



NORTH VANCOUVER
DISTRICT

From Rain 2 Resource BCWWA - Kelowna

October 29th, 2010

Rainwater Management & Policy

How can we (local government) develop new policy to that advocates water sustainability in the modern era?



Rainwater Management & Policy

Local government policy

- Usually a result of something undesired
- Usually contains a set of rules or guidelines to ensure that things “undesirable” do not occur anymore
- Most often is desired to fix a “problem” across all conceivable set of circumstances



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Local government policy

- Will invariably require a number of exemptions due to special circumstances
- Special circumstances can lead to perception that policy is not being fairly and consistently applied



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Local government policy what if?

- Policy resulted from something considered desirable
- Contained a set of rules or guidelines to ensure that things “desirable” continue to occur
- Were not binding to a rigid and prescriptive set of criteria



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- Highlight the impacts of current single family zoning on water supply/demand and rainwater management
- Use of multi-year aerial photos to digitize land uses from years 1992-2009
- Use the Water Balance model as a tool to assess current policy wrt water supply/demand and rainwater management
- Use of the Water Balance model to develop alternative policy options

Returning Users

Username

Password

Log In!**Forgotten Your Password?****Help**

Is this your first visit to the model?

You will have to register in order to create model scenarios. There is only one option during our public beta testing period:

1. Register a (free) "trial" account. As a trial account registrant you are free to access all model features, however your account and any scenarios you've created **will be deleted 7 days** from the time you register.

Following the end of the beta period, scenarios created by subscribers or members of subscribing groups will remain in the database permanently.

Create a New Account

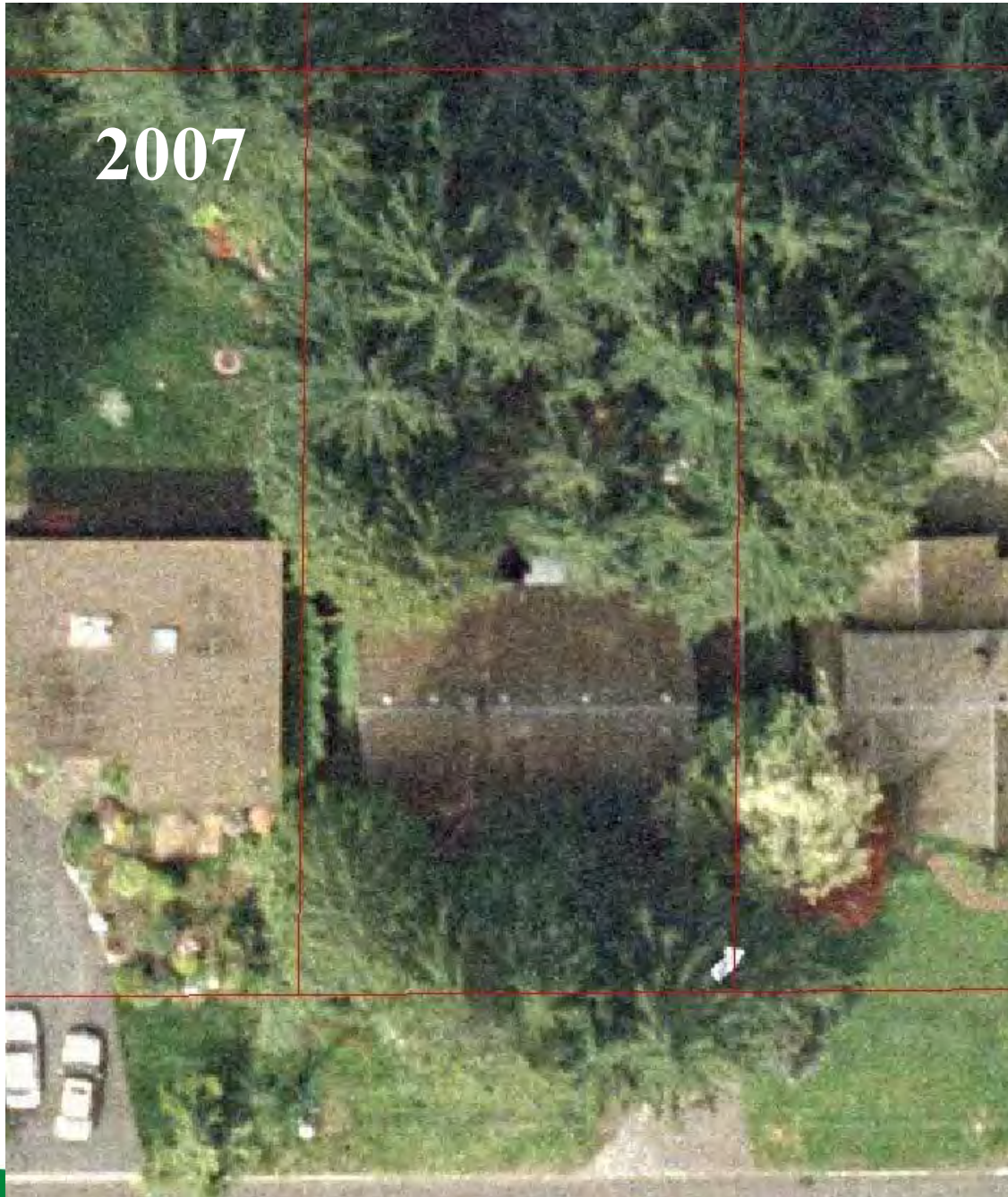
We are incorporating all the lessons we have learned to date...



The 'new Water Balance Model' integrates the Site with the Watershed and the Stream...

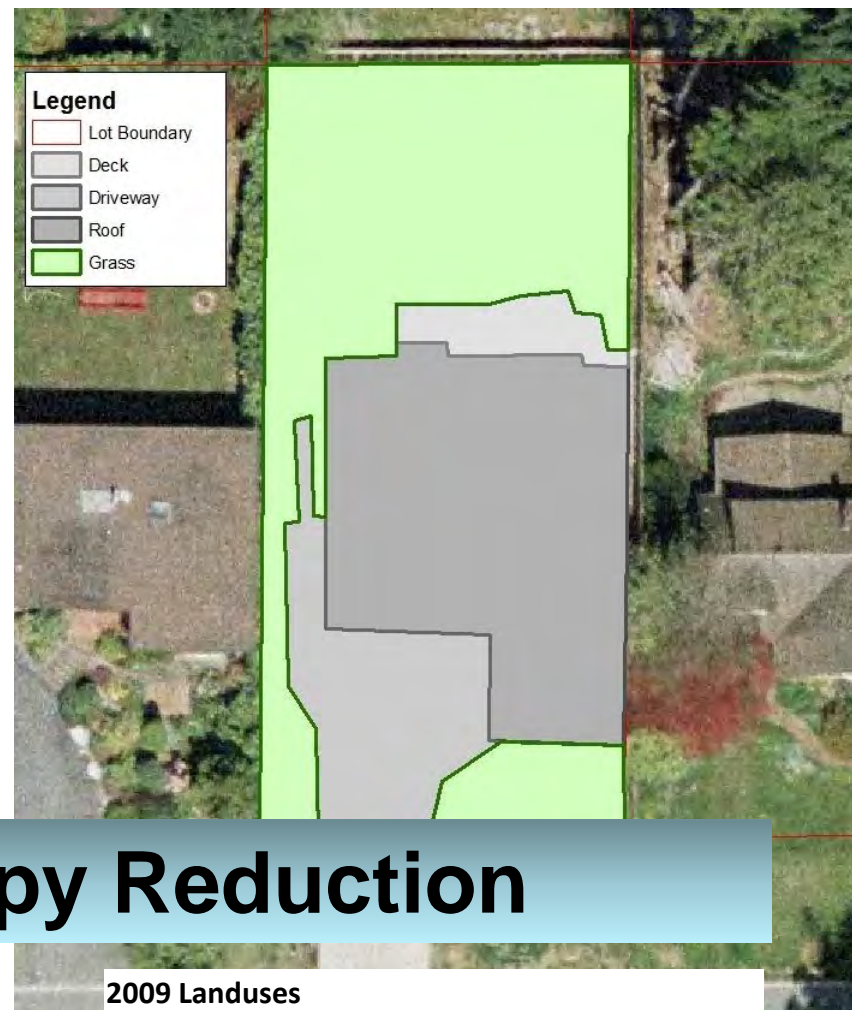
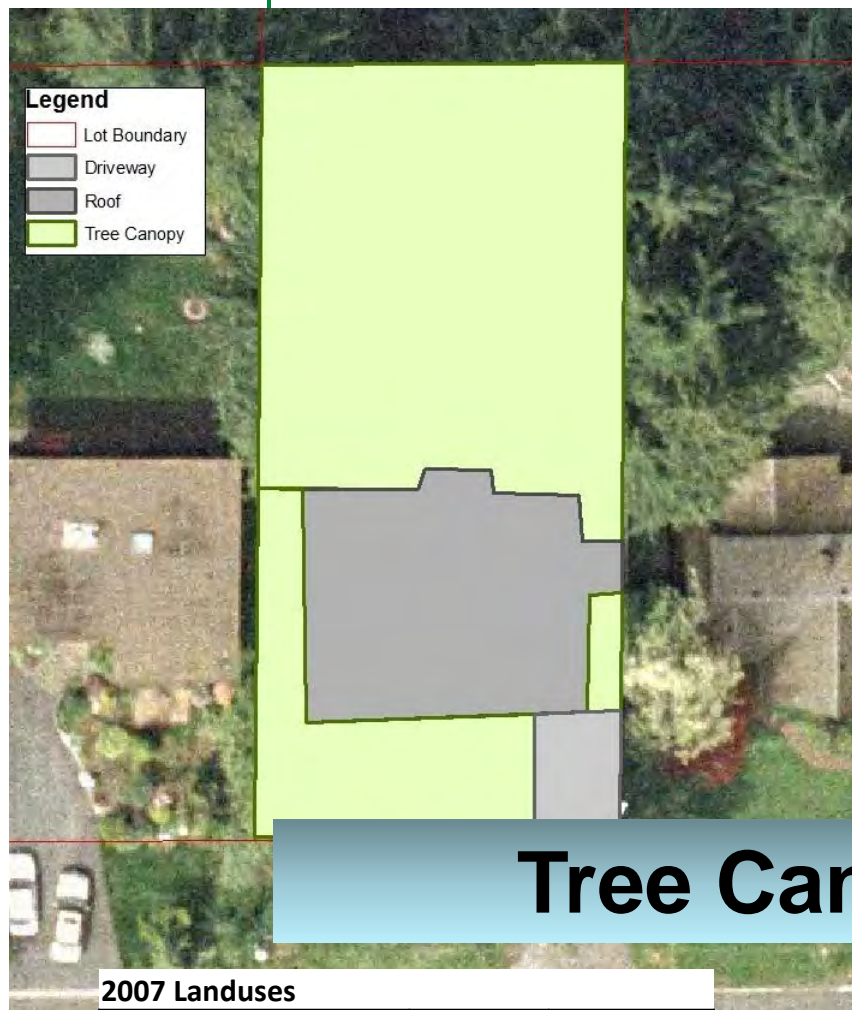
www.waterbalance.ca

2007



2009





Tree Canopy Reduction

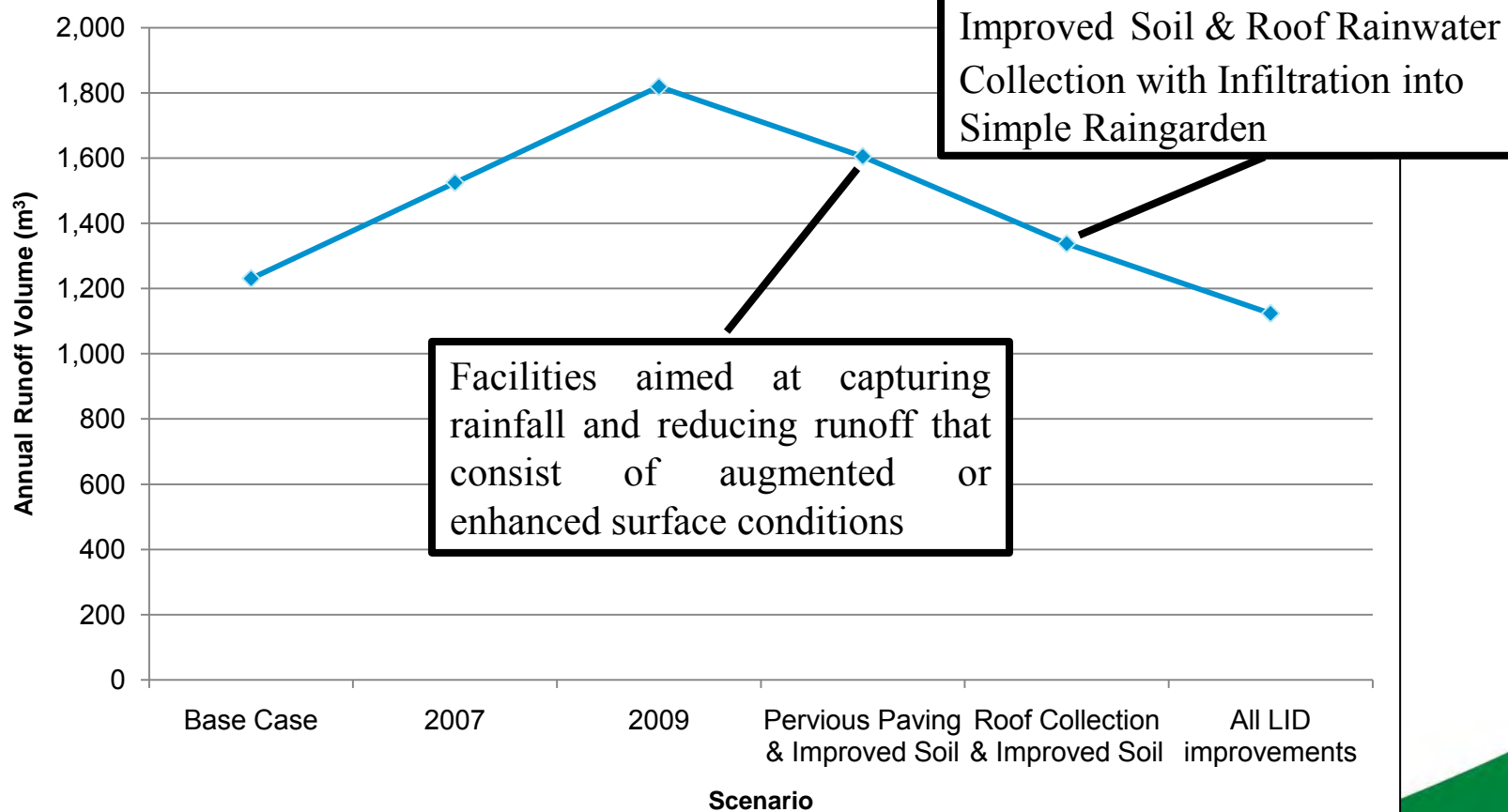
2007 Landuses

Landuse	Area (m ²)	Proportion
Driveway	33	4%
Roof	204	24%
Tree Canopy	622	72%
Impervious	236	28%
Pervious	622	72%

2009 Landuses

Landuse	Area (m ²)	Proportion
Driveway	121	14%
Roof	298	35%
Deck	33	4%
Grass	402	47%
Impervious	452	53%
Pervious	402	47%

Total Runoff from Site 1 and Reductions from Improvements

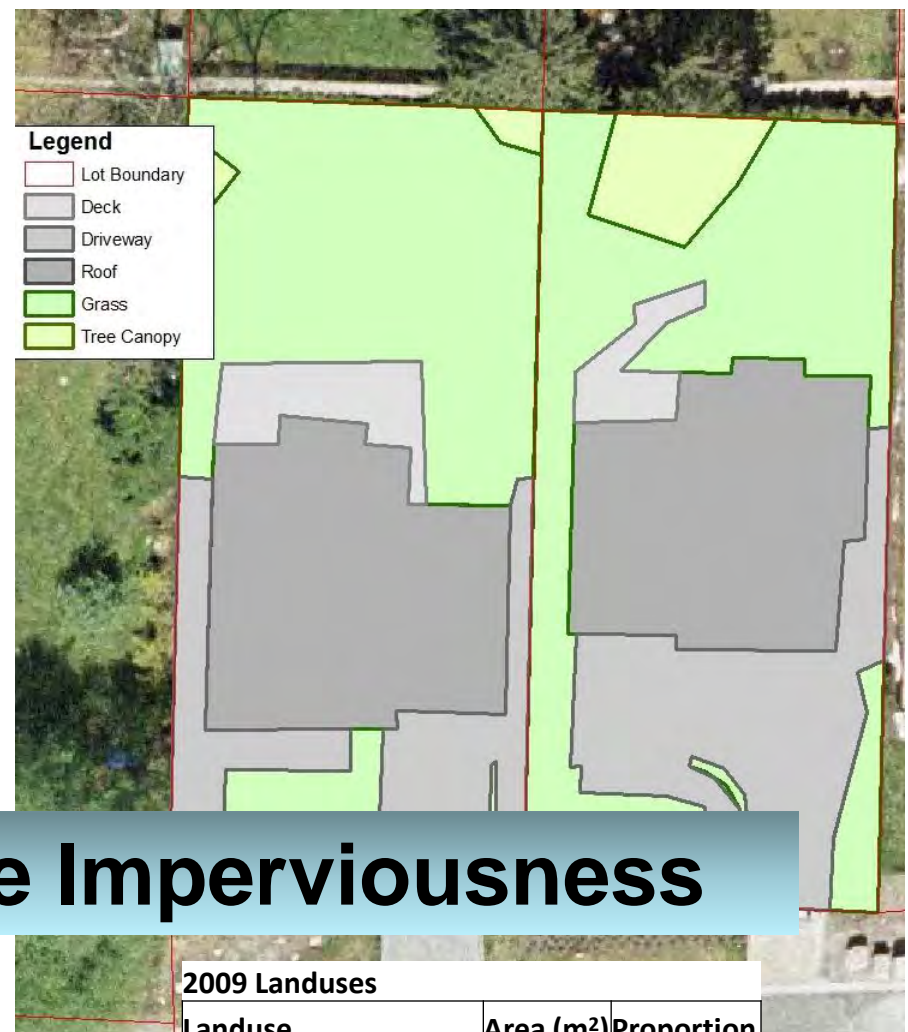
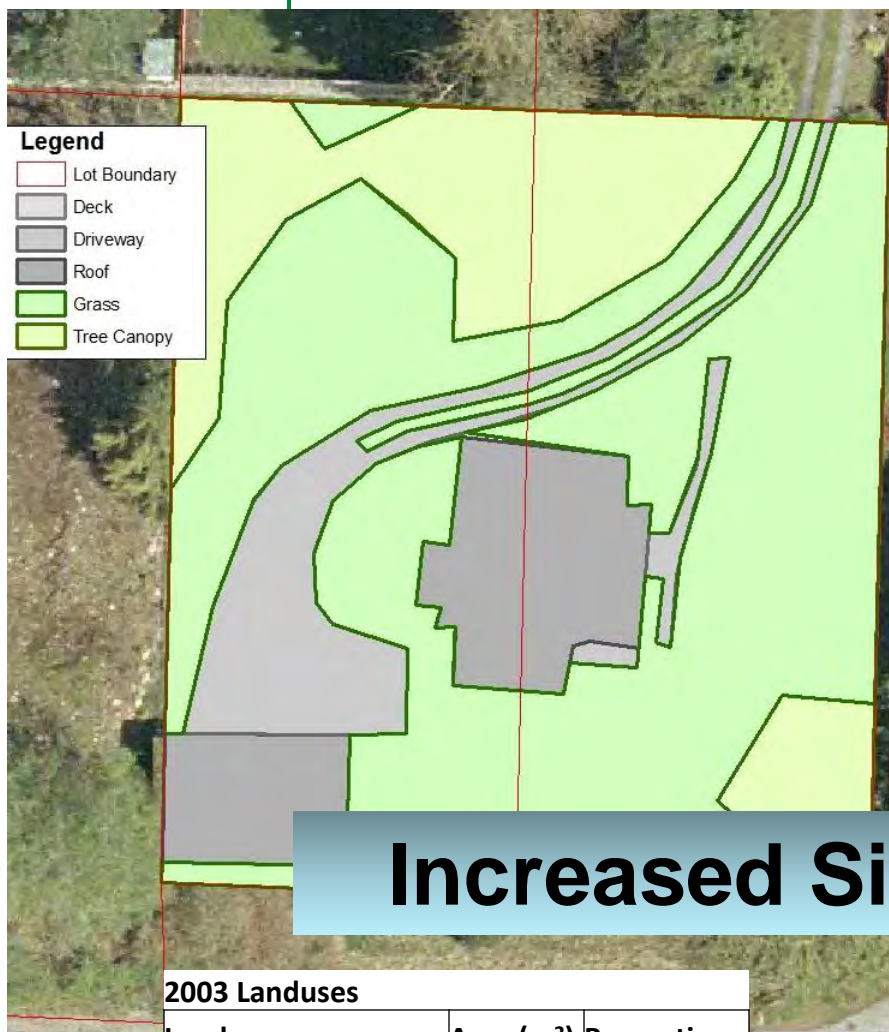


2003



2009





Increased Site Imperviousness

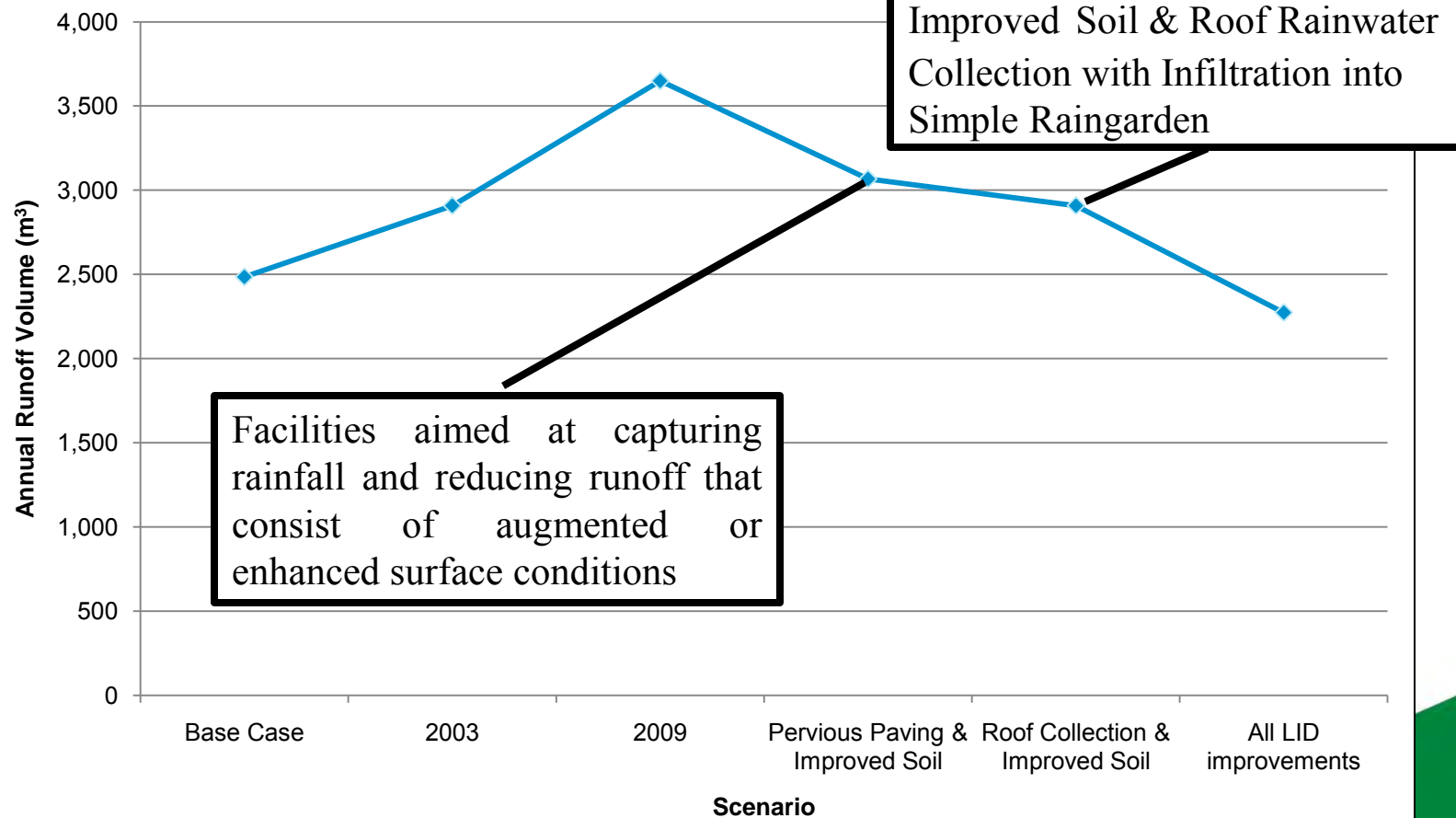
2003 Landuses

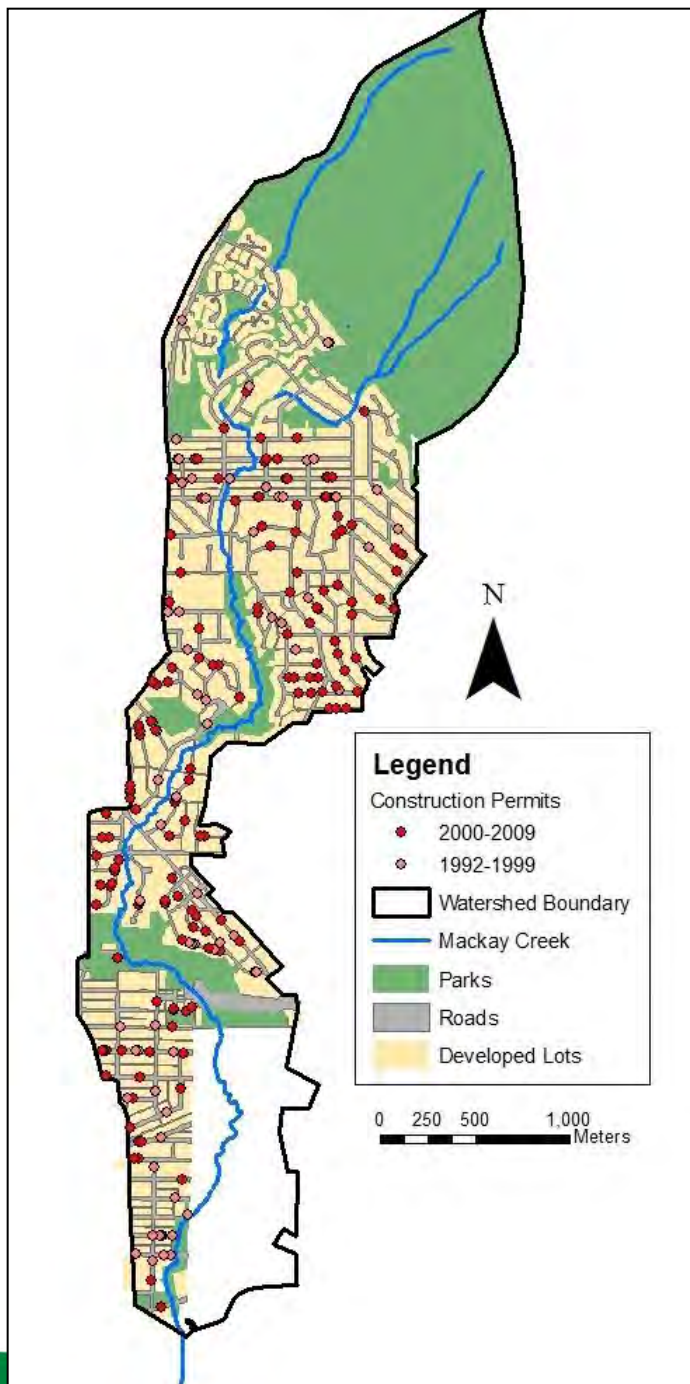
Landuse	Area (m ²)	Proportion
Driveway	186	11%
Roof	207	12%
Grass	961	57%
Tree Canopy	339	20%
Impervious	393	23%
Pervious	1300	77%

2009 Landuses

Landuse	Area (m ²)	Proportion
Driveway	373	22%
Roof	463	27%
Deck	74	4%
Grass	723	43%
Tree Canopy	65	4%
Impervious	910	54%
Pervious	788	46%

Total Runoff from Site 2 and Impacts from Improvements





Mackay Creek

Mackay Creek Construction Permits

77	1992-1999
150	2000-2009
2884	Single Family Lots

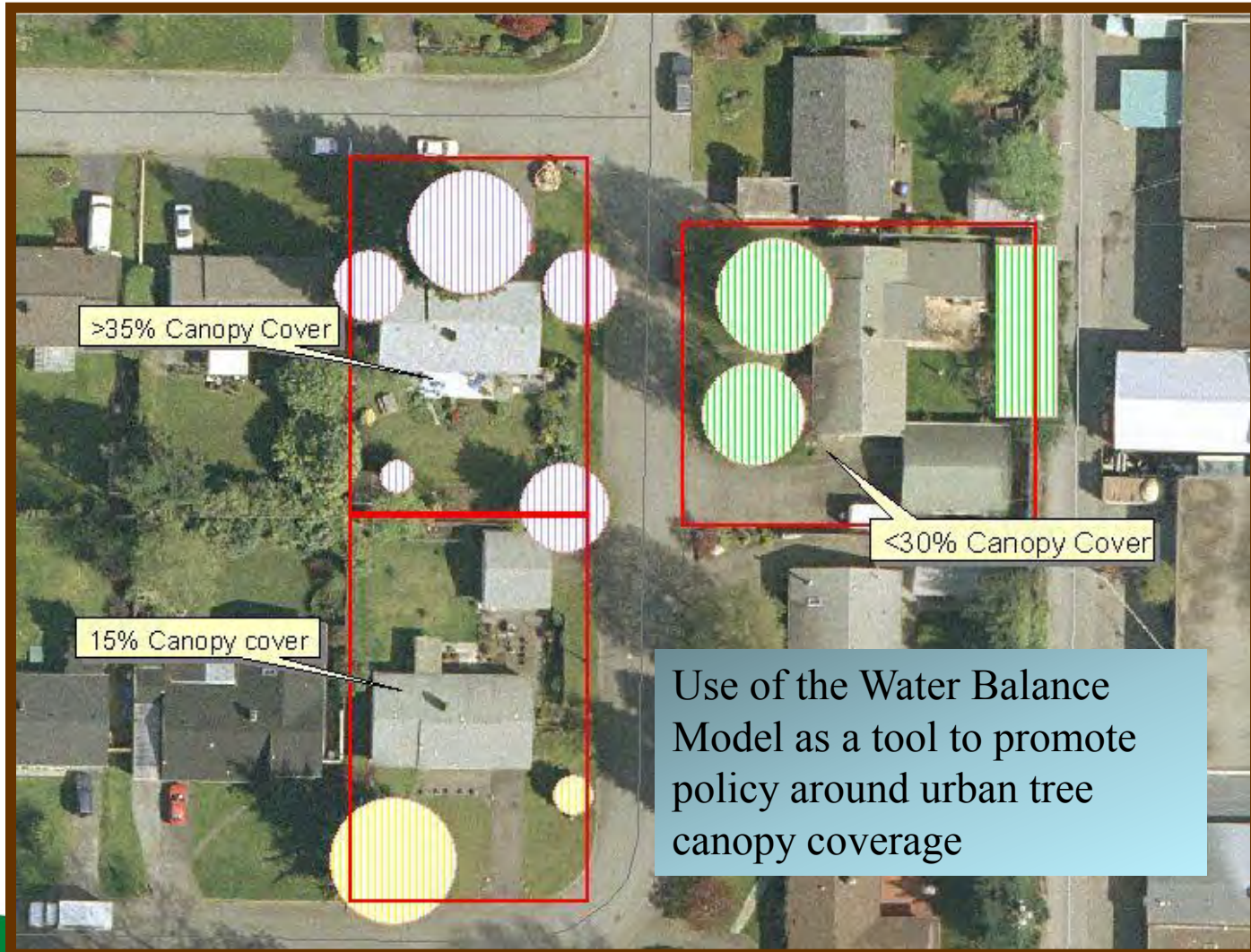
5% of SF lots were
redeveloped in 10
years

Rainwater Management & Policy

- Using the tool as a mechanism for outreach and education concerning current policy
- Highlighting the things deemed “desirable”
- Providing the basis to develop policy that is flexible, provides options and results in the sustainment of things desirable

So what does it look like?

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Sample Policy Statements

“Prepare integrated watershed management plans for all District watersheds coordinating watercourse protection measures; rainwater management and land use planning on an ecosystem basis”

“Manage smaller, more frequent rainfall events to infiltrate onsite, where appropriate, and to recharge the groundwater. Redirect the overflow from larger rainfall events to the storm drainage system”

Next Steps

- Development of the Water Balance Model “Light” or express version to;
 - Allow **land owners** to evaluate their own land from a water sustainability perspective
 - Discover methods to improve their water footprint
 - Get straight forward “how to” guidance and ideas

Next Steps

- Example of DNV Solar Tool

[District of North Vancouver Geoweb](#)



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