

Vancouver's Urban Forest Strategy

Purpose of Today's Presentation:

Provide an update on all Urban Forest Strategy
Action Items for Endorsement



Urban Forest Strategy Action Item Update

■ Background

■ Action Item Update:

■ PROTECT

■ PLANT

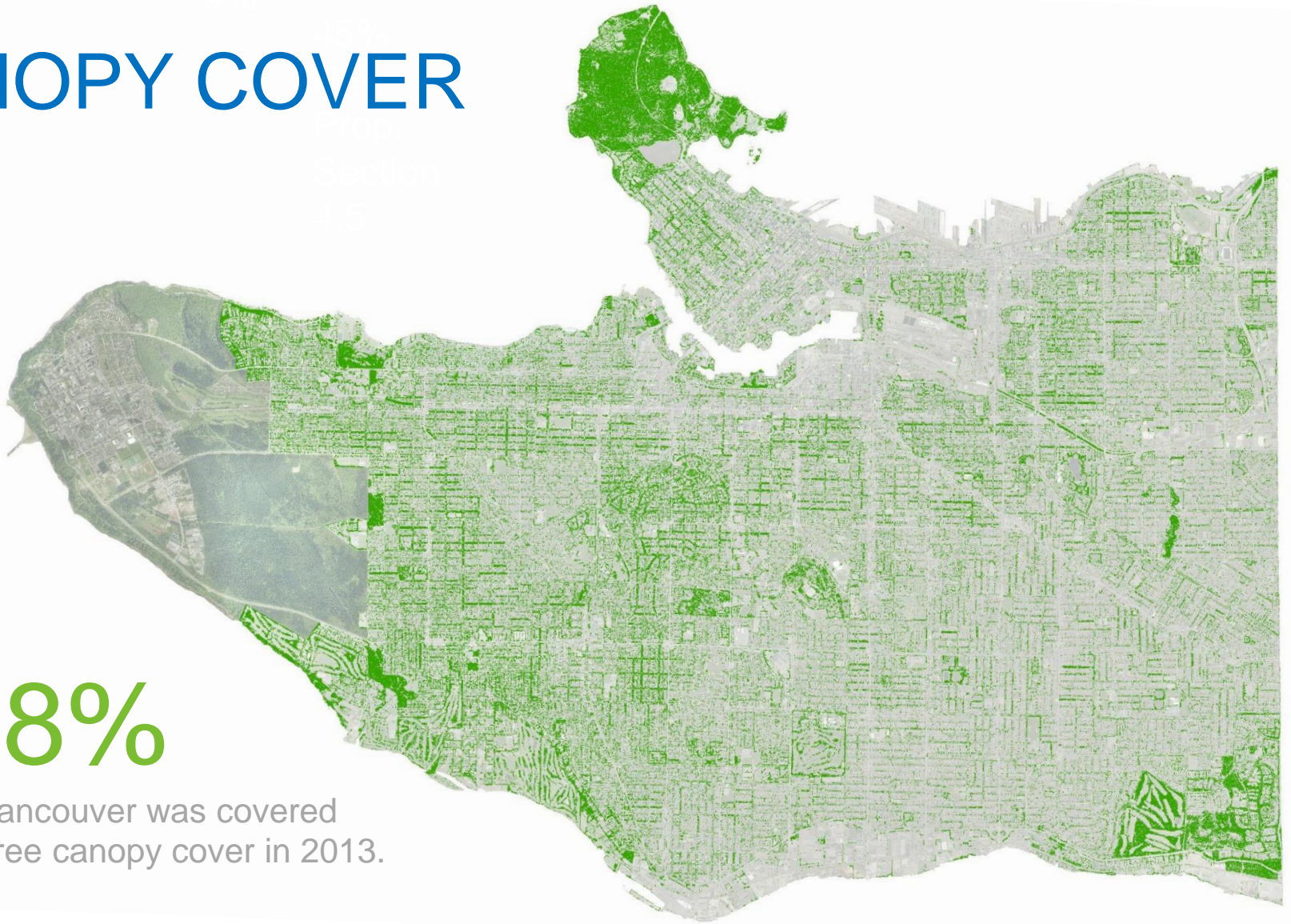
■ MANAGE

■ Next Steps

Engage



CANOPY COVER



18%

of Vancouver was covered
by tree canopy cover in 2013.

BENEFITS

air cleaning
air cooling
food production
access to nature

Source: Sara Barron - CALP

4%

BENEFITS

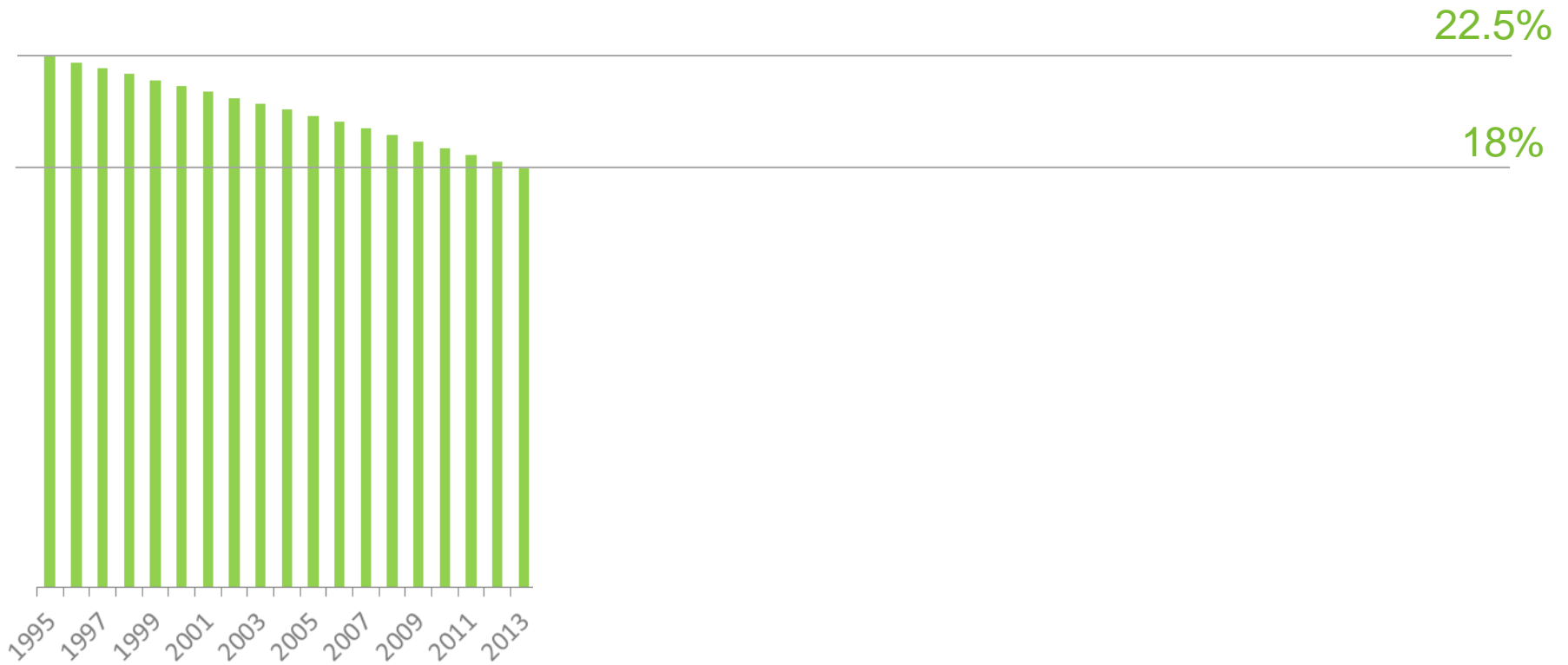
sense of place
beauty
celebration
tourism & economy



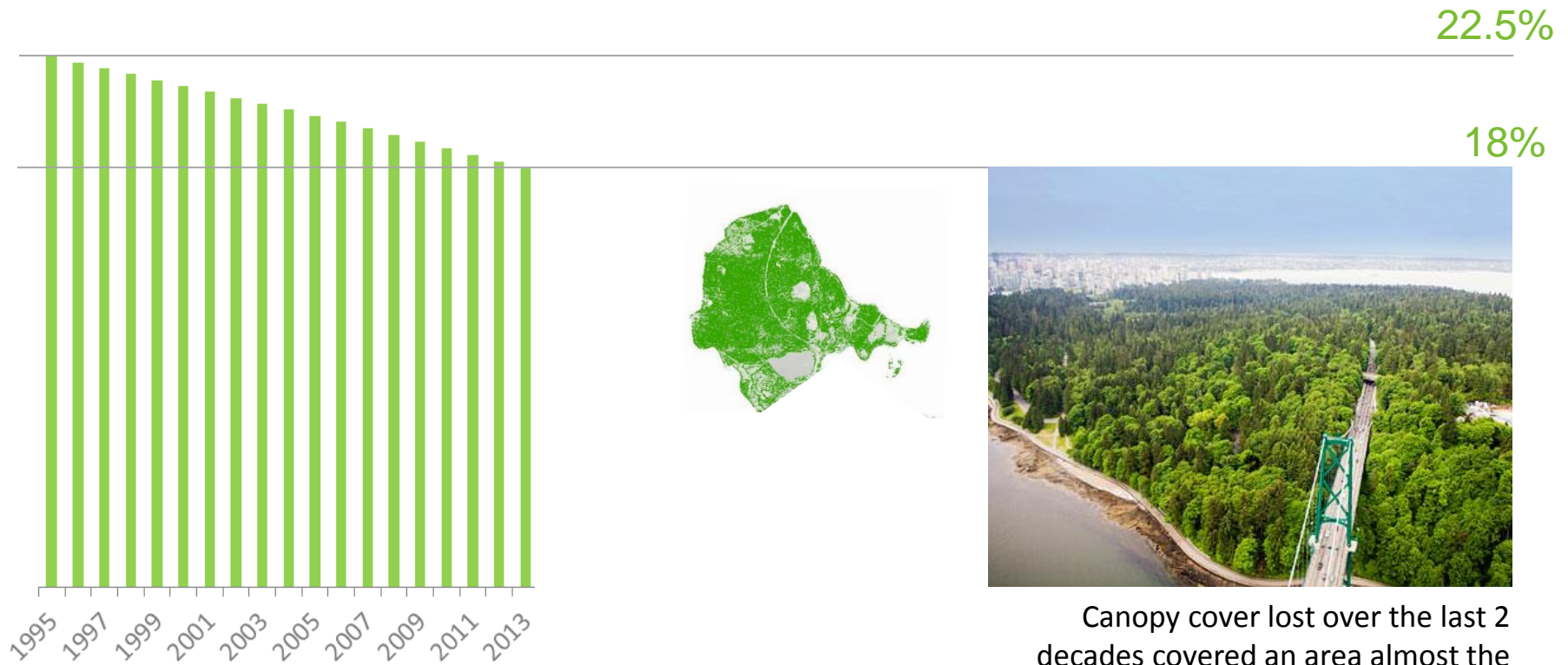
BENEFITS

wildlife habitat
carbon dioxide absorption
rainwater management

CANOPY COVER DECLINE



CANOPY COVER DECLINE



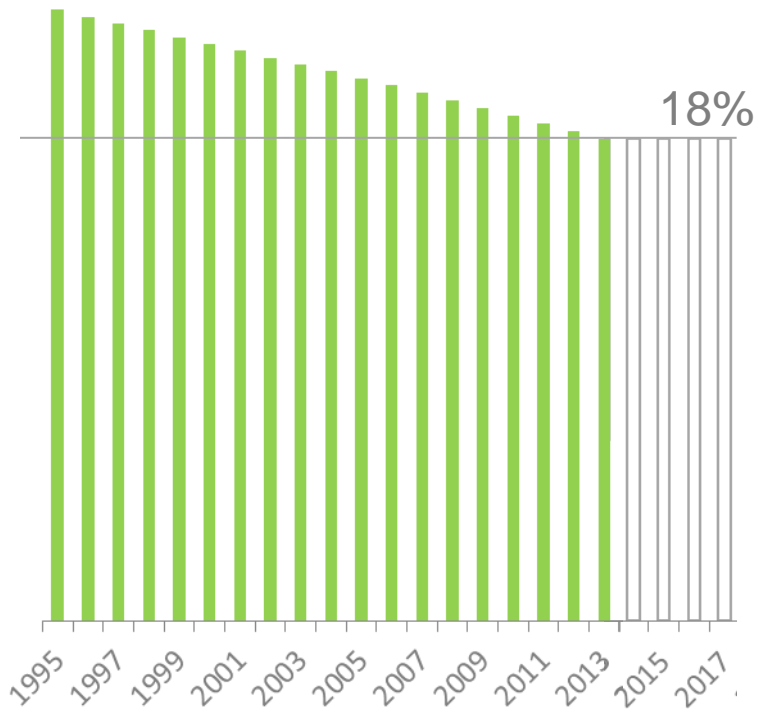
Canopy cover lost over the last 2 decades covered an area almost the same size as Stanley Park.

PROTECT

ACTION AREA

Goal: Stop canopy decline

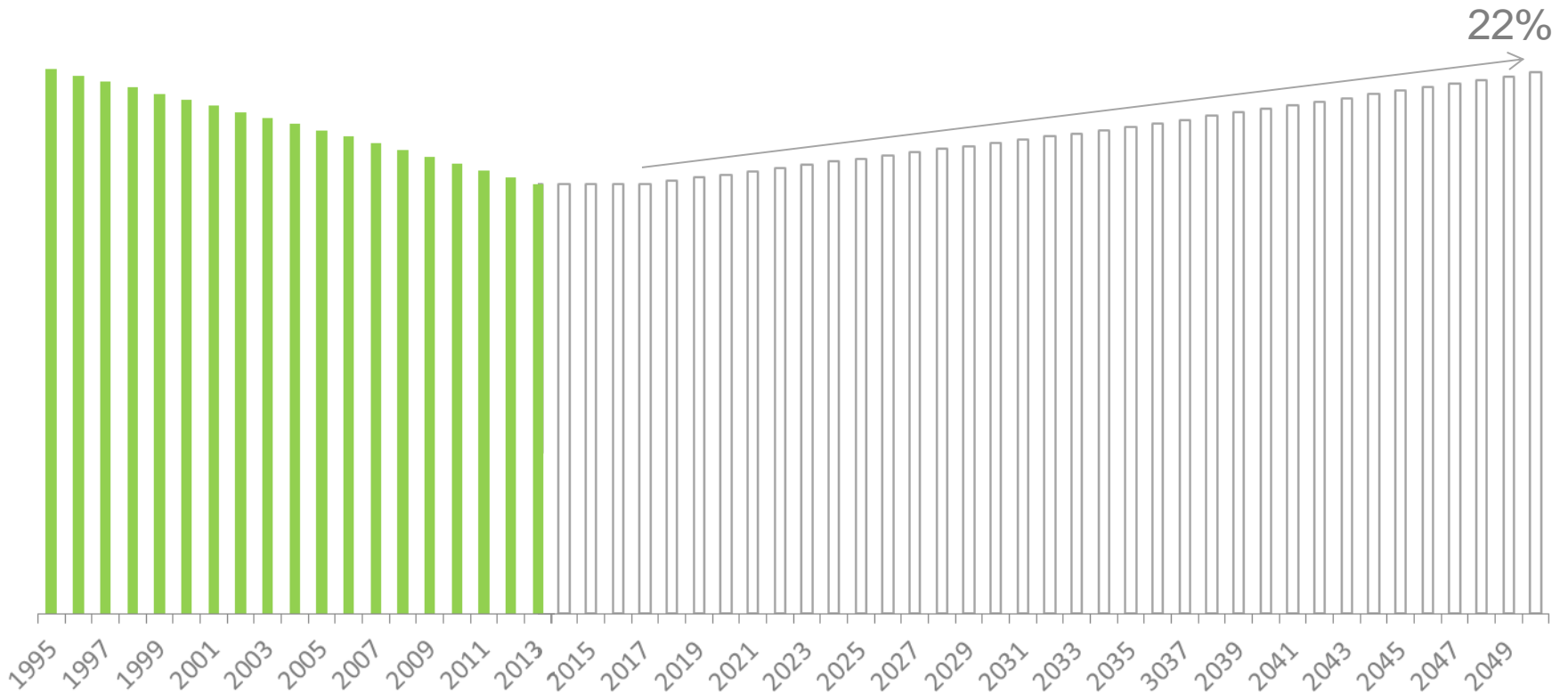
Target: 18% canopy cover by 2017



PLANT

ACTION AREA

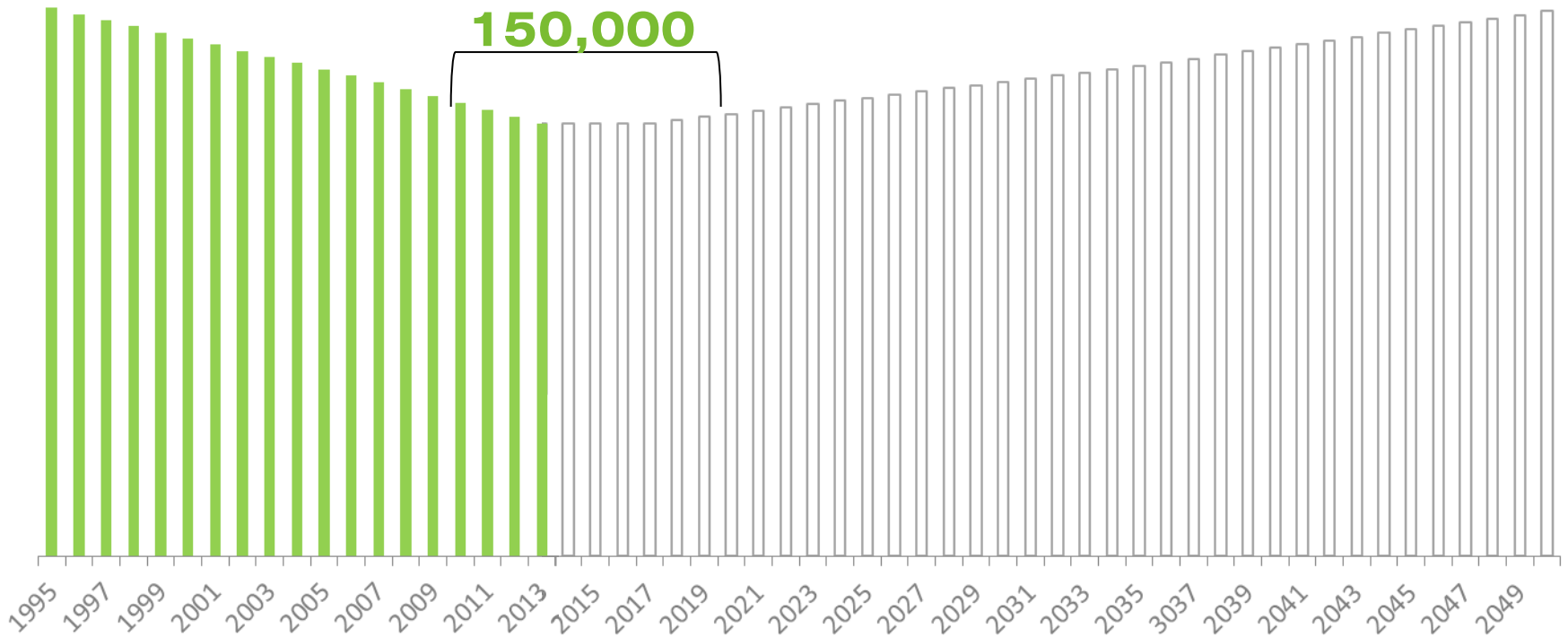
Goal: Grow our canopy
Target: 22% canopy cover by 2050



PLANT

ACTION AREA

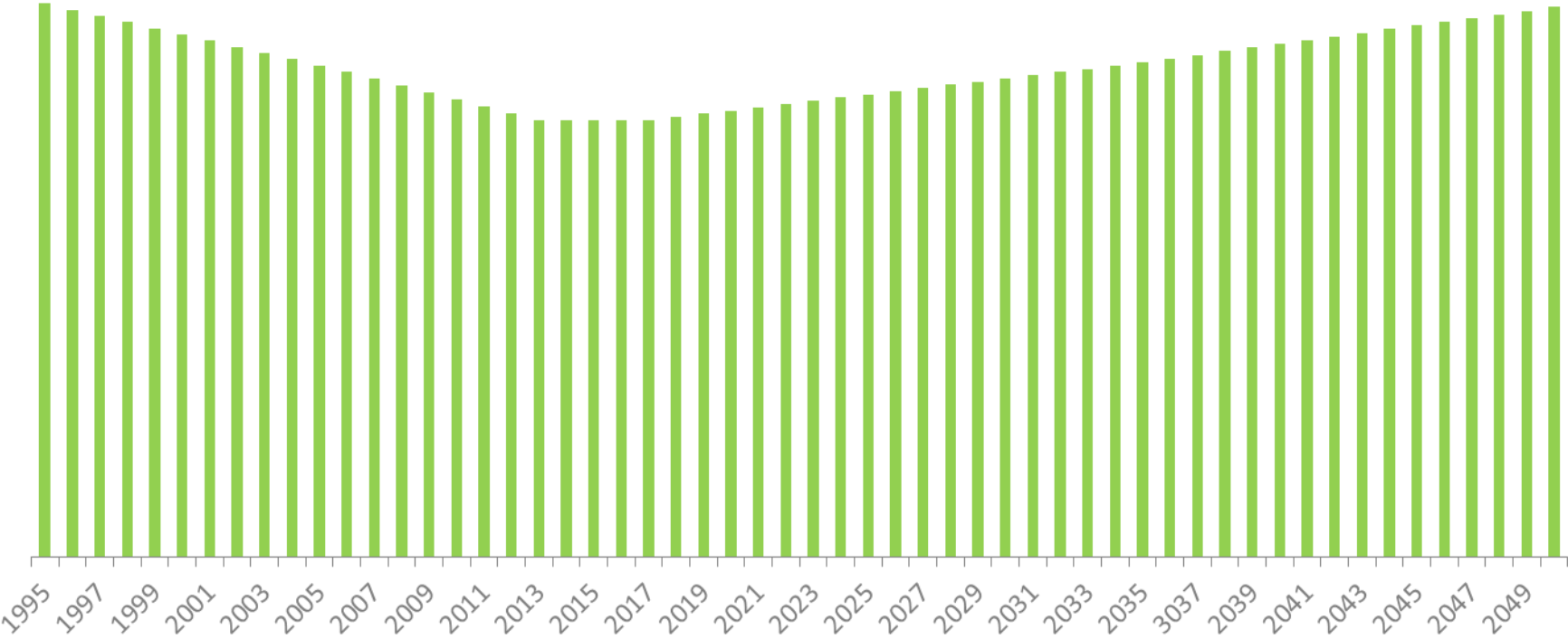
Goal: Grow our canopy
Target: Plant 150,000 new trees
by 2020



MANAGE

ACTION AREA

Goal: Manage as vital living asset



7 ACTION ITEMS – April 2014

PROTECT

1. Amend Section 4.5 of the Protection of Trees By-law
2. Retain more trees on Development Sites
3. Create a Public Tree Retention/Removal Framework

PLANT

4. Expand Park Planting Programs
5. Expand Private Property Planting Programs

MANAGE

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

10 ACTION ITEMS – Today

PROTECT

1. Amend Section 4.5 of the Protection of Trees By-law
2. Retain more trees during development
3. Create a Public Tree Retention Framework

PLANT

4. Expand Private Property Planting & Stewardship Programs
5. Expand Park Planting Programs
6. Create Street Tree Cooling Networks

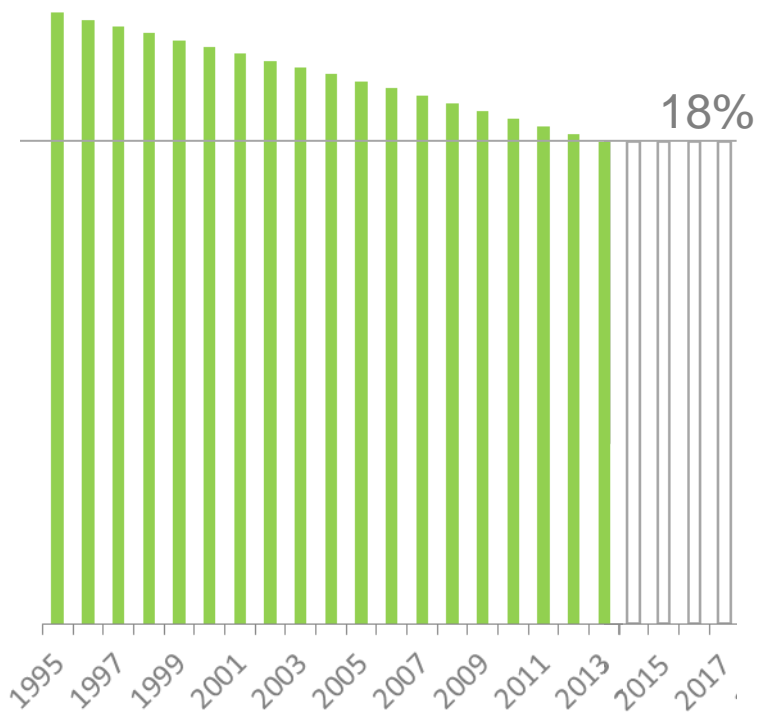
MANAGE

7. Street Tree Soil Volume Standards
8. Street and Park Tree Management Plan
9. Updated Inventory System and Data
10. Monitoring and Adaptation Frameworks

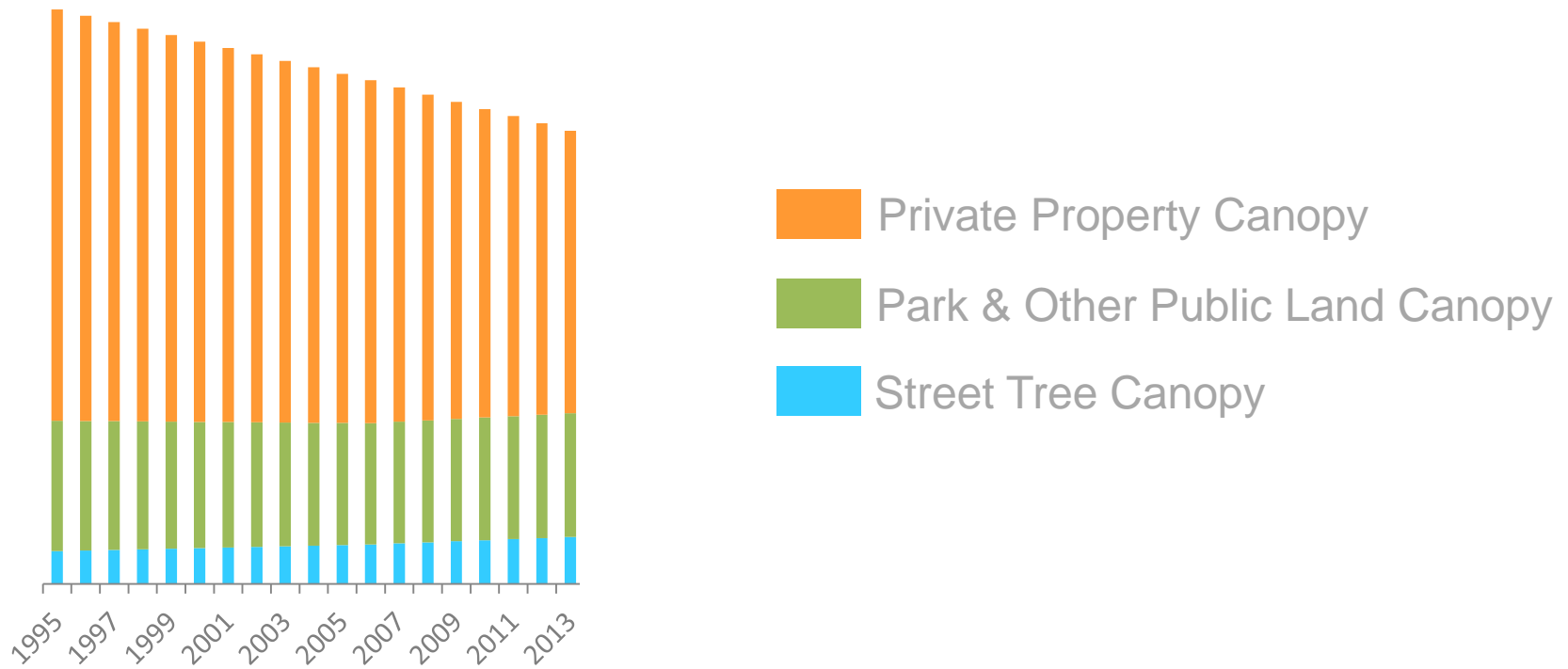
PROTECT

ACTION AREA

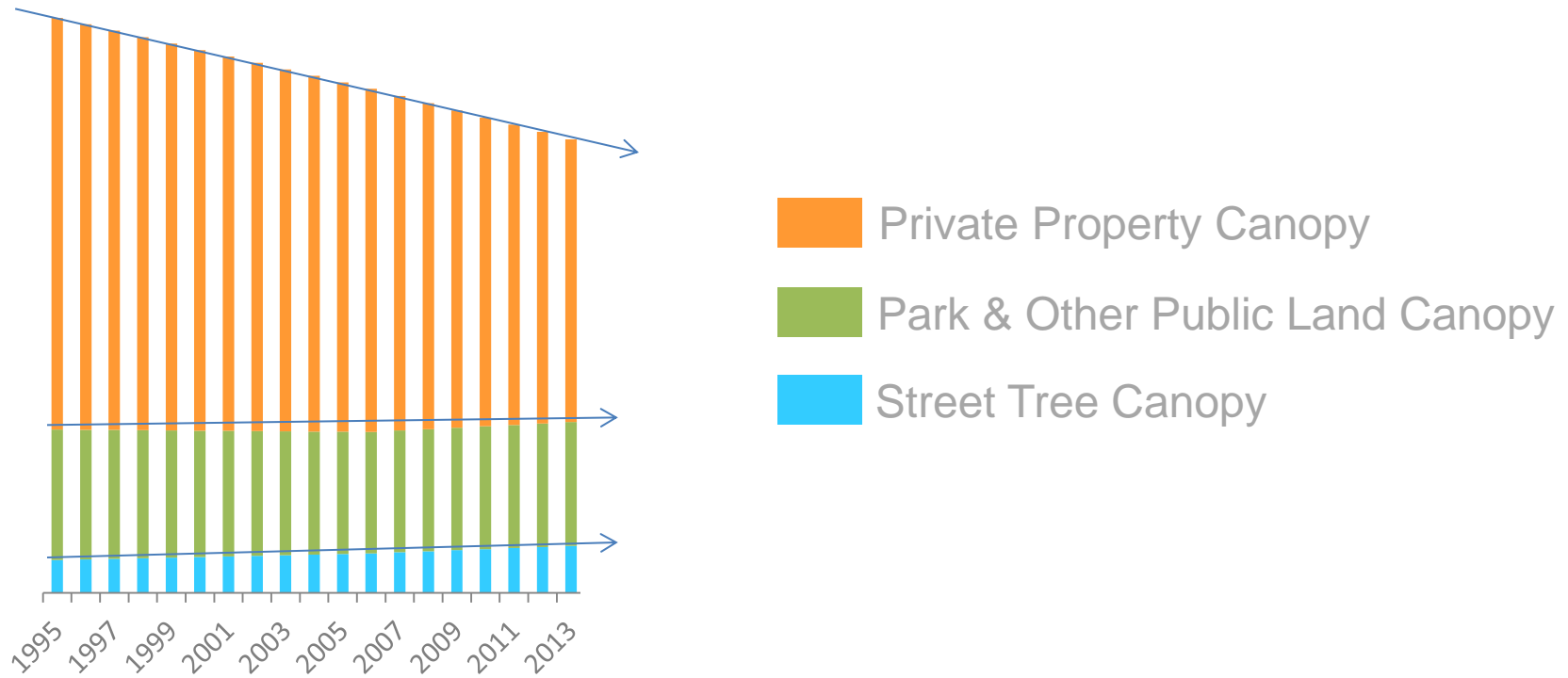
Goal: Stop canopy decline
Target: 18% canopy cover by 2017



CANOPY COVER DECLINE



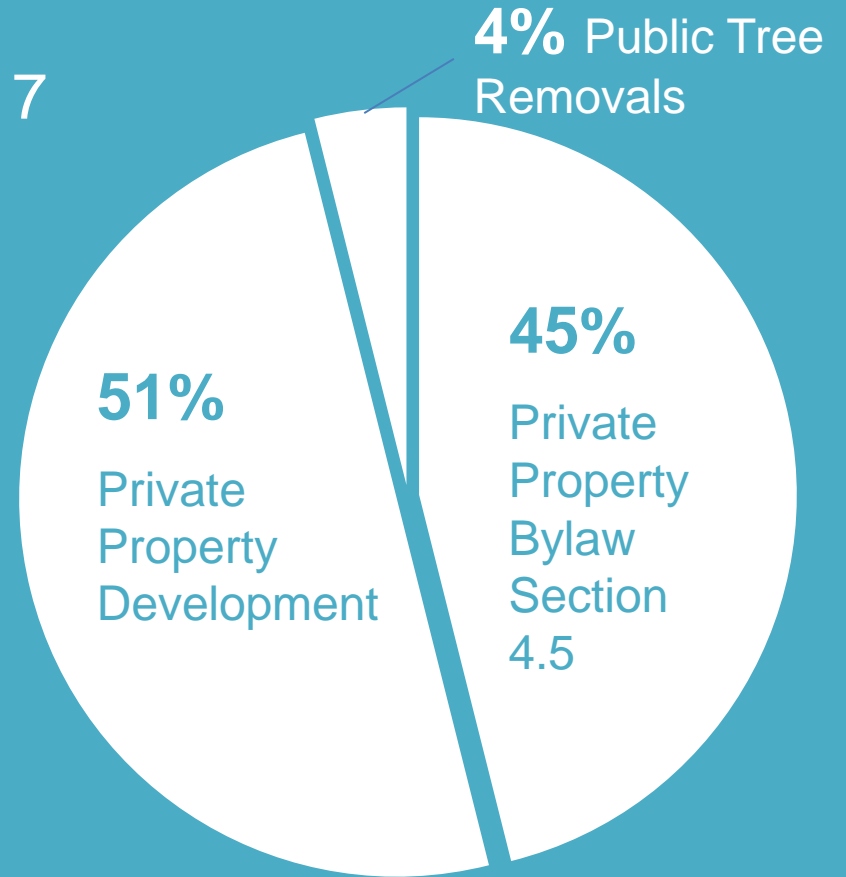
CANOPY COVER DECLINE



PROTECT

Goal: Stop canopy decline

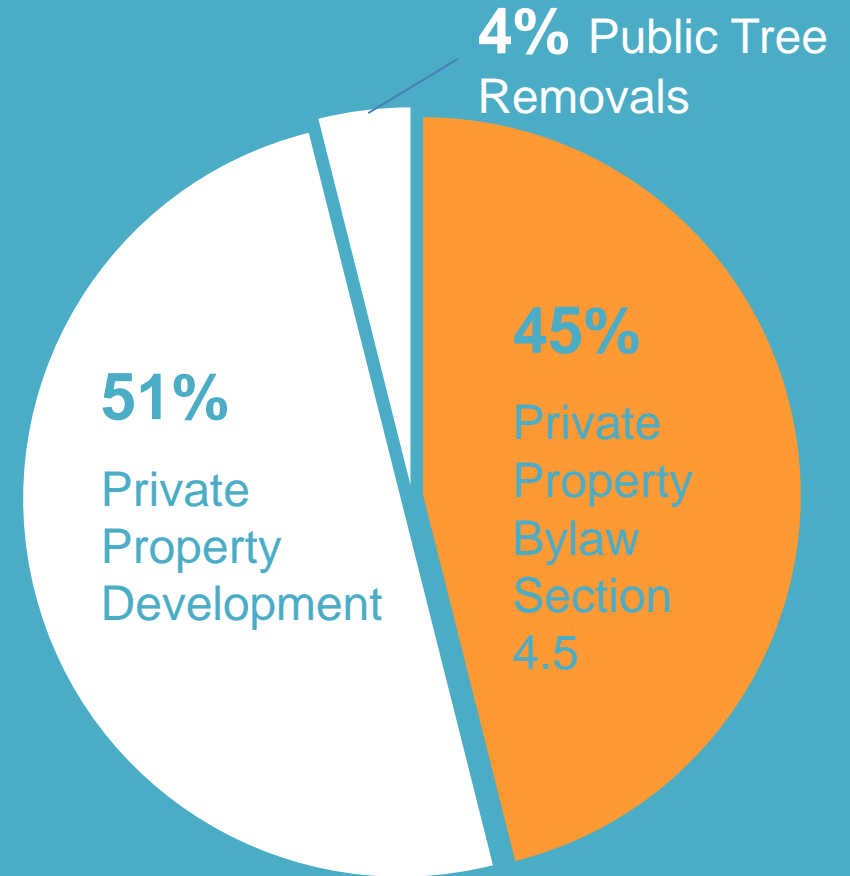
Target: 18% canopy cover by 2017



Reasons for Canopy Cover Loss 1995-2013

PROTECT

1.0 Amend Section 4.5 of the Protection of Trees By-law



Reasons for Canopy Cover Loss 1995-2013

1.0

Amend Section 4.5 of the Protection of Trees Bylaw

Over **2,500** mature trees have been saved as a direct result of Action Item 1

Status:
Complete

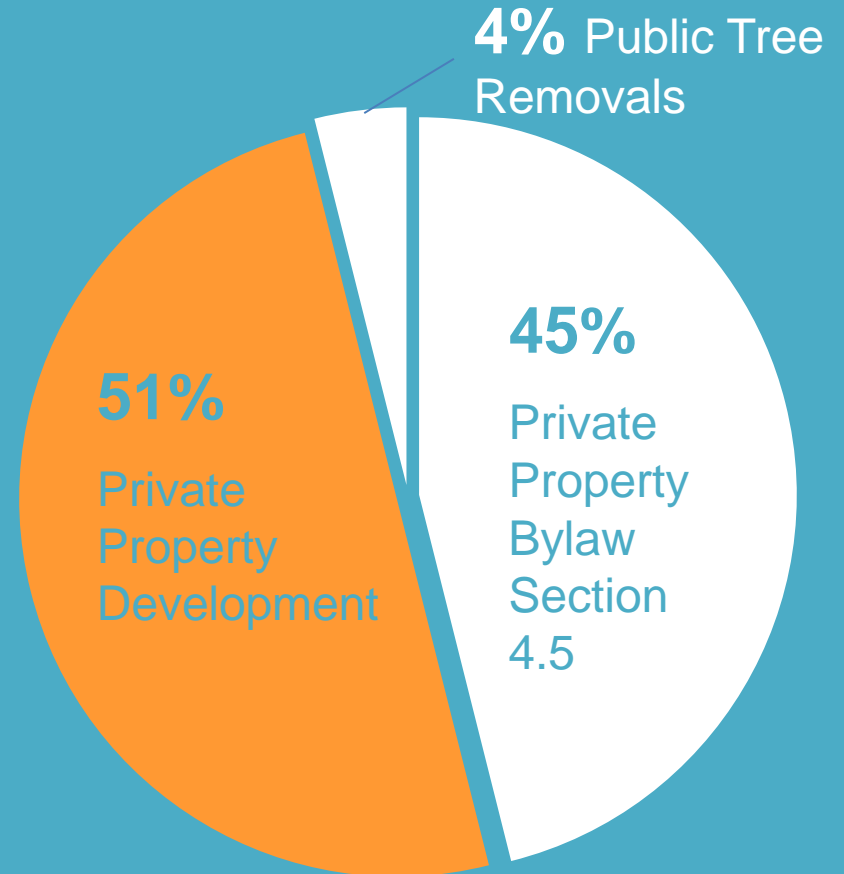
Target:
18% canopy by 2017

Partners:
Residents

PROTECT

1.0 Amend Section 4.5 of the Protection of Trees By-law

2.0 Retain more trees during development



Reasons for Canopy Cover Loss 1995-2013

2.0

Retain more trees during development

- 2.1 Amend the Ticket Offense By-law (MTI)
- 2.2 Amend By-law to enable Securities
- 2.3 Establish Urban Canopy Reserve
- 2.4 Enable voluntary Cash-in-Lieu Payments

Status:

Included in Report for Approval by Council

Target:

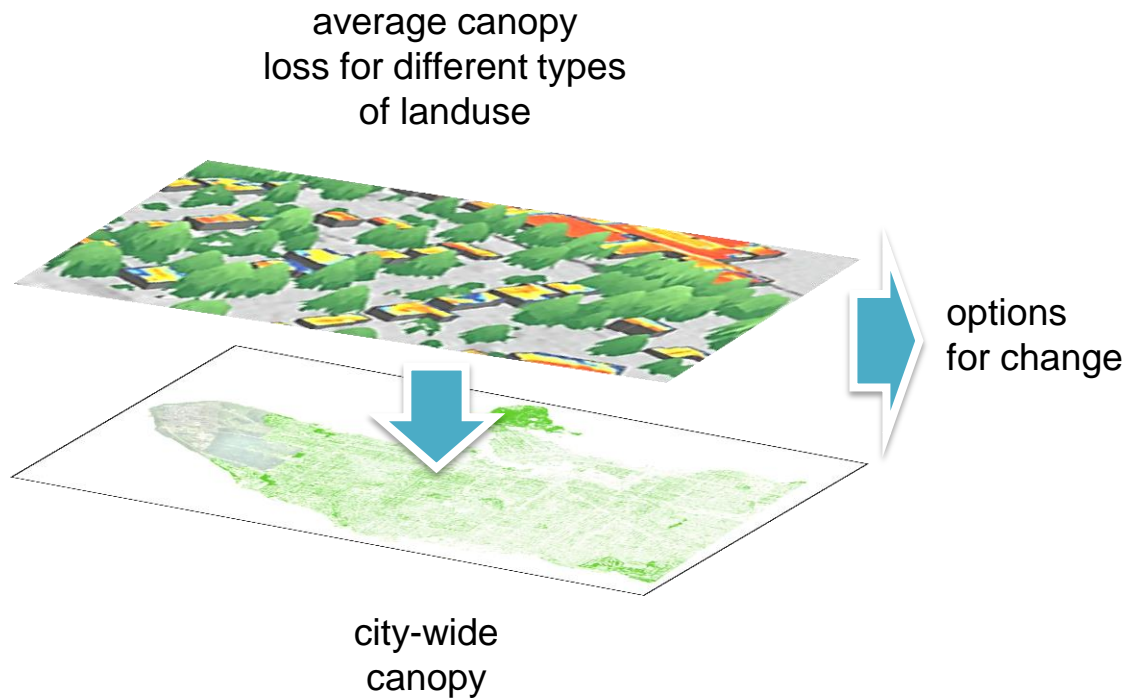
18% canopy by 2017

Partners:

Residents
Development community

2.5

Model long term effects of development on canopy cover



Status:

Completed by end of 2016

Target:

18% canopy by 2017

Partners:

UBC Department of Urban Forestry

2.6

Track canopy cover during permit process

%

of site covered
by tree canopy
**before
construction**



%

of site projected
to be covered by
tree canopy
**10-15 years after
construction**

Status:

Completed by
Spring 2016

Target:

18% canopy by 2017

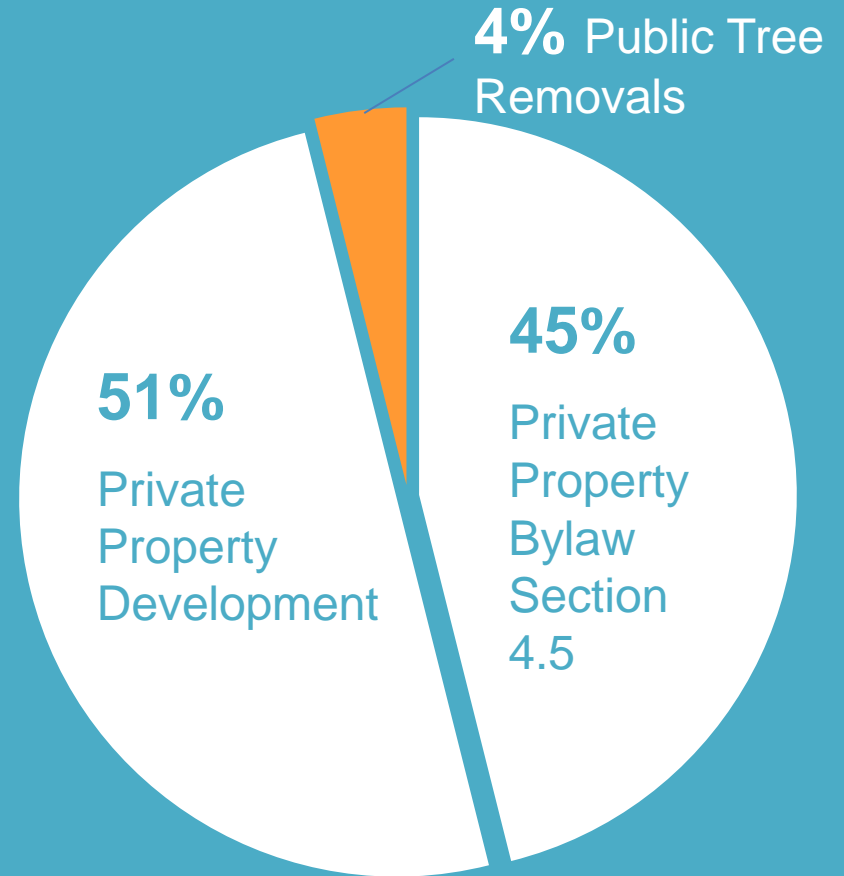
Partners:

Development
community

PROTECT

Action Items:

- 1.0 Amend Section 4.5 of the Protection of Trees By-law
- 2.0 Retain more trees during development
- 3.0 Create a Public Tree Retention Framework**

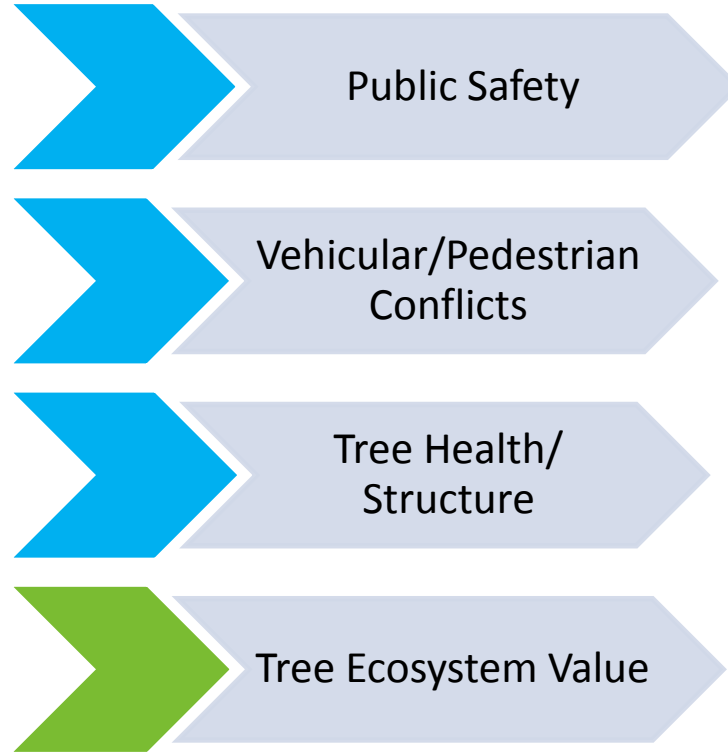


Reasons for Canopy Cover Loss 1995-2013

3.0

Create a Public Tree Retention Framework

Process and criteria to inform decisions on street and park tree removal requests.



Status:
Completed

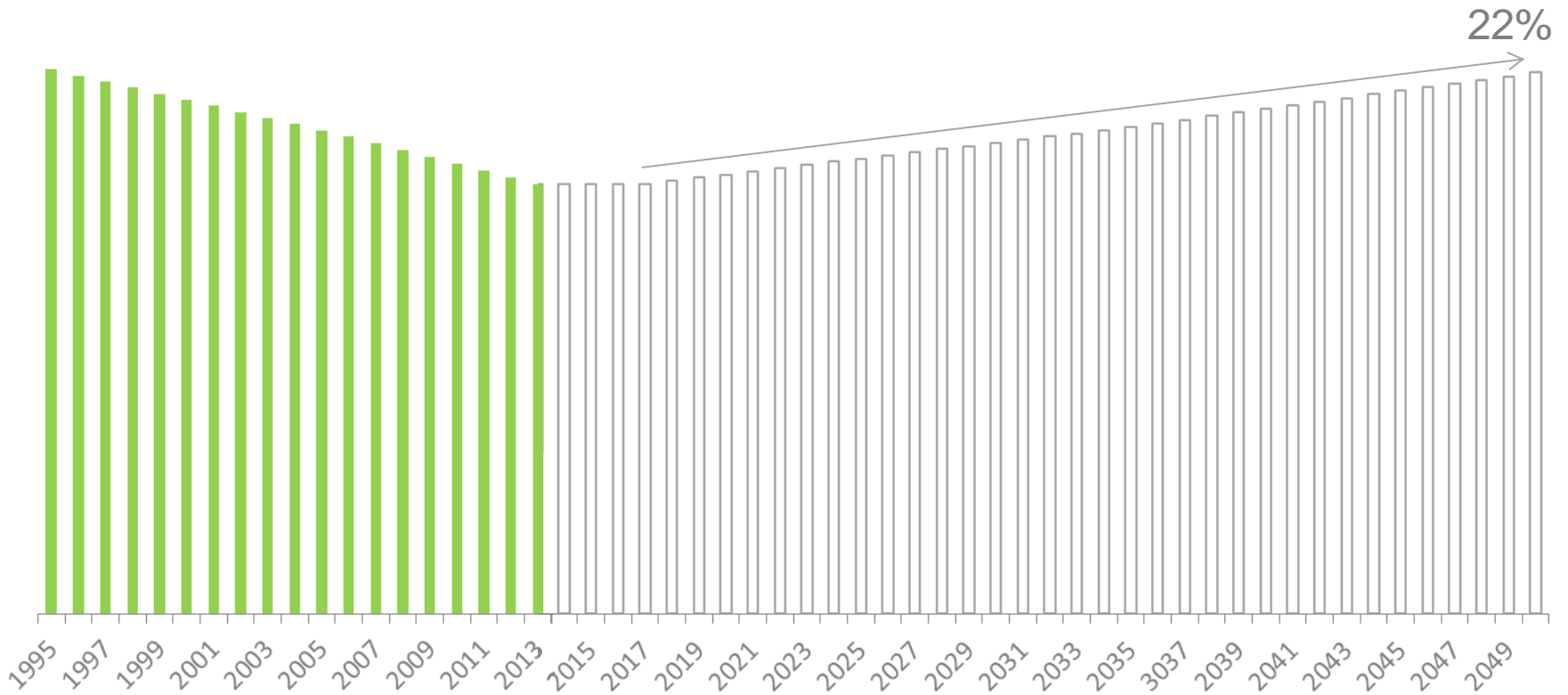
Target:
18% canopy by 2017

Partners:
Park Board
Engineering
Utility Providers

PLANT

ACTION AREA

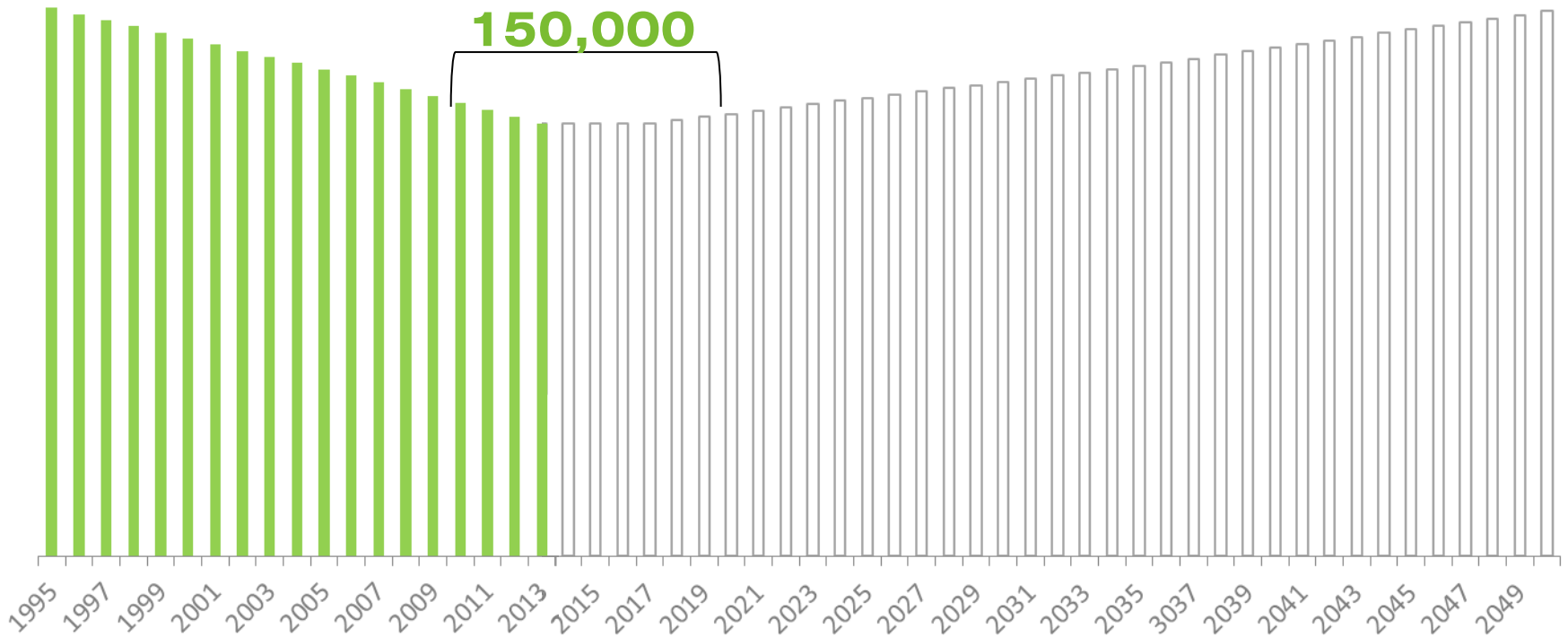
Goal: Grow our canopy
Target: 22% canopy cover by 2050



PLANT

ACTION AREA

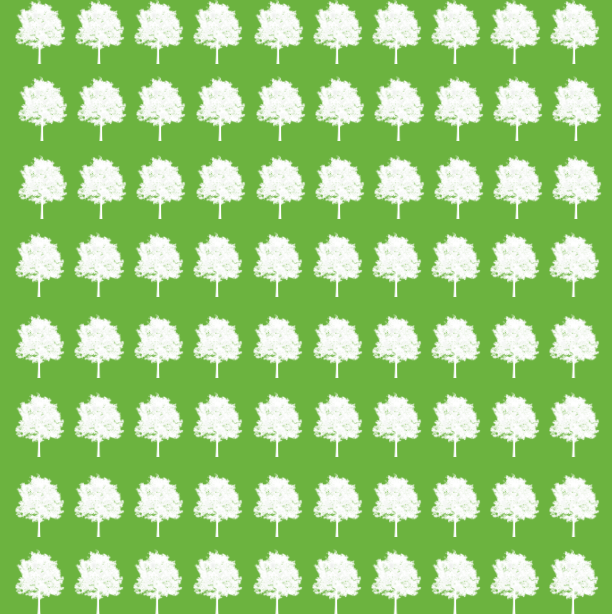
Goal: Grow our canopy
Target: Plant 150,000 new trees
by 2020



PLANT 150,000 new trees by 2020

 = 1,000 trees

private
property
80,000



park & other
CoV land
50,000



streets
20,000



PLANT 150,000

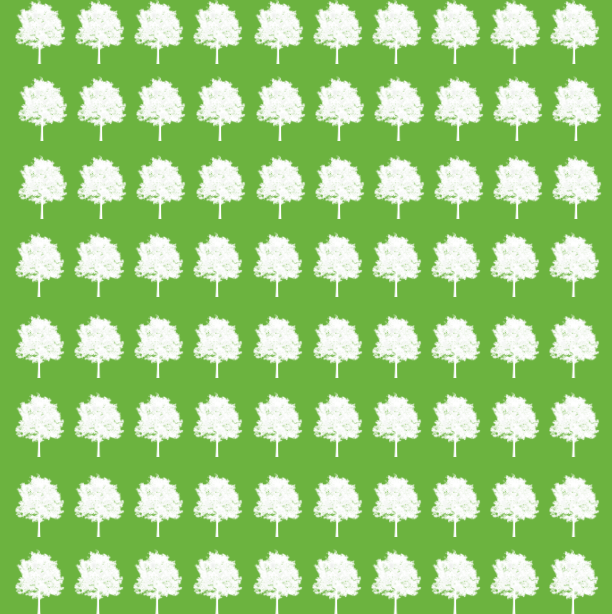
new trees by 2020

by the end of:

2015

total = 47,000

private
property



park & other
CoV land



streets



PLANT 150,000

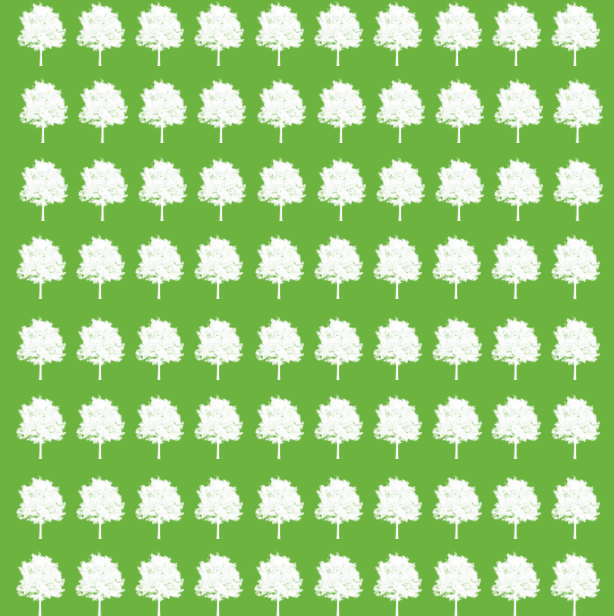
2015

 = 1,000 trees

 = planted

 = to plant

private
property



park & other
CoV land



streets

14,000

planted to date



STREETS



Status:
In progress

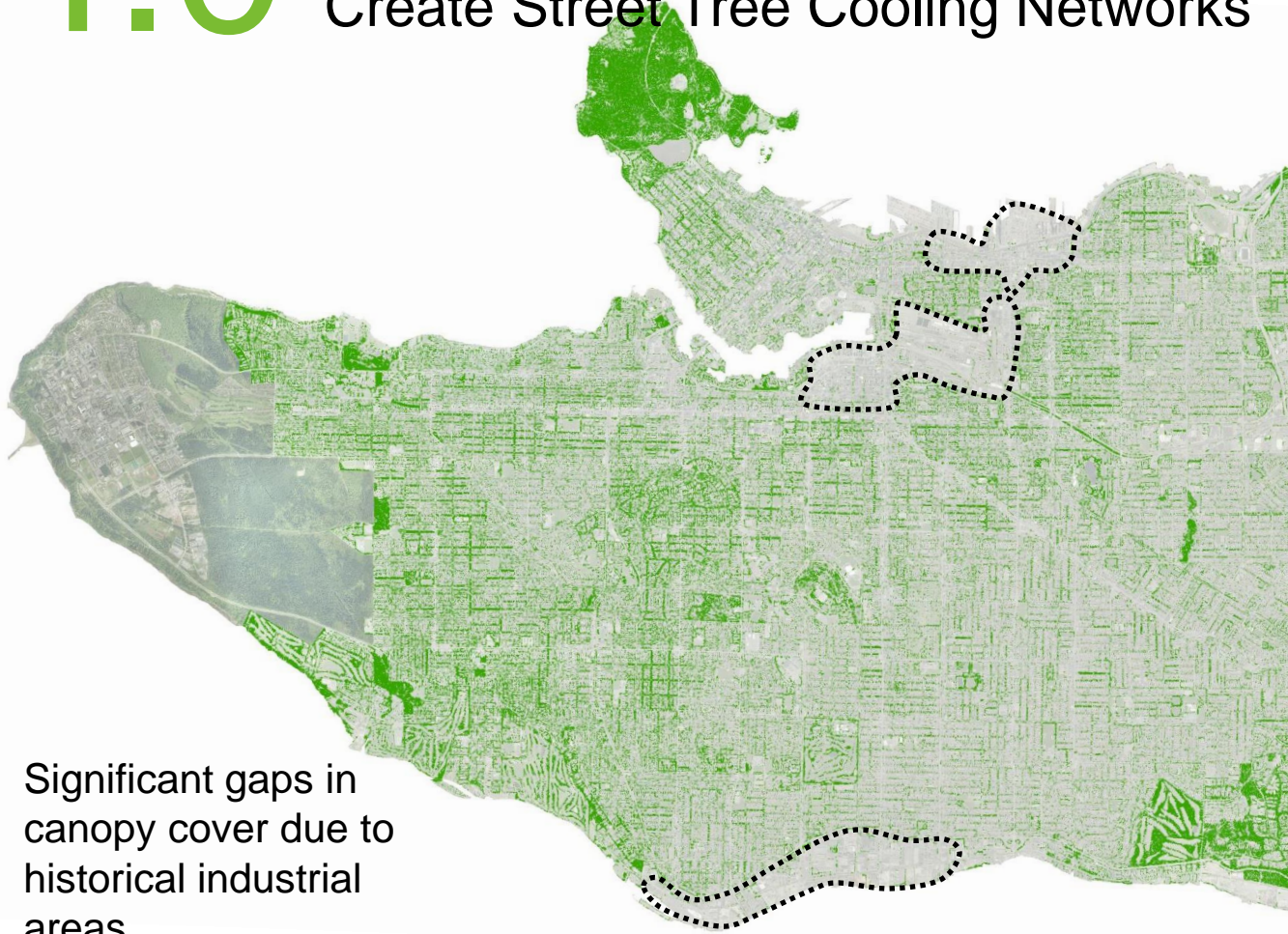
Target:
Plant 150,000

Goal:
Cool our streets
Shade our paths

Partners:
Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Significant gaps in canopy cover due to historical industrial areas

Status:

In progress

Target:

Plant 150,000

Goal:

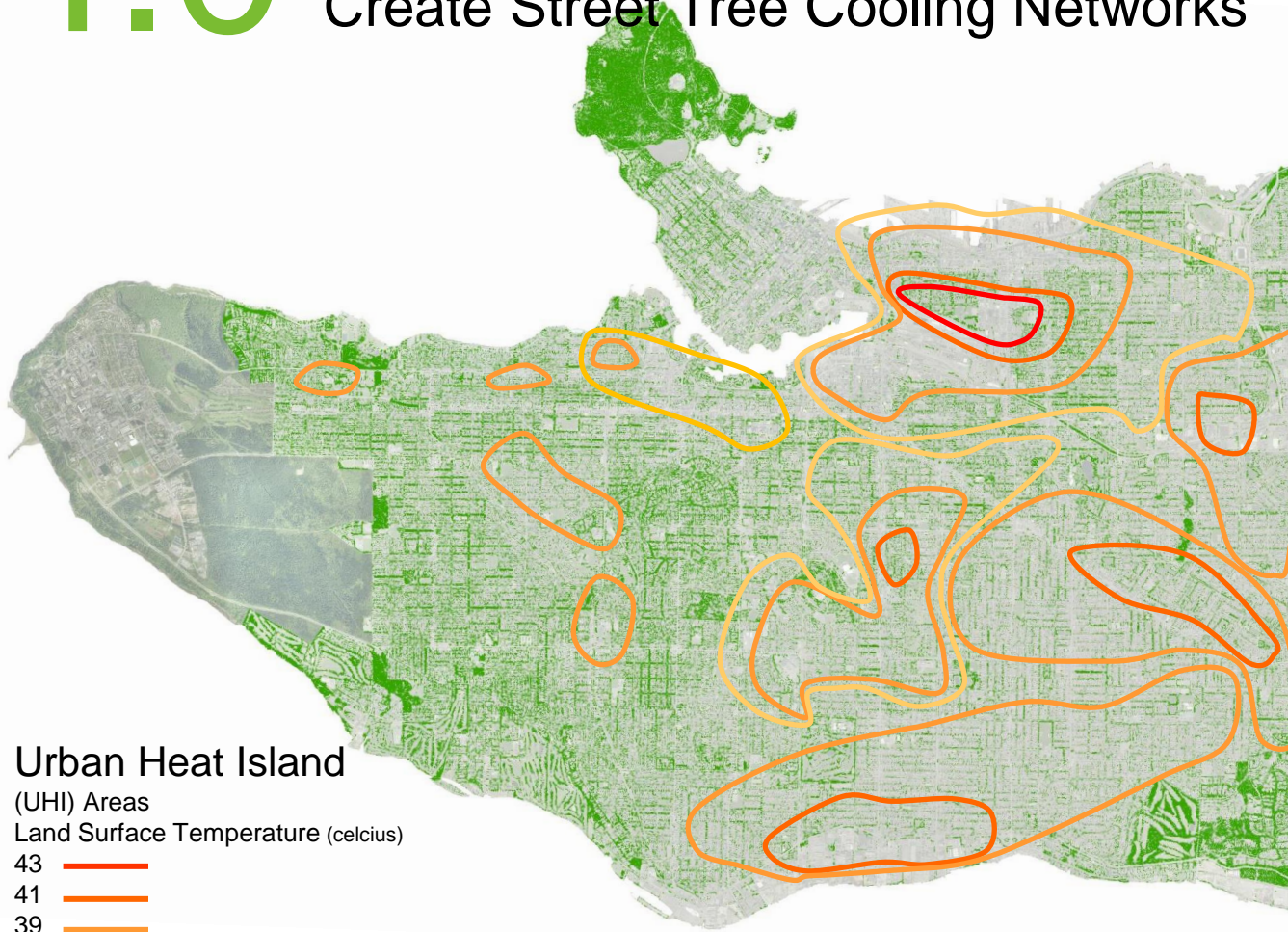
Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Urban Heat Island
(UHI) Areas
Land Surface Temperature (celcius)

43	—
41	—
39	—
37	—

Status:
In progress

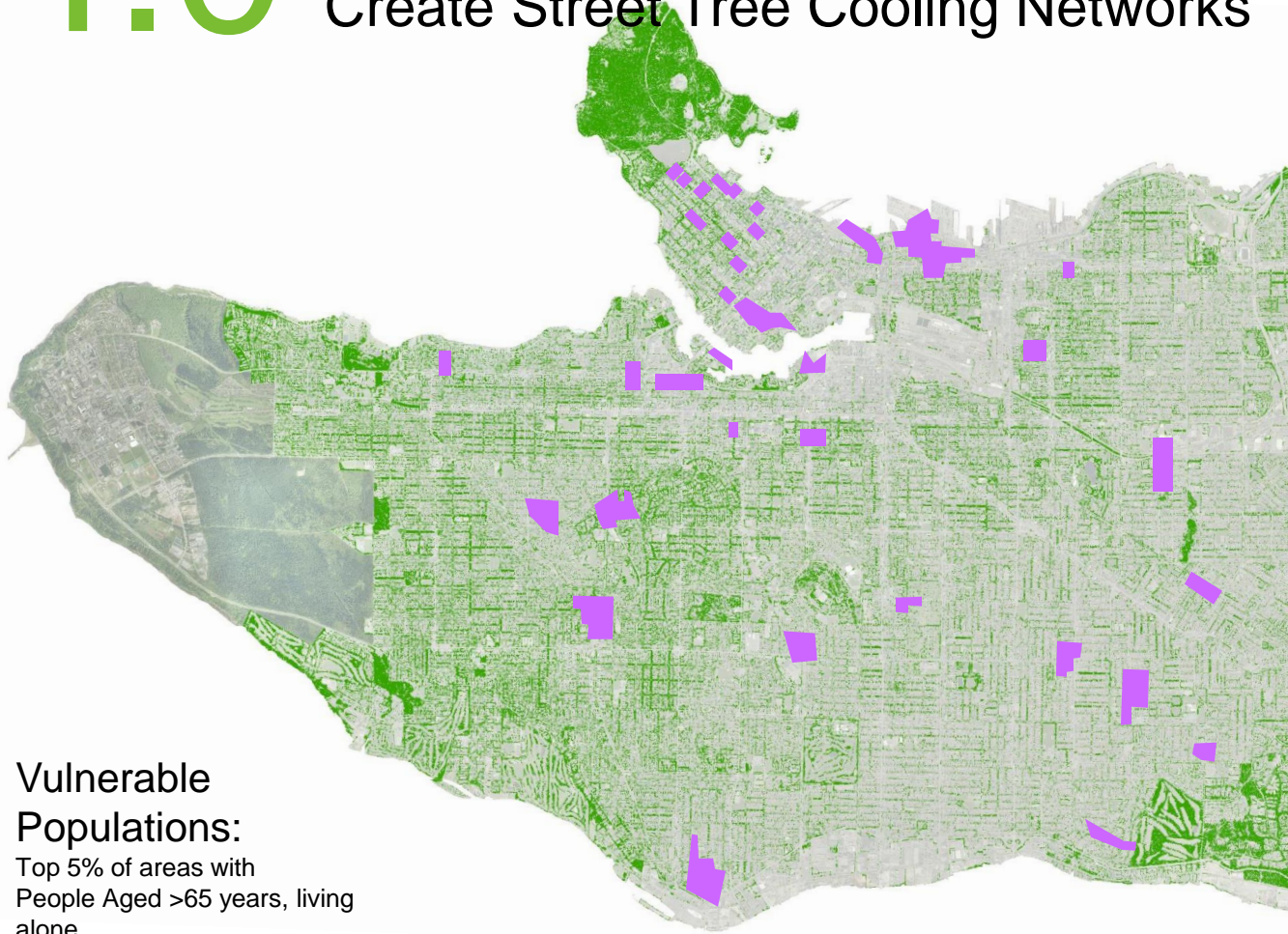
Target:
Plant 150,000

Goal:
Cool our streets
Shade our paths

Partners:
Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Vulnerable Populations:

Top 5% of areas with
People Aged >65 years, living
alone

Status:

In progress

Target:

Plant 150,000

Goal:

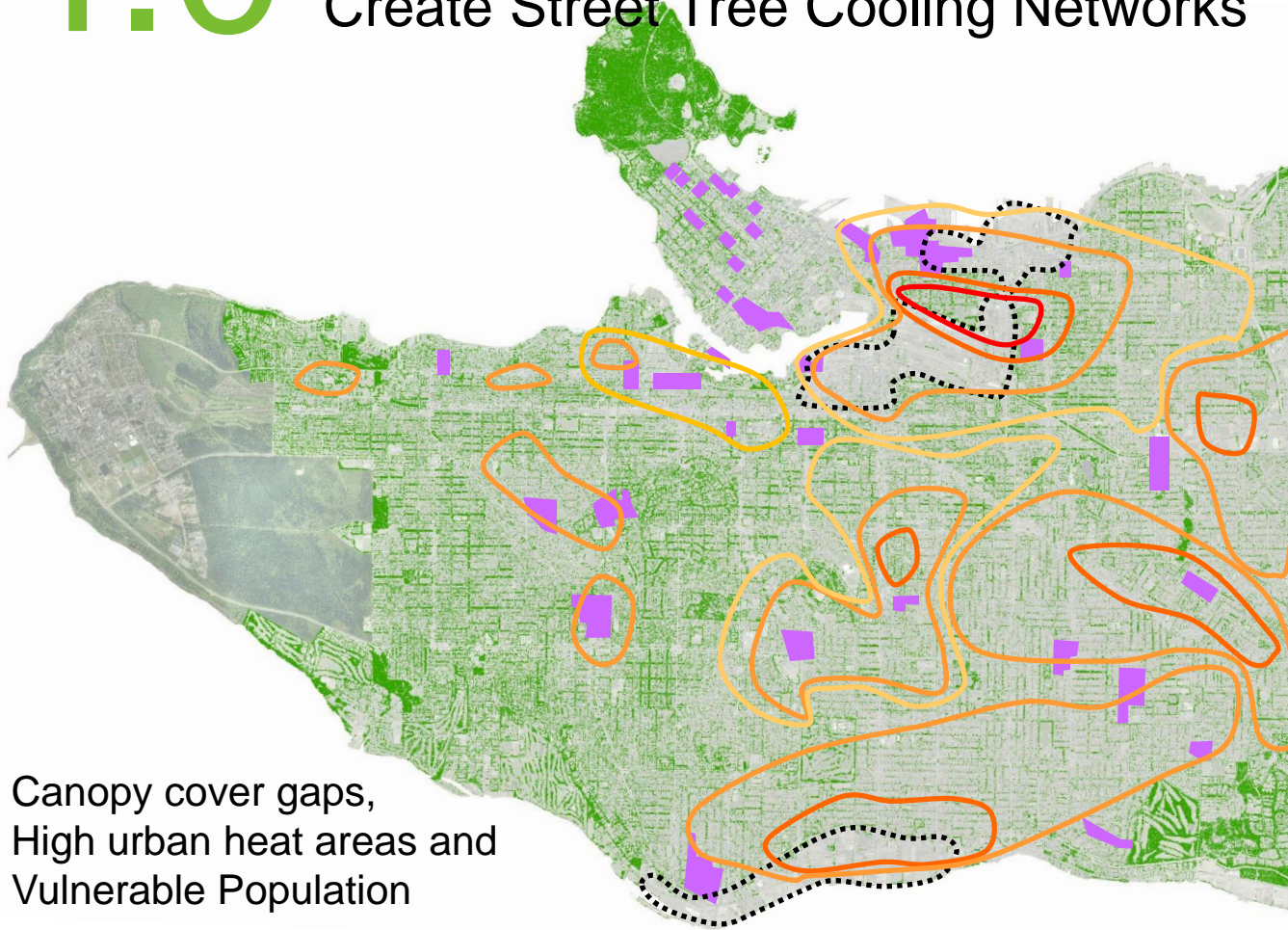
Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Canopy cover gaps,
High urban heat areas and
Vulnerable Population

Status:

In progress

Target:

Plant 150,000

Goal:

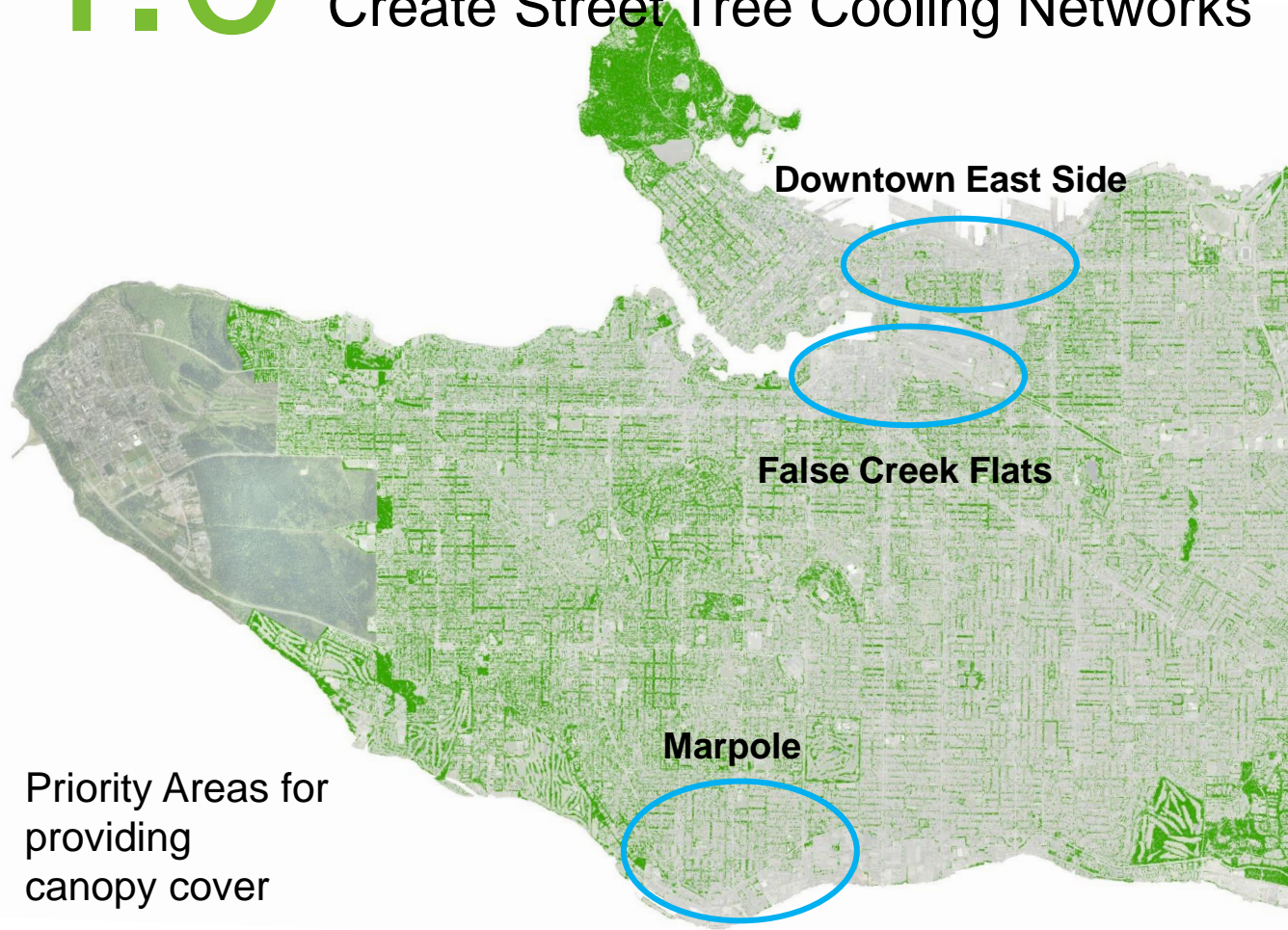
Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Priority Areas for providing canopy cover

Status:

In progress

Target:

Plant 150,000

Goal:

Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Status:
In progress

Target:
Plant 150,000

Goal:
Cool our streets
Shade our paths

Partners:
Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Status:

In progress

Target:

Plant 150,000

Goal:

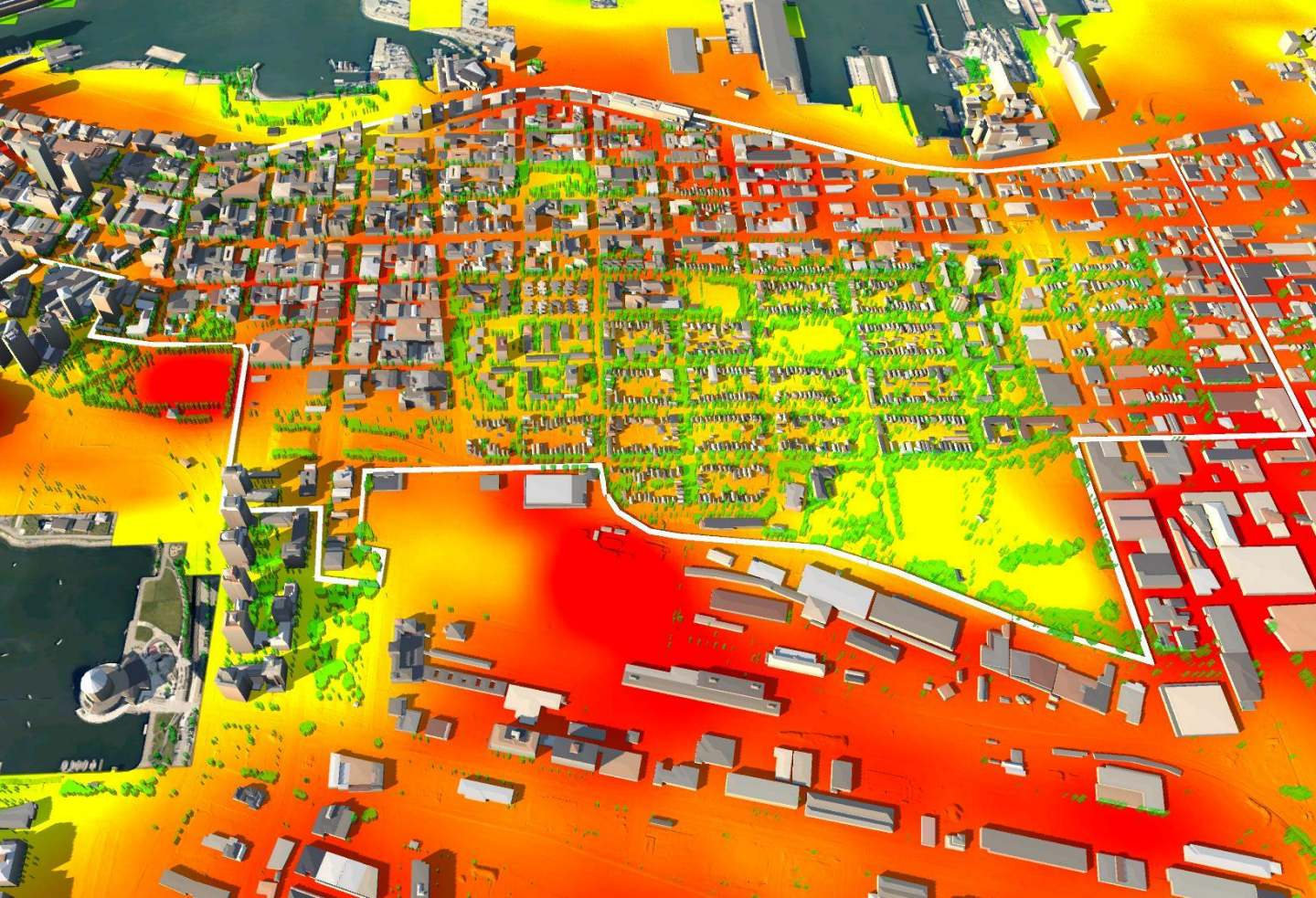
Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Status:

In progress

Target:

Plant 150,000

Goal:

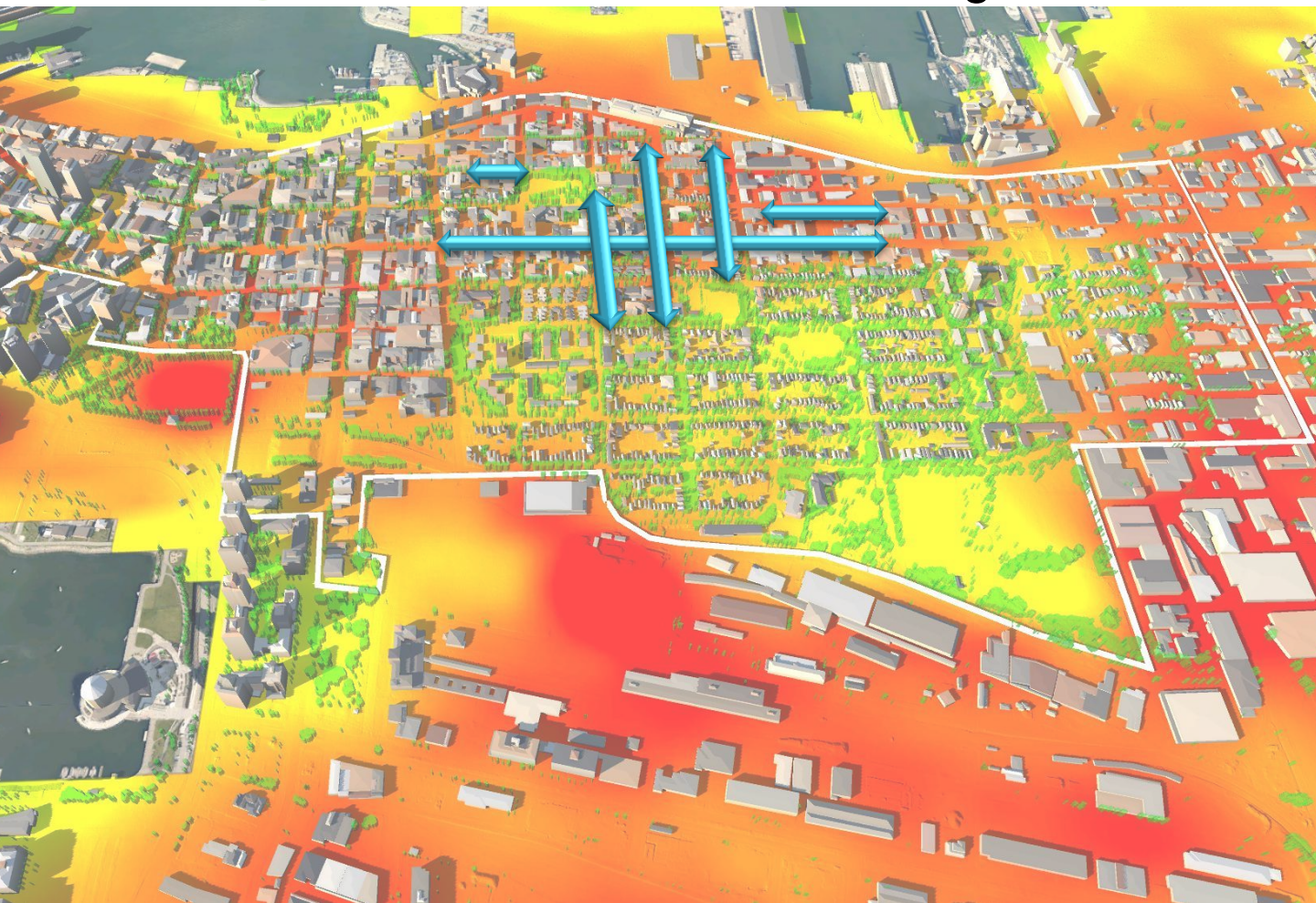
Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Status:
In progress

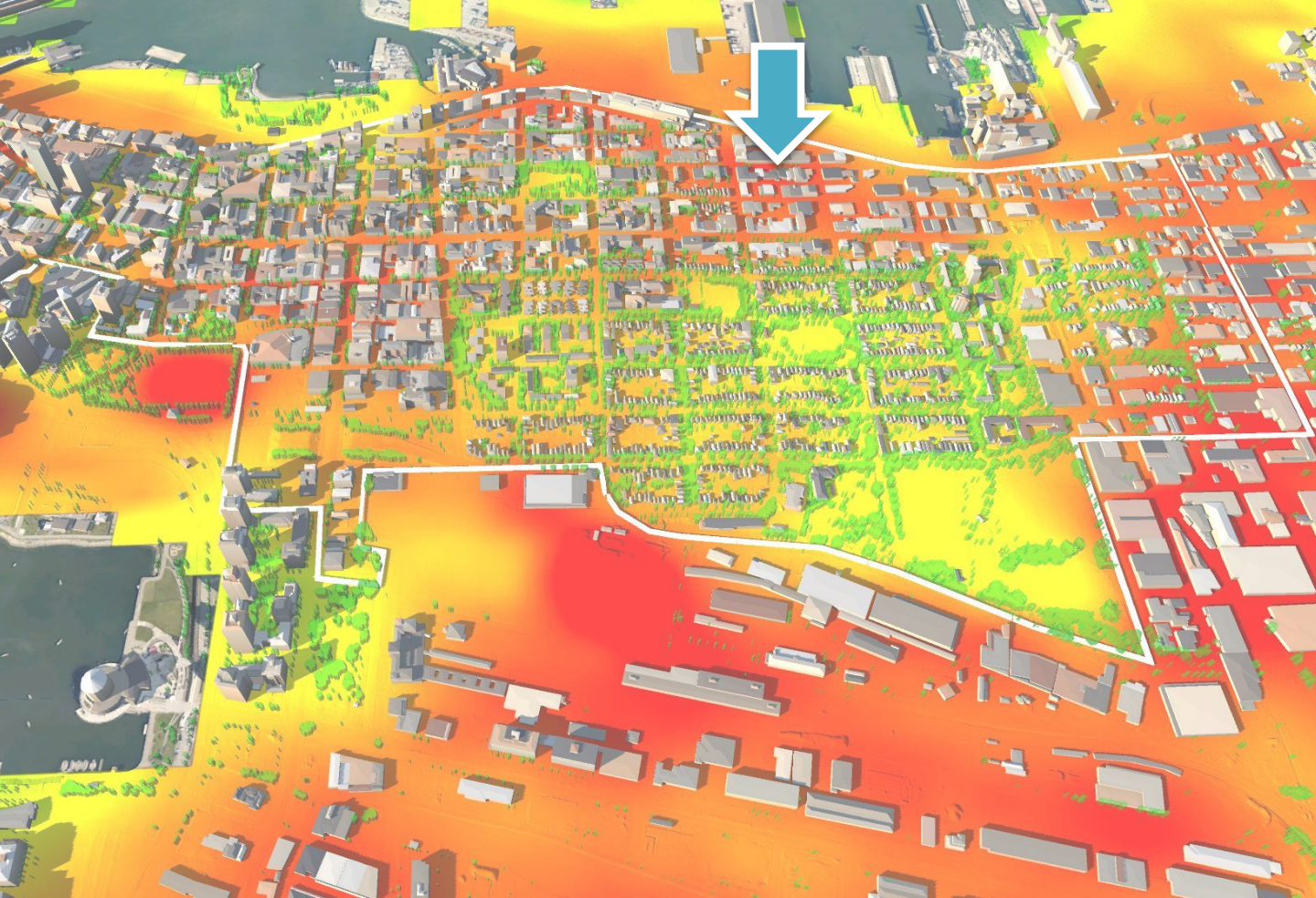
Target:
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Goal:
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Shade our paths

Partners:
Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



Status:

In progress

Target:

Plant 150,000

Goal:

Cool our streets
Shade our paths

Partners:

Residents
Businesses
Community Groups

4.0

Create Street Tree Cooling Networks



PLANT 150,000

2015

 = 1,000 trees

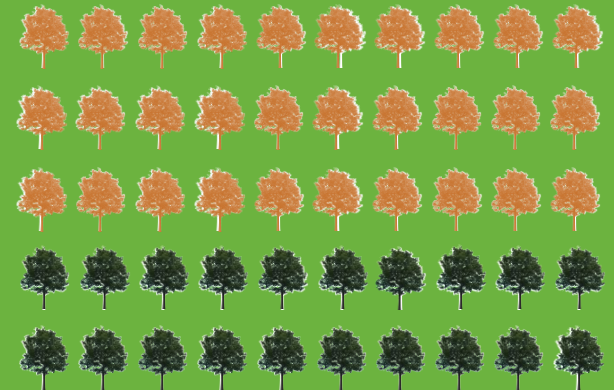
 = planted

 = to plant

private
property



park & other
CoV land



streets

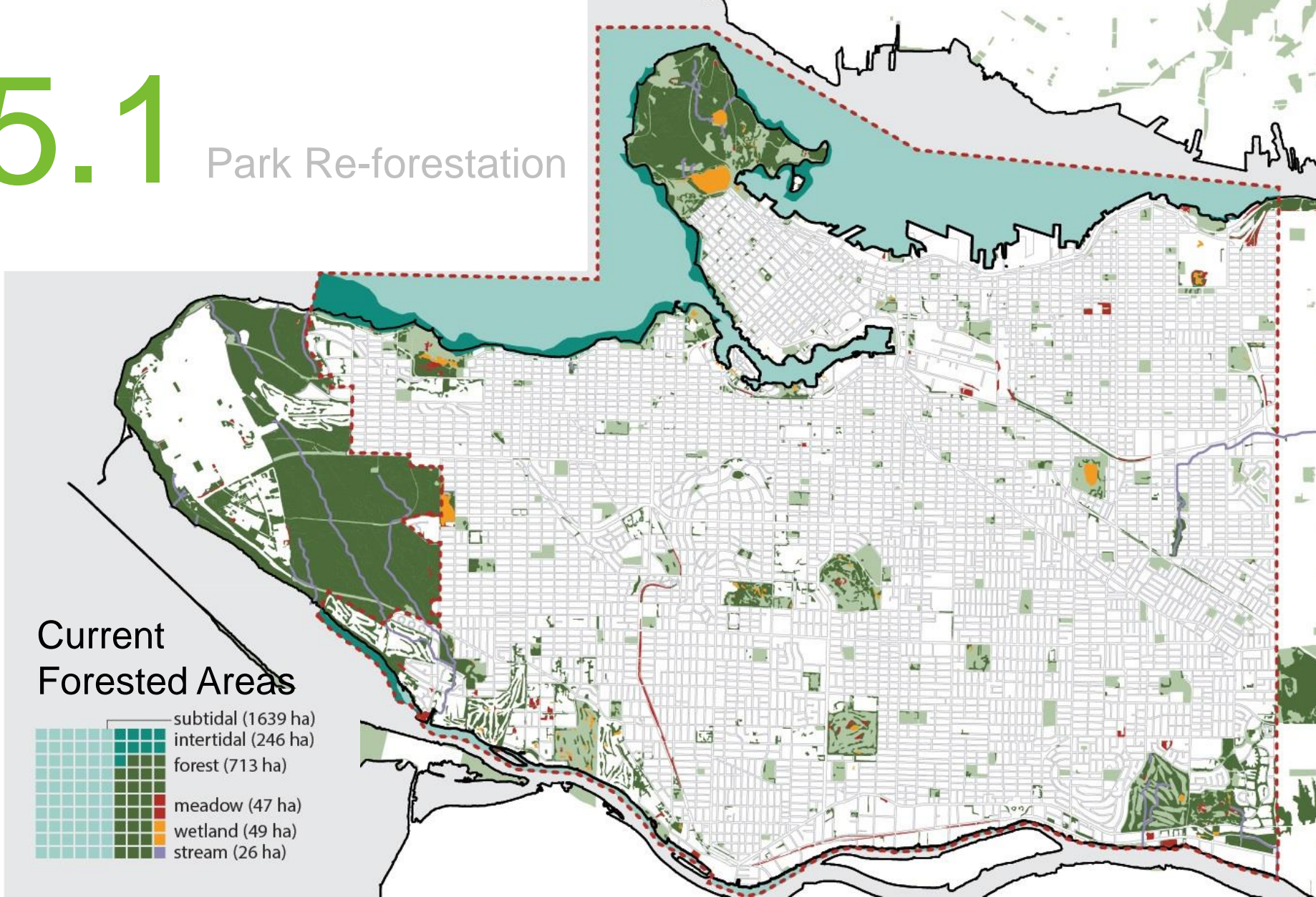


PARKS & OTHER CoV LAND

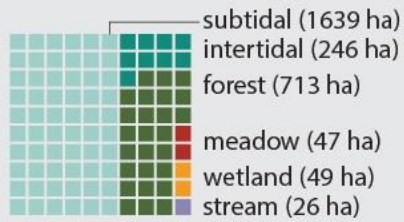


5.1

Park Re-forestation

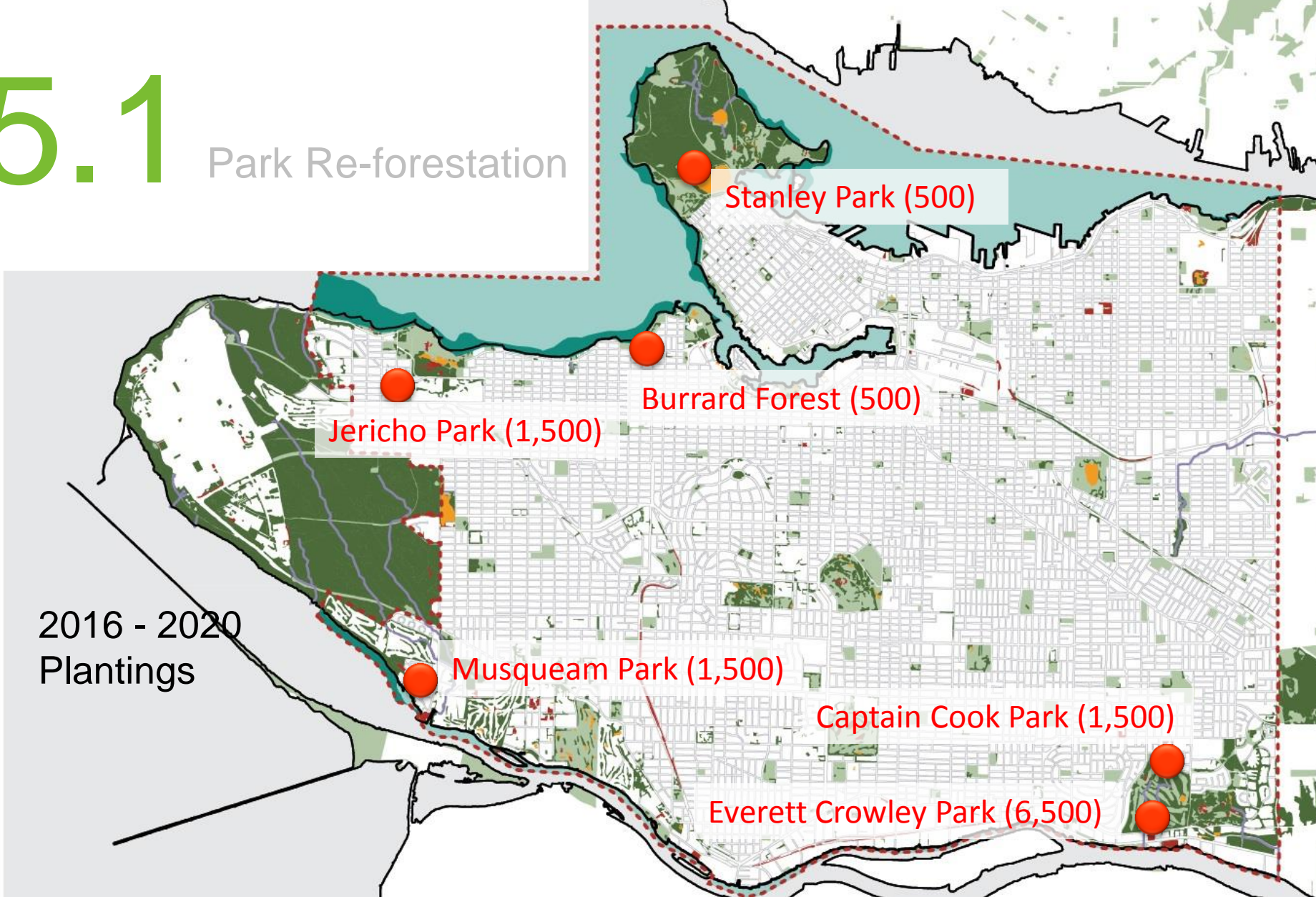


Current Forested Areas



5.1

Park Re-forestation



2016 - 2020
Plantings

5.1

Park Re-forestation Programs



Status:
In progress

Target:
Plant 150,000

Goal:
Create Habitat

Partners:
Non-profits
Volunteers

5.1

Park Re-forestation Programs



Blackberry removal at Everett Crowley Park as a first step in foresting native forests

5.1

Park Re-forestation Programs



5.2

Mountain View Cemetery Planting

Status:
In progress

Target:
Plant 150,000

Goal:
Create Habitat

Partners:
Mountain View
Cemetery

5.3

Celebration Flowering Tree Groves



Status:
In progress

Target:
Plant 150,000

Goal:
Celebrate Flowering
Trees

Partners:
Vancouver Cherry
Blossom Festival
Residents

5.4

City-owned Parking Lot Pilots

Parking Lot
Canopy Target:
40%



Status:
In progress

Target:
Plant 150,000

Goal:
Grow canopy

Partners:
Facilities

PLANT 150,000

2015

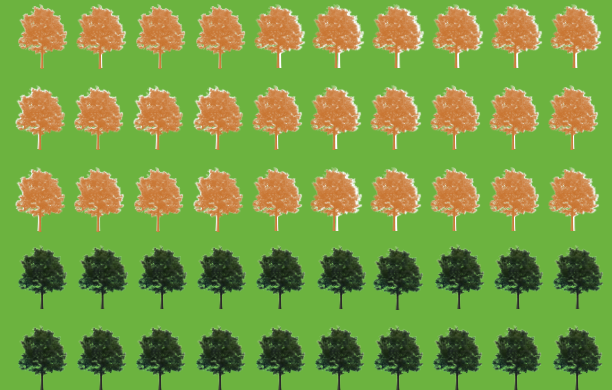
 = 1,000 trees

 = planted

 = to plant



park & other
CoV land



streets



 = 1,000 trees

PRIVATE PROPERTY



6.1

Expand Private Property Planting & Stewardship Programs



Diversify Community-based Outreach

Target:
Plant 150,000

Partners:
Non-profits
Corporate Sponsors
Institutions
Community Centres

Status:
Ongoing, next
program spring 2016

6.1

Expand Private Property Planting & Stewardship Programs



Create a 'Citizen Forester' Education Toolkit

- value of the urban forest
- planting the right tree in the right place
- long term tree care

Status:

Completed by
Spring 2016

Target:

Plant 150,000

Partner:

David Tracey
Consultant

6.1

Expand Private Property Planting & Stewardship Programs

Help us plant 150,000 trees by 2020

Plant a tree in your yard today!

Available trees

- fruit
- flower
- shade
- conifer

All trees are 5' to 6' high

ONLY \$10/tree (\$100 retail value)

Saturday, October 3 — 10am to 5pm
Vancouver Park Board office
2099 Beach Avenue

Did you know that planting one young tree can absorb CO₂, manage rainwater, create a wildlife habitat and grow local fruit? Purchase a young tree for only \$10 on October 3. You and your family can plant your new tree in your backyard and help us grow Vancouver's urban forest canopy. It only takes one tree to make a difference!

Purchasers must be Vancouver residents – please bring ID.
Limit of 5 trees per person. Trees available while quantities last.
Email questions to: pbtree@vancouver.ca

DOV DOORS OPEN VANCOUVER

VANCOUVER BOARD OF PARKS AND RECREATION vancouver.ca

In 2016, hold 6 annual Park Board sponsored Tree Sales (modeled on the October 3rd 2015 Doors Open Tree Sale which sold 1,000 trees in 3 hours).

Target:

Plant 150,000

Partners:

Non-profits
Corporate Sponsors
Institutions
Community Centres

Status:

Ongoing, next program spring 2016

6.1

Expand Private Property Planting & Stewardship Programs



Target:
Plant 150,000

Partners:
Non-profits
Corporate Sponsors
Institutions
Community Centres

Status:
Ongoing, next
program spring 2016

6.1

Park Board Tree Sale Events

Incorporate outreach and tree sales into the events, programs and facilities network of our 22 community centres.



Target:

Plant 150,000

Partners:

Non-profits
Corporate Sponsors
Institutions
Community Centres

Status:

Ongoing, next
program spring 2016

6.2

Fruit Tree Planting Programs



Target:
Plant 150,000

Partners:
Non-profits
Residents

Status:
Next program
spring 2016

6.3

Institutional & Corporate Partnerships

Institutional Land
Partnerships

Nursery Coupons

Target:

Plant 150,000

Partners:

Corporate Sponsors
Institutions

Status:

Ongoing

6.4 Birthday Blossoms Tree Sales



Birthday
Blossoms

CELEBRATING VANCOUVER
CHERRY BLOSSOM FESTIVAL
10TH ANNIVERSARY

Target:

Plant 150,000

Partners:

Vancouver Cherry
Blossom Festival

Status:

Ongoing, next
program spring 2016

6.5

Create an Environmental Stewardship Coordinator Position

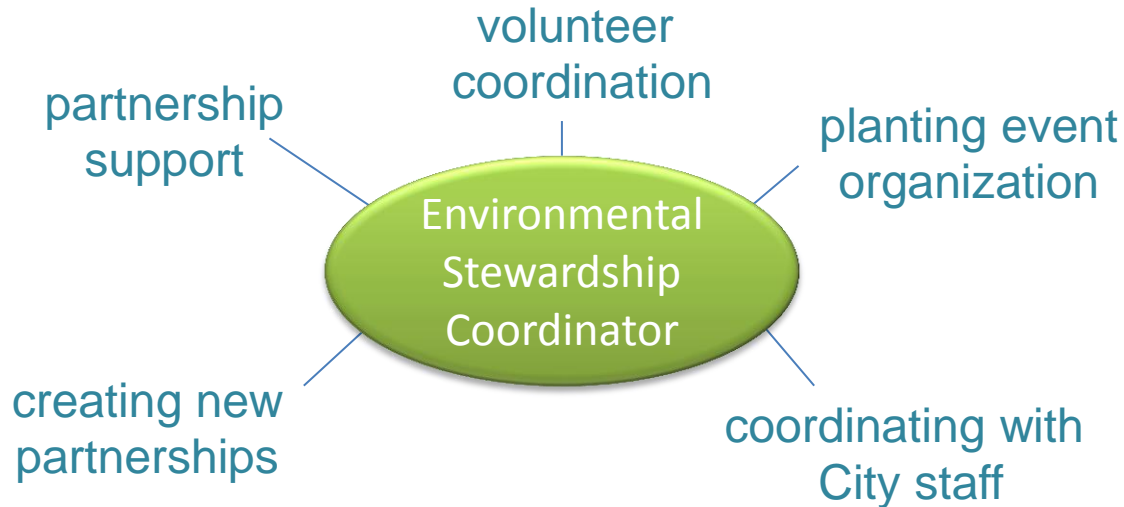
Provide a full-time Park Board position to coordinate the many partners helping to grow our planting and stewardship programs.

Target:

Plant 150,000

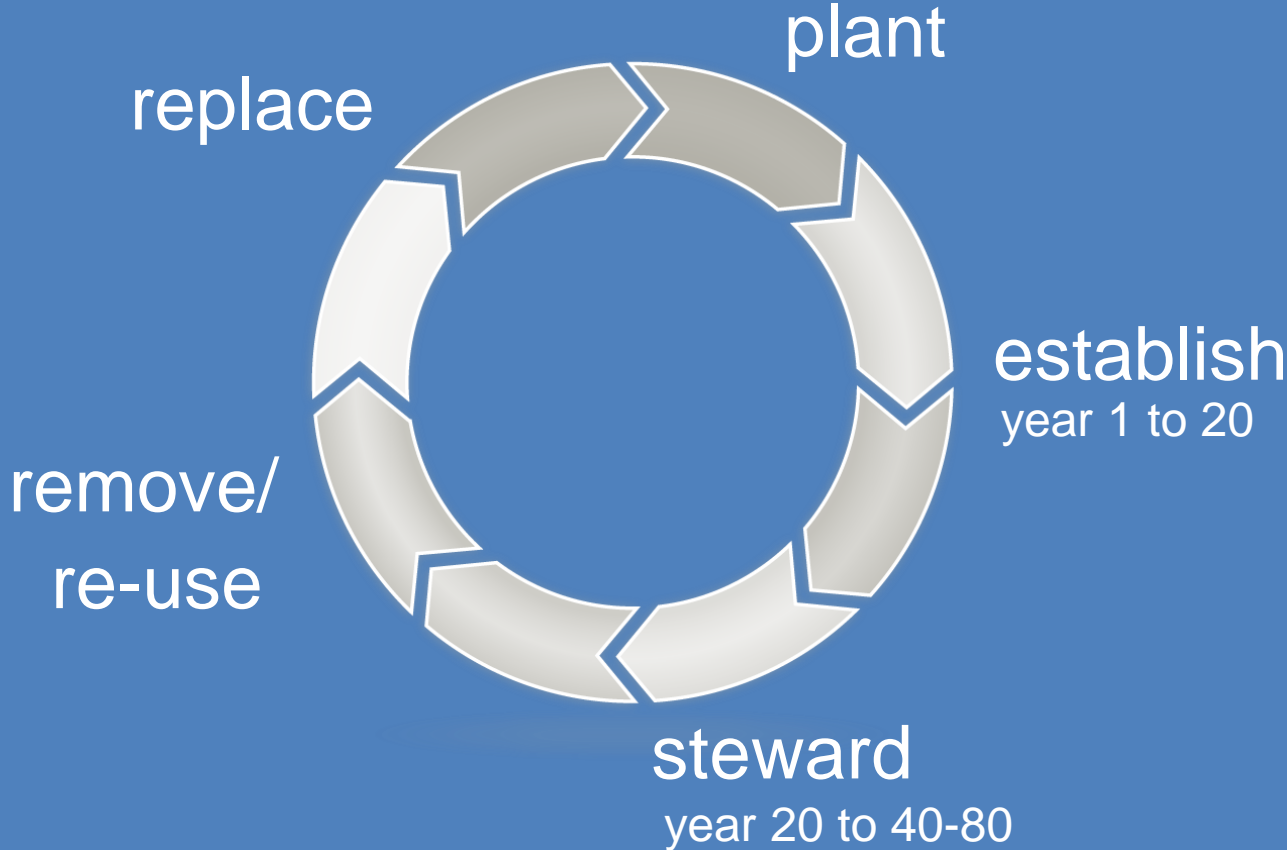
Status:

Position starting Spring 2016



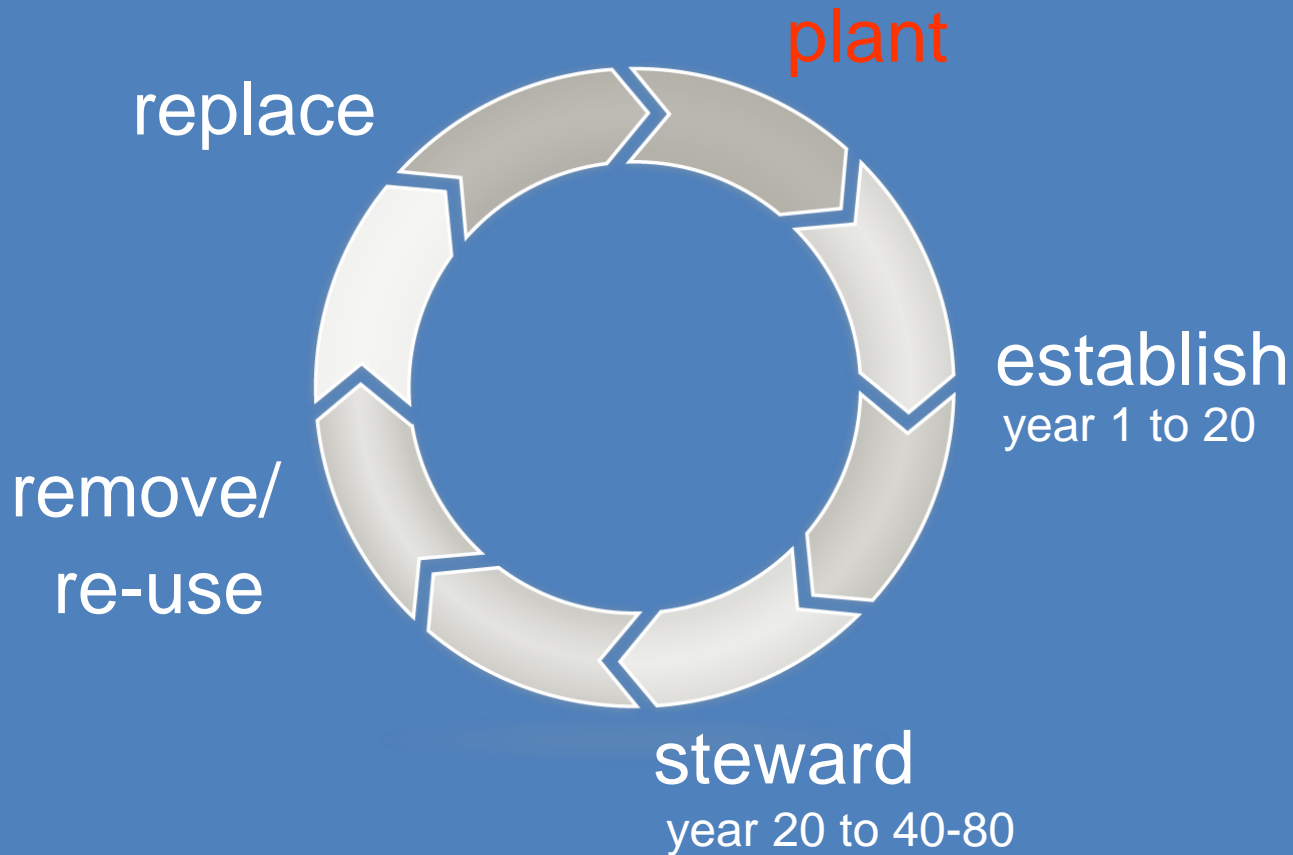
MANAGE

Goal: Manage our urban forest as a vital living asset



MANAGE

Goal: Manage our urban forest as a vital living asset





Above ground

← Sunlight

← Canopy Space →

← Water & Air

Below ground



← Native soil volume & quality →



Above ground

Wires

Lighting

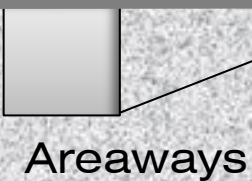
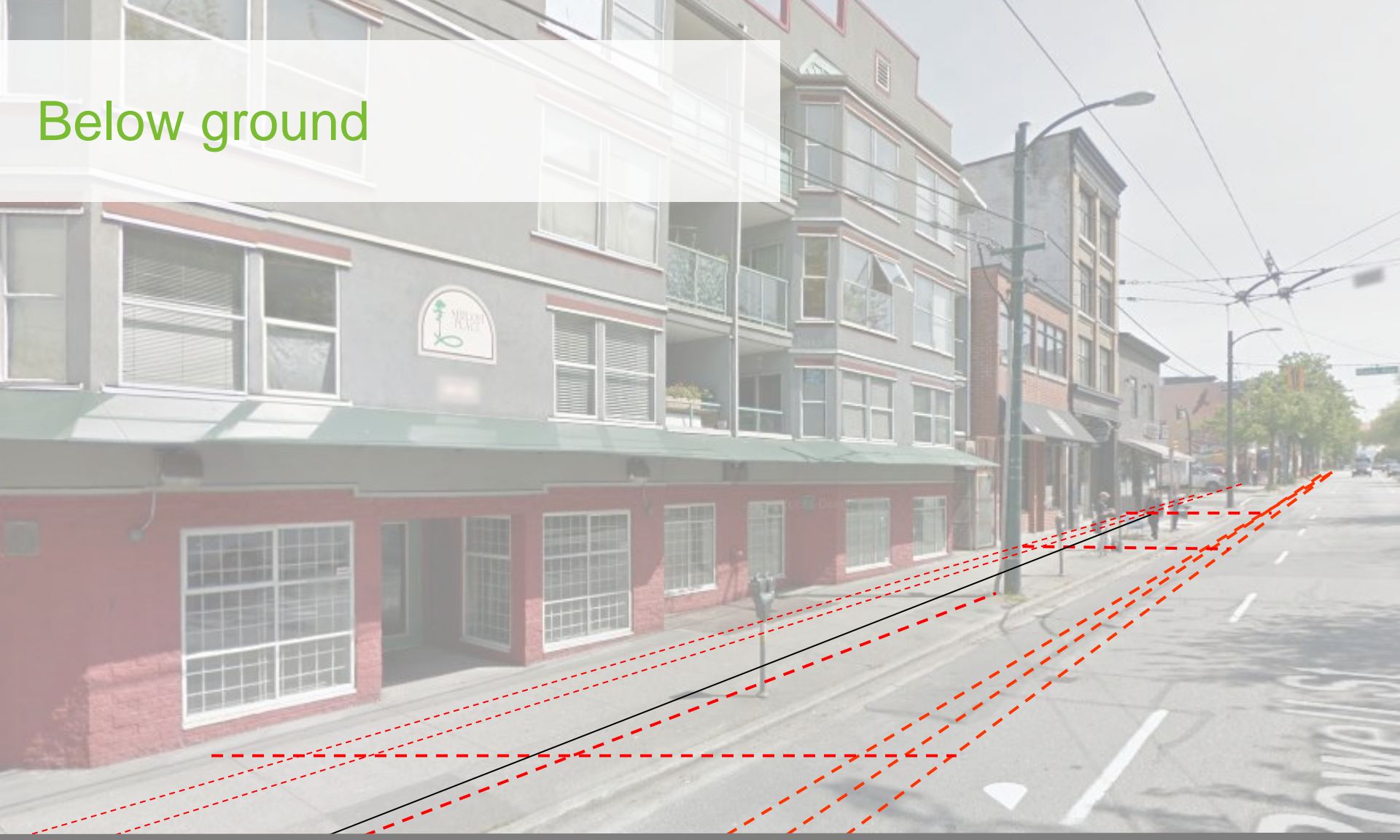
Building setbacks

Existing
Hardscape

Transportation
conflicts



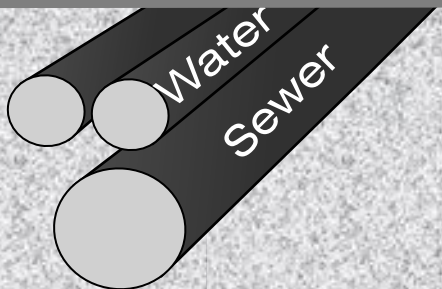
Below ground



Areaways

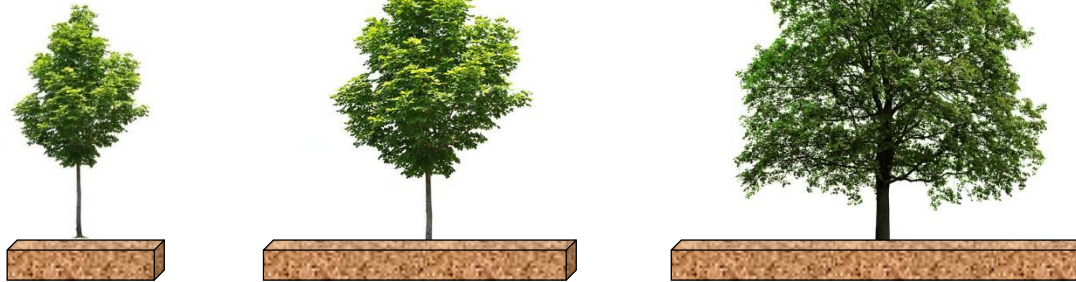
Electrical
Conduit

Poor subgrade



Water
Sewer

7.0 Soil Volume Standards



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Developers
Designers

Status:

Approved by staff

7.0 Soil Volume Standards



Maximum canopy allowable given above and below ground considerations.

Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

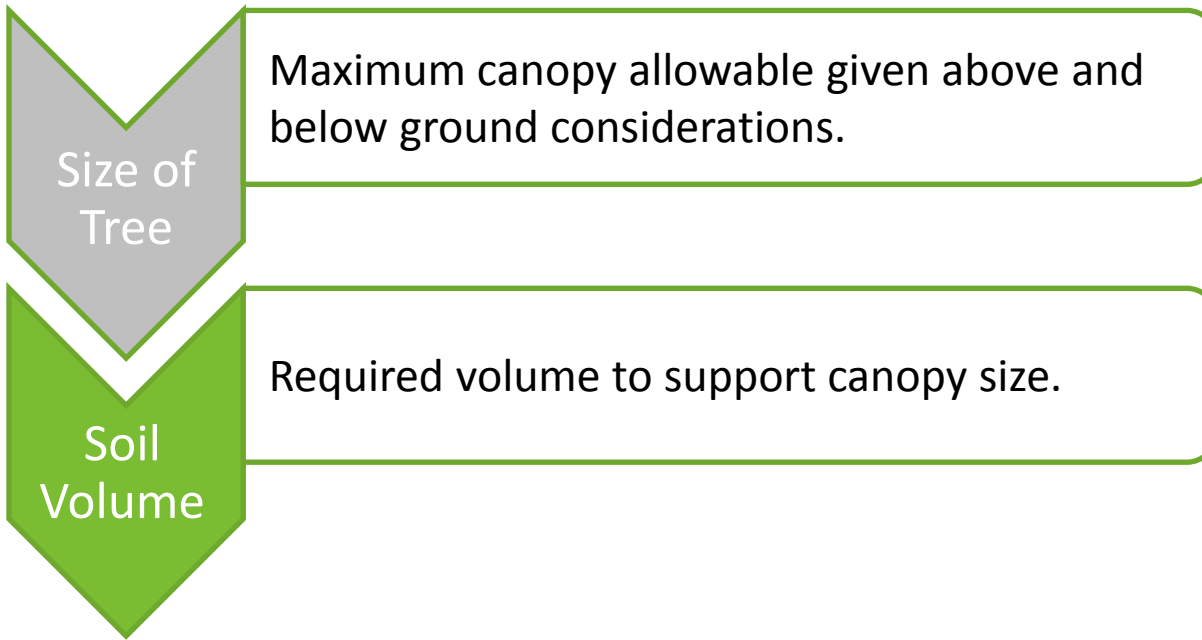
Partners:

Developers
Designers

Status:

Approved by staff

7.0 Soil Volume Standards



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Developers
Designers

Status:

Approved by staff

7.0 Soil Volume Standards

Required volume to support canopy size:

Canopy Size	Minimum Soil Volume
Large (Maple)	30 m ³ (single tree) 20 m ³ (row of trees)
Medium (Hornbeam)	20 m ³ (single tree) 15 m ³ (row of trees)
Small (Snowbell)	10 m ³ (single tree) 5 m ³ (row of trees)

Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

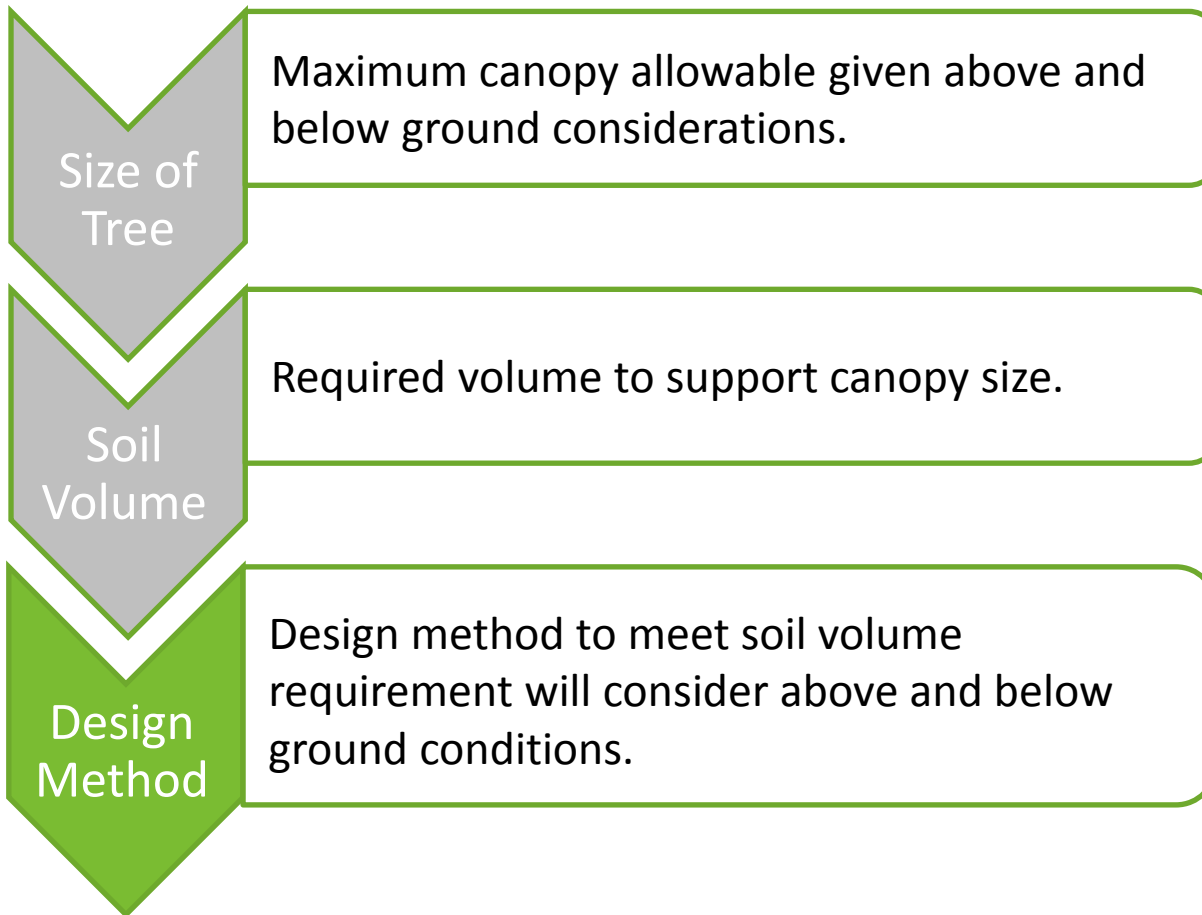
Partners:

Developers
Designers

Status:

Approved by staff

7.0 Soil Volume Standards



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Developers
Designers

Status:

Approved by staff

7.0

Soil Volume Standards

Structural Soil

Hornby St. near Georgia St.



7.0

Soil Volume Standards

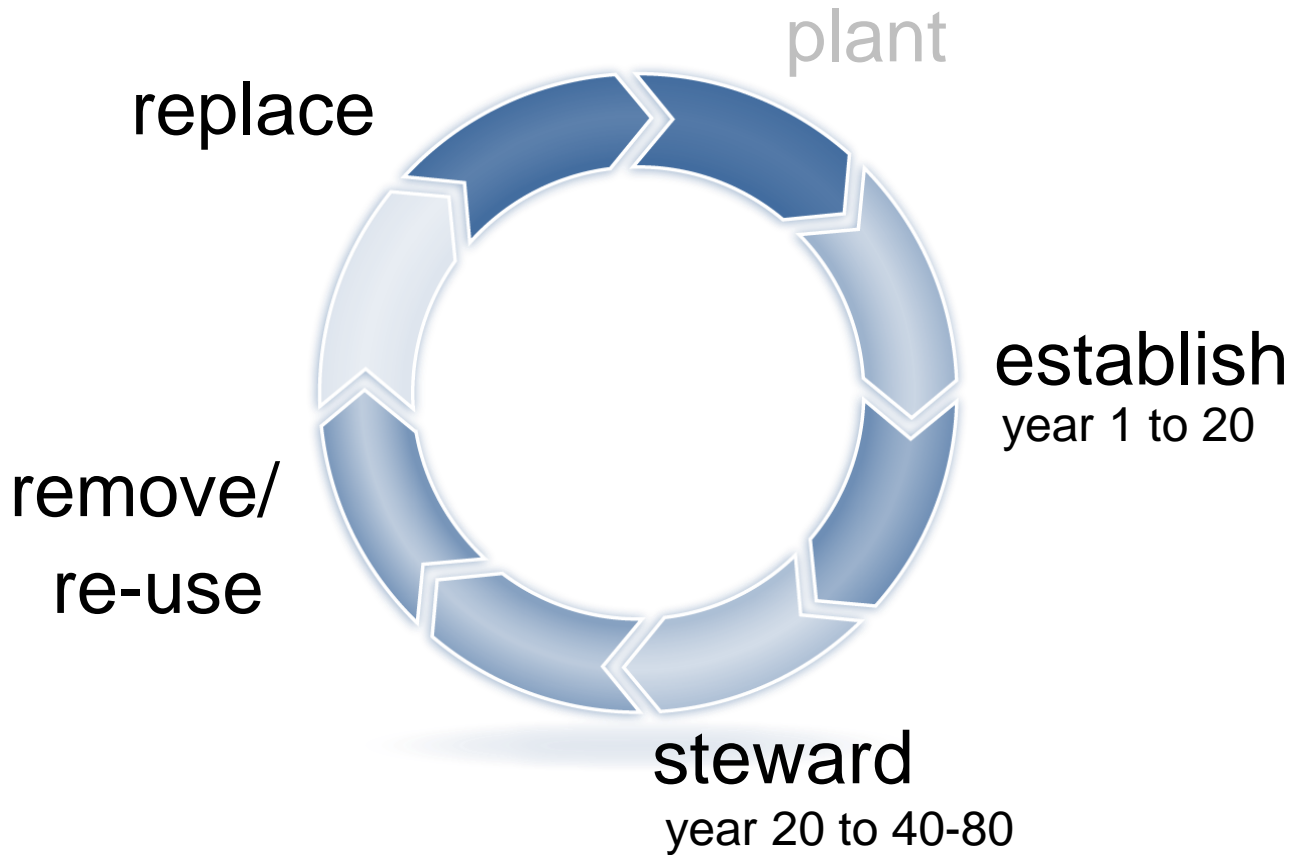
Soil Cells

Columbia St., Olympic Village



8.0

Street & Park Tree Management Plan



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Urban Forest Team

Status:

To Park Board
for approval
Spring 2016

8.0

Street & Park Tree Management Plan

establish
Watering



Target:

Grow canopy to
22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Urban Forest Team

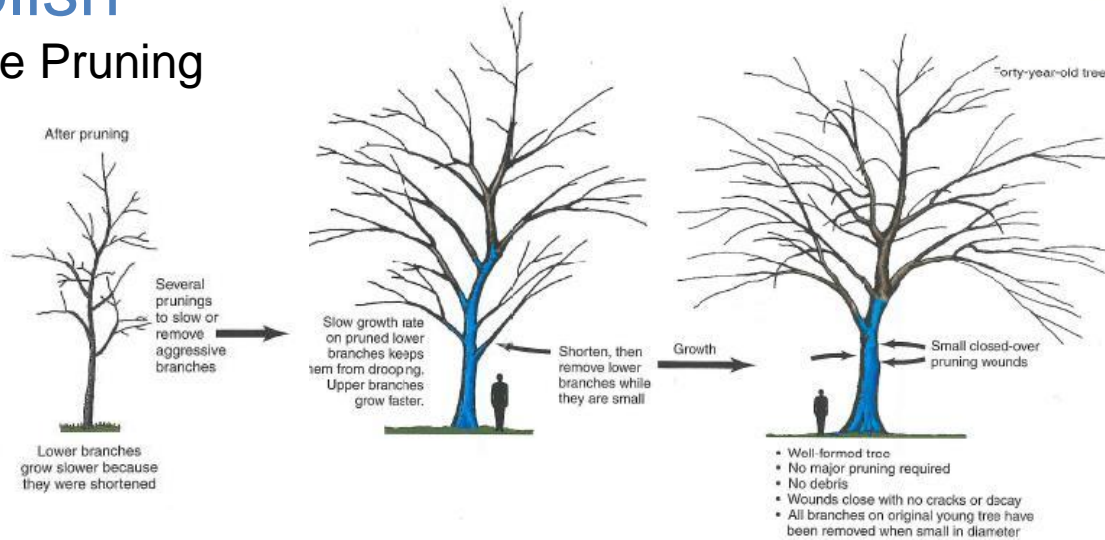
Status:

To Park Board
for approval
Spring 2016

8.0

Street & Park Tree Management Plan

establish Proactive Pruning



Three pruning events within the first 20 years would set the structure of the tree for the rest of its life. Many structural problems that lead to storm damage could be avoided with proactive pruning.

Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Urban Forest Team

Status:

To Park Board
for approval
Spring 2016

8.0

Street & Park Tree Management Plan

steward

Updated Storm Response

Improved interdepartmental coordination and readiness triggers.



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Urban Forest Team

Status:

To Park Board
for approval
Spring 2016

8.0 Street & Park Tree Management Plan

replace

Wherever possible, replace with tree species that provide more canopy and are more resilient to climate change and disease.

Target:

Grow canopy to 22% by 2020

Goal:

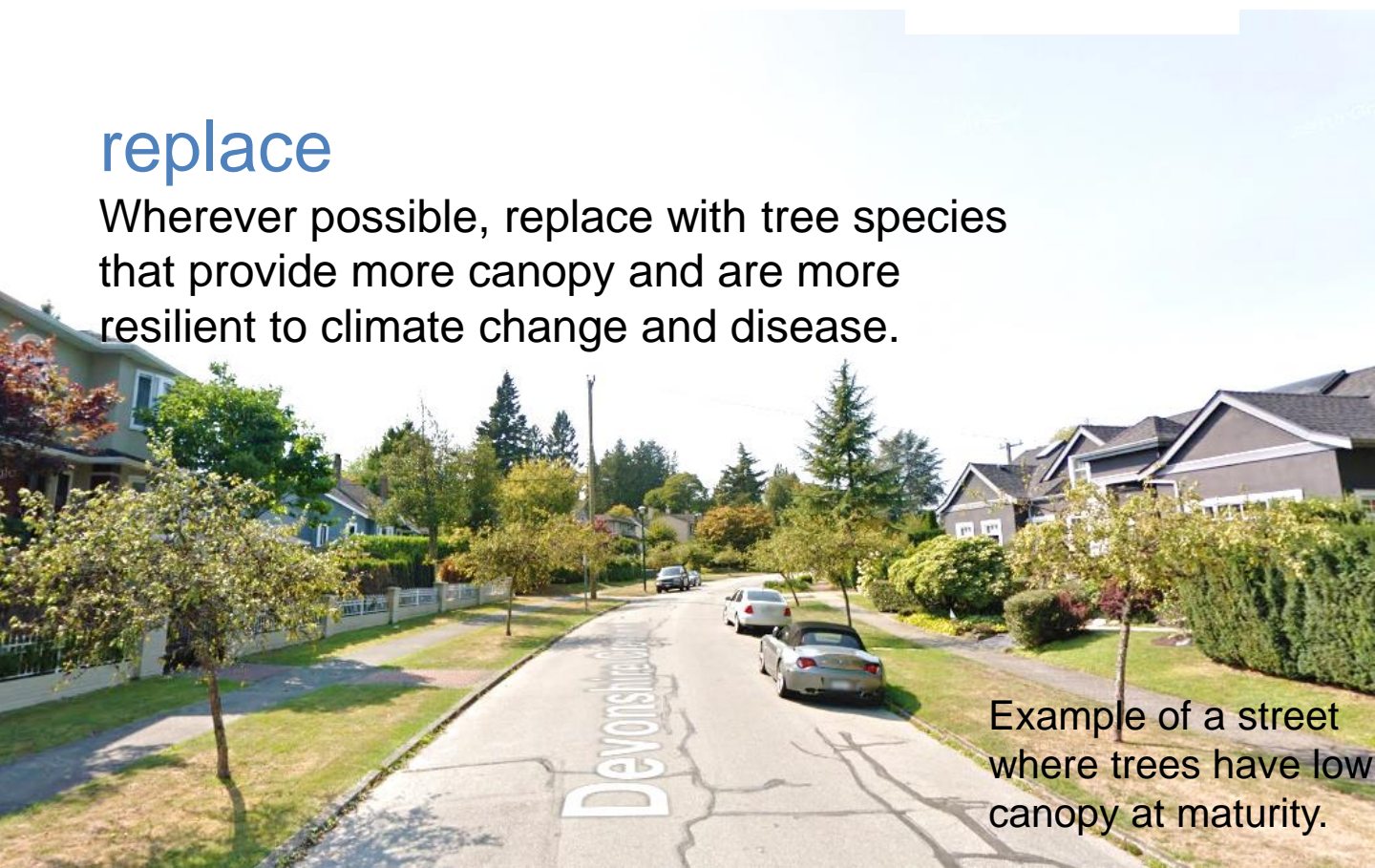
Maximize canopy
Long term tree health

Partners:

Urban Forest Team

Status:

To Park Board
for approval
Spring 2016



Example of a street where trees have low canopy at maturity.

9.0

Updated Inventory System & Data

Geocoding our street and stand-alone park trees.



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Urban Forest Team
Consultants

Status:

Geocoding completed
Spring 2016

9.0

Updated Inventory System & Data

- ✓ survey of other cities
- ✓ needs assessment
- ✓ system selection
- implementation by end of 2016



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Urban Forest Team
Consultants

Status:

New System
Implemented by
end of 2016

9.0

Updated Inventory System & Data

- ✓ survey of other cities
- ✓ needs assessment
- ✓ system selection
- implementation by end of 2016



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

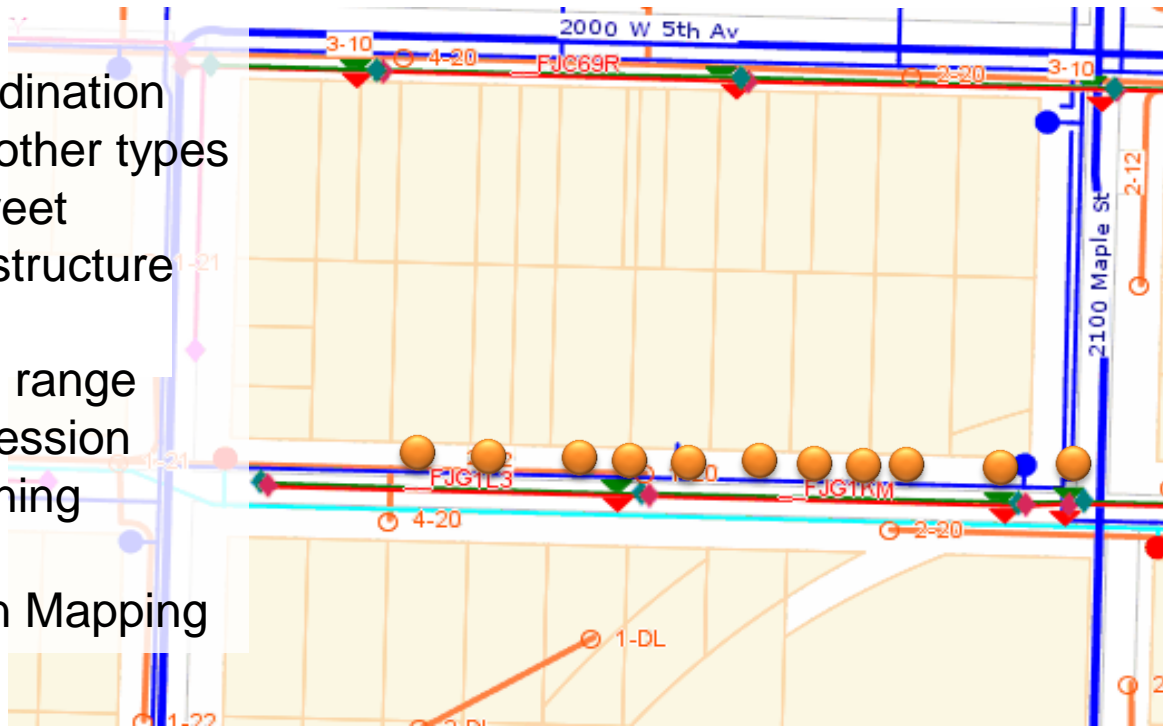
Urban Forest Team
Consultants

Status:

New System
Implemented by end of 2016

9.0 Updated Inventory System & Data

- Coordination with other types of street infrastructure
- Long range succession planning
- Open Mapping



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

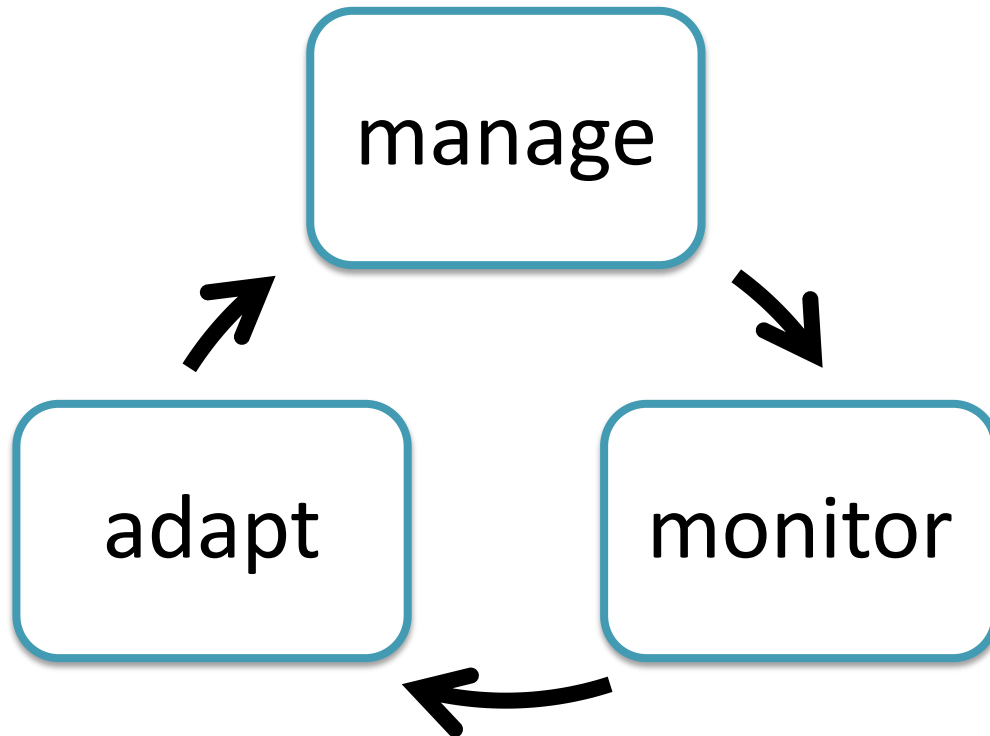
Urban Forest Team
Consultants

Status:

New System
Implemented by
end of 2016

10.0

Monitoring & Adaptation Frameworks



Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Status:

Ongoing

10.0

Monitoring & Adaptation Frameworks

CANOPY COVER

- **Every 3 years:** LIDAR and city-wide canopy cover measurement. Next LIDAR scheduled for 2017.
- **By end of 2016:** UBC partnership to model long term canopy trends.

Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

UBC
Urban Forest
Consultants

Status:

Ongoing

10.0 Monitoring & Adaptation Frameworks

OTHER URBAN FOREST HEALTH INDICATORS:

- Diversity
- Disease
- Climate Change Adaptation
- Age class Distribution

Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Experts
Canadian Urban Forest Network
Universities

Status:

Part of Street and Park Tree Man Plan

10.0 Monitoring & Adaptation Frameworks

SUPPORT & LEARN FROM EVOLVING RESEARCH:

- Designed and administered through the Canadian Urban Forest Network an urban forest management survey (filled out by 12 municipalities across Canada)
- Attended Portland Climate Adaptation Conference
- Hosted western chapter of Canadian Urban Forest Network & Tree Canada Conference
- Participating in Metro Vancouver Urban Forest & Climate Change Workshop

Target:

Grow canopy to 22% by 2020

Goal:

Maximize canopy
Long term tree health

Partners:

Experts
Canadian Urban Forest Network
Universities

Status:

Part of Street and Park Tree Man Plan

Next Steps

SPRING 2016:

- Arbour Week & education campaign launch
- Bring Street & Park Management Plan to Park Board
- Publish summary document of Action Items if endorsed
- Annual Urban Forest Strategy Action Item progress updates

