Save Money Connecting Asset Management to Land-Use

Webinar
November 24/2016

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BRITISH COLUMBIA

CITY OF PRINCE GEORGE

Agenda

1. Introduction:

-Where are we?

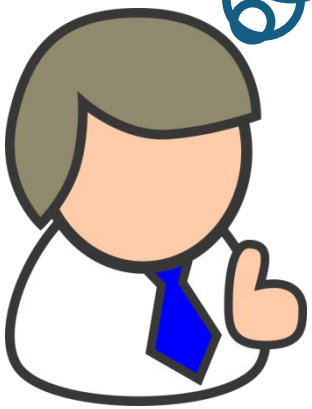
- How did we get here?
- Where do we want to be?

2. How do we get there?

- Integrate management of your assets - Andre
- Proactive Infrastructure Funding - Brian
- Use Nature to your benefit -Andre
- Grow where you can afford - Tiina

Where are we?

Fossil-Fuels Consumption
Climate-Change
Growth-Boundary
Biodiversity Carrying-Capacity
Ecological-Footprint
Agriculture Affordability



Deficit Fiscal
Adaptability Resilience
Infrastructure-Capacity
Service-Boundary
Demand-Reduction
Taxes Levels-of-Service

Where are we?

* $200 bil infrastructure deficit ($13,870/household) – National .
* 60% of Canada's core public infrastructure is owned and maintained by local governments.
* Not able to address existing needs.

Where are we?

35% of assets in poor condition – Infrastructure Report Card

26%

Potable water
Declining

32%

Wastewater
Declining

21%

Stormwater
Declining

22%

Roads
Declining

25%

Bridges
Declining

17%

Buildings
Declining

19%

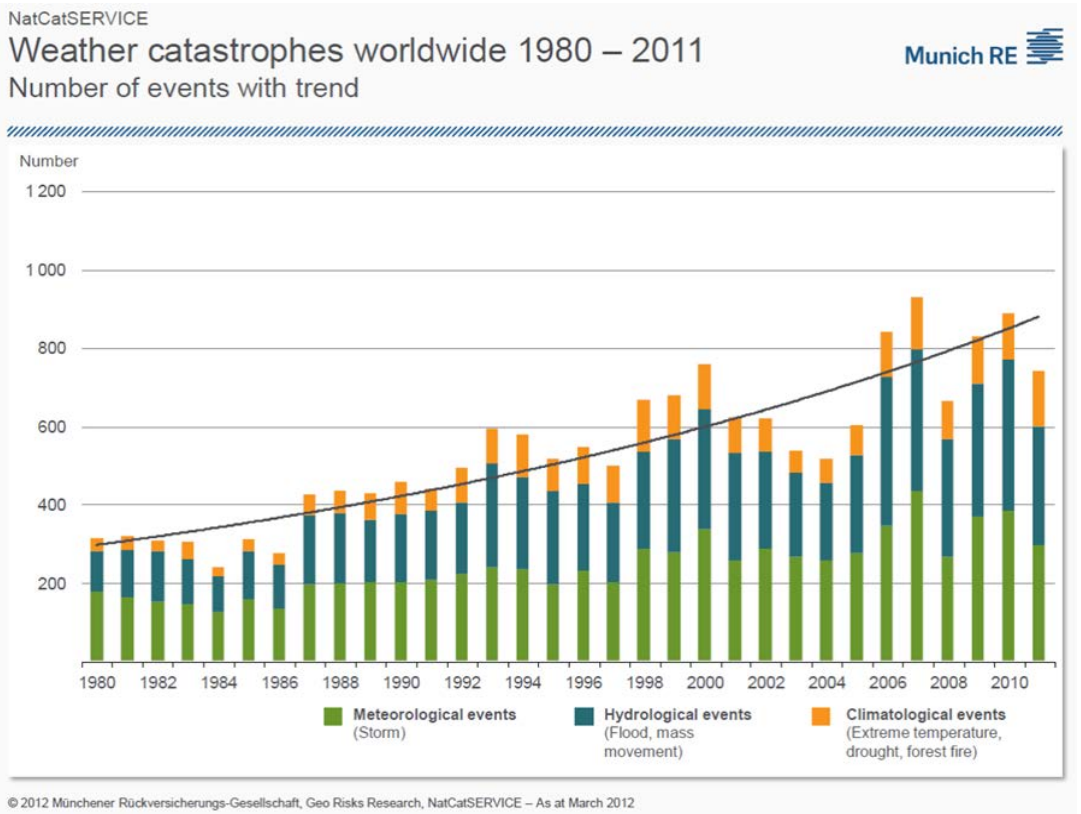
Sports & Rec.
Declining

17%

Public Transit Unavailable

Where are we?


VULNERABLE


NatCatSERVICE
Weather catastrophes worldwide 1980 – 2011
Number of events with trend
Munich RE
Number
1 200
1 000
800
600
400
200
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Meteorological events (Storm)
Hydrological events (Flood, mass movement)
Climatological events (Extreme temperature, drought, forest fire)
© 2012 Münchener Rückversicherungs-Gesellschaft, Geo Risks Research, NatCatSERVICE – As at March 2012

Status Quo

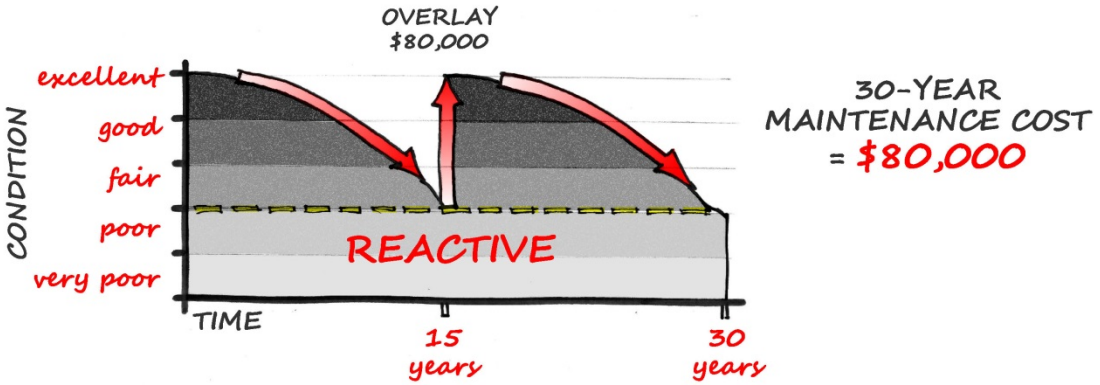
If we are staying on this path……

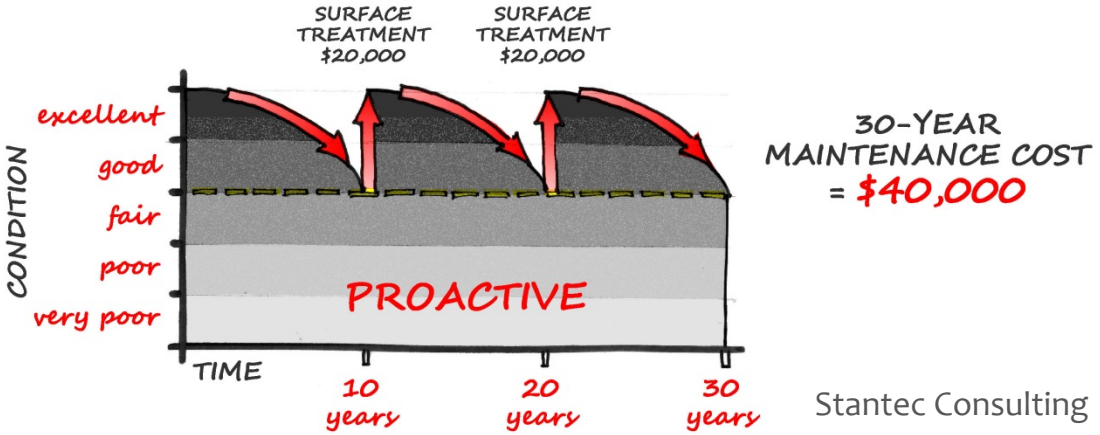
* Increasing infrastructure deficits leading to significant reductions in levels of service and increases in property taxes
* Challenges addressing levels of service
* Disconnection of organizational priorities from its budget
* Marginalization of land use planning
* Increased severity of damage from climate change events

How did we get here?

How did we get there? - Reactive

Waiting until asset fails or requires major renewal



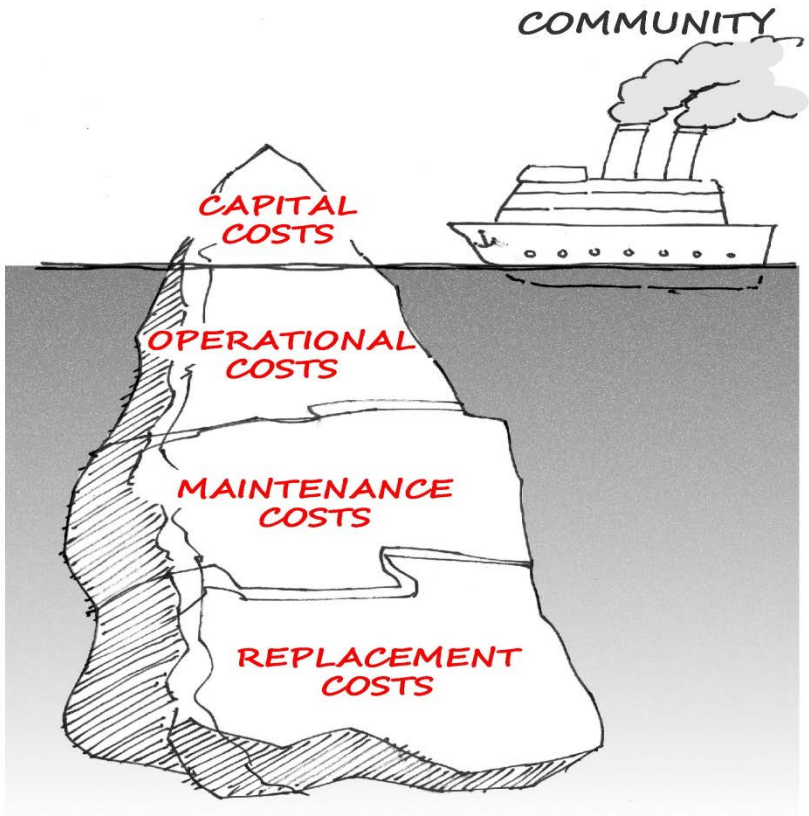


How did we get here? - Siloed

ECON. DEV	• Attracting businesses & people	Huh?
PLANNING	• Population Projections • Land Supply	Nothing to do with me
ENGINEERING	• Servicing Land • Conventional Standards • Operations (and maintenance?) in silos	Told you so
FINANCE	• $ for new capital costs • $ for operations (and maintenance?)	With what money??

How did we get here? –Short-term

- Supporting land-use decisions that don't consider comparative or lifecycle infrastructure costs
- Failing to fully recover costs and fees
- Not reporting on infrastructure deficits

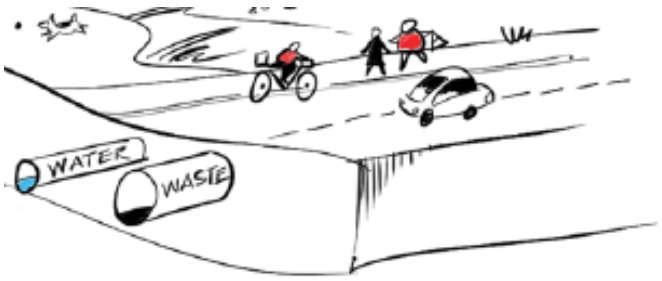


Stantec Consulting

Where do we want to be?

Where do we want to be?

* Meet sustainability targets, effectively work toward meeting GHG targets, and integrating natural and built environments
* Efficient, effective, sustainable and resilient service delivery
* Sustained and improved quality of life, reduced deficits & debt, and attract business and investment



How do we get there?

How do we get there?

* Proactive
* Long-term
* Integrated
* Triple bottom line
* Lifecycle costing
* Connect land-use and finance

Mechanisms of change

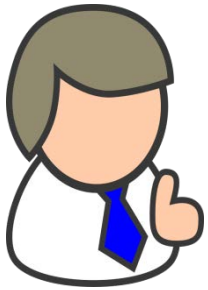
Integrated Processes

* Integrate management of your assets
* Proactive use of infrastructure funding
* Use nature to your benefit
* Grow where you can afford

Asset Management

Effective Asset Management

How do we achieve sustainable service delivery?



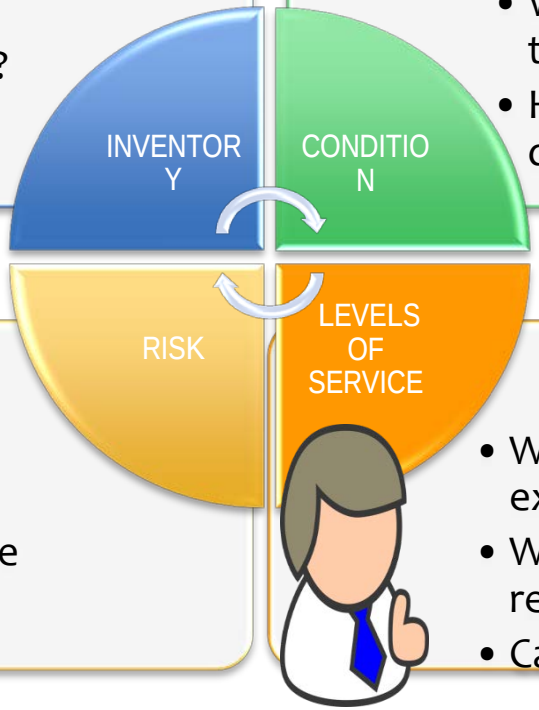
Asset Management

Effective Asset Management

How do we achieve sustainable service deliv

- What do we own ?
- Where is it ?
- What is it worth ?
- Tangible Capital Assets inventory

- What condition is it in ?
- What do we need to do and when ?
- How much money do we need ?



- Where are we vulnerable?
- What are possible consequences?

- What are public's expectations?
- What do regulators require?
- Can we afford it?

Example: life cycle cost

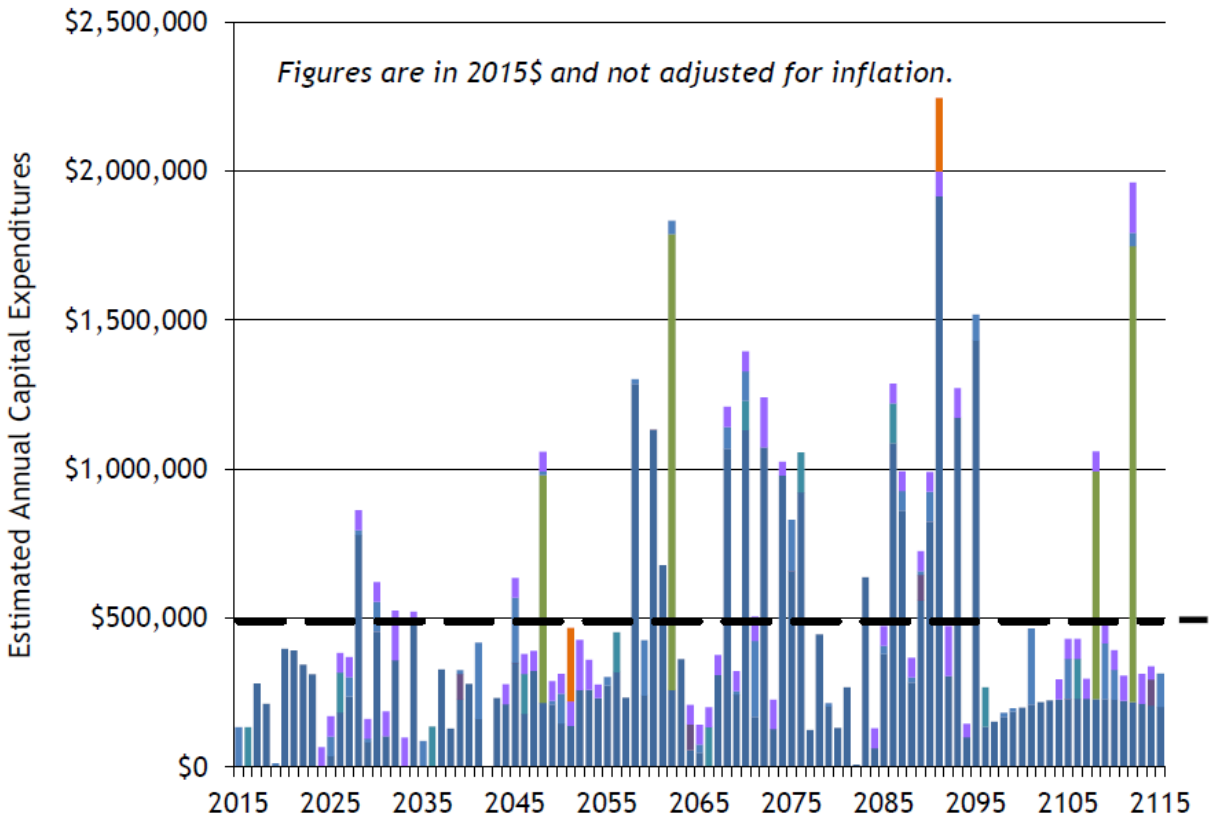


Figure 3: Long Term Estimated Capital Expenditure Schedule

Total Replacement Cost in 2015 Dollars

- Pressure Reducing Stations: $247,067
- Meters: $860,300
- Pump Stations: $1,068,974
- SCADA: $231,630
- Standby Chlorination: $87,299
- Reservoirs: $2,293,329
- Pipes: $30,187,265

Average Annual Cost of Sustainable Ownership (ACSO): $488,810 in 2015 dollars.

100 year average annual funding required to maintain long term sustainable infrastructure replacement.

Example: revenue analysis

Figure 5 below shows the 20 year financial plan with the goal to decrease reliance on gas tax, address the infrastructure replacement needs, and building up the reserve fund to over $500k to provide a contingency for future unforeseen expenditures.

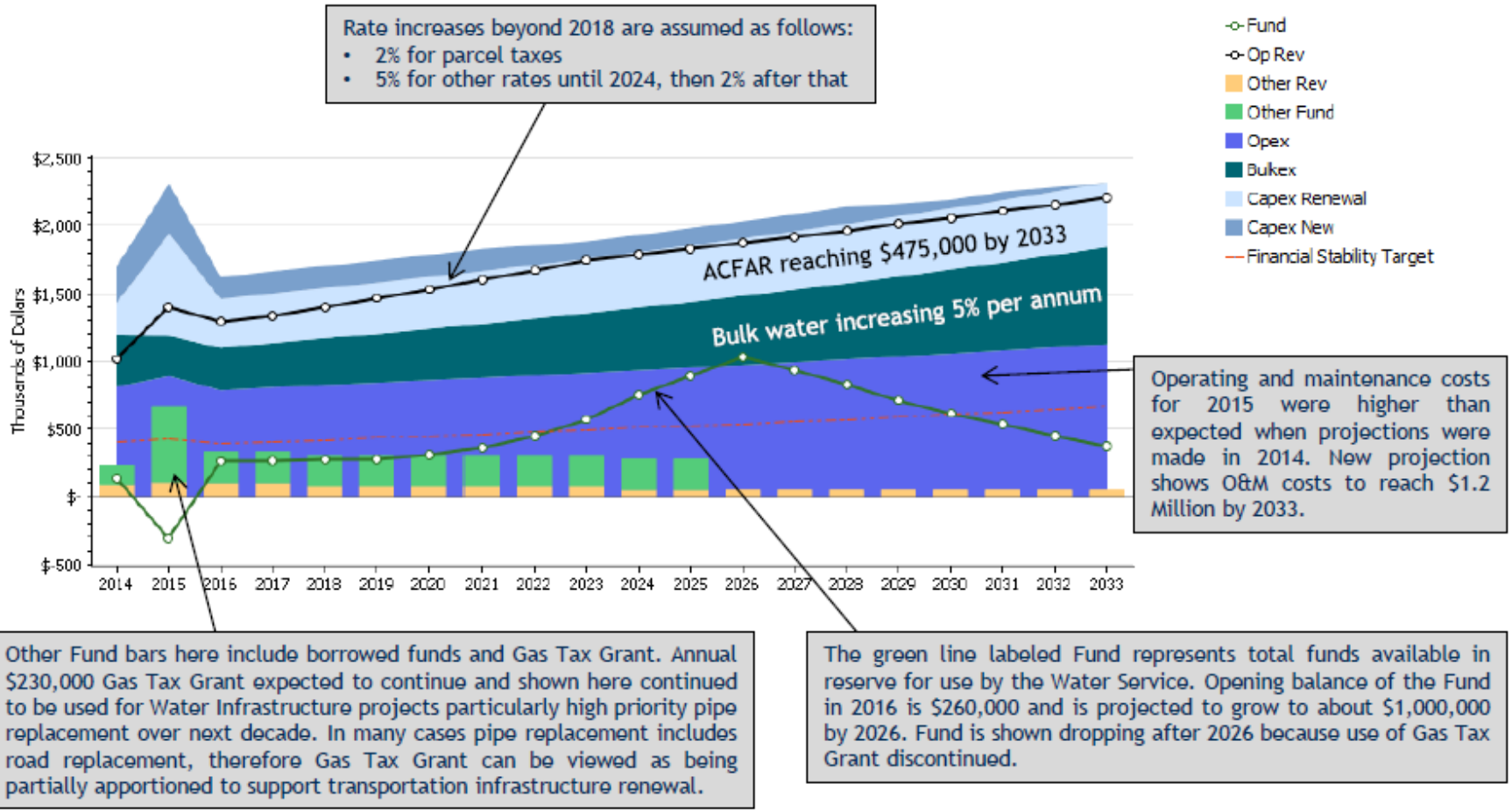


Figure 5: Revenues and Expenditures over Twenty Years

Official Community Plan policies

Policies

4.1.2 Ensure development of new areas in the Town takes place in a sequence that supports long term financial sustainability and greenhouse gas reduction goals.

4.1.3 The Development Cost Charges program (the fees charged by the municipality to cover infrastructure costs when a developer or homeowner develops a new building) should be updated to align with the Towns growth management strategy.

4.1.5 The Town will endeavour to ensure that new development helps reduce, not increase, the infrastructure gap, for example by considering the life cycle cost of new infrastructure.

Sustainable Community Assets

Asset Management

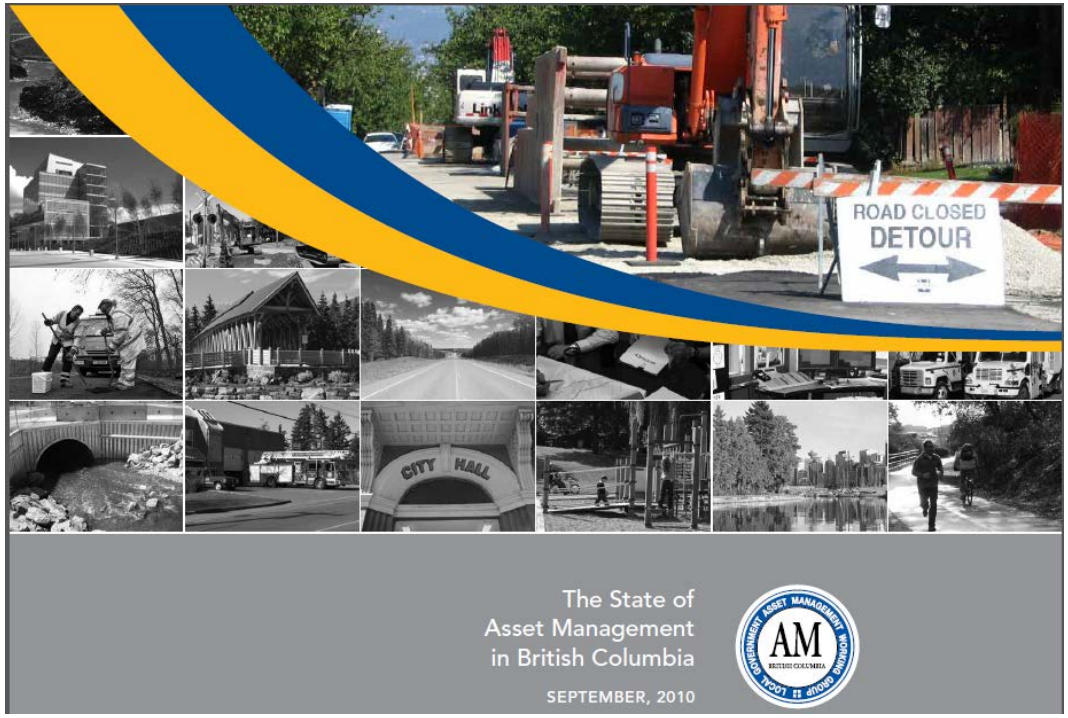
Effective Asset Management

How do we achieve sustainable service delivery?

The **process** of bringing together the skills and activities of **people;** with **information** about the community's physical **infrastructure assets** and **financial resources** to ensure long term **sustainable service delivery.**

How do we get there - CSCD

* 2008 – Formation of Asset Management BC
* 2009 – PSAB 3150 – a new requirement
* 2010 – State of Asset Management in BC



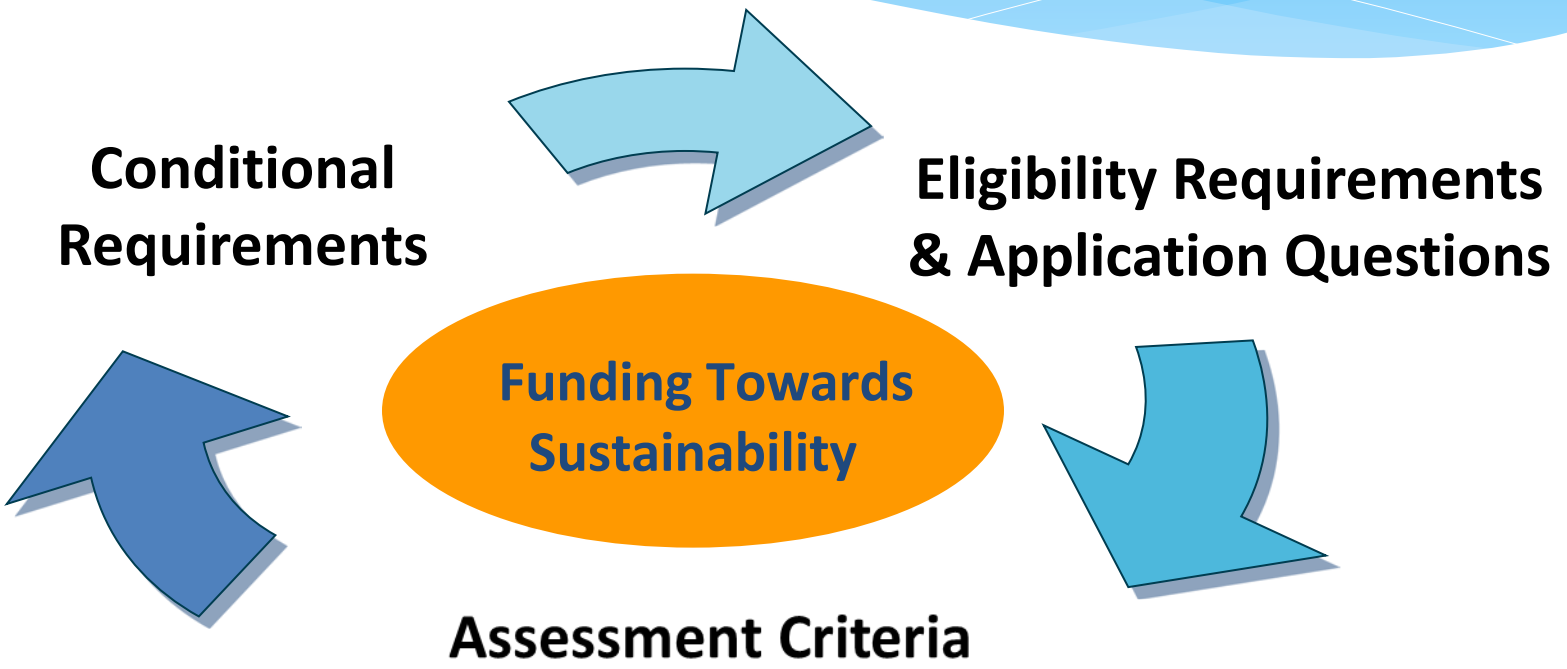
How do we get there - CSCD

* The province has made significant investments in LG infrastructure
* AM helps to ensure that infrastructure investments will be planned, built, operated, maintained and financed efficiently and provide best value for money
* AM reduces risk, to the province and to the local government
* The desire is to support local governments in achieving sustainable service delivery.

How do we get there - CSCD

* Ministry provides conditional grants to local governments through:
  * Infrastructure Planning Grant Program
  * NBCF-Small Communities Fund
  * Clean Water & Wastewater Fund
* Application based & specific to a project
* Meets program outcomes & grant conditions

How do we get there - CSCD

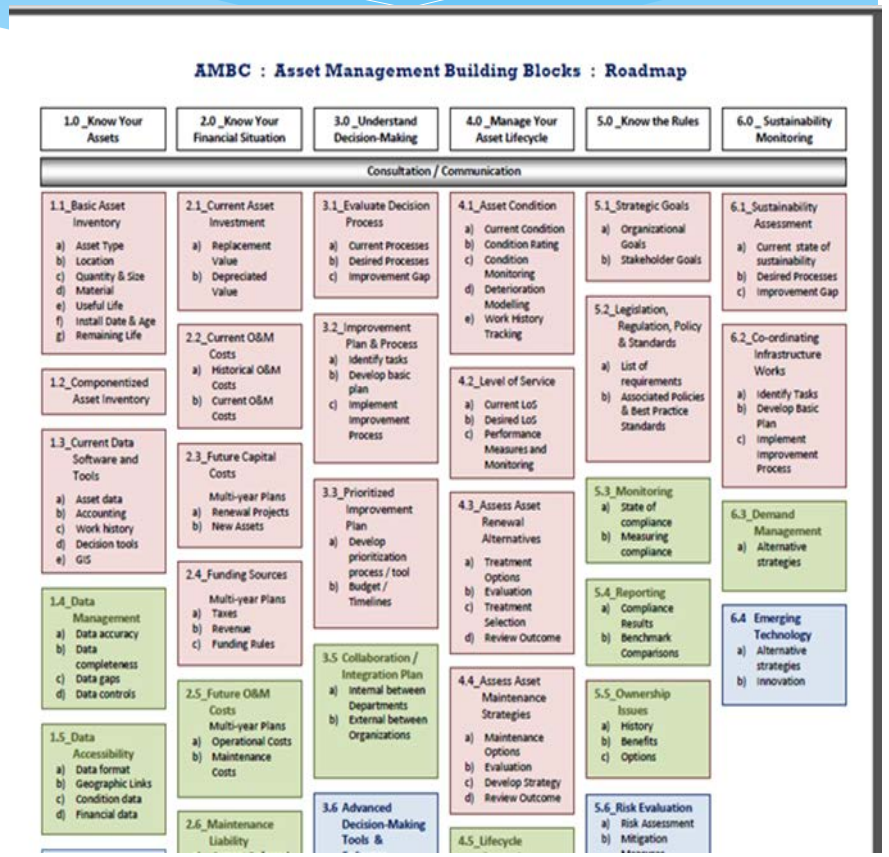


'current conditions become future eligibility'

How do we get there - CSCD

AM application questions

* Do you have a plan to fund, operate and maintain the asset over its lifecycle?
* For the asset class that you are applying for do you have an asset inventory Condition assessment? An asset management plan?
* Using the AM BC Roadmap identify which 'Basic Level' practice modules/building blocks your local government has achieved.



How do we get there - CSCD

* Approved Project = Asset management conditions:

  1) Current state of AM practice & future activities planned to improve

  2) Asset renewal profile over 30 years for the corresponding asset class

* Resources to support meeting conditions:
  * AssetSMART 2.0 & Renewal Profile guidance

How do we get there - CSCD

Asset management integration with grant programs:

* NBCF-Small Communities Fund
  * Renewed Gas Tax Agreement
    * Clean Water and Wastewater Fund
      * Asset Management Planning Grants
        * Infrastructure Planning Grant Program

How do we get there - CSCD

Resources

- Asset Management for Sustainable Service Delivery: A BC Framework
- AssetSMART 2.0
- Asset Management Roadmap
- CLIC – Community Lifecycle Infrastructure Costing Tool
- NAMS Training
- Workshops/seminars

AM BC Newsletter (18 issues to date)

- Articles, stories, tips & tactics
- Case studies

www.assetmanagementbc.ca

Beyond Engineered Assets

Engineered Assets:

* Drinking water sources, treatment, distribution system
* Sanitary sewer pipes and treatment plant
* Storm water pipes and outfalls
* Roads, sidewalks, cycle lanes

What supports these Engineered Assets?

* Aquifers (drinking water)
* Creeks, wetlands, forests (stormwater “end”points)
* Shorelines, ocean (outfalls, protection from the sea)

What are Natural Assets?

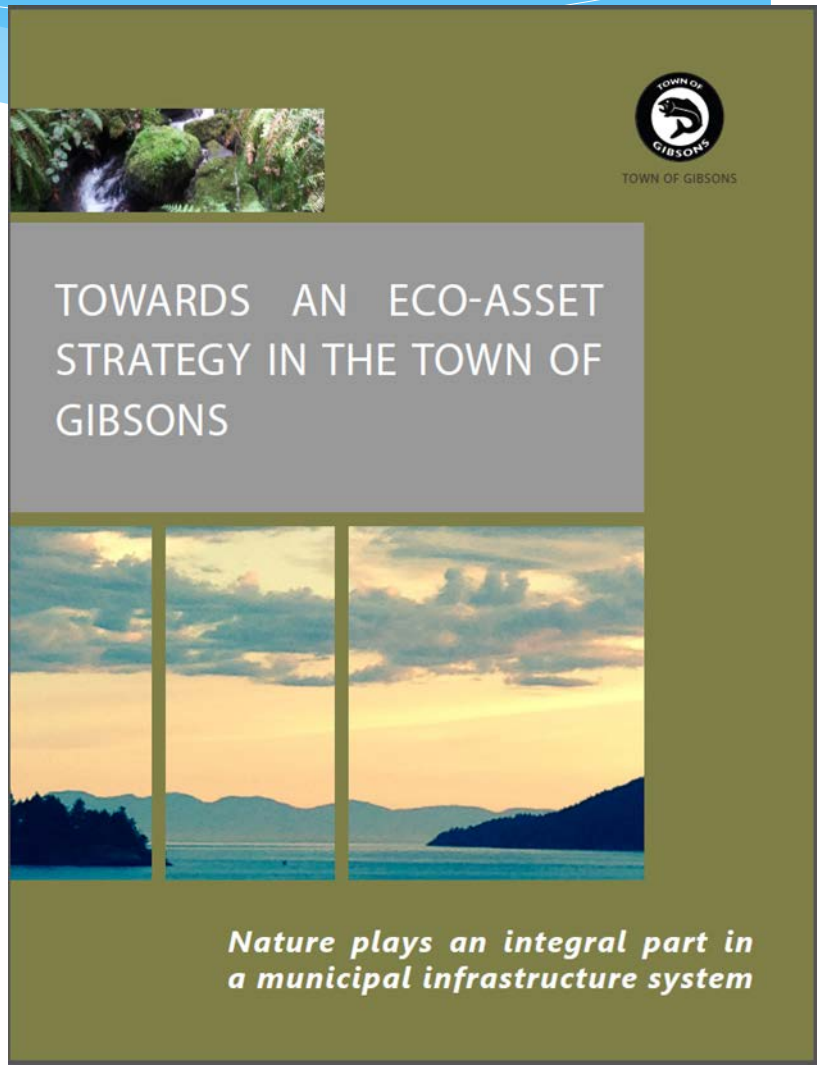
Features in the natural environment that support / provide a municipal service

Examples of Natural Assets

* Aquifers (*drinking water storage and filtration*)
* Rivers and streams (*stormwater conveyance*)
* Swamps and wetlands (*stormwater treatment*)
* Eelgrass (*foreshore erosion protection*)
* Trees (*stormwater management, slope erosion protection*)
* Soil (*stormwater management*)

Gibsons Eco Asset Strategy

* Natural Assets:
  * Creeks, soil, trees, wetlands…
* Biomimicry:
  * *emulating nature's genius*
  * Ditches, ponds
* Engineered Assets:
  * Storm pipes, reservoirs, roads, buildings…



Why Natural Assets?

* Less funding required
  * Operations, maintenance and monitoring only
    * Implement stewardship and monitoring programs
  * No funding required for replacement
    * Must be properly managed
  * Do not depreciate
    * Must be properly managed

* Carbon neutral or even carbon positive

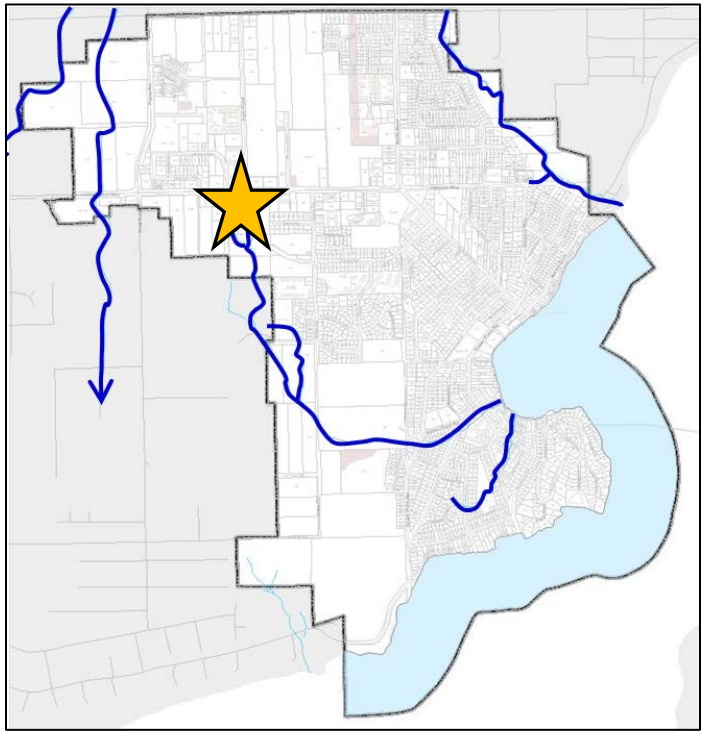
Why Natural Assets?

* Common Ground
  * Provides an opportunity for a meeting of the minds
  * Opportunities for synergy (environment/civil)
  * Applying established AM processes to a new concept
* Draws attention and finances to ignored assets
  * Budgets include O&M for all assets (engineered/biomimicry/natural)

Integration with Asset Management

Whitetower Park Stormwater Management

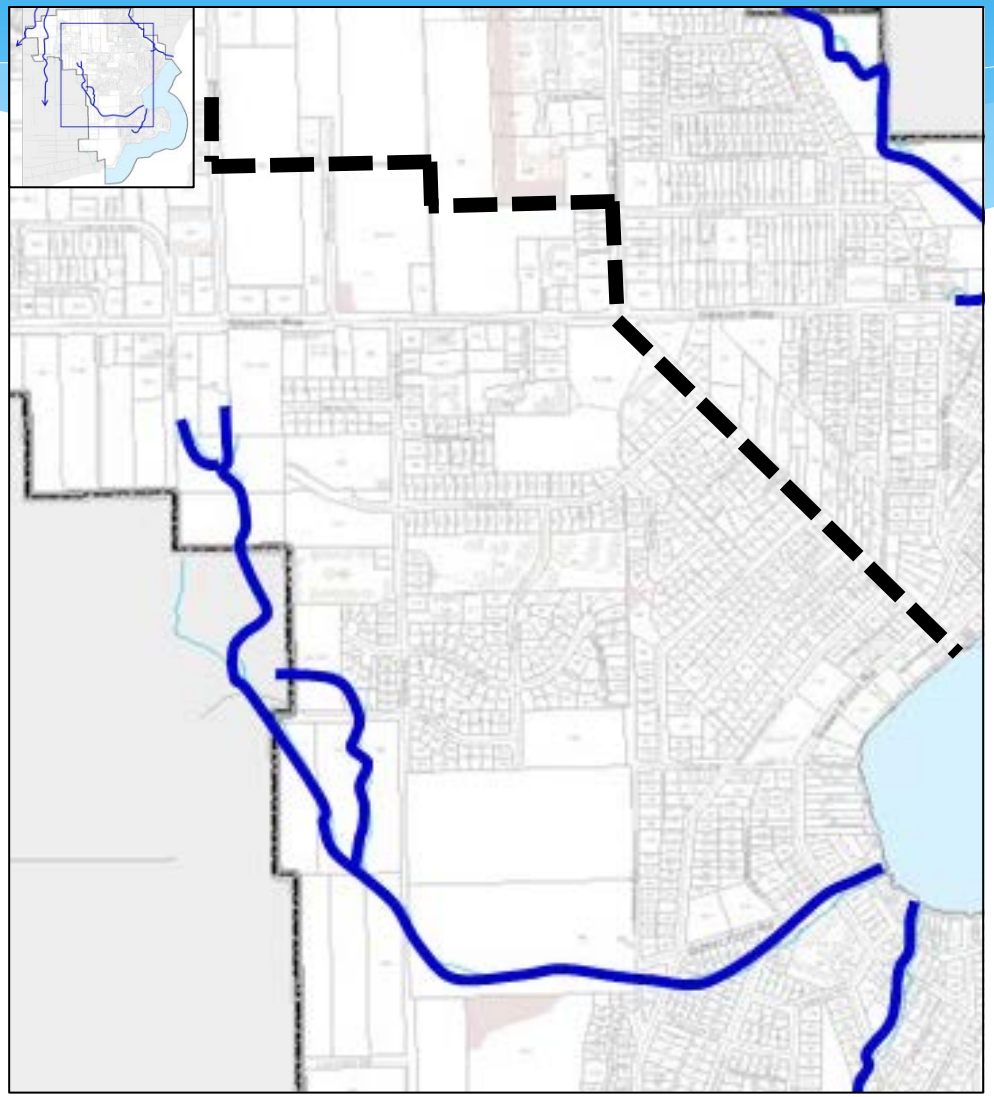
* Headwaters of Charman Creek
* Natural & biomimicry
* Stormwater management
* Provides recreation opportunities
* Educational trail system



* Ponds allow settlement prior to discharge & release at a controlled rate
* Trees and soil retain rain water

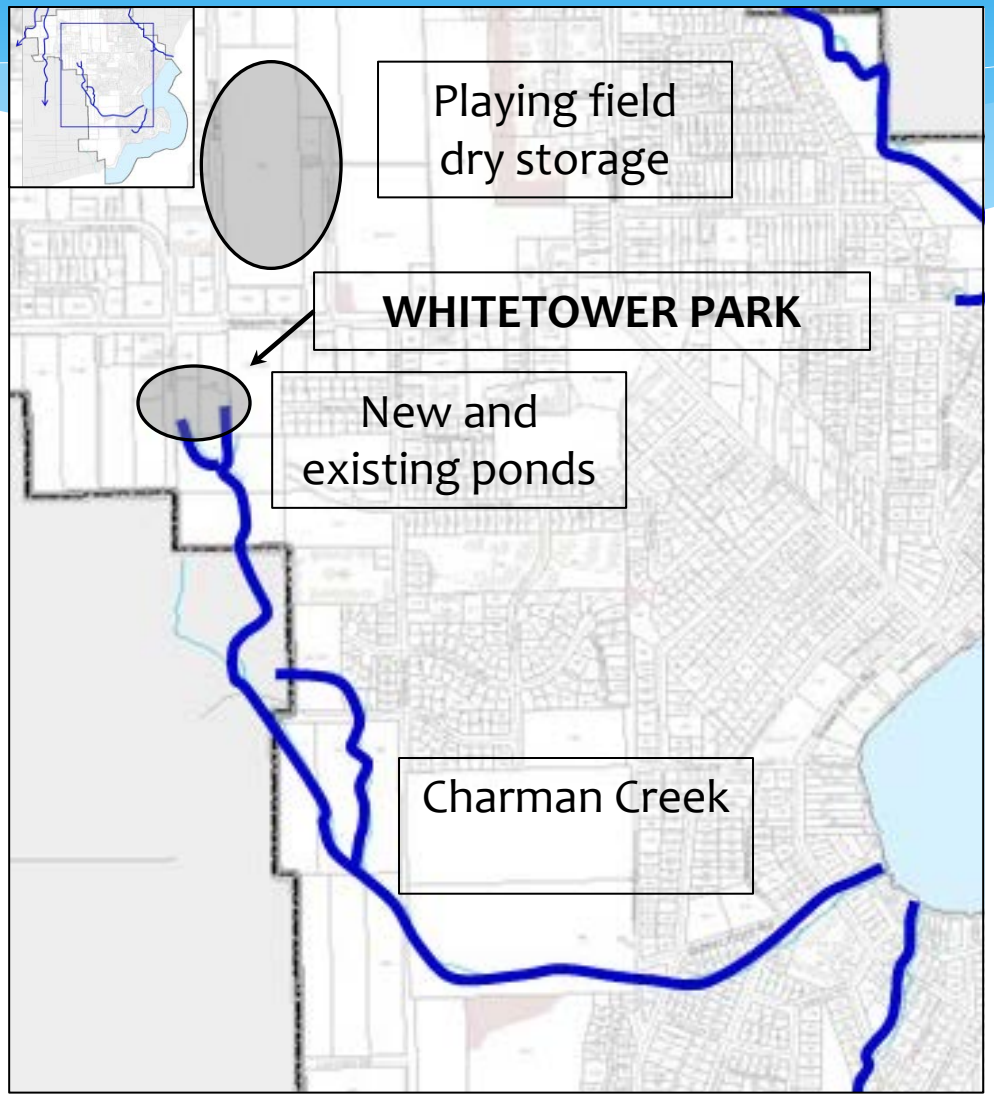
Option #1 – Engineered Solution

* 2km trunk
* Required for growth
* $4 million +
* Majority of pipe must be in place for any development to occur

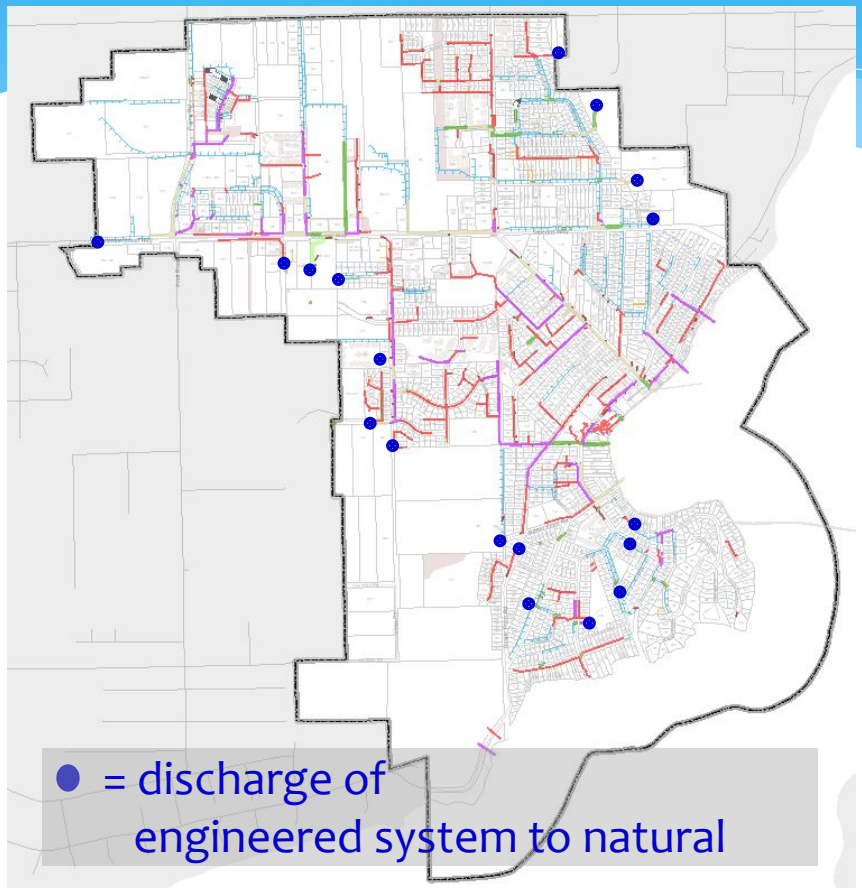


Option #2 – Natural and Biomimicry Solution

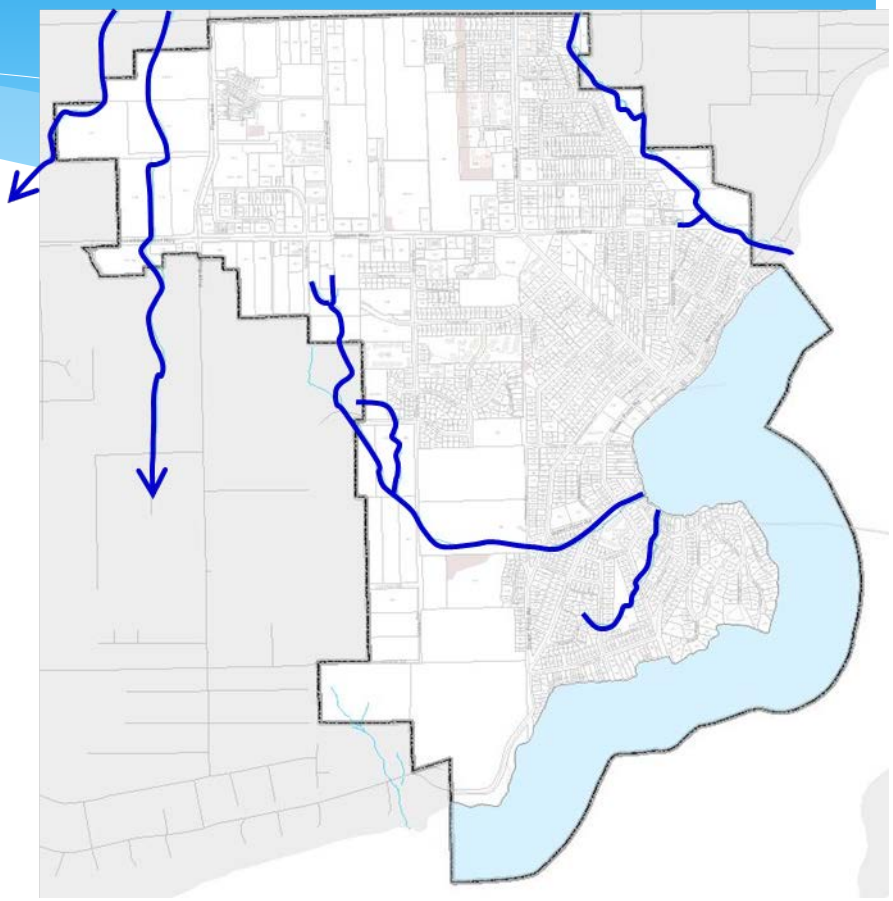
* 2km natural asset ‘in place’
* Currently exploring costs
* Required for growth but may be constructed in stages as growth occurs



Storm Water System



22km Engineered drainage Including 4 km of 500mm or greater diameter pipe



6 km Natural drainage within Town boundaries

Interdisciplinary

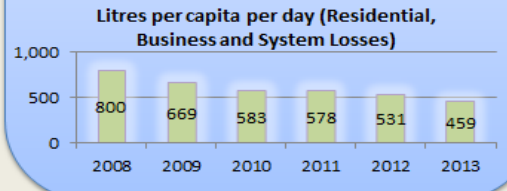
Community communication

Town of Gibsons Asset Highlights: WATER SYSTEM (Natural Assets)

Funding required to operate, maintain and replace asset: $44,000/yr
Projected financial contributions: $_____/yr
Shortfall: $_____/yr

Fast Facts

- It takes about 10 years for a drop of water falling on Mount Elphinstone and entering the aquifer to make its way to the Town wells.
- The aquifer is not an underground river or lake – it is gravel and sand that is saturated by water.
- About 75% of the Town's water is provided by the Gibsons Aquifer and 25% is supplied by SCRD from Chapman Creek
- Water consumption has dropped by approximately 43% since 2008



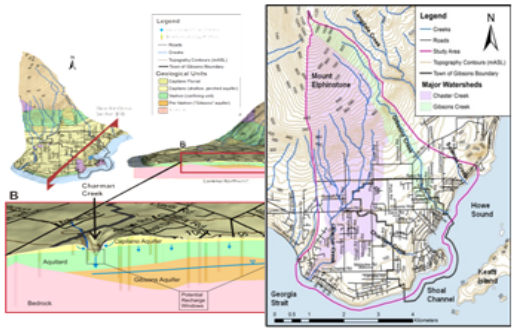
Community Goals

Pending

Levels of Service

Higher service levels (higher costs)

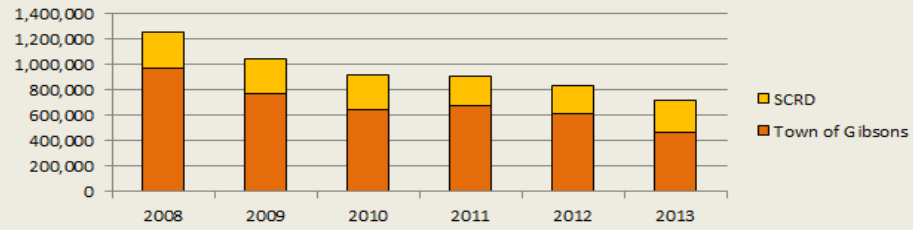
- Annual monitoring program allows early response to changing conditions.
- Communication keeps the public informed and aware of the value of water, the need to protect our resource and the reasons behind water conservation



Low service level (lower cost)

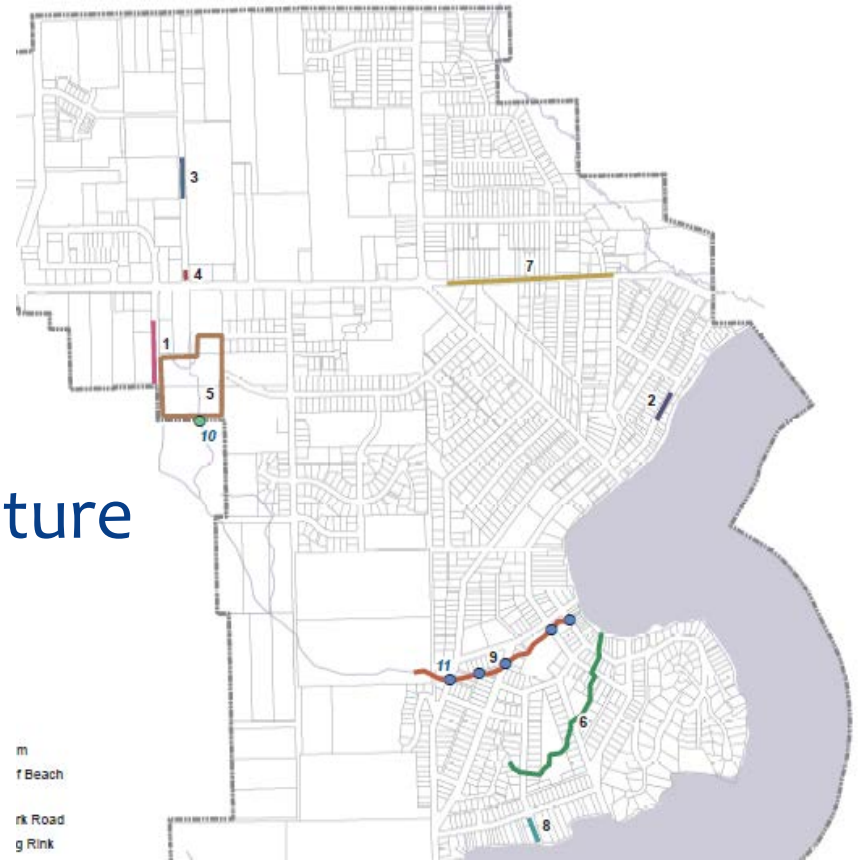
- Numerous recommendations were made in the Aquifer Mapping Study. Some of these recommendations could be abandoned or postponed. Examples of these recommendations are: Community Engagement, Well Maintenance Program, installation of additional monitoring wells, surface water monitoring, etc.

Water volume pumped (cubic metres)



Development Cost Charges

* Could it cover Eco Assets?
* Growth Management considerations
* Selectively includes walking and cycling infrastructure
* Includes natural asset improvements



Financial Statements Note

* The Town is fortunate to have many natural assets that reduce the need for engineered infrastructure that would otherwise be required. This includes the Gibsons aquifer (water storage and filtration), creeks, ditches and wetlands (rain water management) and the foreshore area (natural seawall). Canadian public sector accounting standards do not allow for the valuation and recording of such assets into the financial statements of the Town. As such, these natural assets are not reported in these financial statements. Nevertheless, the Town acknowledges the importance of these assets and the need to manage them in conjunction with engineered infrastructure.

Subdivision Bylaw

* Requirements for new development, re-development
* Awareness life cycle cost, maintenance, replacement
* Need to be selective, what can we afford overtime?

* Reduced requirements for new development
* Improved options for small re-development projects

Sustainable Community Development Implementation

Gibsons examples

* OCP policies regarding life cycle cost relevance
* Asset Management includes Eco Asset Strategy
* Development Cost Charges includes natural assets
* Financial Statements acknowledge natural assets
* New development only builds what's really needed
* Interdepartmental cooperation and promotion

Grow Where You Can Afford

"Each time a planning committee or council makes a land use decision without knowing if revenues will support infrastructure life cycle costs, it is gambling on its fiscal health." InfraGuide

BRITISH COLUMBIA

CLIC COMMUNITY LIFECYCLE INFRASTRUCTURE COSTING TOOL

The Community Lifecycle Infrastructure Costing (CLIC) Tool

Ministry of Community, Sport and Cultural Development

- A Tool that can assist local governments in estimating the life cycle-cost implications of different types of developments over a 100 year period.

- Developed by the Ministry, in collaboration with local governments, and other agencies including the Union of British Columbia Municipalities, Asset Management BC, Fraser Basin Council and the Government Finance Officers Association.

City of Prince George - CLIC Tool Use

Political and Administrative support to pursue resources to use and develop the CLIC Tool through:

* Council approved Asset Management Policy
* Asset Management Workplan
* Linked to a number of Council Strategic Goals
* Related to OCP Growth Management direction

Infill Areas and Growth Priority Areas

Policy 8.1.10 The City should prioritize public investments to Growth Priority Areas, including capital investments in transit, biking/walking infrastructure, streetscape improvements, parks and other public open spaces, utility upgrades, communications and energy infrastructure (including district energy). Repairs and maintenance should also be prioritized in these areas, recognizing the need for adequate maintenance throughout the Urban Area.

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CITY OF PRINCE GEORGE

CLIC -Overview

BRITISH COLUMBIA

CLIC COMMUNITY LIFECYCLE INFRASTRUCTURE COSTING TOOL

VERSION 1.0 (May 2015)

For INSTRUCTIONS and Definition of Terms click here

For the Tool USER GUIDE click here

1. Select, Create or Delete Scenarios	*This step allows users to choose from six default scenarios, begin a new scenario, or delete an existing scenario.*
2. Specify Costing Variables	*This step specifies the unit costs for all variables, as well as related costing parameters.*
3. Specify Revenue Variables	*This step inputs revenue information such as property tax rates and development charges*
4. Enter Development Scenario Characteristics	*This step specifies the characteristics of the scenario including development densities, length of roads, sewers, etc.*
5. Specify Allocation of Costs	*This step allows users to allocate costs and revenues between developers, the municipality and users.*
6. Cost Savings and Replacement	*This step enables users to specify replacement periods for all assests, and discount costs to account for infrastructure that may already be in place.*
7. User Defined Costs and Revenues	*This is an optional step where users can input additional costs or revenues that are not considered in the basic tool.*
8. View Results	*This step illustrates results in several ways and allows the user to compare up to three different scenarios.*
9. View Comments	*This step allows users to view and print their inserted comments.*

Scenarios

BRITISH COLUMBIA | CLIC | COMMUNITY LIFECYCLE INFRASTRUCTURE COST

STEP 1: SELECT/CREATE/DELETE SCENARIO

Note

SELECT SCENARIO

Choose the scenario that best reflects the characteristics of the development scenario you wish to explore.

☞ *See below for a brief description of each of the six built-in scenarios*

Name / Description **Scenario #**

Inner Core / Medium Density

The scenario establishes a starting point for development parameters. The parameters of this scenario can be modified in subsequent steps. Scenarios 1 to 6 must be saved under a NEW name before they can be modified. To view the results of a default scenario, select the scenario and click 'Main Menu' above.

If you want to modify the scenario under a

NEW Name / Description

Save NEW Name

If you want to delete the scenario selected

Delete Scenario

Scenario 1

Inner core : High density

Scenario 2

Inner core : Medium density

Scenario 3

Inner suburb : Medium density

Scenario 4

Inner suburb : Low density

Scenario 5

Outer suburb: Medium density

Scenario 6

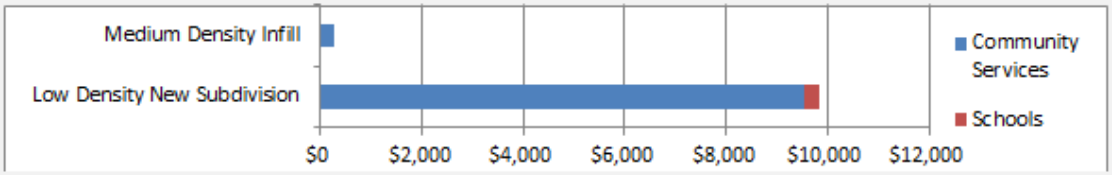
Outer suburb: Low density

Neighbourhood Planned areas comparison with C.L.I.C. Tool: low density new subdivision vs. medium density infill

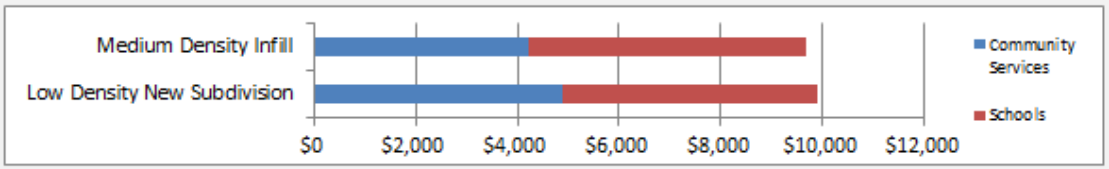
Neighbourhood Comparison: The main differences between the two neighbourhoods is that one has a higher density due to a higher concentration of multi-family dwellings, and it is located closer to existing infrastructure and services.

	Low Density New Subdivision Scenario	Medium Density Infill Scenario
Net Density (u/ha)	28	52
Population	8,958	10,824
Gross Area (ha)	188	127
Residential area	71%	70%
Connectivity	• interconnected road network, some trail and bike. • some transit access • 9.4km from Central Business District	• interconnected road, trail and bike network • excellent transit access • 1.0 km from Central Business District
Mix of land use	• Primarily residential: single-family detached, townhouses	• Primarily residential: single-family detached, narrow lots single family, townhouses, mid-rise & low-rise apartments
Roads total length (m)	20,672	21,624

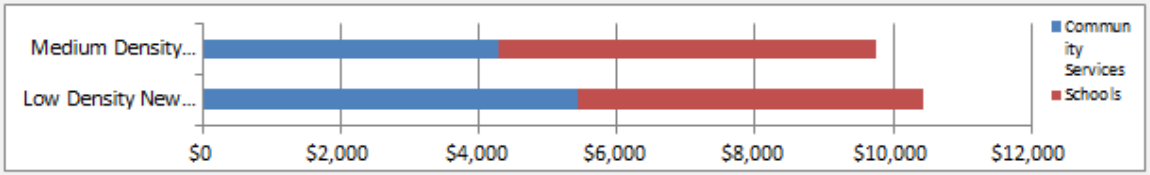
Initial Capital Costs Per Household: Per household initial capital costs are significantly lower (97%) in the infill neighbourhood compared to the low density neighbourhood ($287 vs.$9,846)



Annual Operating Costs Per Household: The community services costs are 14% lower in the infill scenario ($4,905 vs. $4,238); with school costs the difference is 2% higher in the lower density new subdivision ($9,895 vs. $9,694).



Annual Lifecycle Cost: The annual lifecycle cost per household for community services for the low density neighbourhood is 21% higher than that of the infill neighbourhood ($5,426 vs. $4,285); with school costs the difference is 7% higher respectively ($10,431 vs. $9,741).



CITY OF PRINCE GEORGE

Annual Estimated Property Taxes & User Fees: The average annual fees (taxes and user fees) per household in the infill neighbourhood are 10% less than in low density one ($4,361 vs $4,821).		
	Per household or unit	
	Low density	**Infill**
Annual Property Taxes	$3,459	$3,037
Annual User Charges	$1,185	$1,181
Total Annualized Value of Revenues	**$4,821**	**$4,361**
Private & External Costs: Residents also experience other non-tax-based savings with more compact patterns.		
	Low density	**Infill**
Home Energy Costs	$2,010	$1,819
Driving Costs	$15,614	$12,625
Vehicle Collision (including property damage, injury)	$1,046	$872
Air Pollution	$151	$126
Climate Change	$177	$148
Total Annual	**$18,998**	**$15,590**

Prince George Revenue Comparison (CLIC Tool)

	Low Density	Medium Density
Prop taxes	$70 k/ha	$109 k/ha
User charges	$23 k/ha	$42 k/ha
Total rev	$97 k/ha	$157 k/ha

CITY OF PRINCE GEORGE

Unit Costs & Revenues

POTENTIAL COMMUNITY SERVICES

Roads, Water, Sanitary and Storm - Capital Costs

This section refers to the cost of road infrastructure within the community/development using chainages.
The costs are then applied to the road layout specified in Step 4.

	Type 1 Public Laneway 6 m R.O.W	Type 2 Two-lane local 15 m R.O.W	Type 3 Two-lane local 20 m R.O.W	Type 4 Two-lane collector 20 m R.O.W	Type 5 Four-lane collector R.O.W	Type 6 Four-lane Arterial R.O.W	Type 7 User Defined 0 m R.O.W	
Basic Roadworks ($/m)	$ 592	$ 1,939	$ 2,445	$ 2,681	$ 3,490	$ 4,507	$ -	☞ *Incudes excavation, granular fill, asphalt sidewalks, and basic landscaping*
Potable Water Distribution ($/m)	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	☞ *Includes 150 mm watermain, connectors and hydrants*
Sanitary Sewer Collection ($/m)	$ 373	$ 373	$ 373	$ 373	$ 373	$ 373	$ 373	☞ *Includes 200 mm pipe, connectors and maintenance holes*
Storm Sewer Collection ($/m)	$ 324	$ 324	$ 324	$ 324	$ 324	$ 324	$ 324	☞ *Includes 300 mm pipe, connectors and maintenance holes*

For information on the assumptions for road costs, including quantities and unit costs, click here: **Road Cost Calculator**

Roads, Water, Sanitary and Storm - O&M Costs

☞ *It is best practice to separate Operatng Costs from Maintenance Cost. Where separate values don't exist, the user can add the combined total in either category as only total combined O&M Cost is used to calculate lifecycle cost.*

Road O&M Costs ($/m)

	Operating	Maintenance	Total O&M
Local	$ 27.00	$ 0.00	$ 27.00
Collector	$ 37.04	$ 0.00	$ 37.04
Arterial	$ 55.24	$ 0.00	$ 55.24

☞ *Road maintenance costs may vary by local climatic conditions and policies for snow clearing.*

Potable Water Treatment ($/household)

	Operating	Maintenance	Total O&M
Single Detached	$ 450.81	$ 0.00	$ 450.81
Semi-detached/Rowhouses	$ 413.33	$ 0.00	$ 413.33
Apartments	$ 376.84	$ 0.00	$ 376.84

☞ *Includes the cost of centralized treatment. Lower costs for higher density neighbourhoods are due to lower lawn watering, etc.*

	Operating	Maintenance	Total O&M
Potable Water Distribution ($/m)	$ 2.00	$ 2.00	$ 4.00

☞ *Include all costs associated with main pipes, service laterals and any other components of the distribution or collection system.*

	Operating	Maintenance	Total O&M
ewater Treatment ($/household)	$ 138.32	$ 0.00	$ 138.32

☞ *Includes the cost of centralized treatment.*

CITY OF PRINCE GEORGE

Development Characteristics

DEVELOPMENT DENSITIES

Enter number of units by housing type OR to convert % housing breakdown, use the:

Density Calculator

Housing Type	Number of Units by Type
Single Detached	588
Semi Detached	136
Rowhouse/Townhouse/Duplex	0
Low Rise	1,353
High Rise	0

Transit Supportive Land Use Guidelines click here

POTENTIAL COMMUNITY SERVICES

Roads

Internal: Roads that are within the development.

Residential Street Pattern Design, CMHC click here

		Length of Road (m)
Type 1 Public Laneway	6 m R.O.W	0
Type 2 Two-lane local	15 m R.O.W	0
Type 3 Two-lane local	20 m R.O.W	14,173
Type 4 Two-lane collector	20 m R.O.W	2,993
Type 5 Four-lane collector	26 m R.O.W	0
Type 6 Four-lane Arterial	37 m R.O.W	4,458
Type 7 User Defined	0 m R.O.W	0

If some or all roads exist, indicate the percentage that exist under Step 6 for cost savings.

External: Roads that are impacted by the development but not contained within.

Select Road Type		Length of Road (m)
Type 6 Four-lane Arterial	37 m R.O.W	0
Type 3 Two-lane local	20 m R.O.W	0

Select Road Type as defined in Step 2 Road Cost Calculator

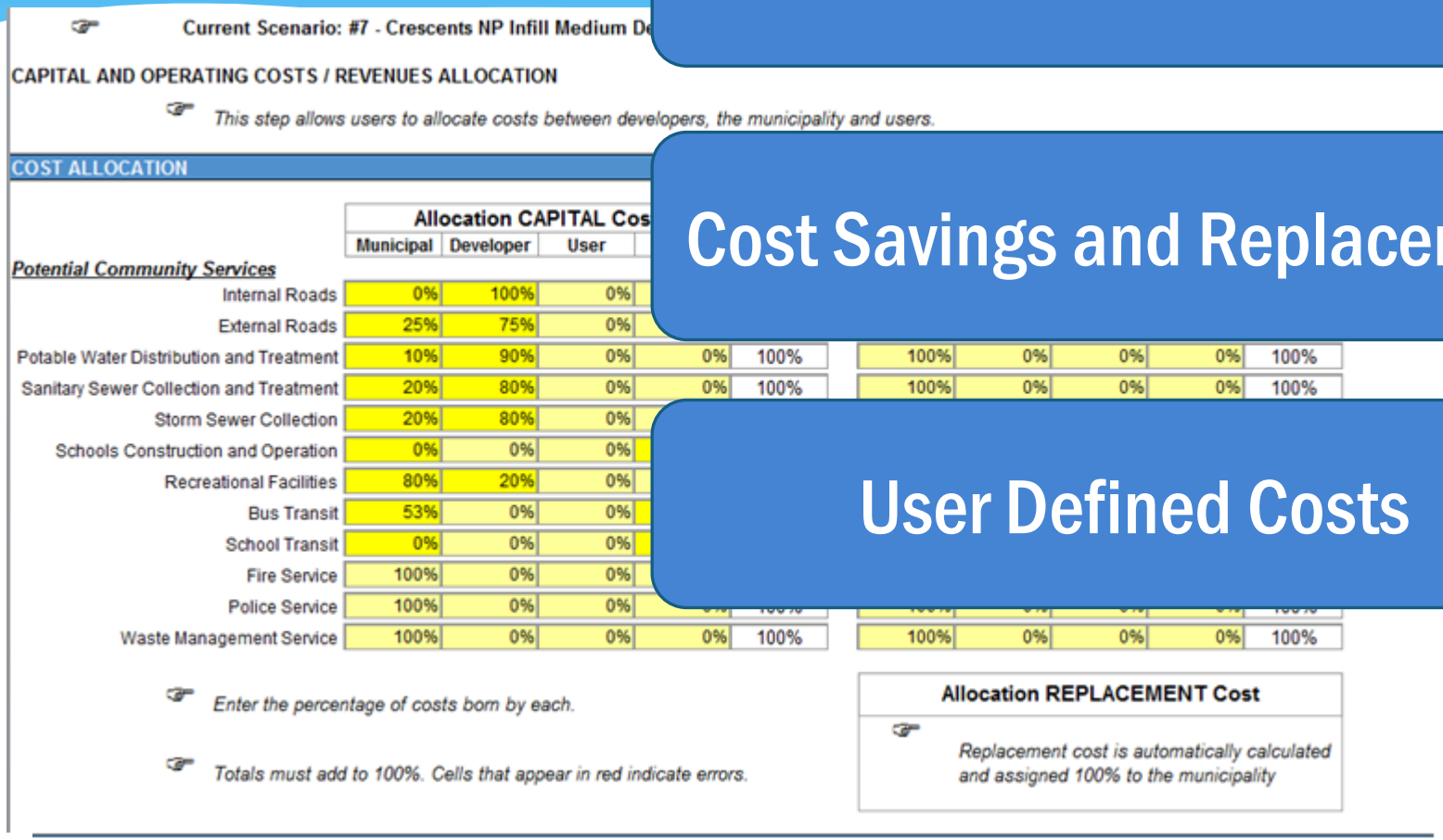
If new or widened roads are required outside of the development area, enter these here. Allocation of costs can be specified under Step 5.

CITY OF PRINCE GEORGE

Cost Allocation

Cost Savings and Replacement

User Defined Costs



Current Scenario: #7 - Crescents NP Infill Medium D

CAPITAL AND OPERATING COSTS / REVENUES ALLOCATION

This step allows users to allocate costs between developers, the municipality and users.

COST ALLOCATION

	Allocation CAPITAL Cos									
	Municipal	Developer	User							
Potential Community Services										
Internal Roads	0%	100%	0%							
External Roads	25%	75%	0%							
Potable Water Distribution and Treatment	10%	90%	0%	0%	100%	100%	0%	0%	0%	100%
Sanitary Sewer Collection and Treatment	20%	80%	0%	0%	100%	100%	0%	0%	0%	100%
Storm Sewer Collection	20%	80%	0%							
Schools Construction and Operation	0%	0%	0%							
Recreational Facilities	80%	20%	0%							
Bus Transit	53%	0%	0%							
School Transit	0%	0%	0%							
Fire Service	100%	0%	0%							
Police Service	100%	0%	0%							
Waste Management Service	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%

Enter the percentage of costs born by each.

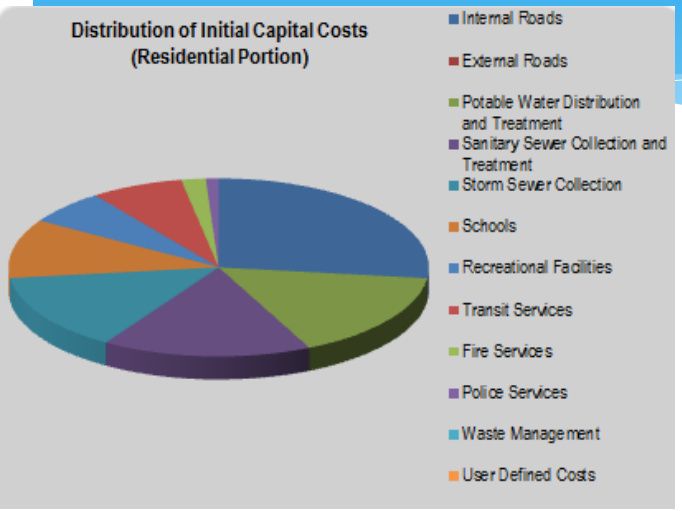
Totals must add to 100%. Cells that appear in red indicate errors.

Allocation REPLACEMENT Cost

Replacement cost is automatically calculated and assigned 100% to the municipality

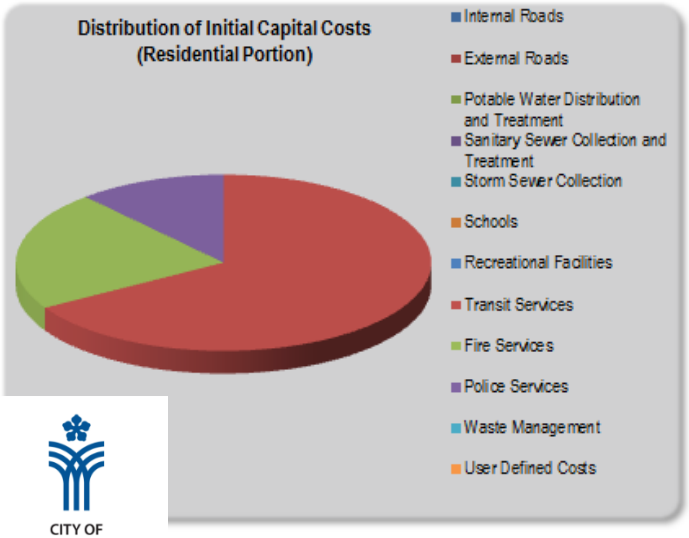
CITY OF PRINCE GEORGE

Results



INITIAL CAPITAL

POTENTIAL COMMU					
	External Roads	-	-	-	-
	Potable Water Distribution and Treatment	$1,825,970	$1,825,970	$484	16%
	Sanitary Sewer Collection and Treatment	$1,841,508	$1,841,508	$488	16%
	Storm Sewer Collection	$2,253,724	$1,609,159	$427	14%
	Schools	$1,226,938	$1,226,938	$325	11%
	Recreational Facilities	$708,745	$708,745	$188	6%
	Transit Services	$1,145,658	$818,000	$217	7%
	Fire Services	$214,885	$214,885	$57	2%
	Police Services	$113,098	$113,098	$30	1%
	Waste Management	-	-	-	-
USER DEFINED	User Defined Costs	-	-	-	-
	Total Costs	**$13,649,768**	**$11,442,241**	**$3,035**	**100%**



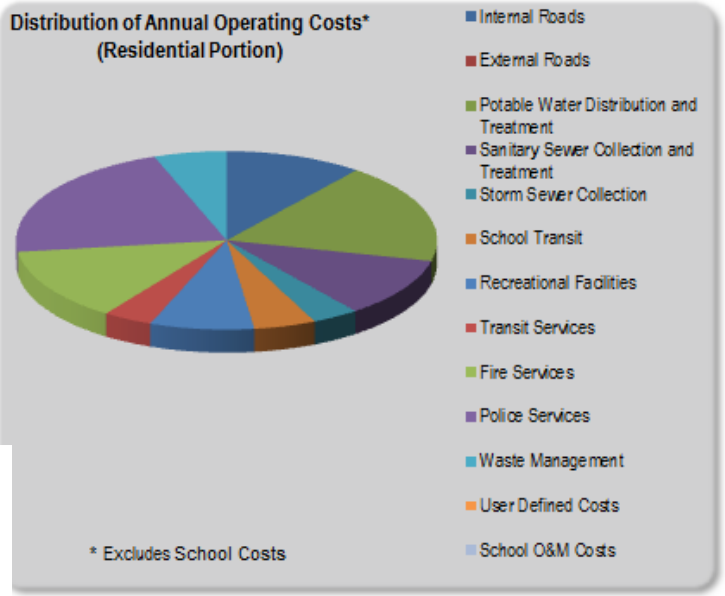
INITIAL CAPITAL COSTS

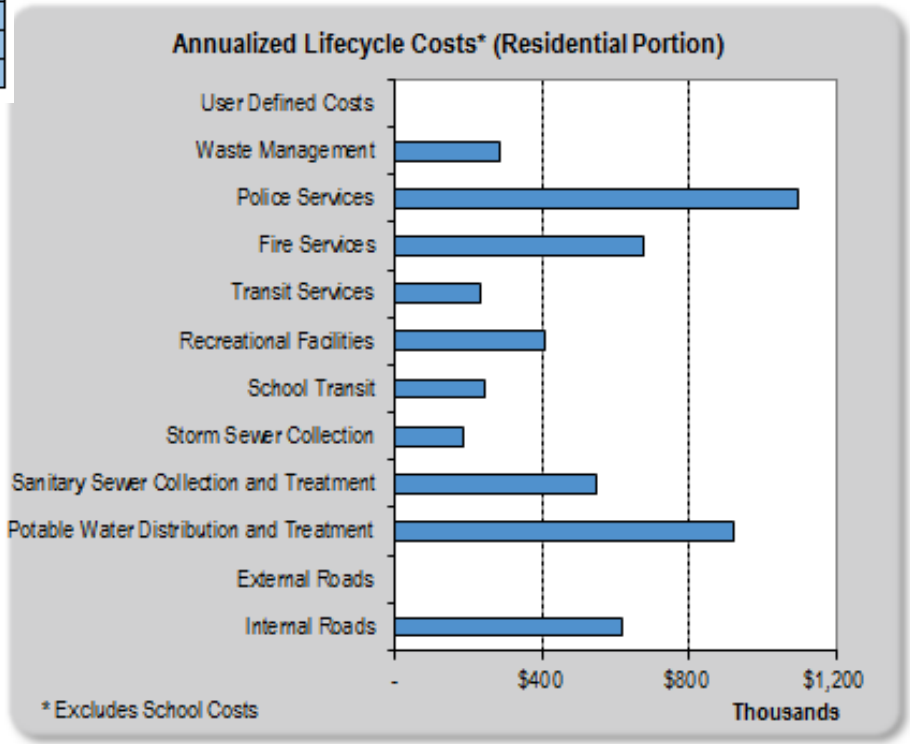
POTENTIAL COMMUNITY SERVICES		Total Development $	Residential Portion $	Household Costs $/hh	Percent Breakdown %
	Internal Roads	-	-	-	-
	External Roads	-	-	-	-
	Potable Water Distribution and Treatment	-	-	-	-
	Sanitary Sewer Collection and Treatment	-	-	-	-
	Storm Sewer Collection	-	-	-	-
	Schools	-	-	-	-
	Recreational Facilities	-	-	-	-
	Transit Services	$510,910	$357,637	$172	66%
	Fire Services	$118,389	$118,389	$57	22%
	Police Services	$62,310	$62,310	$30	12%
	Waste Management	-	-	-	-
USER DEFINED	User Defined Costs	-	-	-	-
	Total Costs	**$691,609**	**$538,336**	**$259**	**100%**

CITY OF
PRINCE GEORGE

Results

		Total Development	Residential Portion	Household Costs	Percent Breakdow
POTENTIAL COMMUNITY SERVICES		$	$	$/hh	%
	Internal Roads	$880,571	$616,400	$297	5%
	External Roads	-	-	-	
	Potable Water Distribution and Treatment	$917,650	$917,650	$442	7%
	Sanitary Sewer Collection and Treatment	$546,779	$546,779	$263	4%
	Storm Sewer Collection	$259,488	$181,642	$87	1%
	School Transit	$343,825	$240,678	$116	2%
	Recreational Facilities	$405,015	$405,015	$195	3%
	Transit Services	$331,698	$232,189	$112	2%
	Fire Services	$679,116	$676,019	$325	5%
	Police Services	$1,096,093	$1,093,147	$526	9%
	Waste Management	$283,635	$283,635	$137	2%
USER DEFINED	User Defined Costs	-	-	-	-
SCHOOLS	School Costs	$7,590,038	$7,590,038	$3,654	59%
otal Costs (Excluding School Costs)		**$5,743,870**	**$5,193,152**	**$2,500**	
Total Costs (Including School Costs)		**$13,333,908**	**$12,783,190**	**$6,155**	**100%**





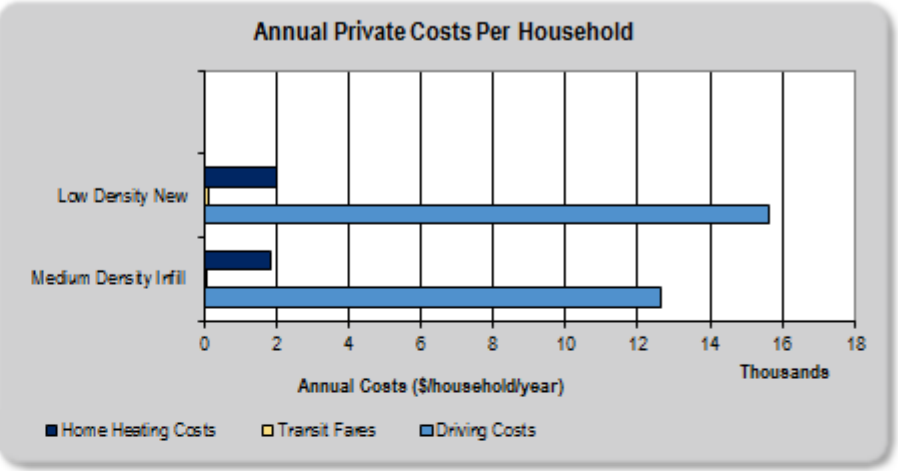
CITY OF PRINCE GEORGE

Compare Scenarios

COMPARISON OF PRIVATE COSTS AND EXTERNAL COSTS

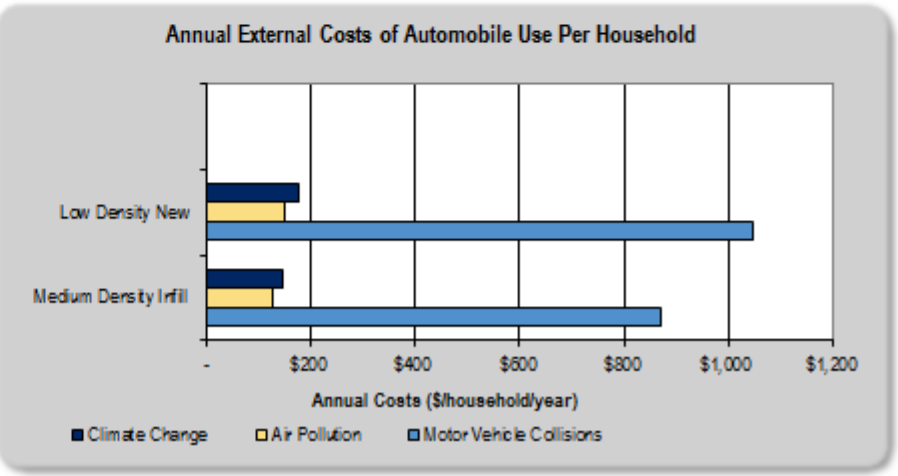
ANNUAL PRIVATE COSTS PER HOUSEHOLD

Annual Private Costs (hh)	Medium Density Infill	Low Density New	
Driving Costs	$12,625	$15,614	
Transit Fares	$52	$108	
Home Heating Costs	$1,819	$2,010	
Total Cost	**$14,497**	**$17,732**	-



ANNUAL EXTERNAL COSTS OF AUTOMOBILE USE PER HOUSEHOLD

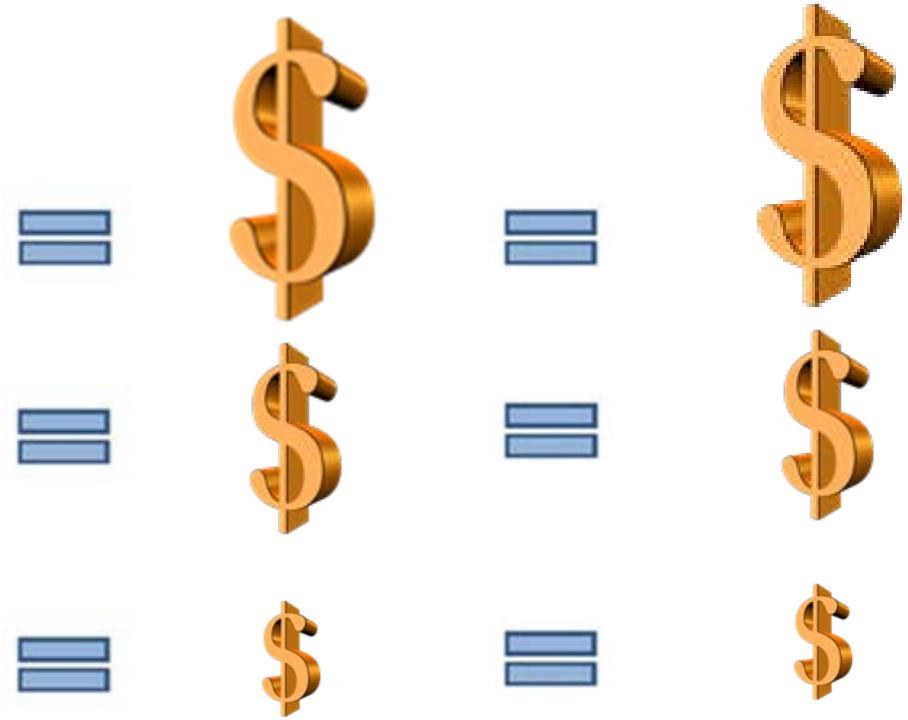
Annual External (hh)	Medium Density Infill	Low Density New	
Motor Vehicle Collisions	$872	$1,046	
Air Pollution	$126	$151	
Climate Change	$148	$177	
Total Cost	**$1,146**	**$1,374**	-



CITY OF PRINCE GEORGE

The CLIC Story

Length of infrastructure



Initial Capital Cost

Lifecycle Cost

Per Capita/Household Cost


CLIC
Effective Asset Management
CLIC
Responsible Growth Management
CLIC
Long-term Fiscal Management

Use Financial Tools and Incentives

Revealing:

* CLIC Tool
* Asset Management
* Eco-Asset Management

Financial Tools to integrate:

* Development Cost Charges
* Revitalization Tax Exemptions
* User Fees & charges
* Self funding utilities
* Local area service tax

Recommendations

- An Interdepartmental team
- Asset Management Plan
- Using CLIC Tool
- Review of policy tools
- Investigating funds and grant opportunities
- Dialogue with residents
- Evaluating natural assets
- Assessing vulnerability of infrastructure to climate change

Acknowledgements

Funding Partners:

CMHC SCHL
HOME TO CANADIANS

real estate foundation
BRITISH COLUMBIA

Visuals:

FCM
FEDERATION OF CANADIAN MUNICIPALITIES
FÉDÉRATION CANADIENNE DES MUNICIPALITÉS
GREEN MUNICIPAL FUND
FONDS MUNICIPAL VERT

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References

CLIC and other Tools: http://www.cscd.gov.bc.ca/lgd/greencommunities/sustainable_development.htm

Asset Management BC: http://www.assetmanagementbc.ca/

Eco-Asset Management: http://www.gibsons.ca/eco-assets

Questions