garbage stickers cost $3.	$107/tonne tipping fee at NSTS	$199.50 (yard trimmings included)
Single Family	Source separated organics (SSO)	weekly, same day as garbage and recyclables	Six items not exceeding 20 kg per item	77L lidded can with 'Green Can' Decal or DNV wheeled cart or Kraft bag or Tied Bundles	DNV	Y - direct calls with owners	NSTS	Harvest Power BC (Richmond) - contract expires June 30, 2019	Green Can Program. Residents can take Yard Trimmings and Clean Wood Waste directly to NSTS for a fee	$71/tonne tipping fee at NSTS	$199.50 (garbage included)
Single Family	Recyclables	weekly, same day as SSO and garbage	None	3-stream (Blue Bag, Yellow Bag, Blue Box)	NSRP (contracted out to WMCC)	Y - notice of non-compliance	North Vancouver Emterra Group MRF - contract expires June 30, 2014	Markets	Residents can also take recyclables to the North Shore Recycling Drop-Off Depot	~$100/tonne (basket of goods)	$83.40/year
Multi Family	Recyclables	weekly	None	3-stream containers	NSRP (contracted out to WMCC)	Y - notice of non-compliance	North Vancouver Emterra Group MRF - contract expires June 30, 2014	Markets	MF & ICI must apply to NSRP for collection services	~$100/tonne (basket of goods)	$80.72 per unit
Multi Family (DNV serviced)	Garbage & Cardboard	weekly	None	Various bulk container sizes (1 - 6 yd)	DNV serve approx. 400 Clients (600 containers)	Y - fluorescent stickers	NSTS	Garbage - Cache Creek Landfill or Burnaby WTE Facility, OCC - markets	MF & ICI must apply to DNV for collection services	$107/tonne	DNV Customers can pay monthly container rental fee or a charge per tip. All charges dependent on size of container and are published annually by DNV. Additional Jitney service charge of $18 (round trip) where applicable)
IC&I (DNV serviced)	Garbage & Cardboard	weekly	None	Various sizes	DNV serve approx. 400 Clients (600 containers)	Y - direct calls with owners	NSTS	Garbage - Cache Creek Landfill or Burnaby WTE Facility, OCC - markets	Access issues to commercial buildings is challenging - Jitney service at extra cost	$107/tonne	
Litter Collection	Garbage	2-5 times per week	n/a	Various e.g. 80L (pedestrian locations) 40L (bus stop locations)	DNV - dedicated vehicle. 200 bins	n/a	NSTS	Cache Creek Landfill or Burnaby WTE Facility		$107/tonne	Funded through Solid Waste Utility Fee (SF properties)

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DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Presentation To Council

16th July, 2012

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DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Presentation Outline

- Waste Management Hierarchy "5Rs"
- Metro Vancouver's Waste Targets
- Where are we now?
- Key Challenges
- Study – Next Steps
- DISSCUSSION – Council Input

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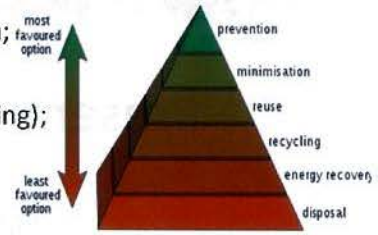
DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Intro to Waste Management

Waste management options hierarchy:

- Prevention / Minimization / **R**eduction;
- **R**euse;
- **R**ecycling (including organics composting);
- Energy **R**ecovery; and
- **R**esidual Management (disposal).



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DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Metro Vancouver ISWRMP

Goal #1: Minimize Waste Generation

"Reduce per capita waste generated with the region, calculated on a 5 year rolling average, to 90% or less of 2010 volumes by 2020"

*2010 waste generation rate** = *1.31 tonnes per capita*

2020 target waste generation rate = *1.20 tonnes per capita*

*Source: Metro Vancouver Recycling and Solid Waste Management – 2010 Summary

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Metro Vancouver ISWRMP

Goal #2: Maximize reuse, recycling and material recovery

Increase waste diversion rate from 55% to a minimum of 70% by 2015, 80% by 2020.

Diversion Targets by Sector:

Sector	Diversion Rate
Multi-Family	30%
Single Family	65%
ICI	70%
C&D (DLC)	80%

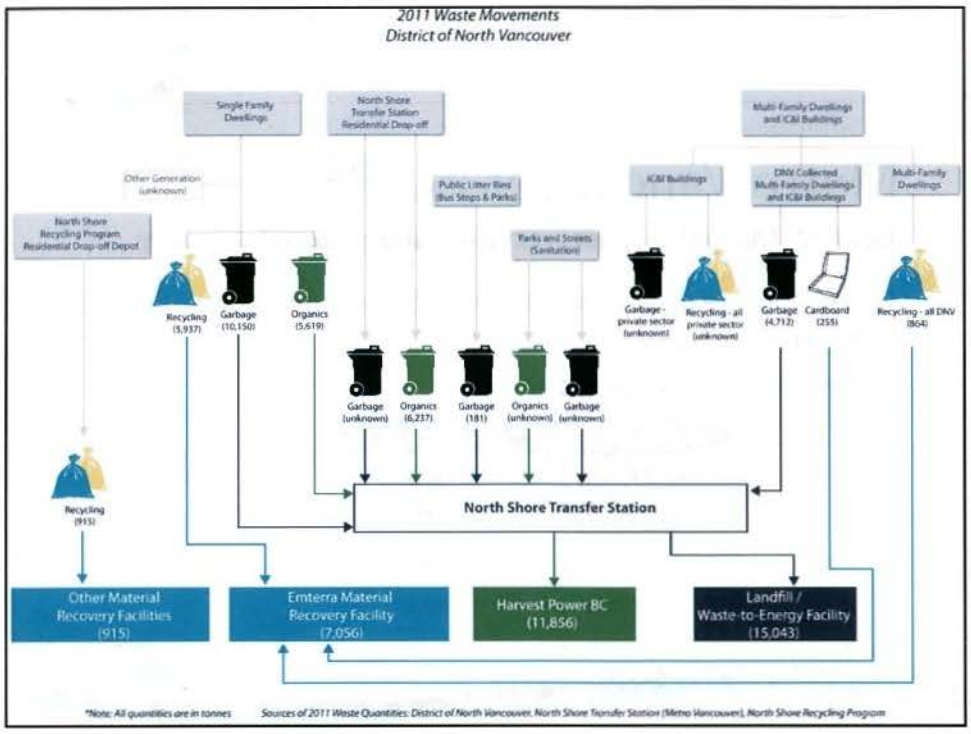
Metro Vancouver ISWRMP

Goal #3: Recover Energy from the waste after recycling

Expand use of WTE, improve performance of WTE facility, recover metals and other residue for beneficial use, maximize energy recovery (district heating, industrial applications and alternative fuels)

Goal #4: Dispose remaining waste in Landfill

Reduce quantity of waste going to Vancouver landfill to a maximum of 100,000 tonnes per year by 2020.



DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Where are we now?

DNV Diversion Rate (2010 Annual Report): ~ 65%
(NSRP provides diversion rate for Single Family only)

Calculations do not include:

- Residential Drop Off (RDO) of Garbage at Transfer Station
- Bus Stop Garbage Tonnages
- Parks Department Garbage Tonnages
- ICI Garbage (portion collected by Private sector)
- ICI Recycling (all Private sector)
- Take back programs

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DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Key challenges

- Methodology for accurately and consistently tracking waste generation and waste diversion in DNV
- Multi Family Diversion Targets (organics, recycling, private sector collection)
- ICI Recycling Targets
- New Town Centres (C&D waste, Multi Family)
- Bear Awareness

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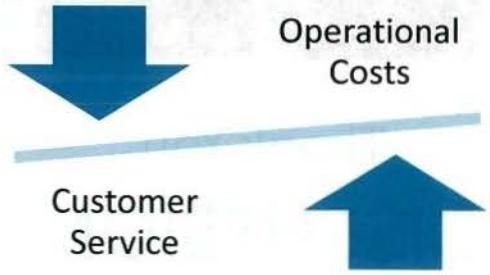
DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Key challenges



While meeting Diversion Goals

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DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

NEXT STEPS

• Develop Options	July
• Undertake Public Phone Survey	July
• Prepare Draft ISWMP	August
• Executive & Council Review	Sept

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DNV INTEGRATED SOLID WASTE MANAGEMENT PLAN (ISWMP)

NORTH VANCOUVER DISTRICT

Thank You

DISCUSSION

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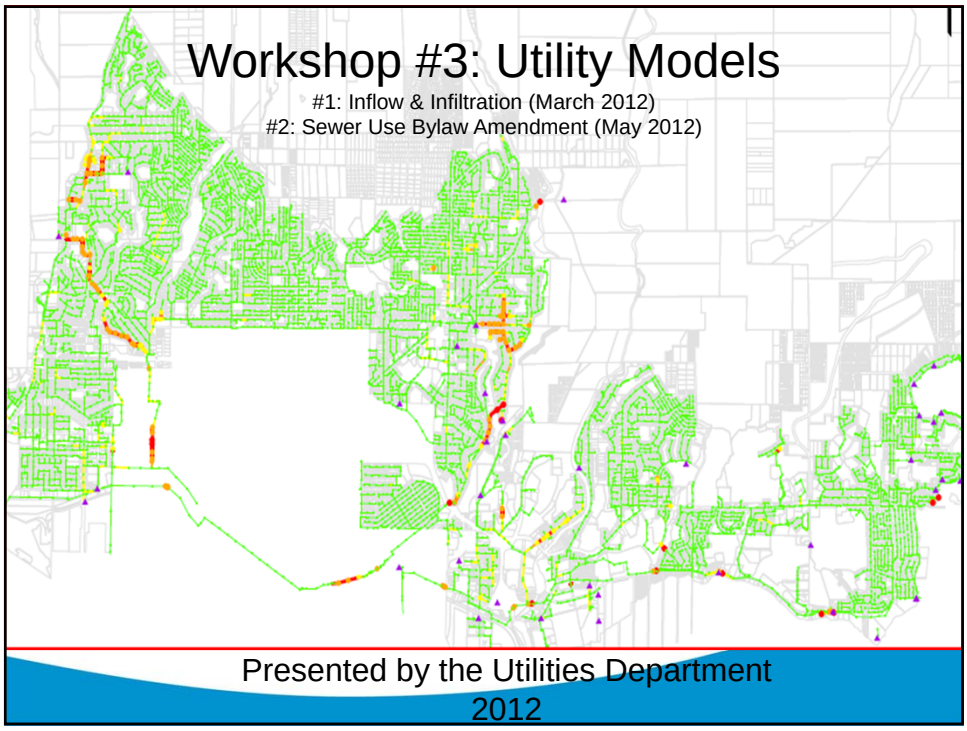

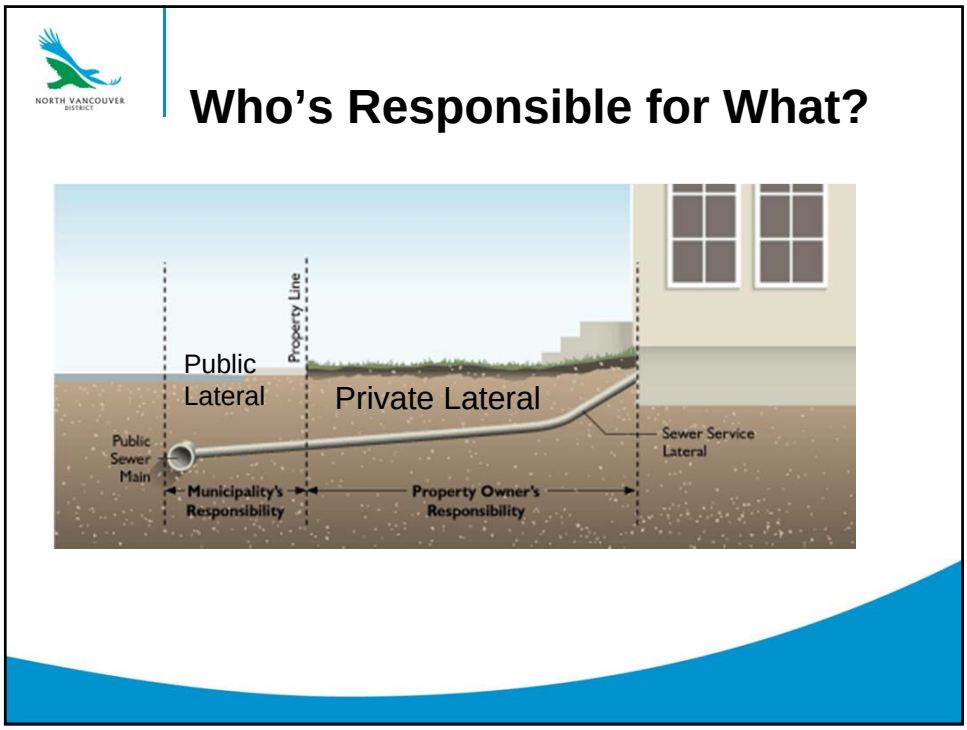

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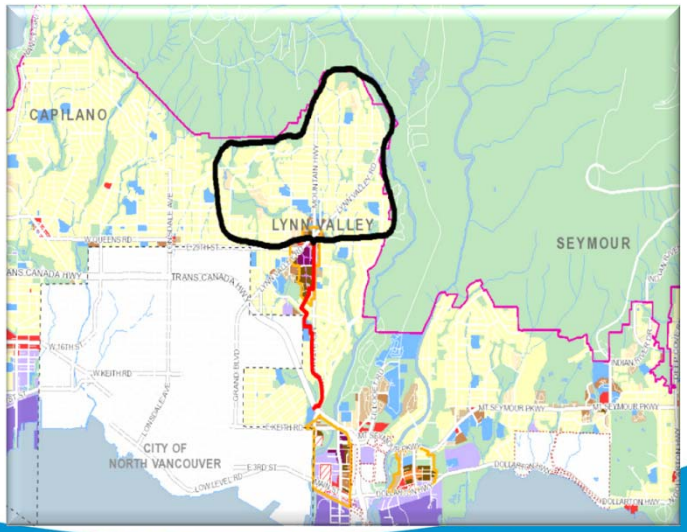
Lynn Valley Sewer System



Benefits of I&I Reduction

1. Accommodate OCP growth
2. Defer or eliminate capital projects
3. Anticipating Metro rate structure change

4. Develop DNV I&I reduction relationships
5. Support design for Lions Gate WWTP
6. Achieve our mandated ILWRMP actions
7. Infrastructure & environmental stewardship

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Private Lateral Program Approaches

1. Municipal Approach: We do all the work.
   Treat the private system as if it is ours.

2. Incentive Approach: We encourage and regulate owners to do work.
   Encourage bylaw adherence through positive or negative incentive. No consequence for non adherence.

3. Regulatory Approach: We 'force' and regulate owners to do work.
   Enforce owner bylaw adherence with consequence for non compliance.

Workshop #3. Utility Models

- Why do we need models?
- What can models do for us?
- Used to forecast the impact of growth.

- Status Utility Models
  - Sanitary Sewer Model
  - Water Model
  - Storm Sewer

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Why we Need Models

- Utilities Infrastructure Services:
  - 23,000 services properties over 40 km^2
  - 85,000 residential and ICI customers
  - +/- 800 km of main and public lateral
  - Pump stations, PRVs, Reservoirs, Lift Stations
- Influencing Factors:
  - Water (FF, Seasonal)
  - Sanitary (I/I, % of water consumed)
  - Storm (Permeable surfaces, rainfall return)

Complex systems with multiple simultaneous demands that require computer models to predict response.

Model Results help us...

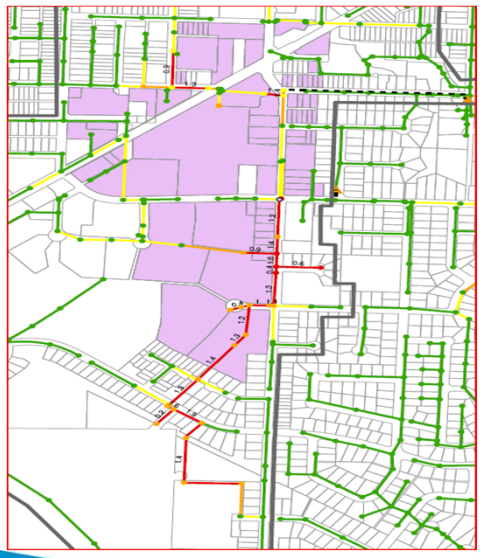
- Plan
  - Growth impact
  - Programs (conservation, I/I, ISMPs, Bylaws)
  - Develop DCCs
  - Capital Planning (right asset, right size, right time)
  - Emergency plans & risk assessments
- Operate
  - Reactive operations (pipe, station failures)
  - Planned operations (wm clean, replace)

Model Results: OCP Four Town Centres

Utility	OCP Capital Upgrades Required	OCP Upgrade Value
Sanitary	Pipe: 3,200 m	$7.7M
Water	Pipe: 1,900 m	$1.5M
	Pump Stations: 2	$0.2M
Drainage	In Progress	
Total		**$9.4M**

All sizing to accommodate 2100 population

Town Centers Sanitary



- Draft district model complete
- I&I reduction programs proceeding
- Capacity concerns confirmed for Lynn Valley & Lower Lynn

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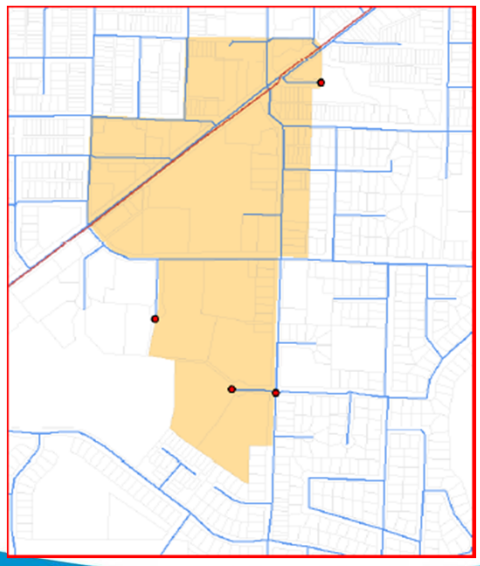
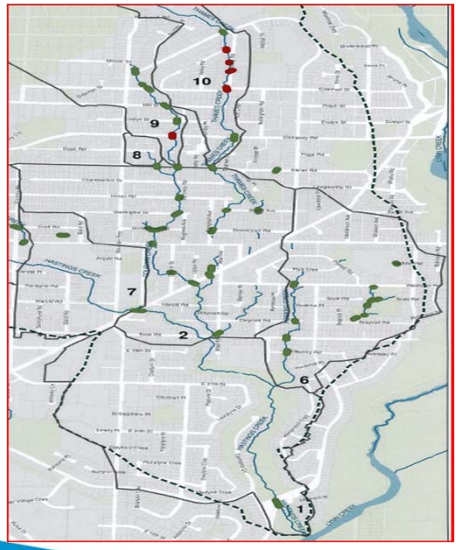
Town Centers Water



- Draft district model complete
- Water main replacement program proceeding
- No significant OCP issues anticipated

Town Centers Drainage



- Lynn Valley draft ISMP model complete
- Planned bylaw supports no net development discharge increase
- No significant OCP issues anticipated in Lynn Valley other results pending

Looking Forward

- Funding OCP upgrades
- Apply Models
  - Assess Development impact
  - Prioritize I/I program components
  - Update DCC's (now and future)
  - Capital works schedule and sizing
- Assess drainage model requirement
- Bylaw amendments to support programs

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