# City of Vancouver Urban Forest Strategy

APRIL 15, 2014





## Outline

### OUR URBAN FOREST TODAY

### WHAT CAN WE DO ?

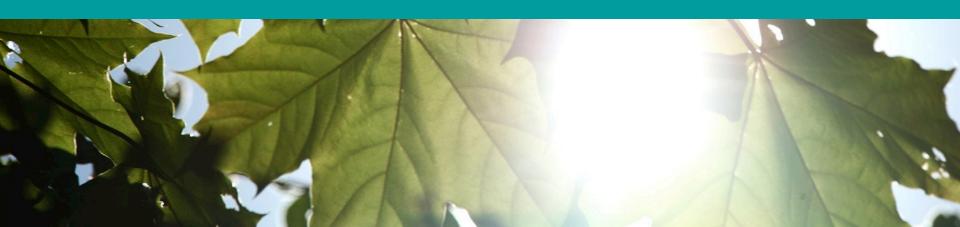
## PROTECT PLANT

MANAGE

---Engage

#### NEXT STEPS





## Every tree in our city, including 140,000 street trees...

## 300,000 park trees...



## and an unknown number of trees on private property...



## make up what is known as Vancouver's "urban forest"



## which we mapped for the first time using LIDAR technology.

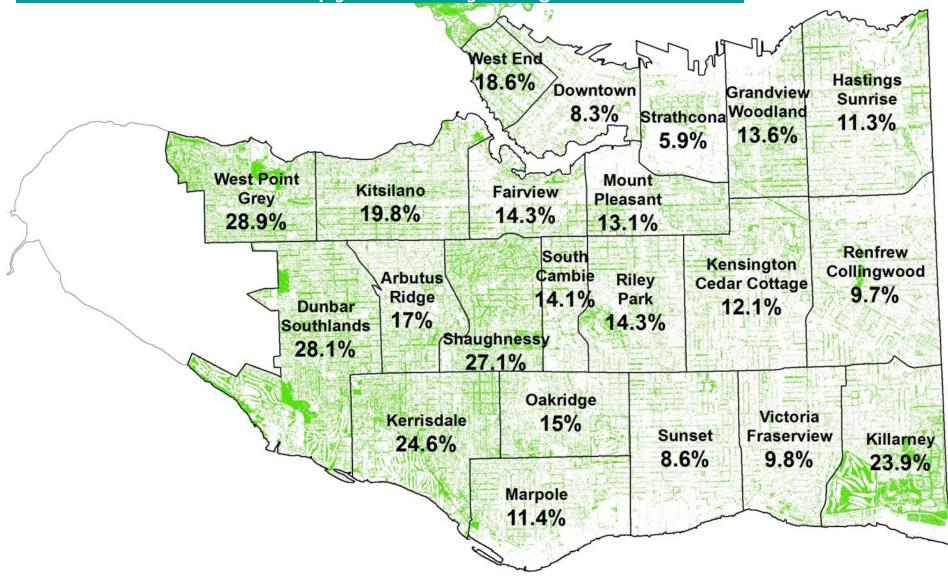
## This allowed us to calculate "canopy cover", the North American standard for assessing urban forest performance.



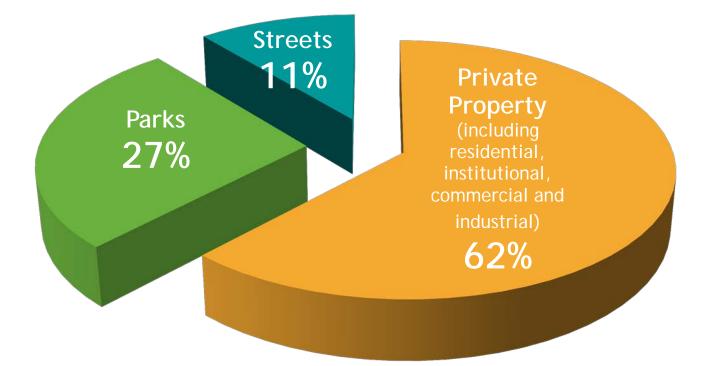
Canopy cover is how much ground area is covered by tree leaf canopies as seen from the air.



#### We now know canopy cover by neighbourhood.



#### We also found that most of our canopy is on private property.



Tree Canopy across the City

# and 18% of our total city area is covered by tree canopy.



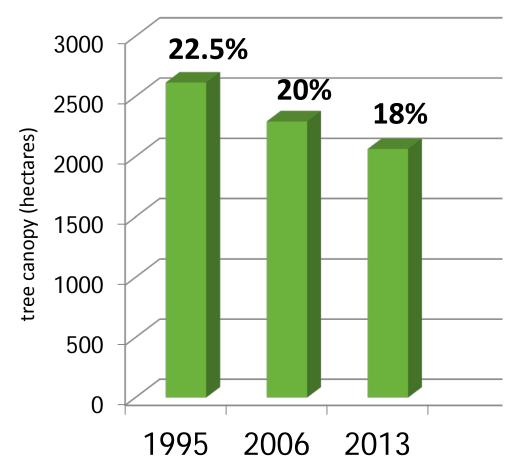
### Compared to other cities, we seem to be doing ok...



However, our canopy cover has been declining over

the past two decades. Why is this of concern?

City-wide Canopy Cover



## As our canopy declines, so do the benefits our urban forest provides, such as cleaning the air...

34 metric tonnes of particulate matter (dust, smog, soot) are removed by our urban forest each year

## absorbing carbon dioxide to mitigate climate change

20,000 metric tons of carbon dioxide are absorbed by our urban forest each year

## managing rainwater

#### OUR URBAN FOREST TODAY

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## access to nature and healthy community

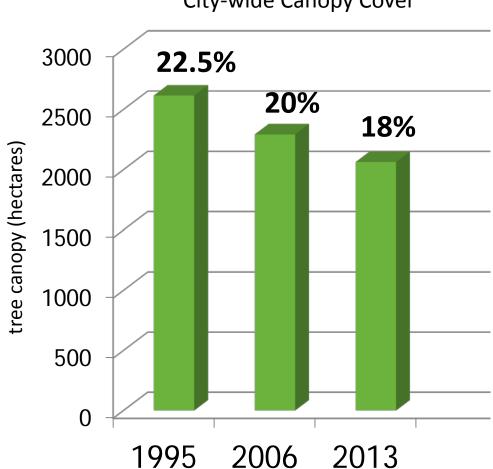
## shade fruit stress reduction

3 minutes: time it takes for blood pressure and muscle tension to reduce significantly after seeing trees

## and local economy and tourism.

The contract

## Why is our canopy cover declining?



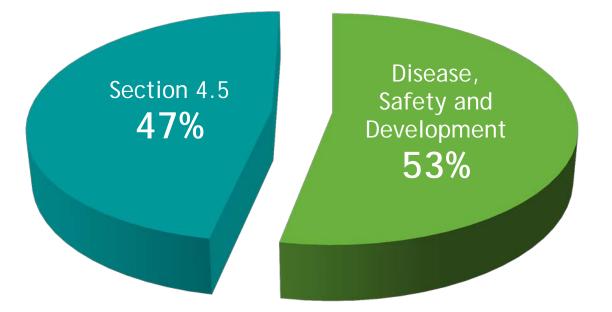
City-wide Canopy Cover

Over the last two decades 23,490 healthy, mature trees were removed on private property (including residential, institutional, commercial and industrial land).

Just over half of these removals were due to development.

The rest were removed under Section 4.5\* of the

Protection of Trees Bylaw.



\*Section 4.5 allows property owners to remove one tree per year, regardless of tree health, size or species.

### In 2013, 1,805 trees were removed under Section 4.5



That's about five healthy, mature trees removed every day.

## Conflicts and competing interests



views





infrastructure conflicts



sun



#### litter & allergies





## WHAT CAN WE DO ?



# PROTECT



# PLANT



# MANAGE



# PROTECT



GOAL

## Stop the decline of our canopy cover

## Protect healthy, mature canopy

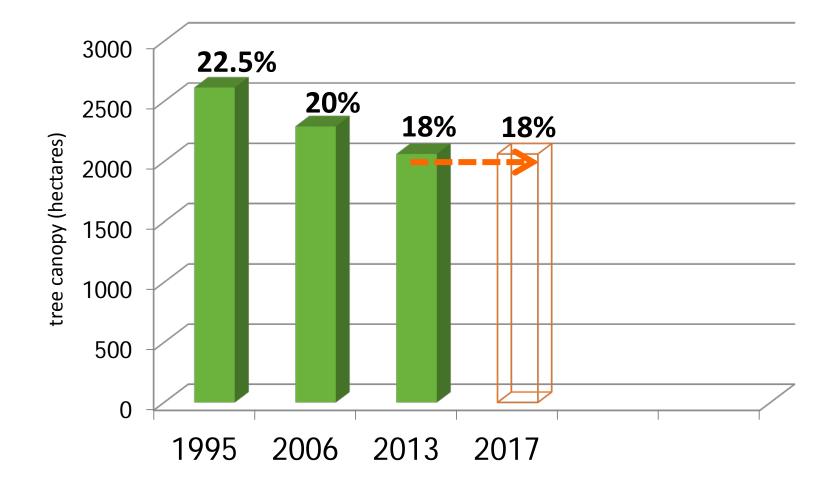
## ACTION ITEM

PRINCIPLE

- . Amend Section 4 of the Protection of Trees By-law
- 2. Retain more trees on development sites
- 3. Create a comprehensive retention framework

#### PROTECT / WHAT CAN WE DO ?

## GOAL Stop the decline of our canopy cover



PROTECT / WHAT CAN WE DO ?

Protect healthy, mature canopy

# What takes years to develop can be cut down in less than a day



#### PROTECT / WHAT CAN WE DO ?

PRINCIPLE

CURRENT SECTION 4.5: property owners are able to remove one tree per year regardless of tree health, size or species.

PROPOSED AMENDMENT: trees can be removed only if they meet the criteria in Section 4.4 of the existing By-law:

• Hazardous

ACTION

ITEM 1

- Dead, diseased or dying
- Within a building envelope
- Close to or interfering with drainage systems, sewer systems or utility wires
- Causing damage to property including roofs and sidewalks.

## Retain more trees on development sites

The City will work with applicants to proactively retain as many healthy, mature trees as possible on development sites.

**ACTION** 

ITEM 2



#### PROTECT / WHAT CAN WE DO ?

## Create a comprehensive framework to encourage retention of trees and discourage removals, such as a system of payments for canopy loss that cannot be replaced on a site.

ACTION

ITEM 3

# PLANT

# PLANT

Grow our urban forest canopy

Plant 150,000 trees by 2020

## PRINCIPLE

ACTION ITEM

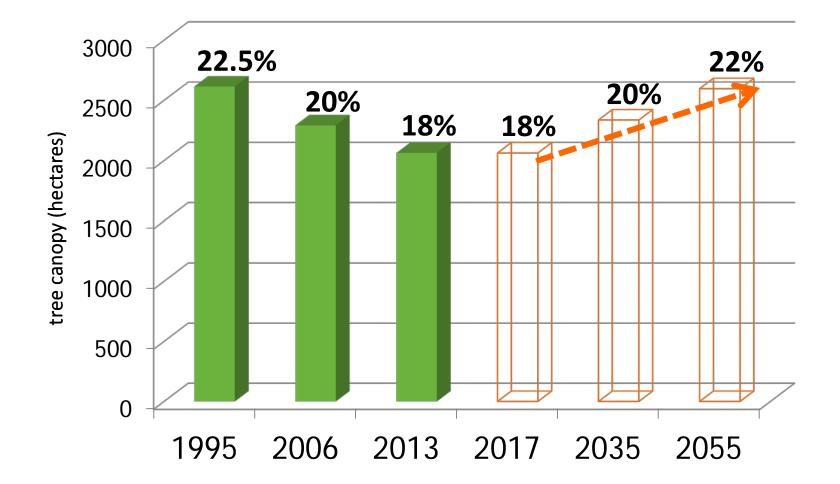
GOALS

- Ensure a balanced approach
- Plant strategically across the city
- Plant the right tree in the right place
- Ensure resiliency to disease and climate change

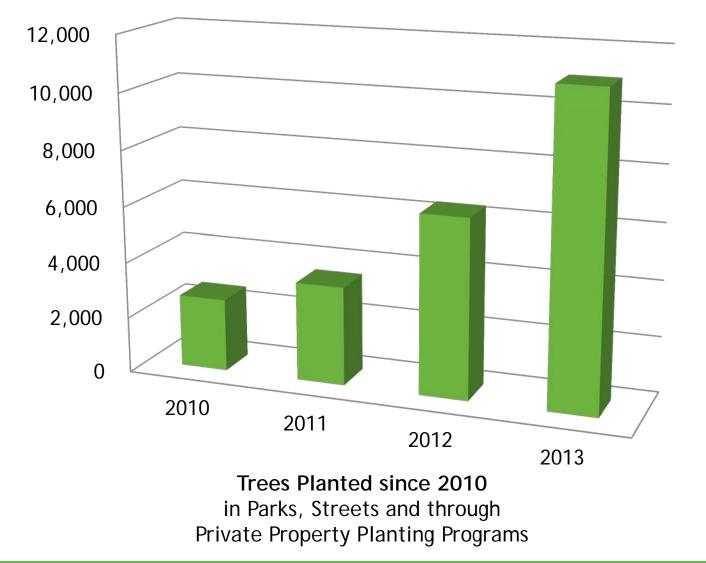
## 4. Expand Park Planting Programs

5. Expand Private Property Planting Programs

**GOAL** Grow our urban forest canopy



### Plant 150,000 trees by 2020



### PLANT / WHAT CAN WE DO ?

GOAL

PRINCIPLE

### Ensure a balanced approach



views



sun



# development

# CANOPY COVER



### litter & allergies



#### utilities and sidewalks



# **PRINCIPLE**Plant the right tree in the right place

Tree species selection to prevent:

- root conflicts (with underground infrastructure such as sewer lines and surfacing such as sidewalks)
- canopy conflicts (with overhead utility wires and transportation sight lines).

# PRINCIPLE Ensure resiliency to disease and climate change

### Ensure resiliency to:

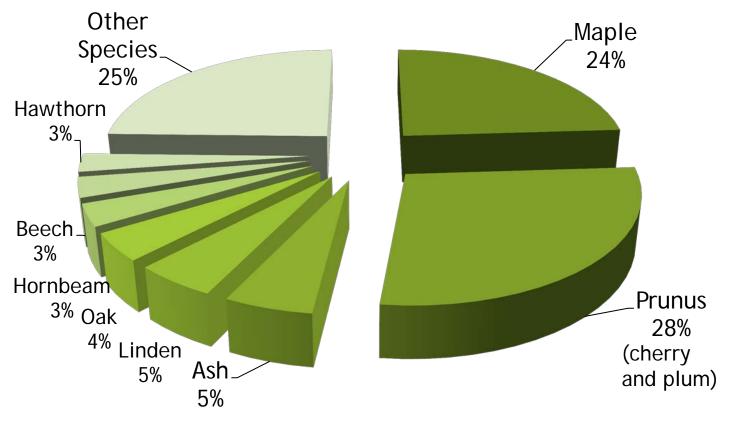
- disease
- effects of climate change such as rising temperatures and more severe storms



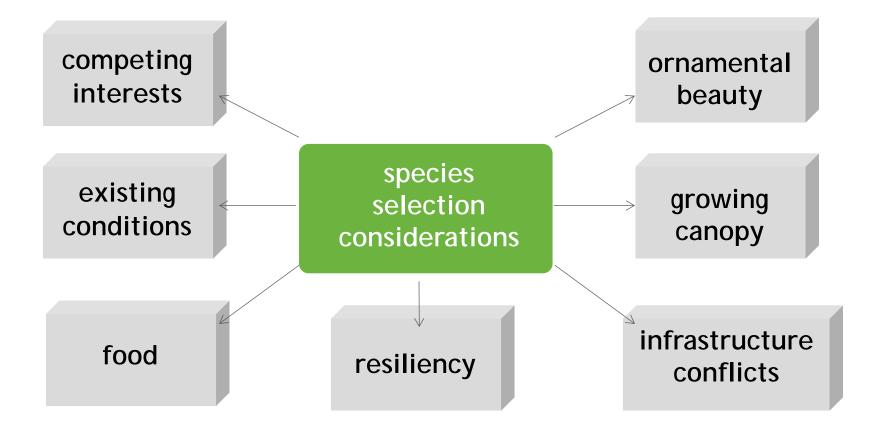
### **PRINCIPLE** Ensure resiliency to disease and climate change

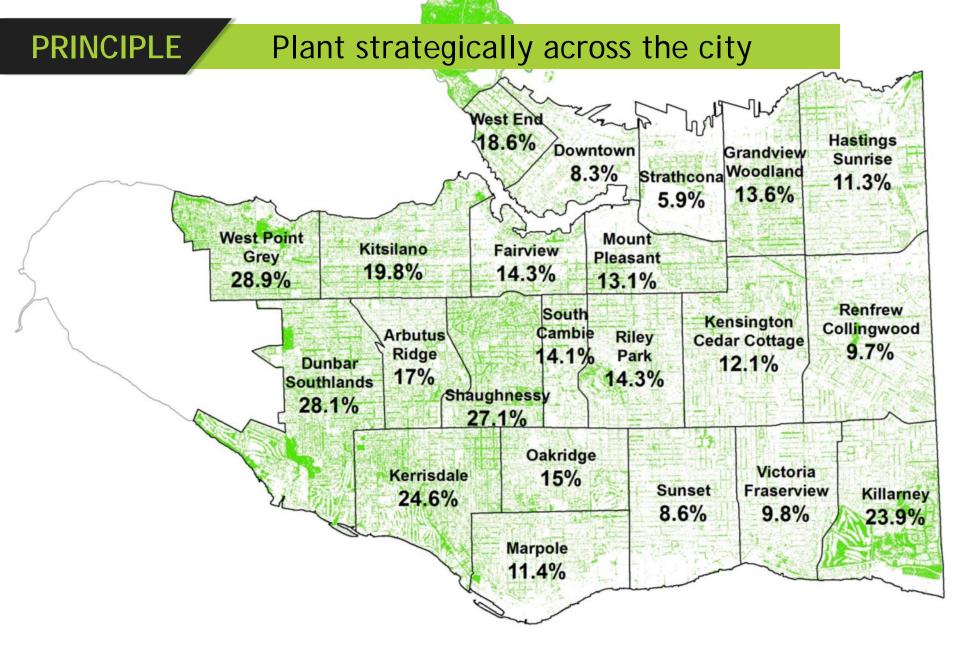
Ensure resiliency through:

- appropriate species selection
- species diversity



Vancouver's current street tree species





We need to find ways to plant

### more trees in parks and private property.



### **Estimated Planting Capacity**



in parks and golf courses

and enhance existing forests.

# Expand Private Property Planting Programs

Work with Treekeepers and other community groups to provide planting and stewardship programs, including fruit tree programs.

#### PLANT / WHAT CAN WE DO ?

**ACTION** 

**ITEM 5** 

# MANAGE

# MANAGE

### GOAL

# Manage our urban forest as a vital living asset

# PRINCIPLE

- Manage the whole lifecycle of the urban forest
- Consider conditions for trees to thrive

# ACTION ITEM

6. Update our Street Tree Management Plan7. Create Street and Park Succession Plans

## Manage our urban forest as a vital living asset

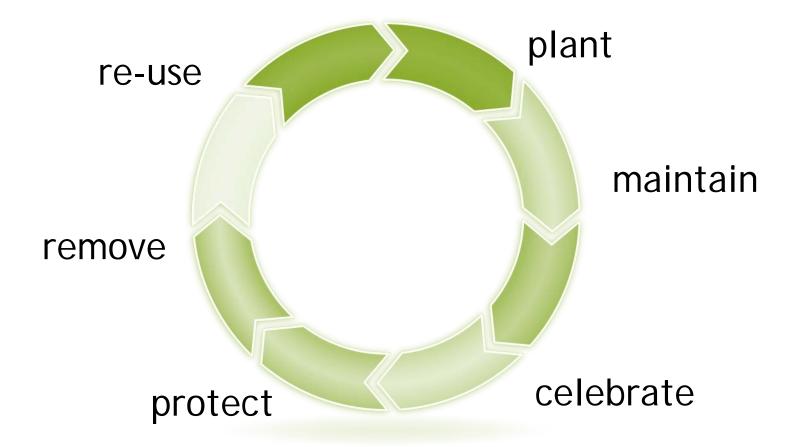
 View our urban forest as green infrastructure that provides immense benefits.

**GOAL** 

 Manage for long term tree health to ensure our urban forest continues to provide benefits.



**PRINCIPLE** Manage the whole lifecycle of the urban forest



# PRINCIPLE Consider ideal conditions for trees to thrive

Space for roots (soil volume), soil quality, water infiltration and space for canopy



- COORDINATION with Integrated Stormwater Management Plan, Utility Plans and Transportation Plan 2040.
- HOLISTIC PLANTING STANDARDS including soil volume.
- WOOD RE-USE for alternative fuel sources and artisans.



### MANAGE / WHAT CAN WE DO ?

**ACTION** 

ITEM 6



- Succession plans to help grow canopy and ensure resiliency
- Updated Inventory and Tracking System



# NEXT STEPS



- Approve immediate By-law amendment to reduce significant canopy loss.
- Hold a city-wide conversation on how we can all help to achieve Strategy goals.
- Return to Council with specific plans:
  - Comprehensive retention framework
  - Updated Street Tree Management Plan
  - Street and Park Succession Plans

Vancouver has a magnificent urban forest that contributes to our environment and to the health of every resident in our city.

# The Urban Forest Strategy is a bold first step designed to protect, grow and manage this vital, shared resource for future generations.

# ACTION ITEMS

- 1. Amend Section 4 of Protection of Trees By-law
- 2. Retain more trees on development sites
- 3. Create a comprehensive retention framework
- 4. Expand Park Planting Programs
- 5. Expand Private Property Planting Programs
- 6. Update our Street Tree Management Plan
- 7. Create Street and Park Succession Plans

