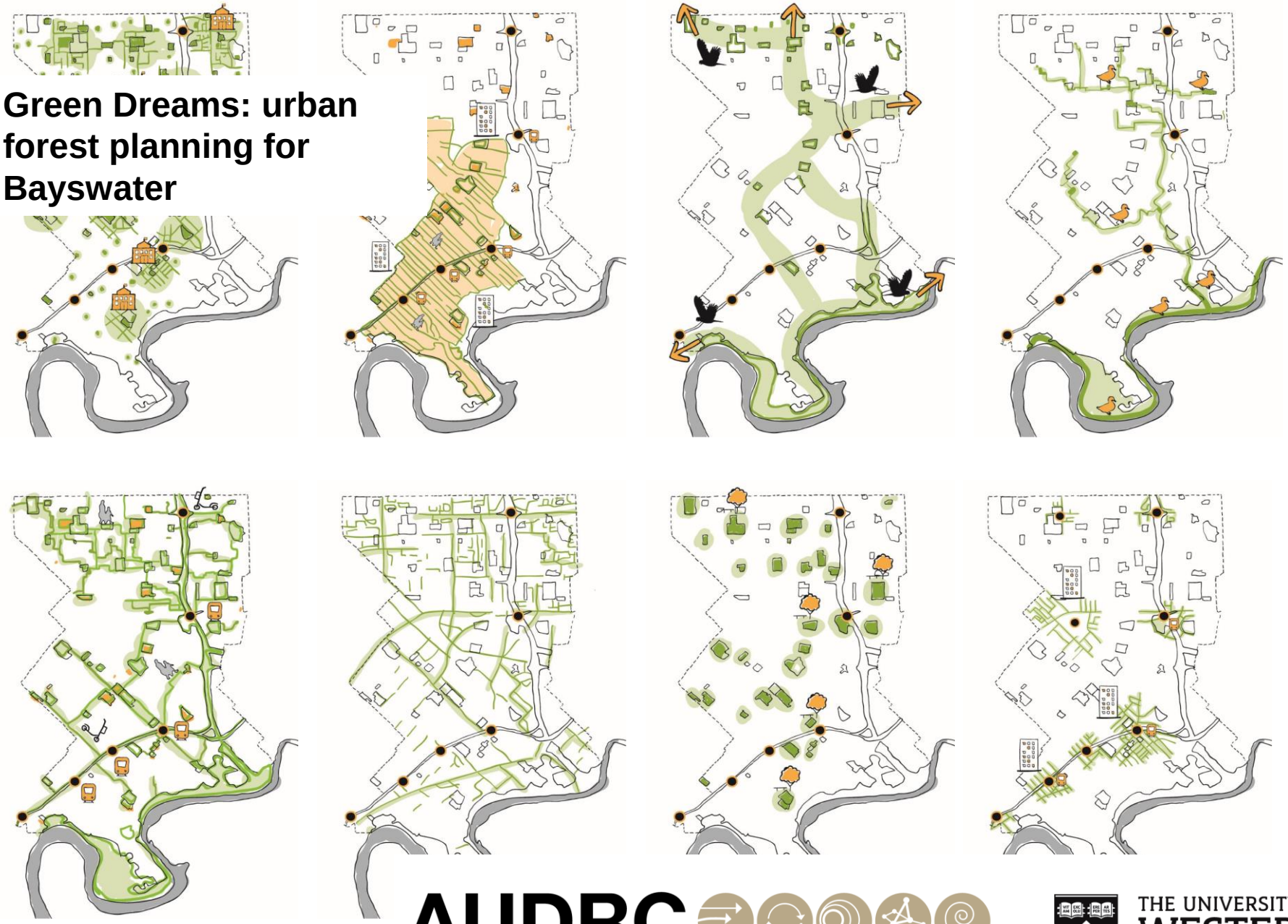
Green Dreams: urban forest planning for Bayswater



AUDRC
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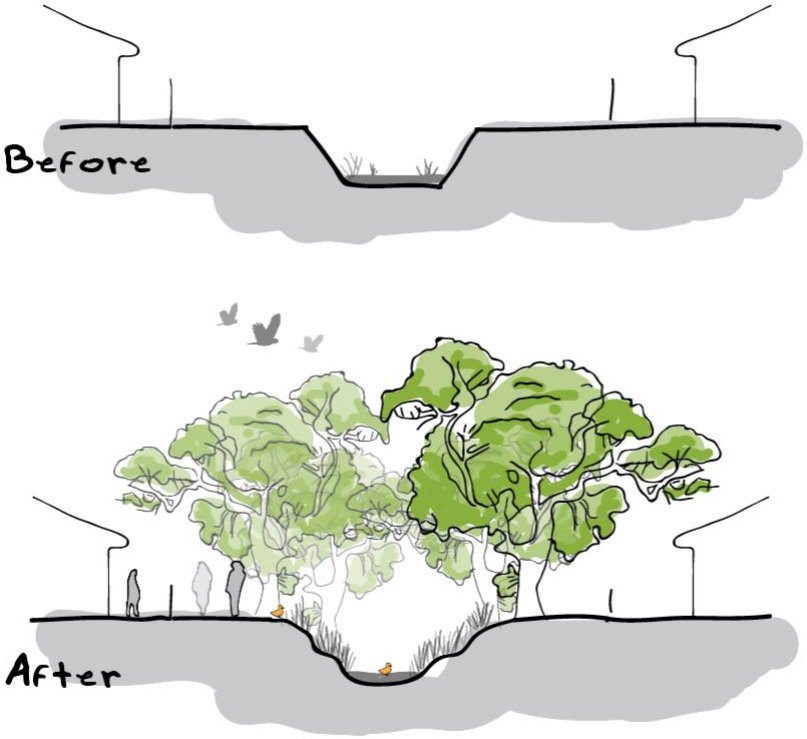
JB

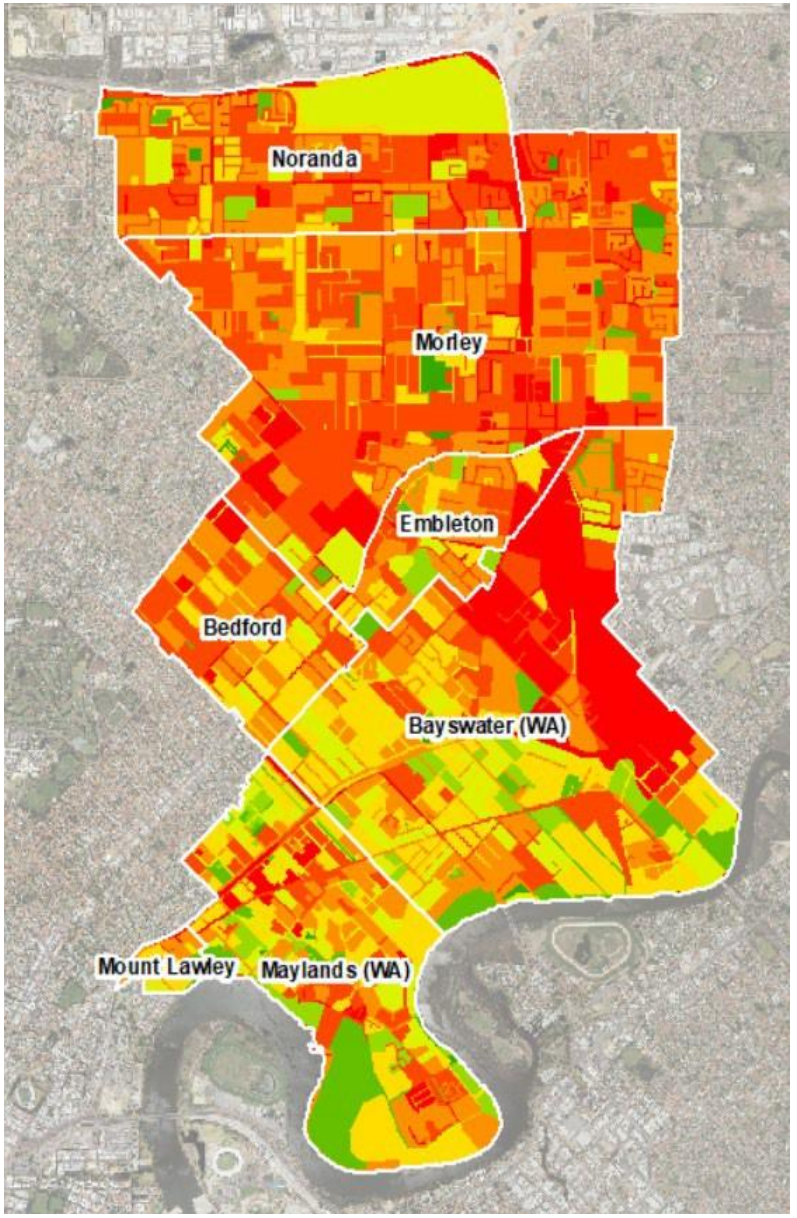
Green Dreams: urban forest planning for Bayswater presentation

This presentation includes:

1. Benchmarking current canopy cover (PH)
2. Mapping of the likely effects of infill development on canopy coverage (JB/ PH)
3. Urban forest scenarios to deliver an increase in canopy coverage (JB)
4. The synthesis of multiple urban forest scenarios into a hybrid scenario (JB)
5. Urban forest scenario testing with Planning Support System with respect to mental health, physical health, walkability and the regulation of extreme heat events (PH)



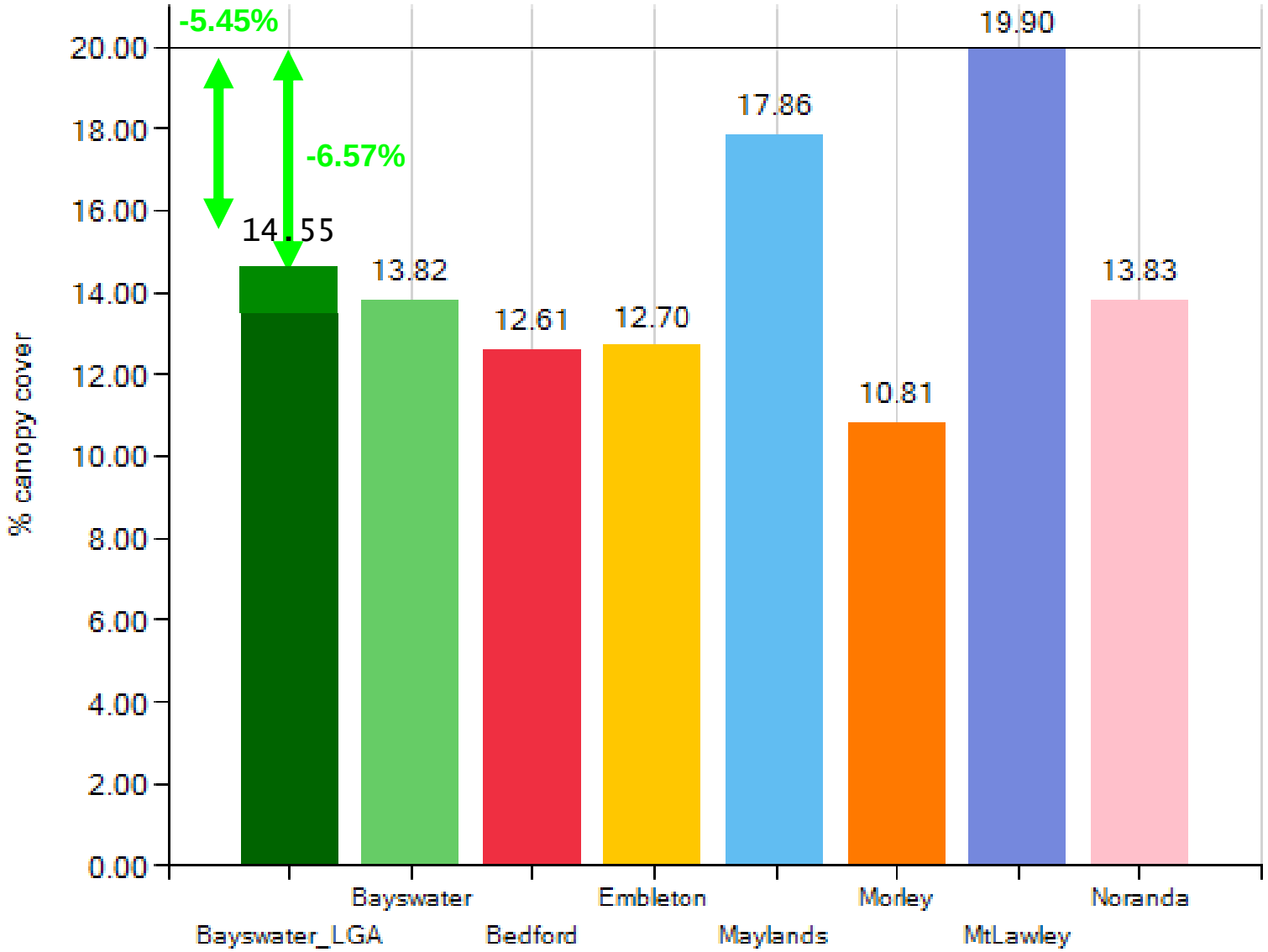
1. Benchmarking <u>current</u> canopy



NB: Source data = City of Bayswater tree canopy mapping 2019

1.1. Benchmarking current canopy

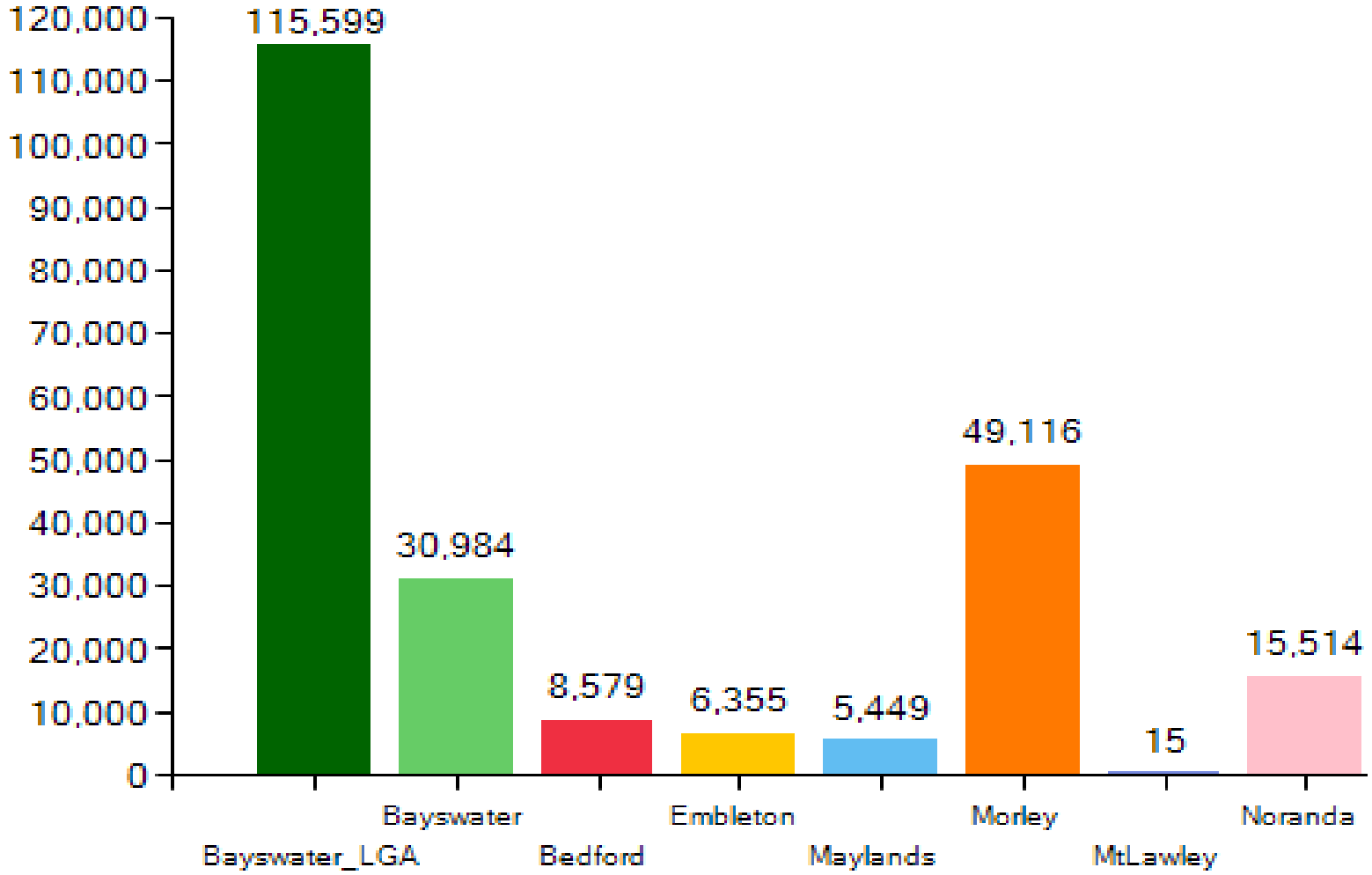
Percentage tree canopy cover by CoB LGA and suburb



PH

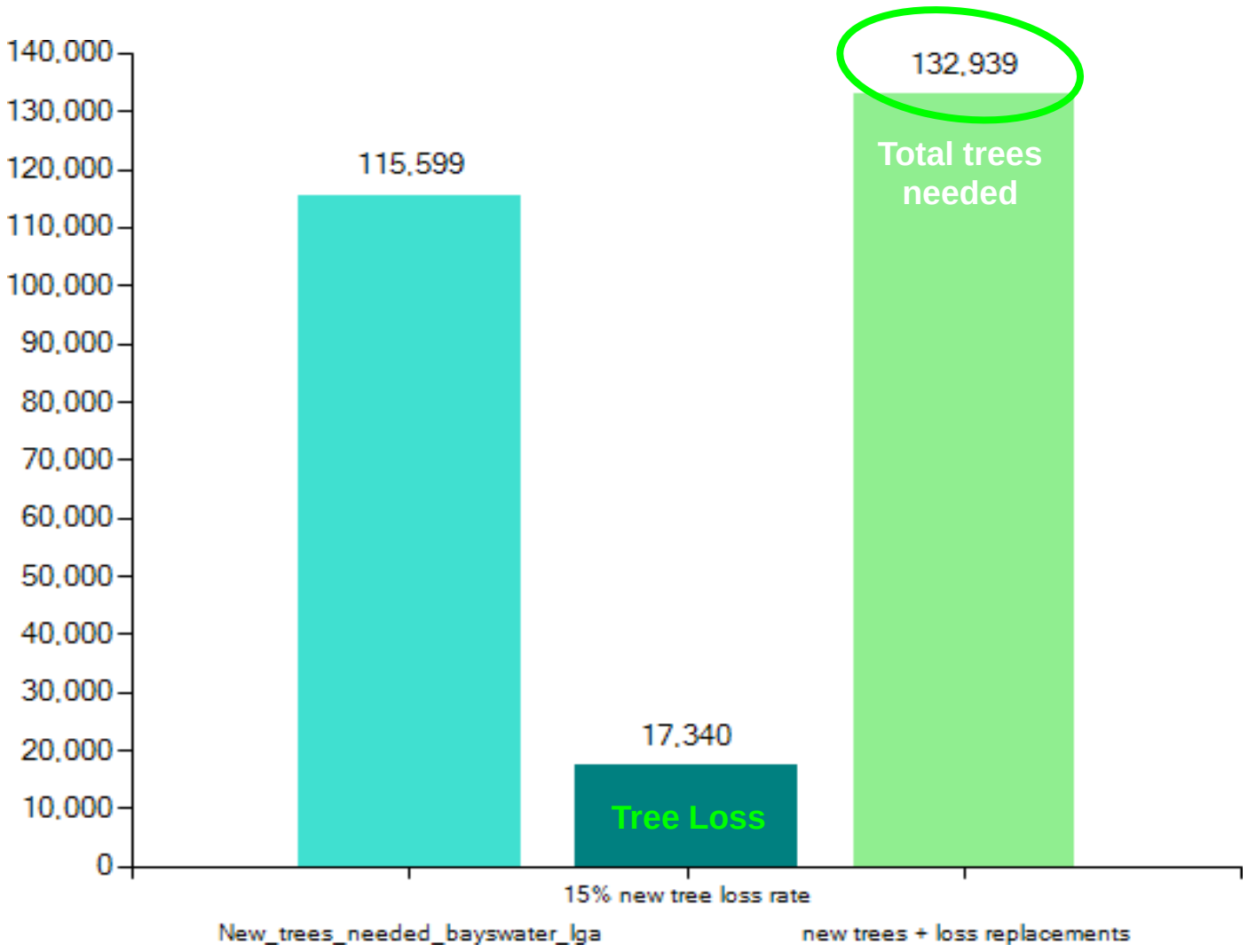
1.2. Compute the number of new trees that currently need planting to meet the 20% target shortfall

Number of new trees needed to meet the 20% target by CoB LGA and suburbs



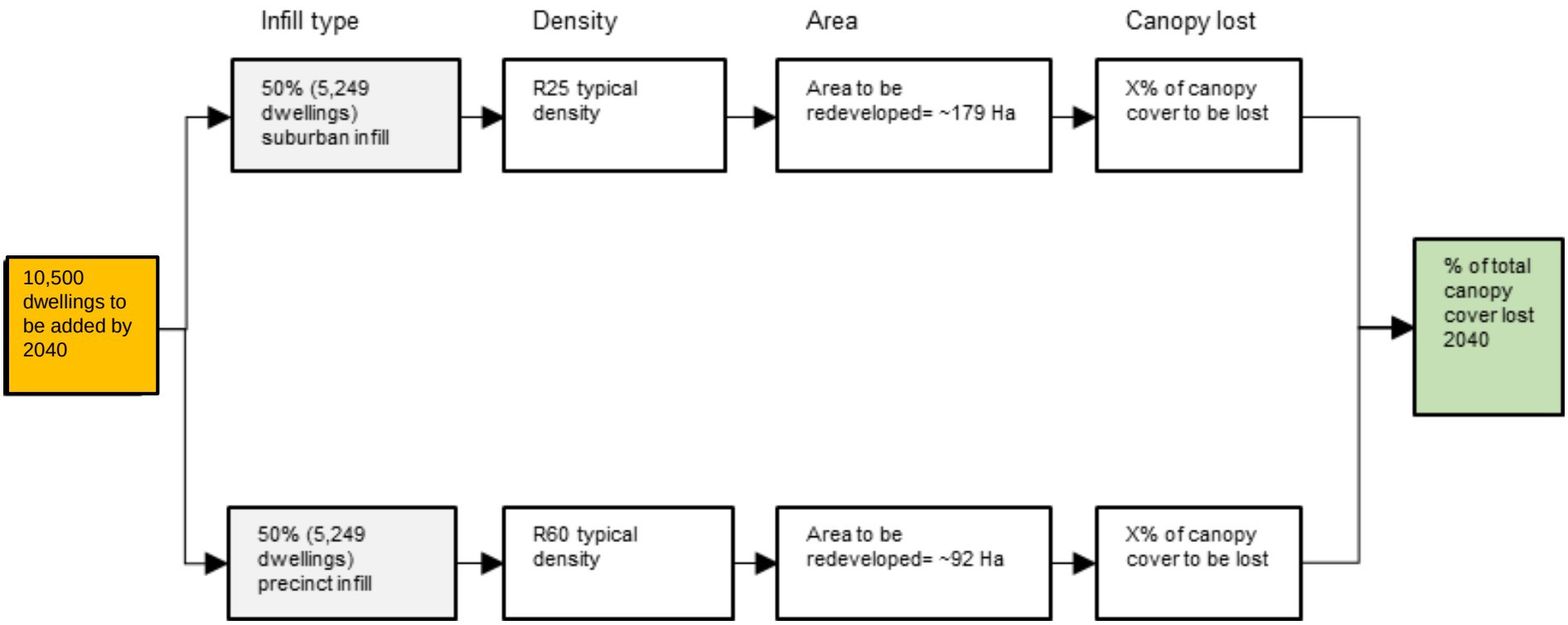
1.2. Compute the number of new trees that <u>currently</u> need planting to meet the 20% target shortfall

Number of new trees needed accounting for an 85% survival rate to meet the 20% target by CoB LGA and suburbs



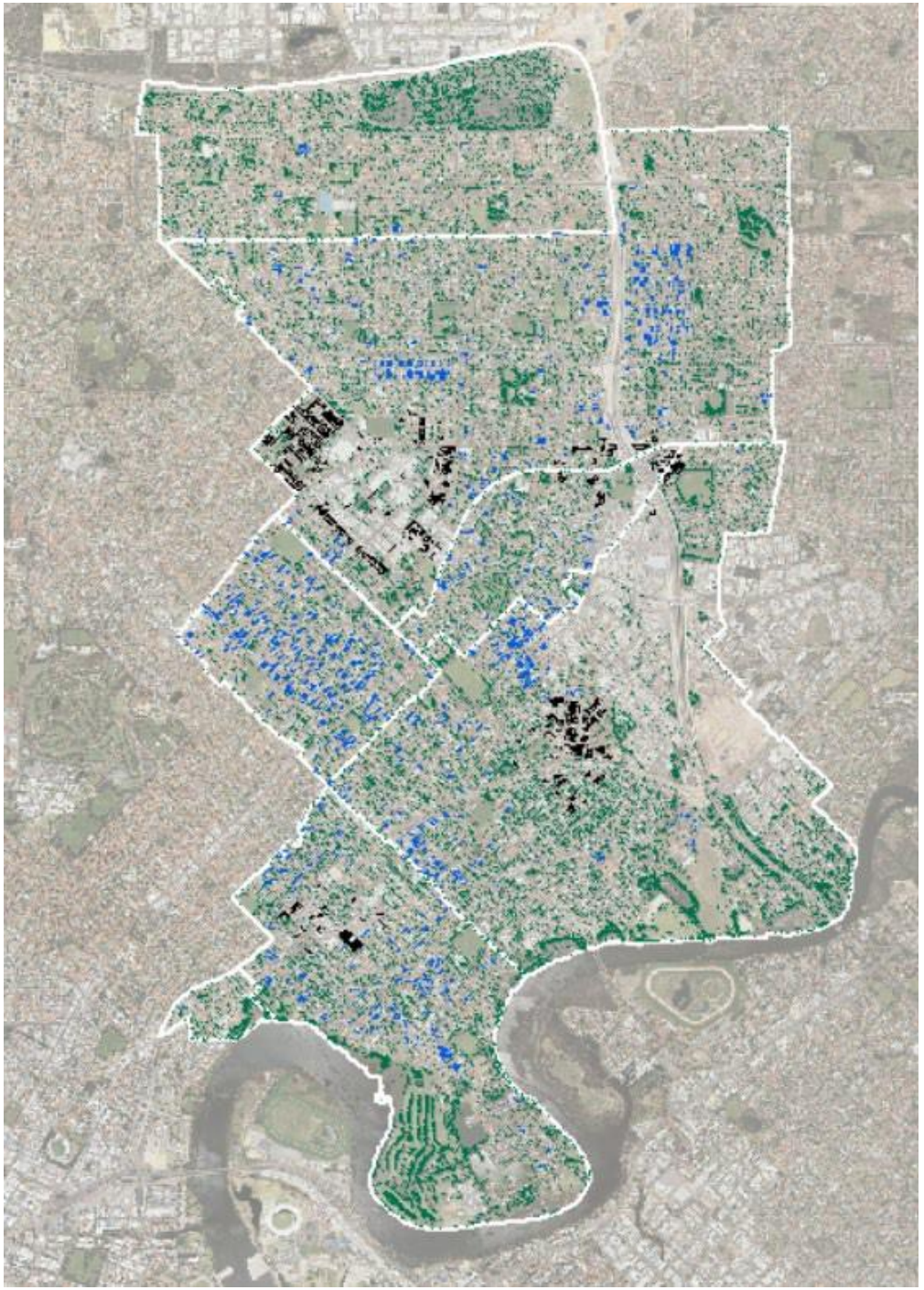
2. Mapping the likely effects of infill on canopy coverage (PH)

Geospatial mapping to determine the likely effects of infill development on the City of Bayswater LGA canopy coverage until the year 2040

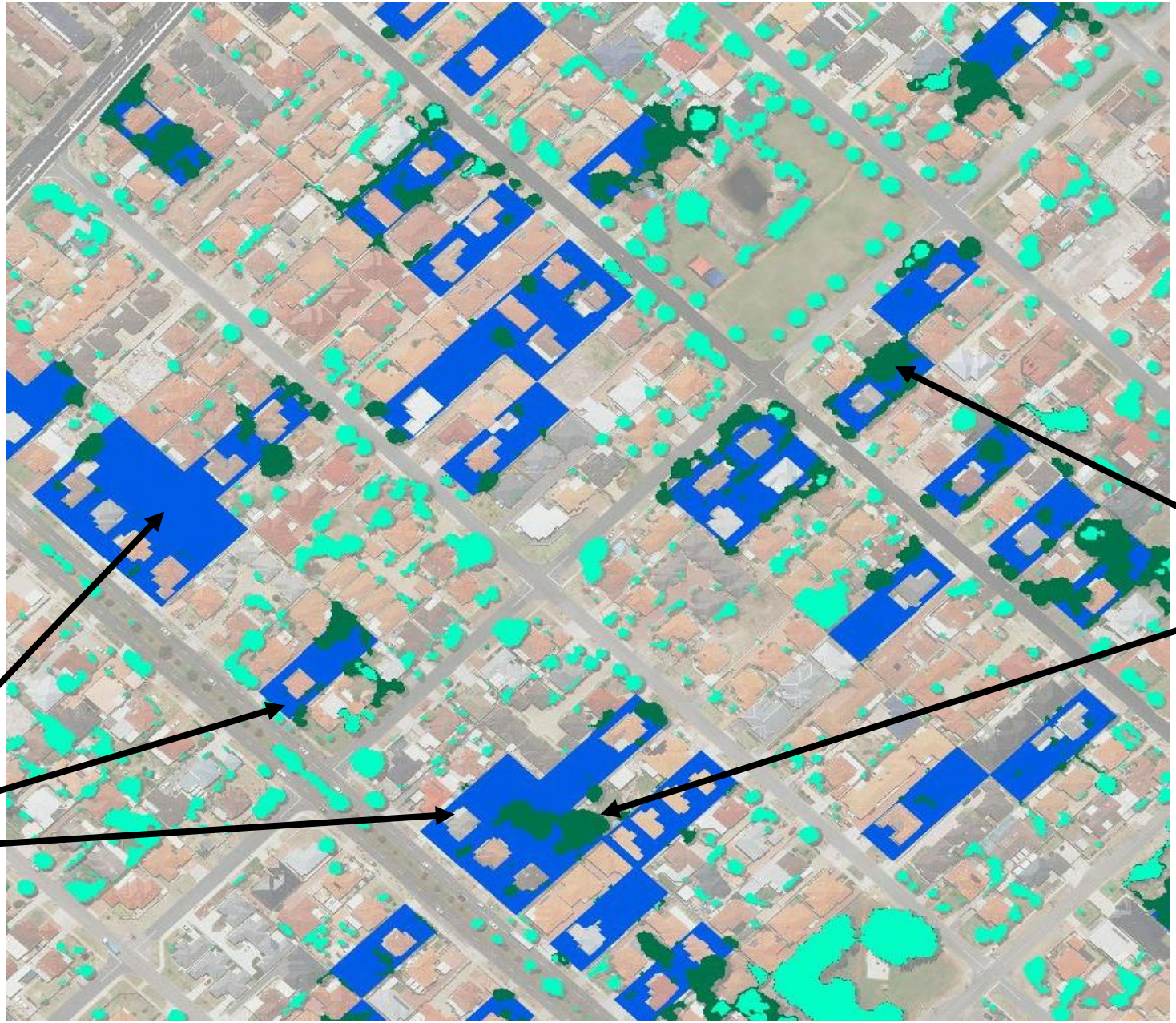


2.1 Identifying BAU infill lots

- Precinct infill
- Suburban (background) infill



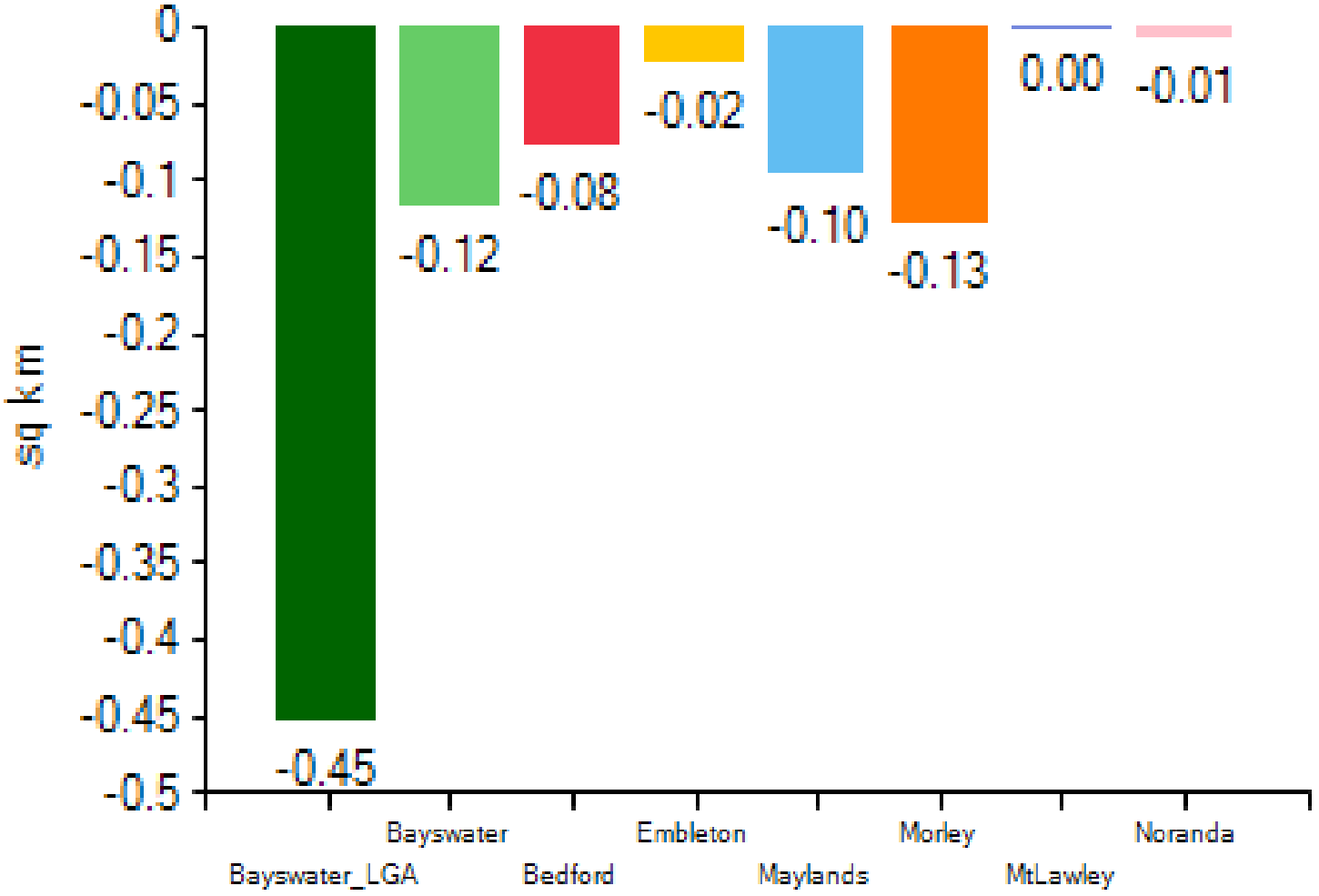
2.1 Identifying BAU infill lots



PH

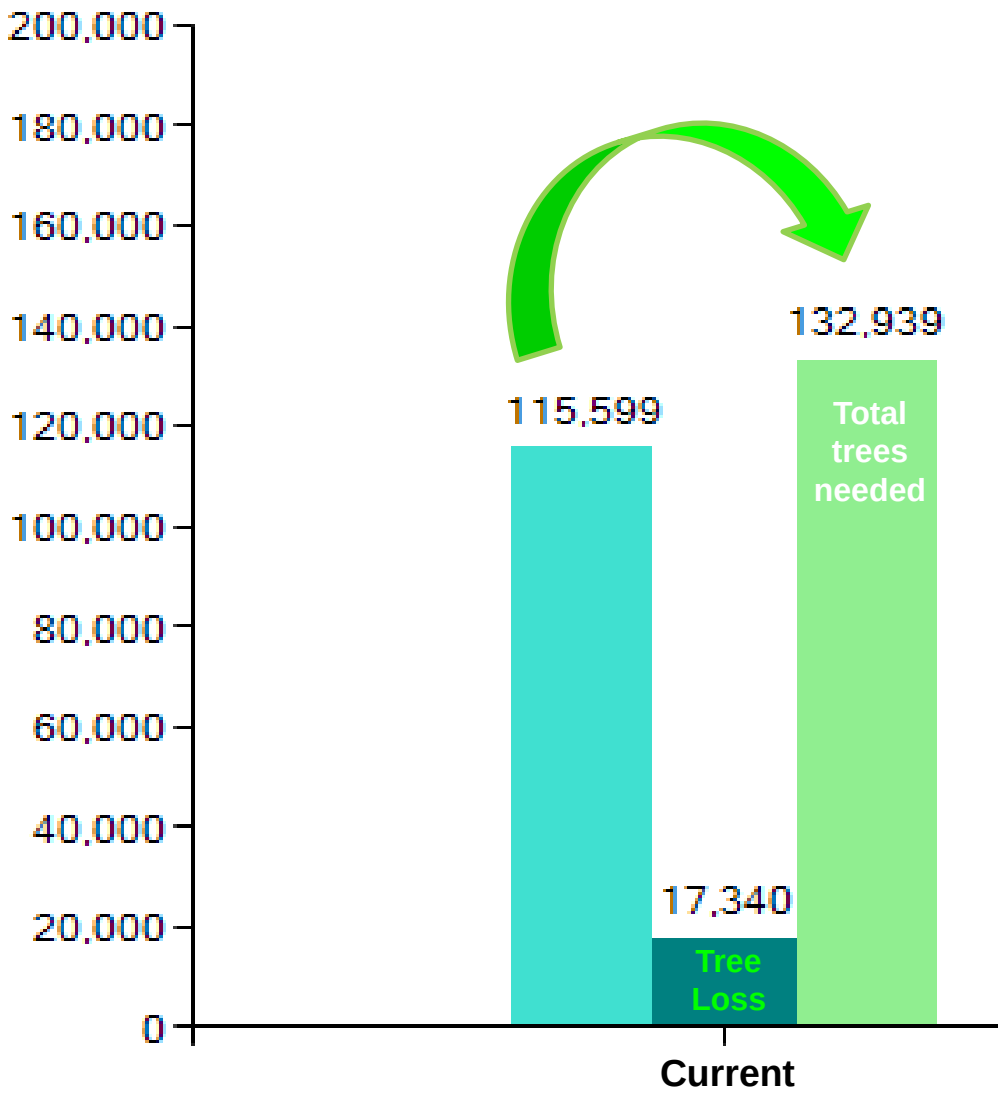
2.1 Identifying BAU infill lots

Area of tree canopy cover (km²) lost by as a result of the BAU Infill Scenario

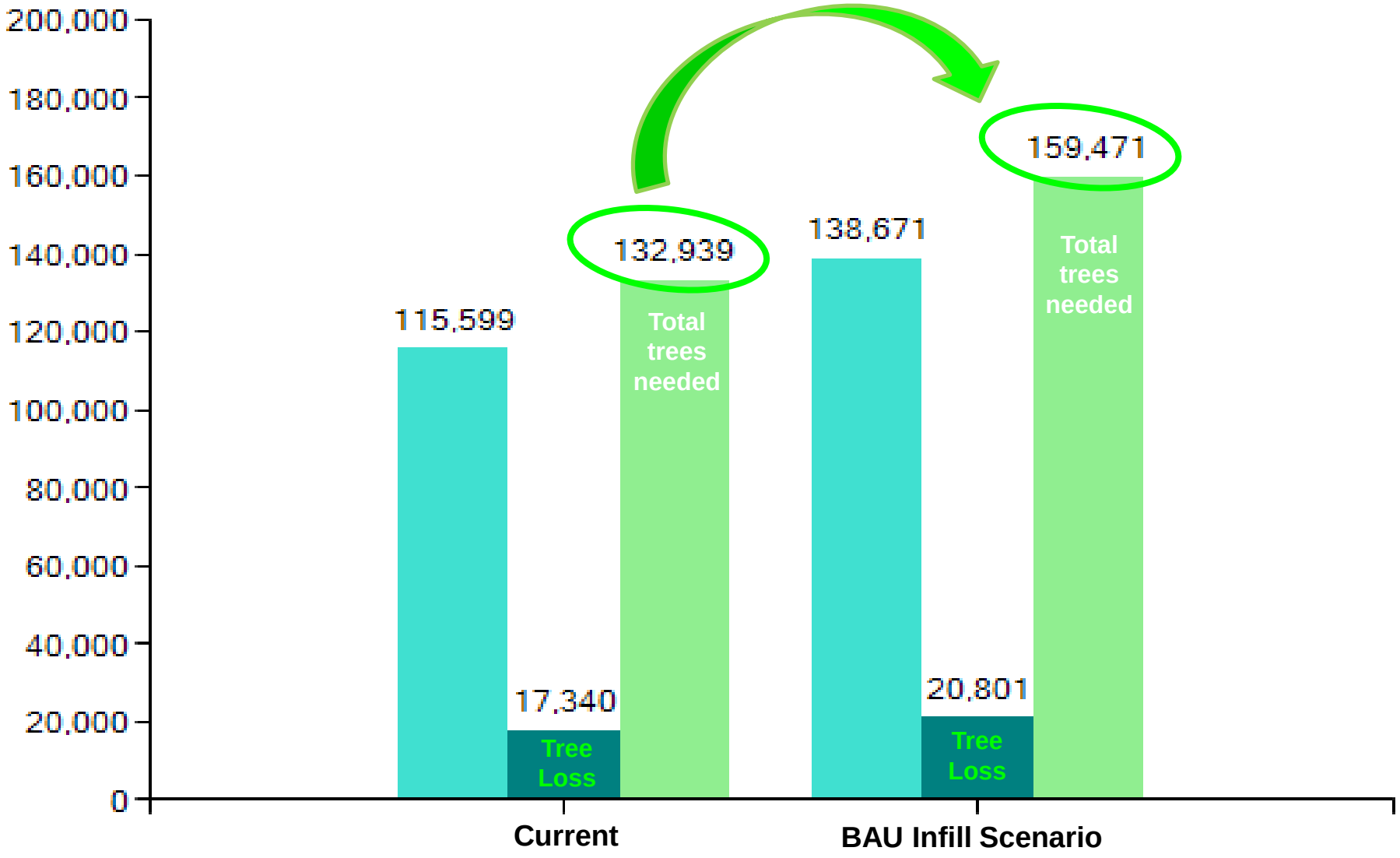


PH

2.1 Number of new trees needed to meet the 20% target with the vs. BAU Infill scenario

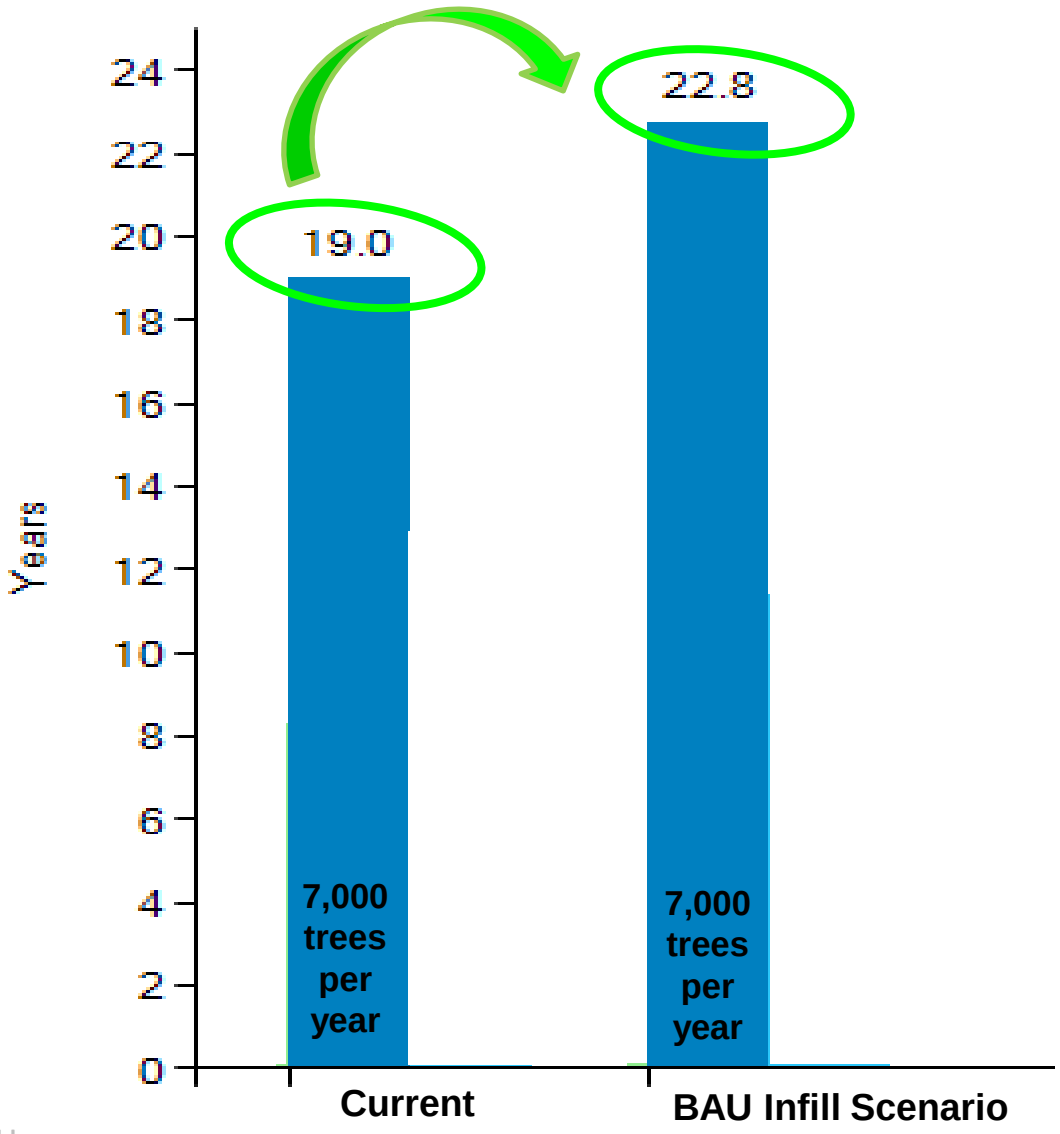


2.1 Number of new trees needed to meet the 20% target with the vs. BAU Infill scenario



2.2 Time to target & planting rates

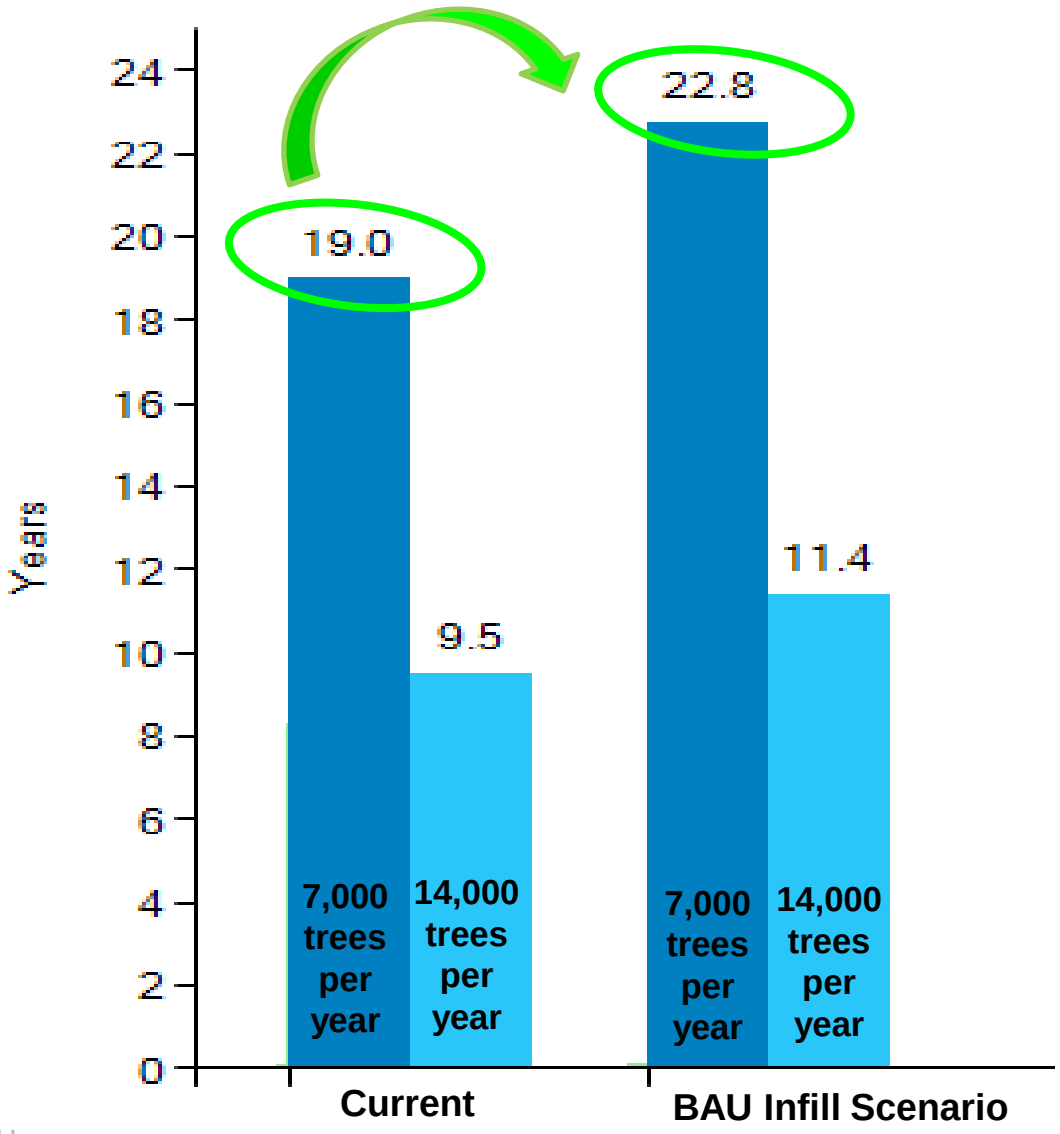
Planting rates – time (years) to meet the 20% canopy cover target : Current vs BAU Infill Scenario



PH

2.2 Time to target & planting rates

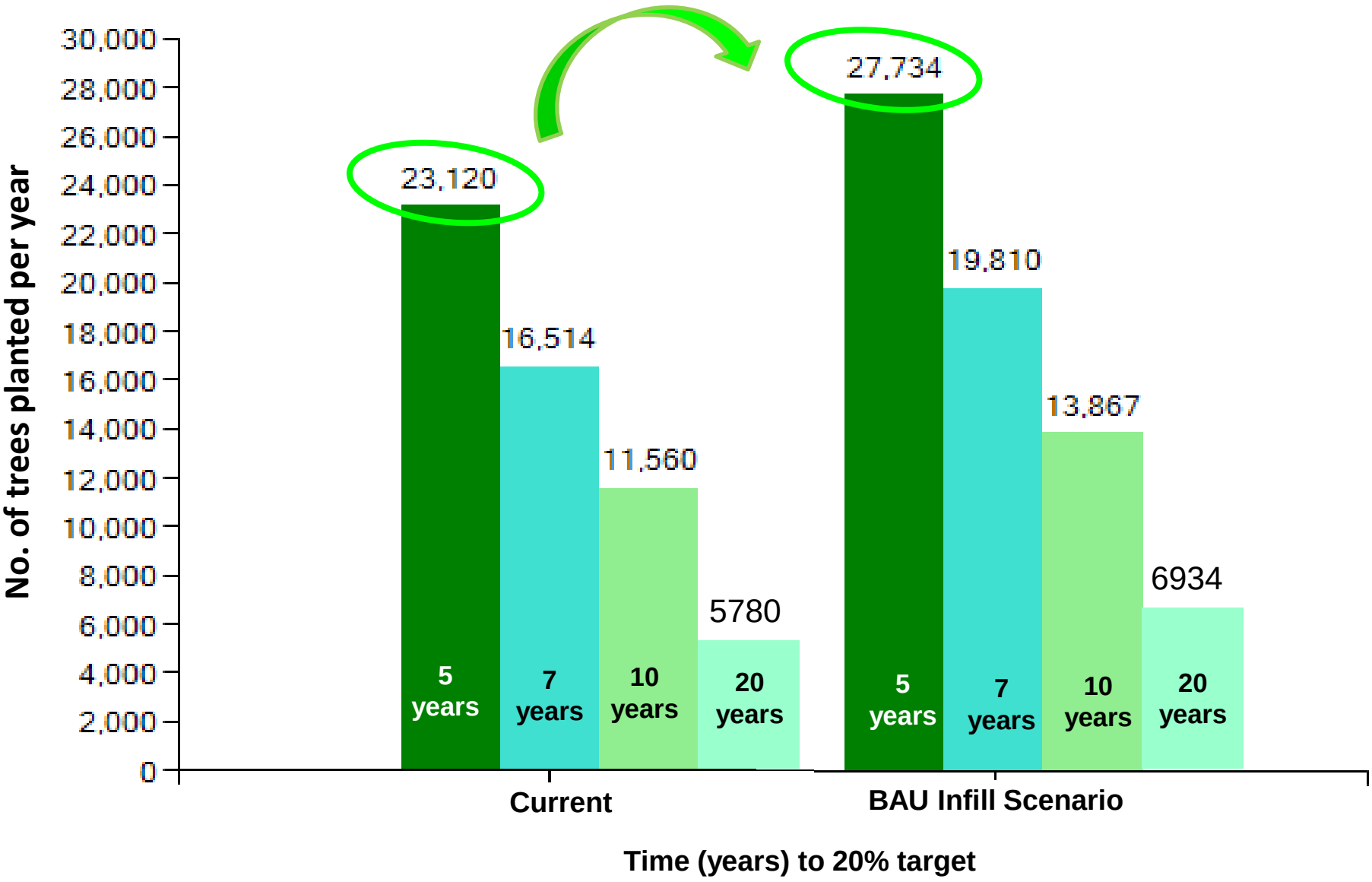
Planting rates – time (years) to meet the 20% canopy cover target : Current vs BAU Infill Scenario



PH

1.3 Time to target & planting rates

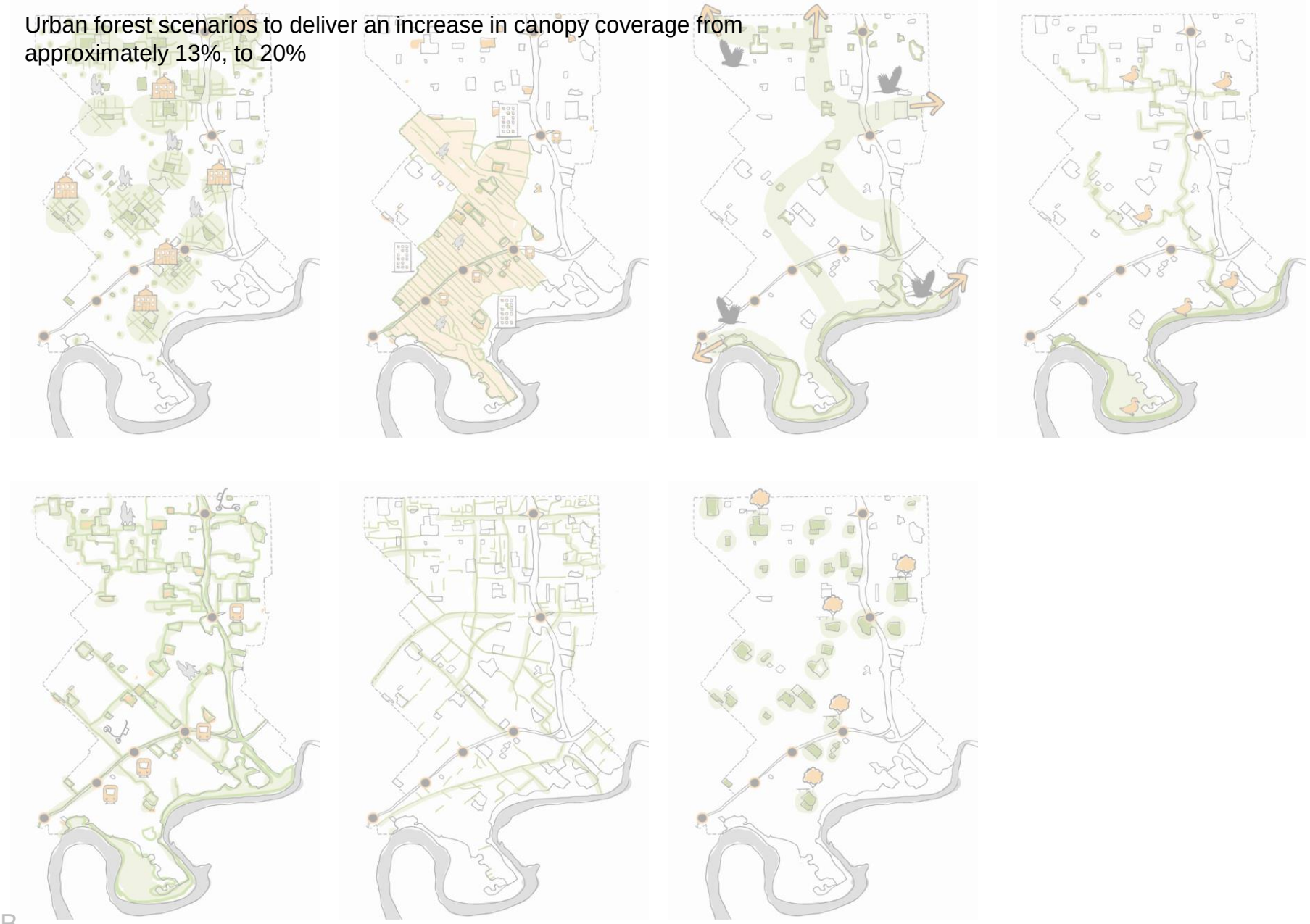
Planting rates required to meet 20% canopy cover by number of years : Current vs BAU Infill Scenario



PH

3. Urban forest scenarios (JB)

Urban forest scenarios to deliver an increase in canopy coverage from approximately 13%, to 20%



Stage 1 scenarios

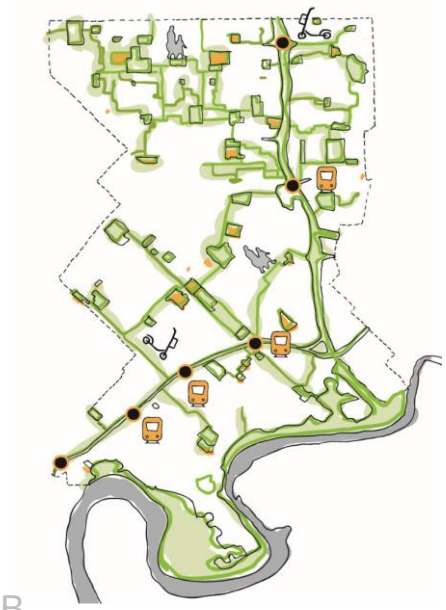
The Kid's Forest

The High Density Forest

The Green Funnel

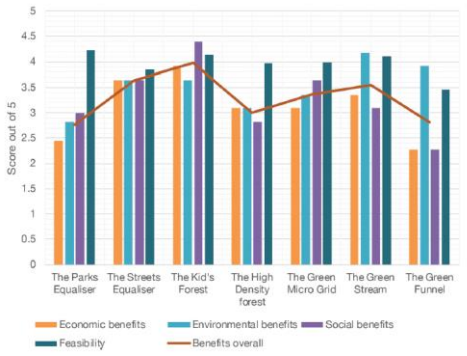
The Green Stream

The Green Micro-Grid



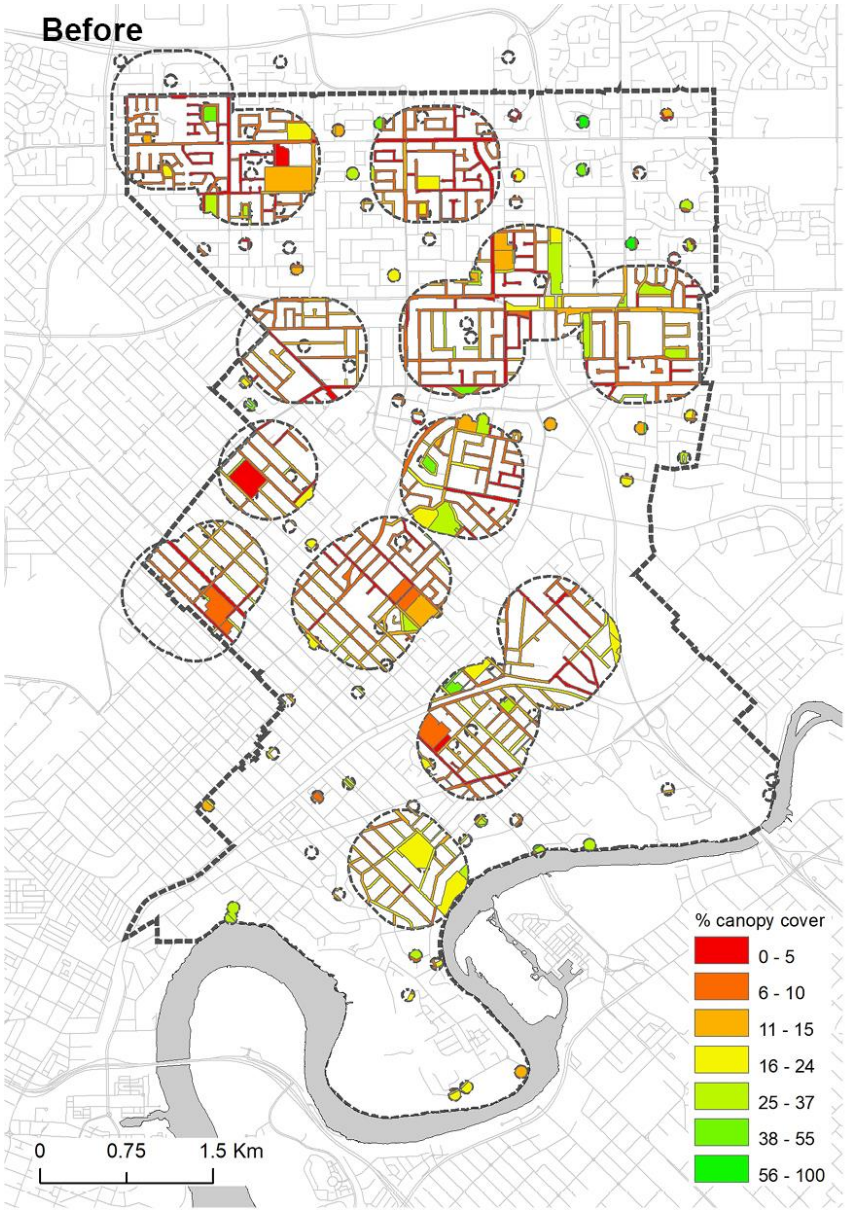
The Streets Equalizer

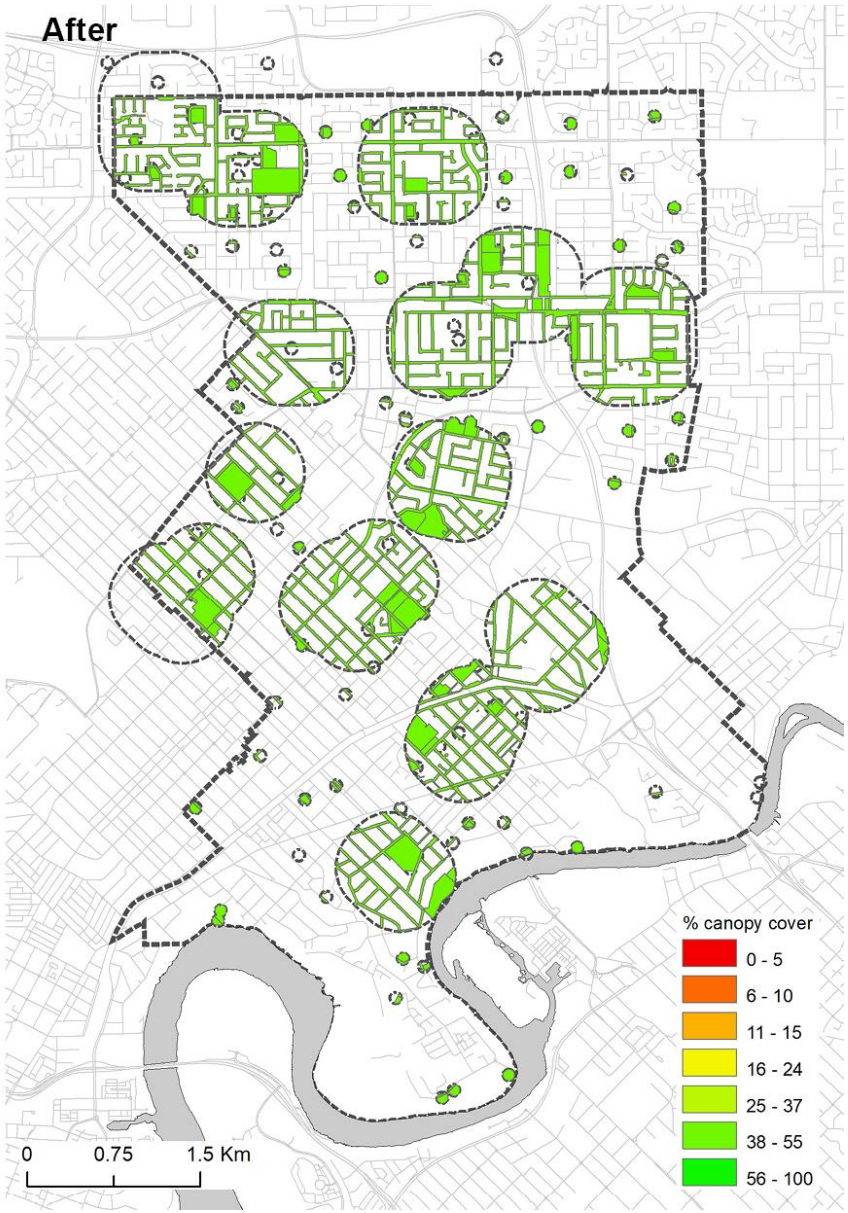
The Parks Equalizer



The Kid's Forest

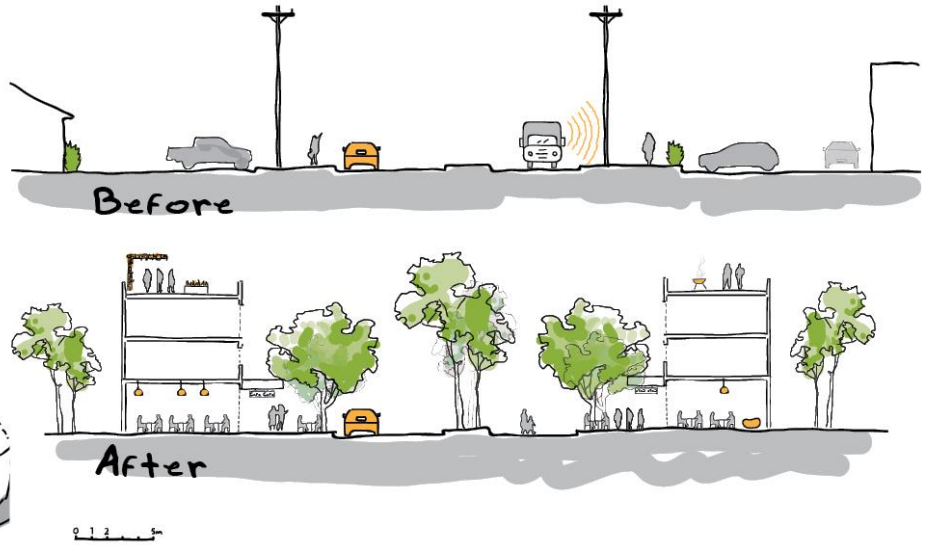
The Kid's Forest



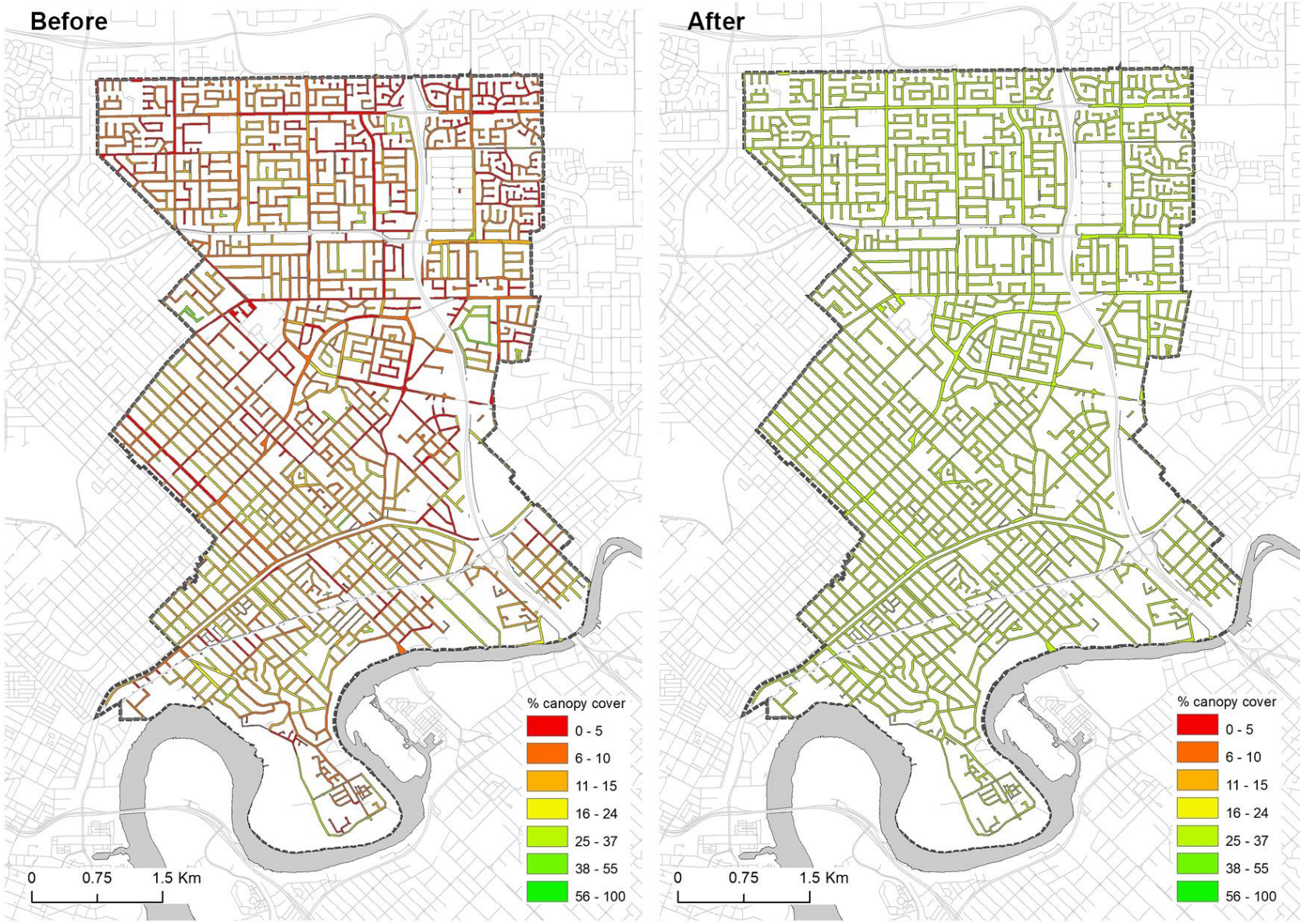


JB

The Street's
equalizer



The Street's equalizer



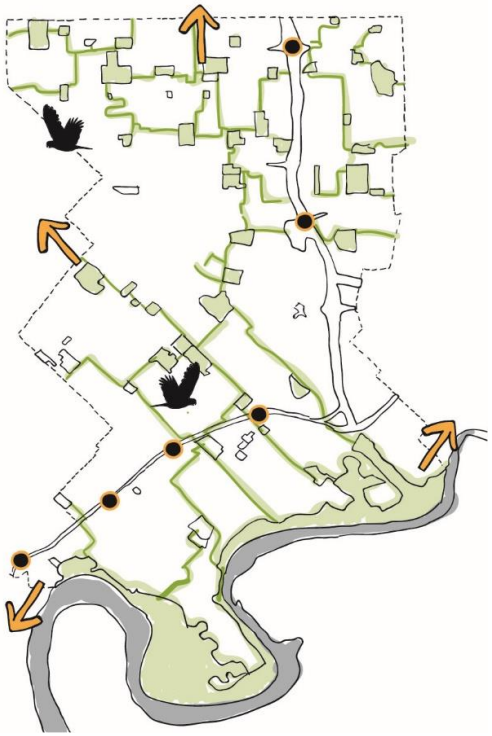
JB

Stage 2 scenarios

+

Town Forest

Naturelink



The Town Forest

The Streets Equaliser

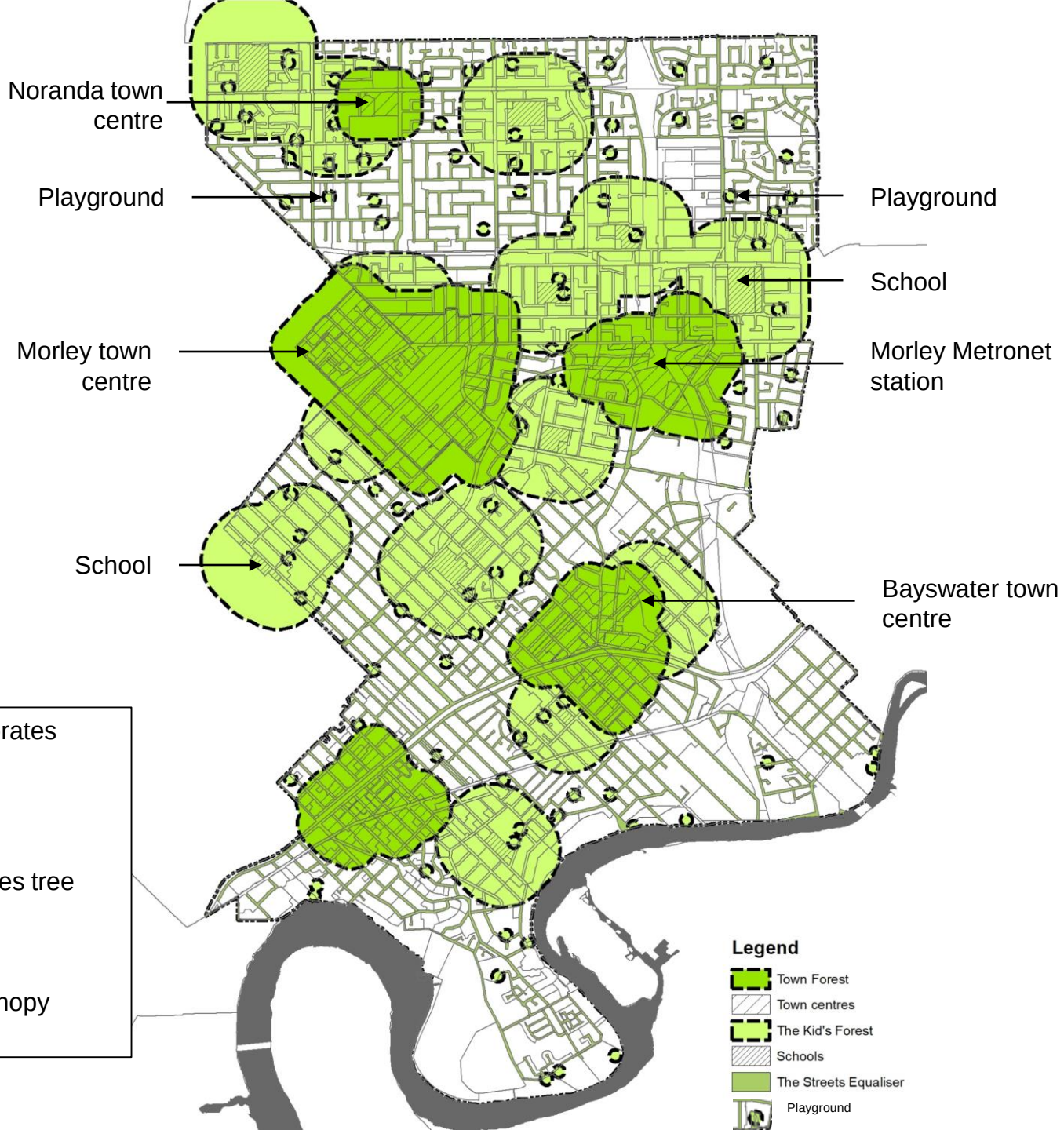
The Kid's Forest

Hybrid scenario

4. Urban forest scenario synthesis (JB)

The synthesis of multiple urban forest scenarios into a hybrid scenario with supporting photorealistic visualisations (JB

Hybrid scenario



This Hybrid scenario incorporates
- The Kid's Forest and
- The Street's Equaliser
- The Town Forest.

The Hybrid scenario correlates tree planting with
- Town centres,
- Schools and playgrounds
- Street verges that lack canopy cover.

The Town Forest (before)

King William St, Bayswater

JB

The Town Forest (after)

King William St, Bayswater

JB

The Kid’s Forest (before)

Silverwood Park, Morley

JB


The Kid’s Forest (after)
Silverwood Park, Morley
JB

The Streets Equaliser (before)

Benara Rd, Noranda

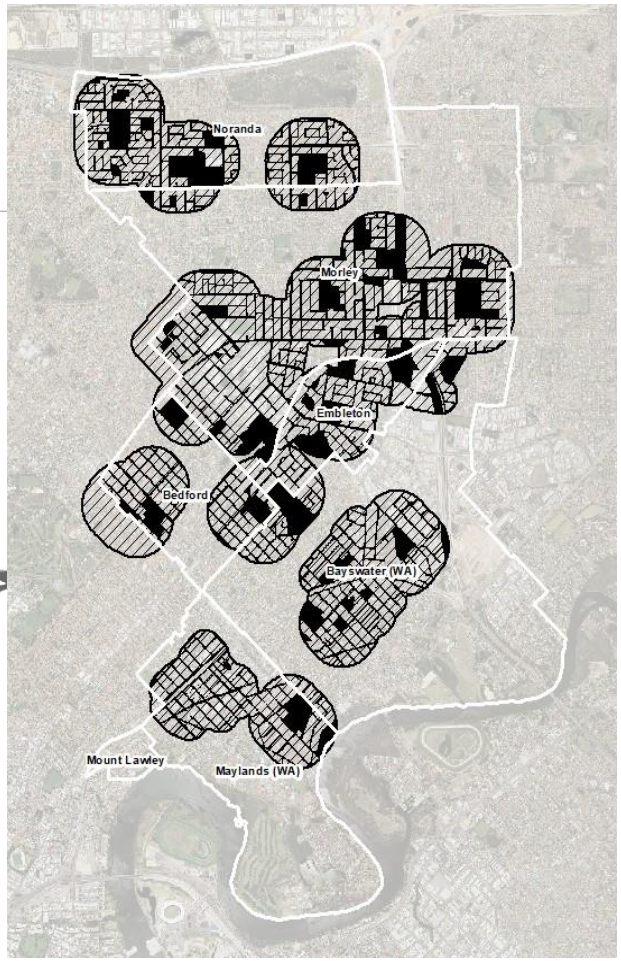
JB


The Streets Equaliser (after)
Benara Rd, Noranda
JB

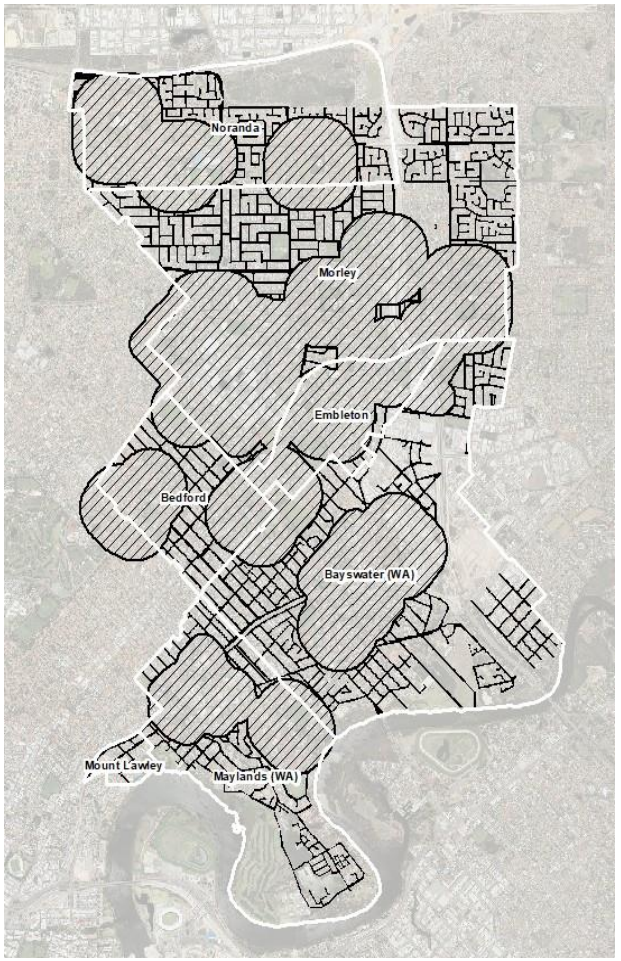
5: Planning Support System scenario testing

Testing of the hybrid scenario and the loss of canopy coverage through infill development in AUDRC's Planning Support System to understand implications for mental health, physical health, walkability and the regulation of extreme heat events

HYBRID TOWN + KIDS FOREST



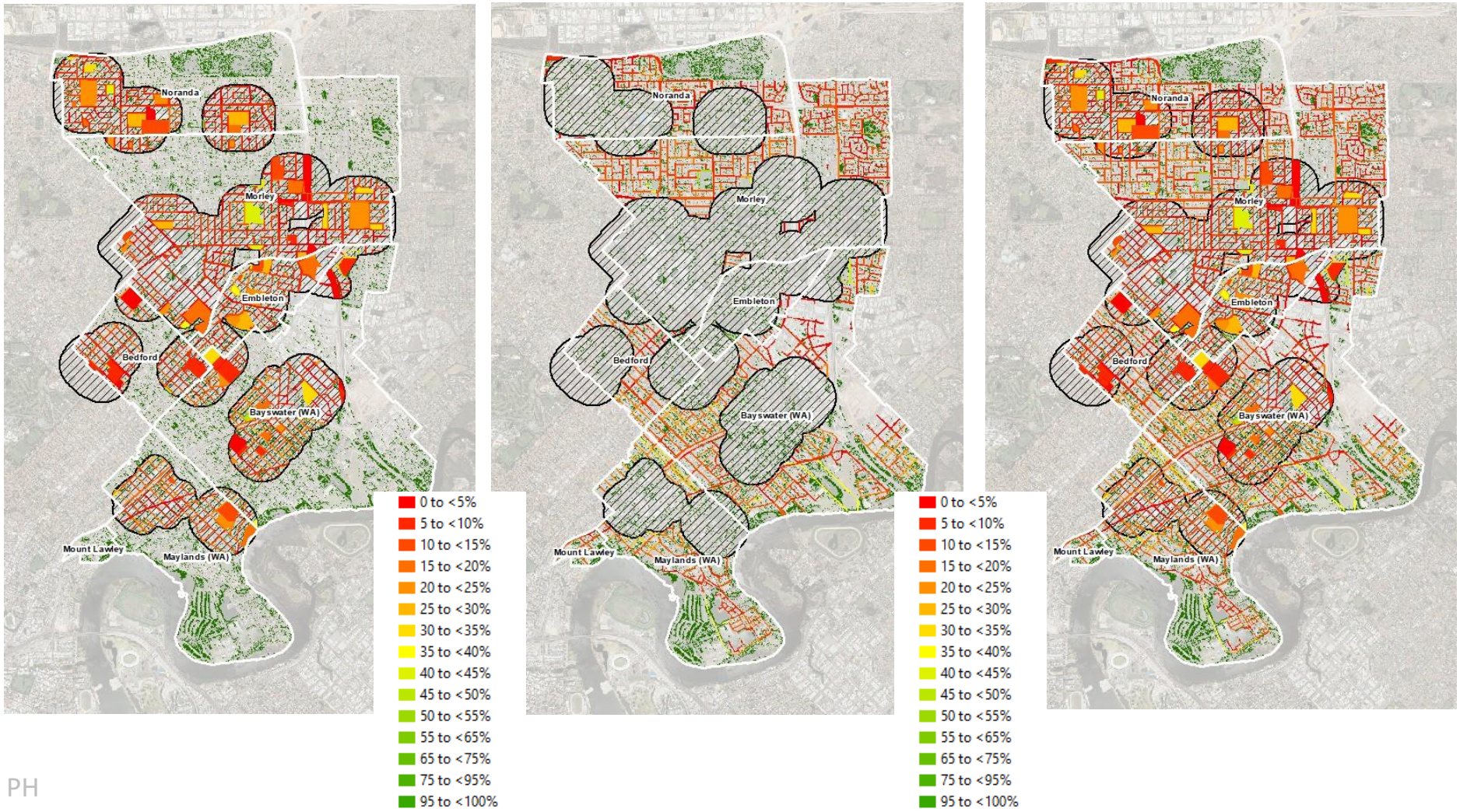
STREETS EQUALISER



PH

3.1 Identify the tree canopy cover in the “hybrid town & kids forest” + “streets equaliser” scenario zones and the rest of Bayswater as a result of BAU Infill

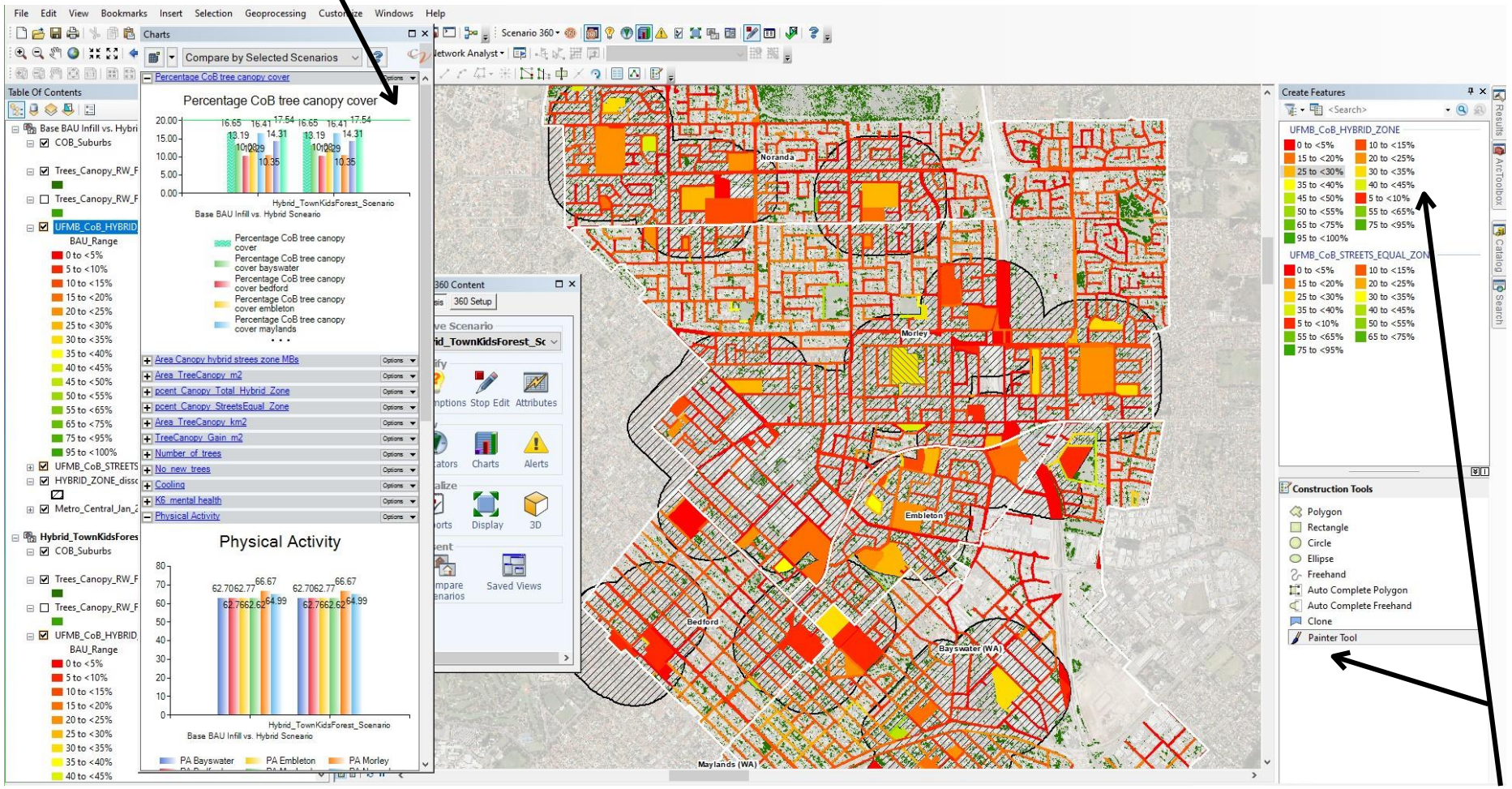
- **Tree canopy cover IN the “hybrid town & kids forest” scenario zone (= roads, parks, schools)**
- **Tree canopy cover IN the “streets equaliser” zone (= ro0ds outside the hybrid zone)**
- **Total tree canopy cover in all roads, parks and schools within the “hybrid town & kids forest” + “streets equaliser” scenario zones**



PH

3.2 Modelling the urban forest scenarios in the ‘Urban Health Check’ PSS

❷ The indicators automatically update and results are displayed in a series of graphs

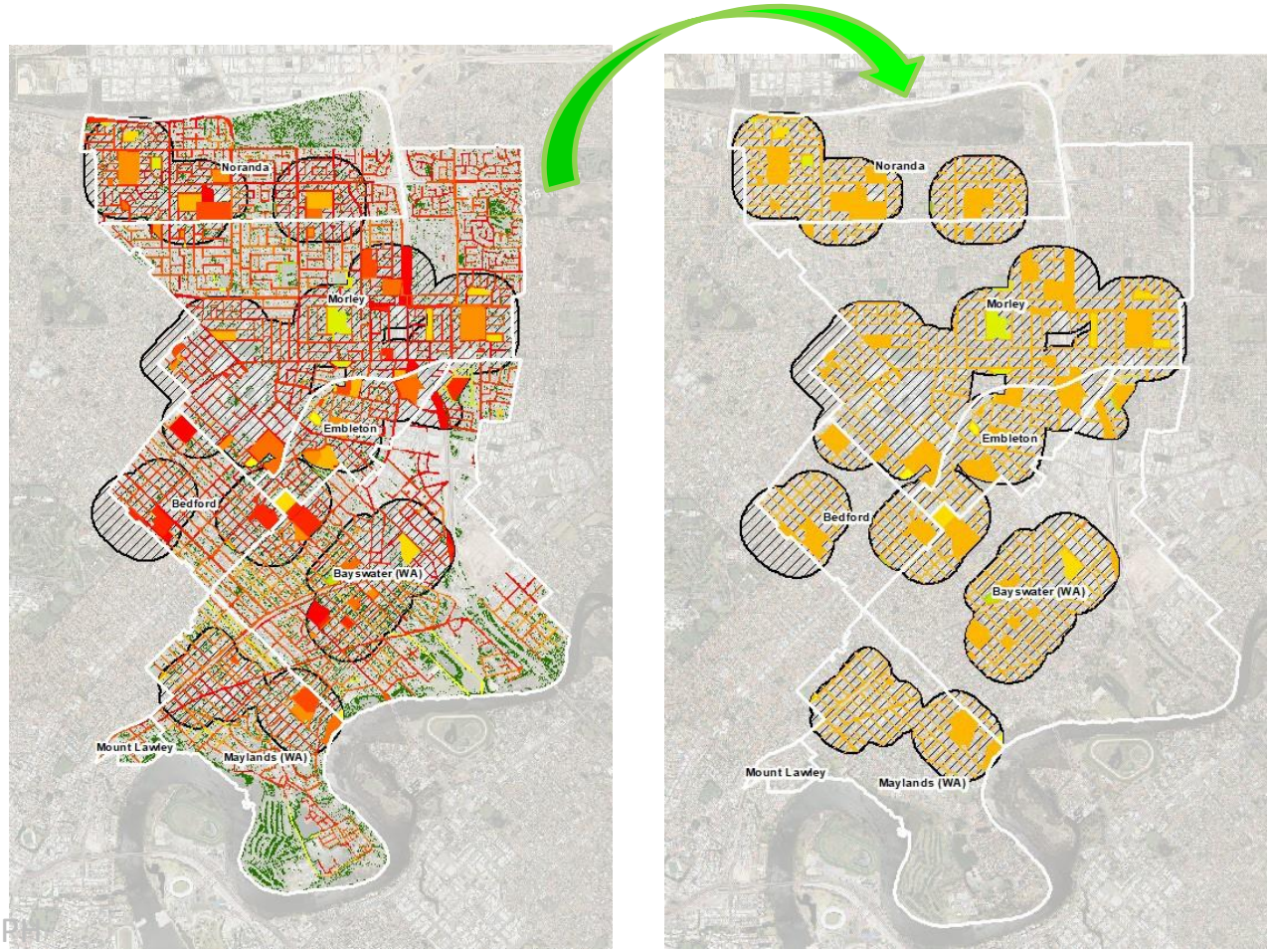


❶ User selects the level of tree canopy they want to apply to a meshblock and “paints” this new tree canopy coverage on the meshblock

PH

3.4 Modelling scenario

Apply 30% tree canopy cover in all roads, parks and school meshblocks within the "hybrid town & kids forest" zone ***(where <30% current cover)***

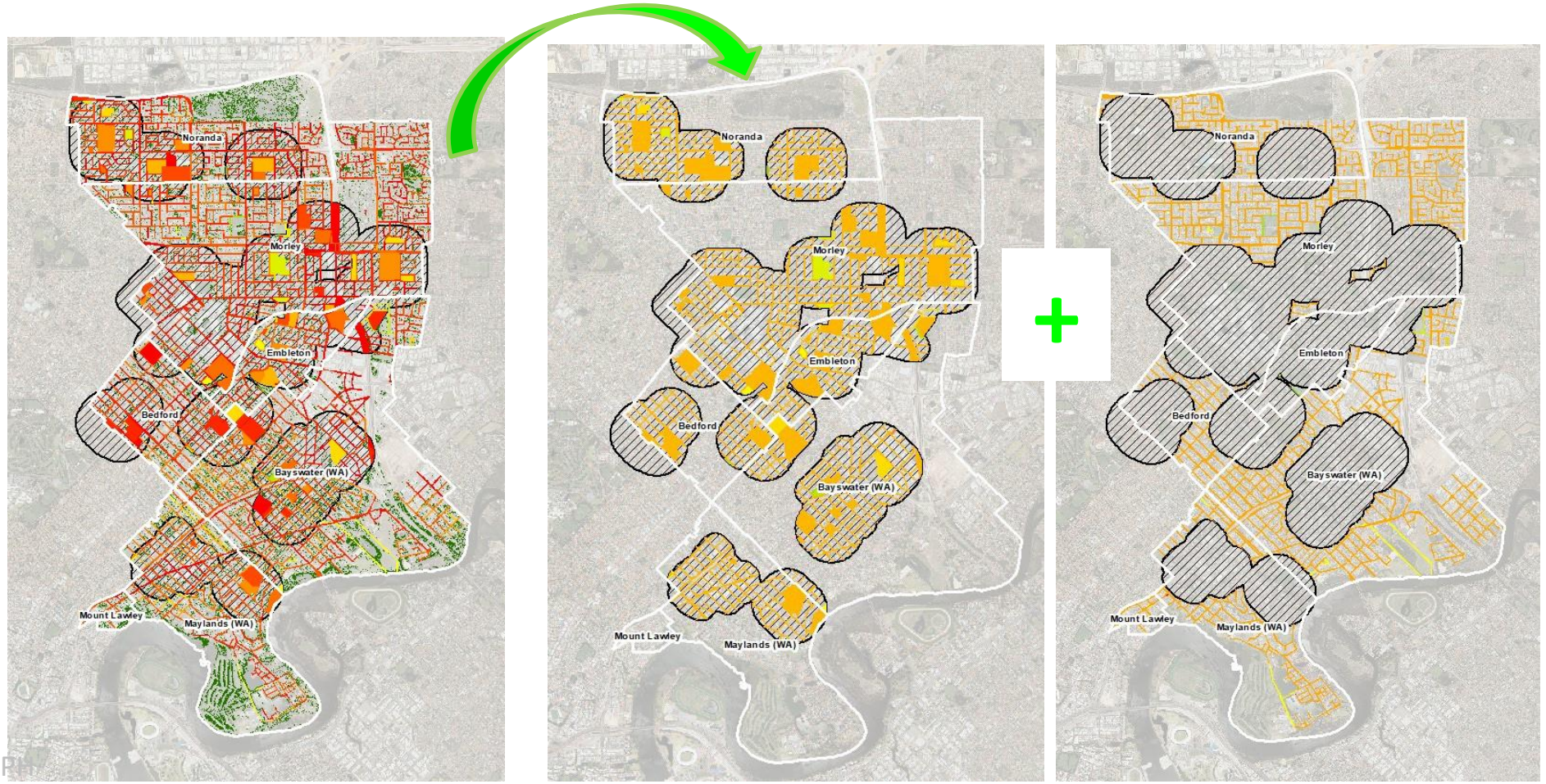


3.4 Modelling scenario

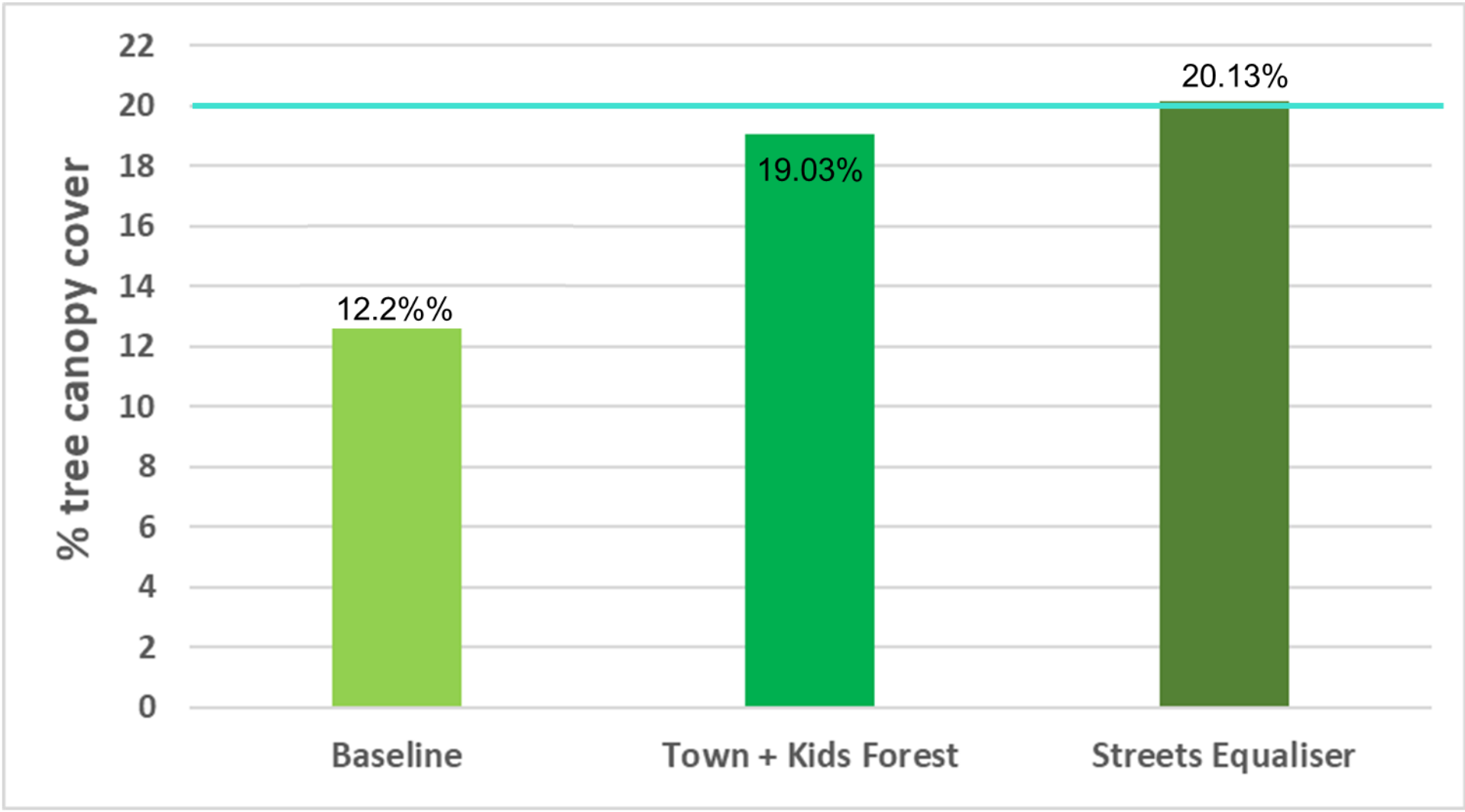
Apply 30% tree canopy cover in all roads, parks and school meshblocks within the "hybrid town & kids forest" zone ***(where <30% current cover)***

+

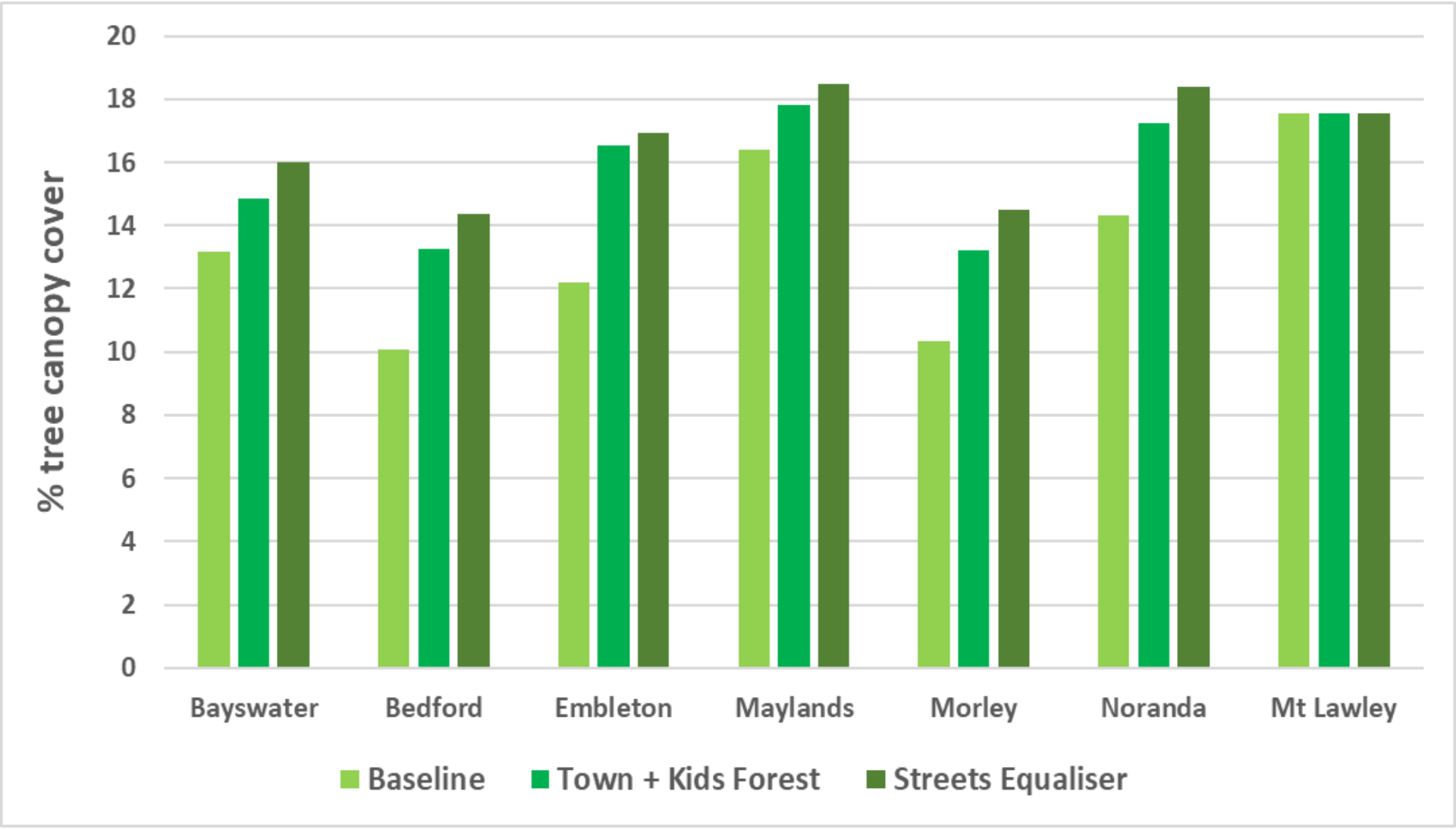
a 25% tree canopy cover in all road meshblocks within the "streets equaliser" zone ***(where <25% current cover)***



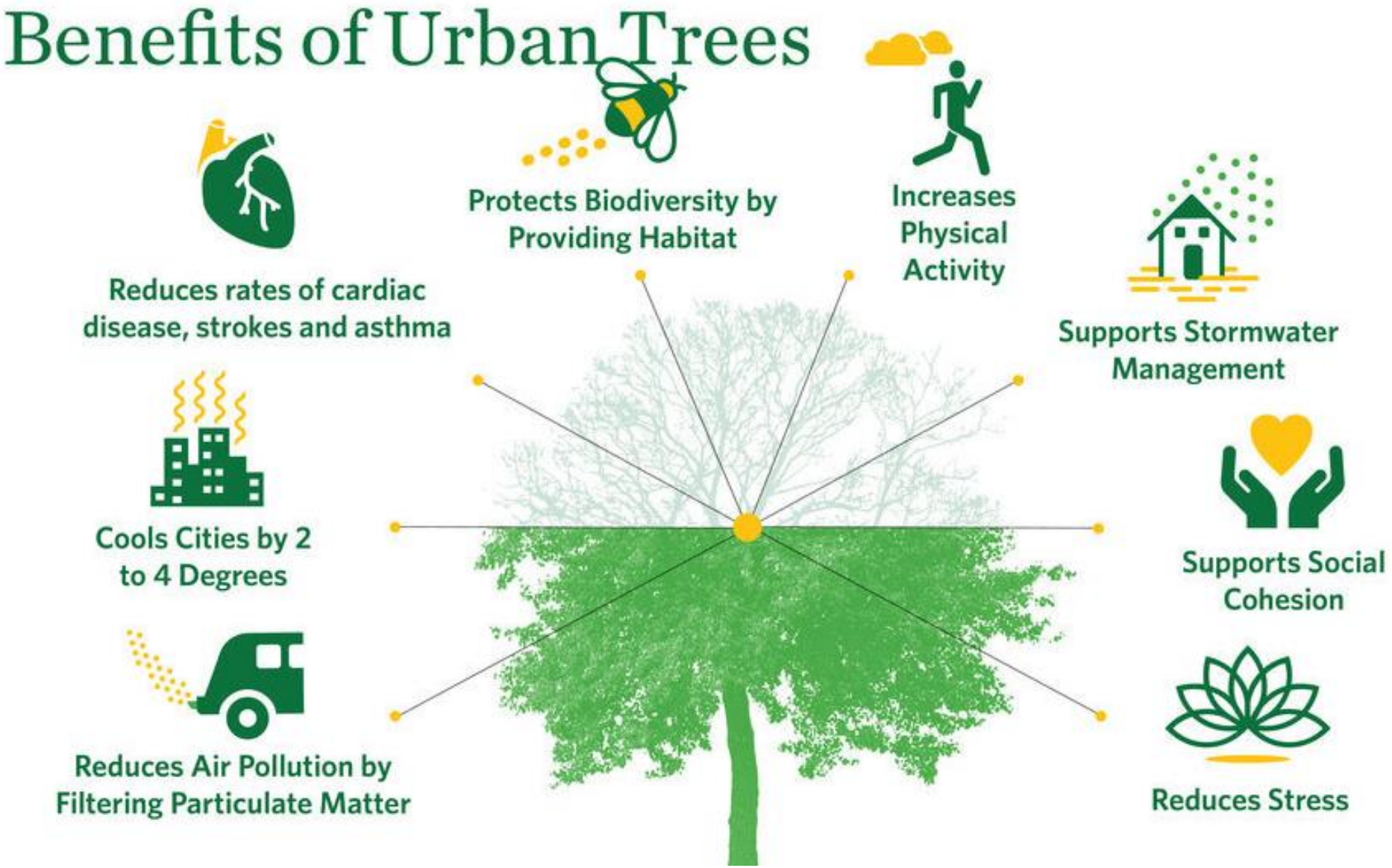
3.5 Results


% tree canopy cover
22
20
18
16
14
12
10
8
6
4
2
0
12.2%%
19.03%
20.13%
Baseline
Town + Kids Forest
Streets Equaliser

3.5 Results


20
18
16
14
12
10
8
6
4
2
0
% tree canopy cover
Bayswater
Bedford
Embleton
Maylands
Morley
Noranda
Mt Lawley
Baseline
Town + Kids Forest
Streets Equaliser

Deliverable 3: Planning Support System scenario testing – health impacts



Source: The Nature Conservatory

Deliverable 3: Planning Support System scenario testing – health impacts

For every additional tree per km, the odds of walking increased by 4%

Tree canopy of 30% or more, adults had 31% lower odds of developing psychological distress

Mental health

PH

1.10 Determine the potential health impacts associated with:

A) the BAU Infill approach and resulting loss of tree canopy cover

B) the hybrid urban forest scenario

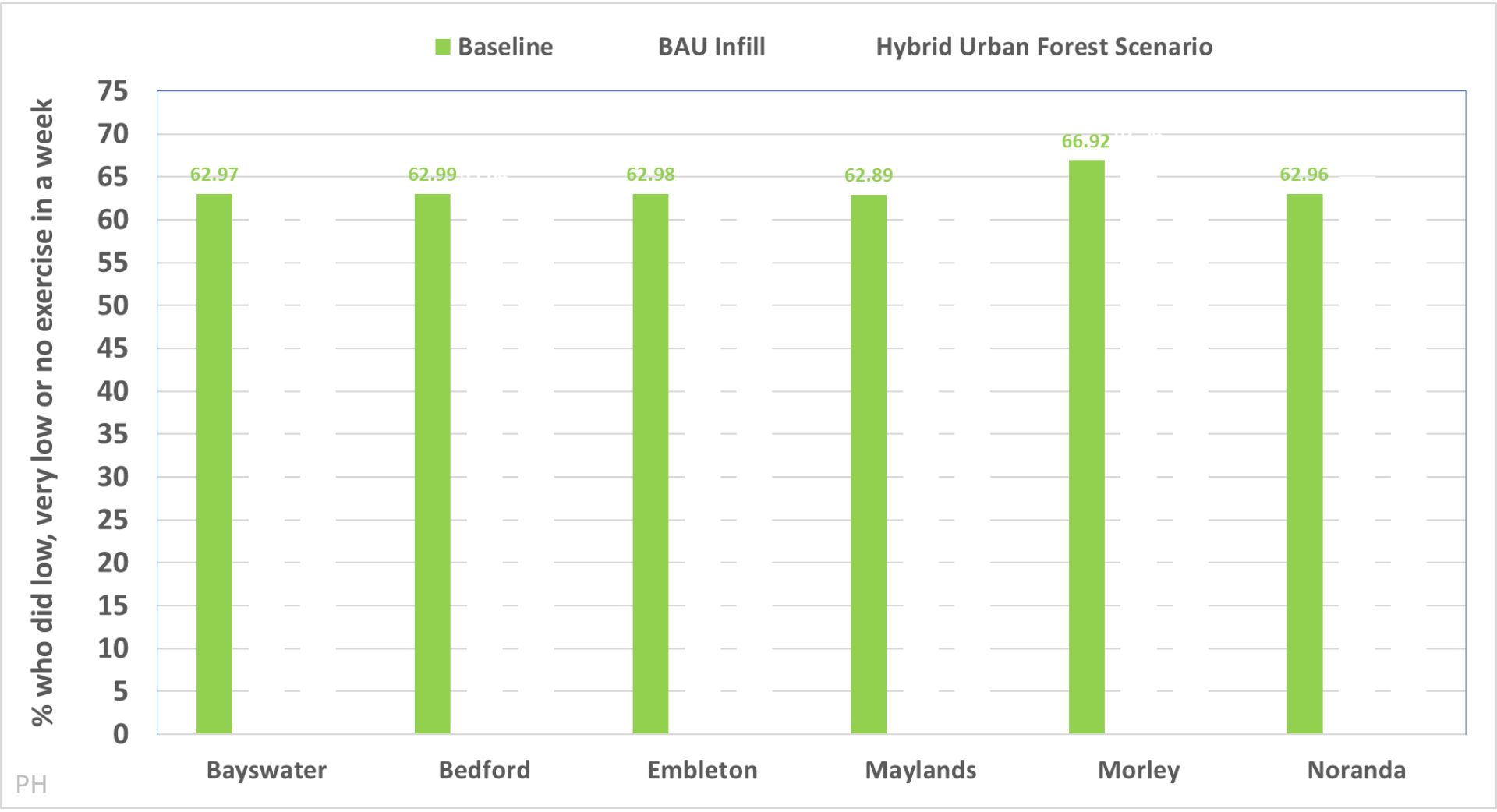
- Using national data from the Public Health Information Development Unit (PHIDU) we identified the estimated number of people (age-standardised rate per 100) aged 18 years and over by each City of Bayswater suburb:
  - **who did low, very low or no exercise in a week**
  - **with high or very high psychological distress**

1.10 Determine the potential health impacts associated with:

A) the BAU Infill approach and resulting loss of tree canopy cover

B) the hybrid urban forest scenario

% who did low, very low or no exercise in a week



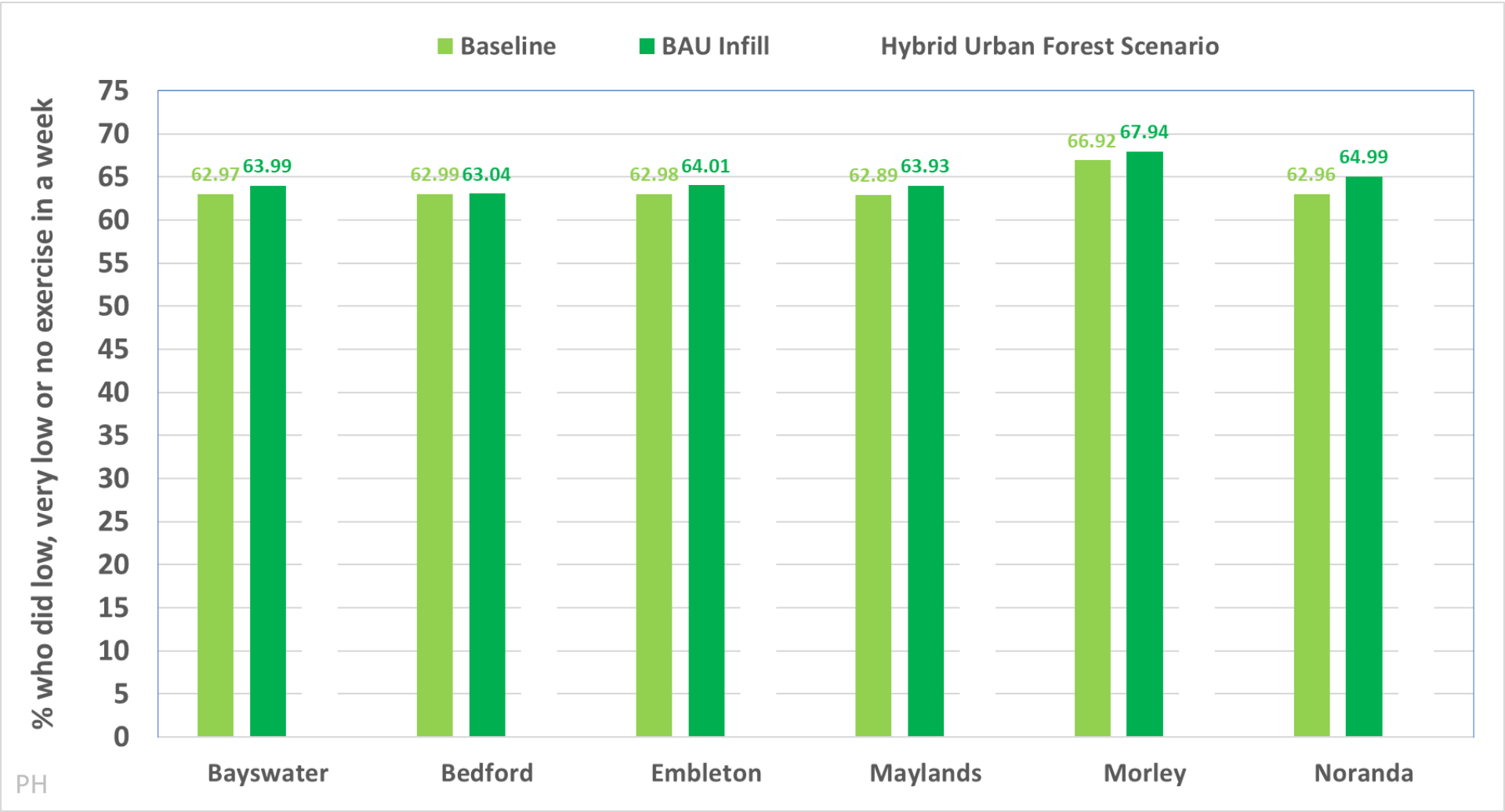
PH

1.10 Determine the potential health impacts associated with:

A) the BAU Infill approach and resulting loss of tree canopy cover

B) the hybrid urban forest scenario

% who did low, very low or no exercise in a week = INCREASES



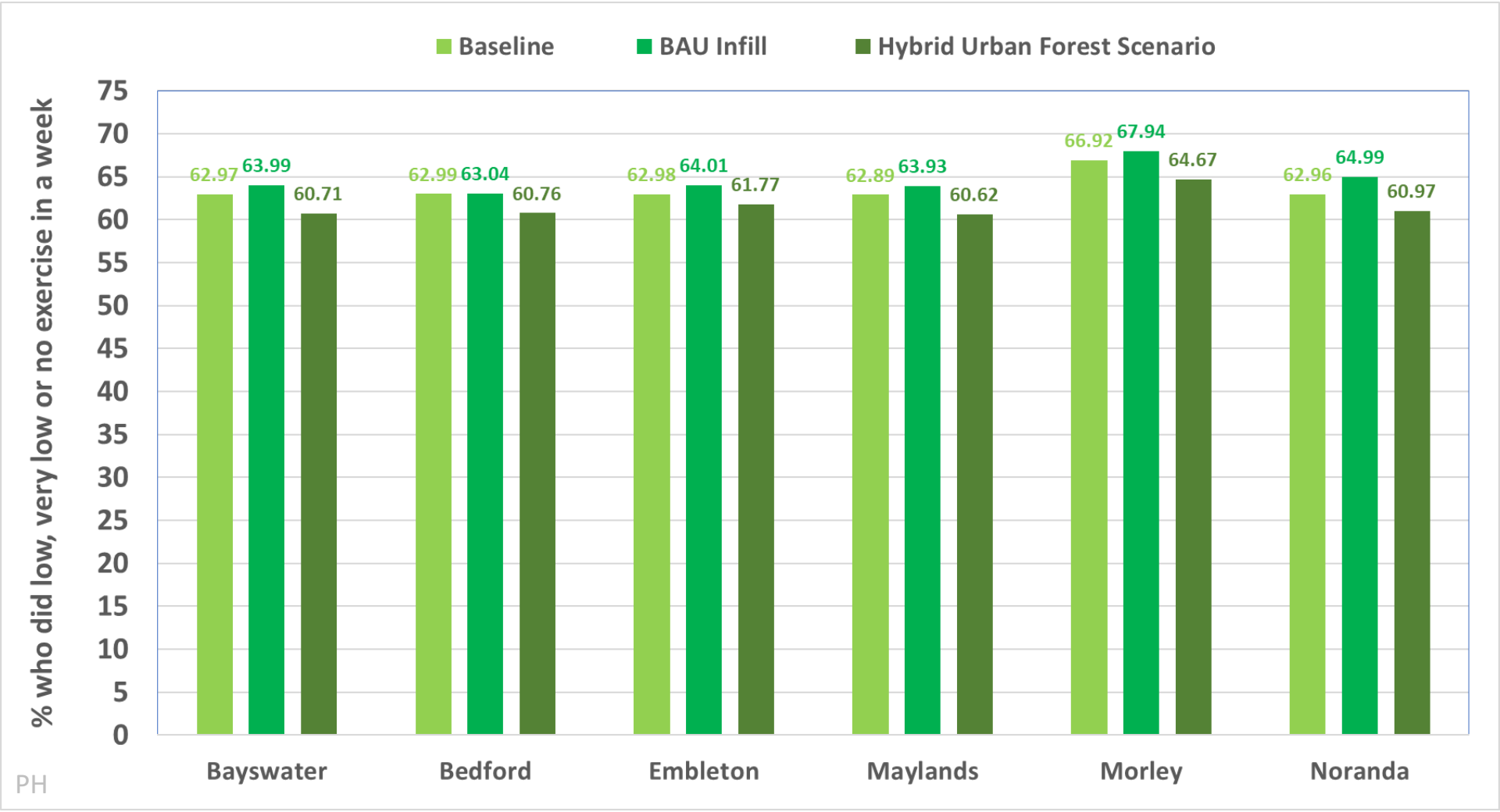
PH

1.10 Determine the potential health impacts associated with:

A) the BAU Infill approach and resulting loss of tree canopy cover

B) the hybrid urban forest scenario

% who did low, very low or no exercise in a week = DECREASES



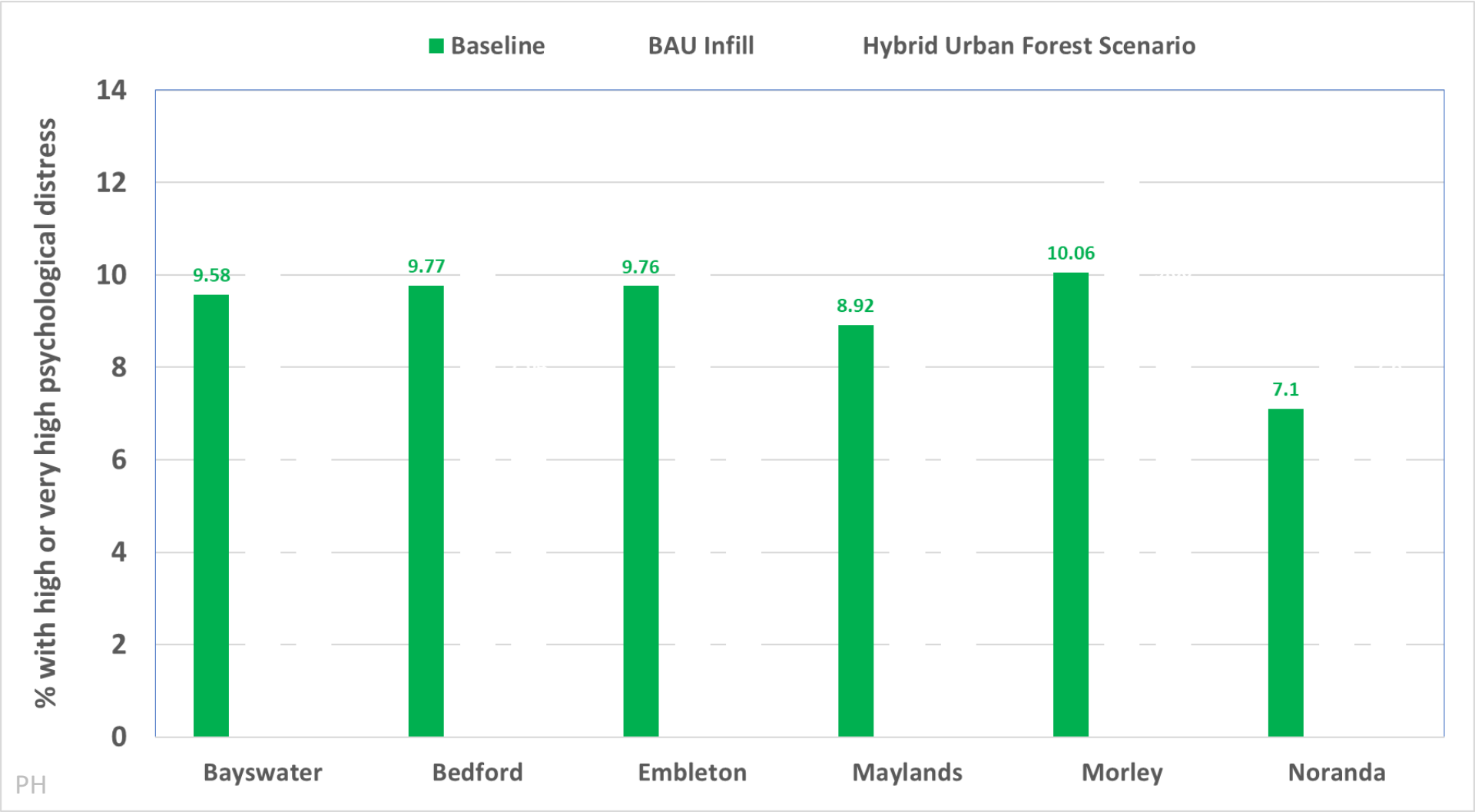
PH

1.10 Determine the potential health impacts associated with:

A) the BAU Infill approach and resulting loss of tree canopy cover

B) the hybrid urban forest scenario

% with high or very high psychological distress



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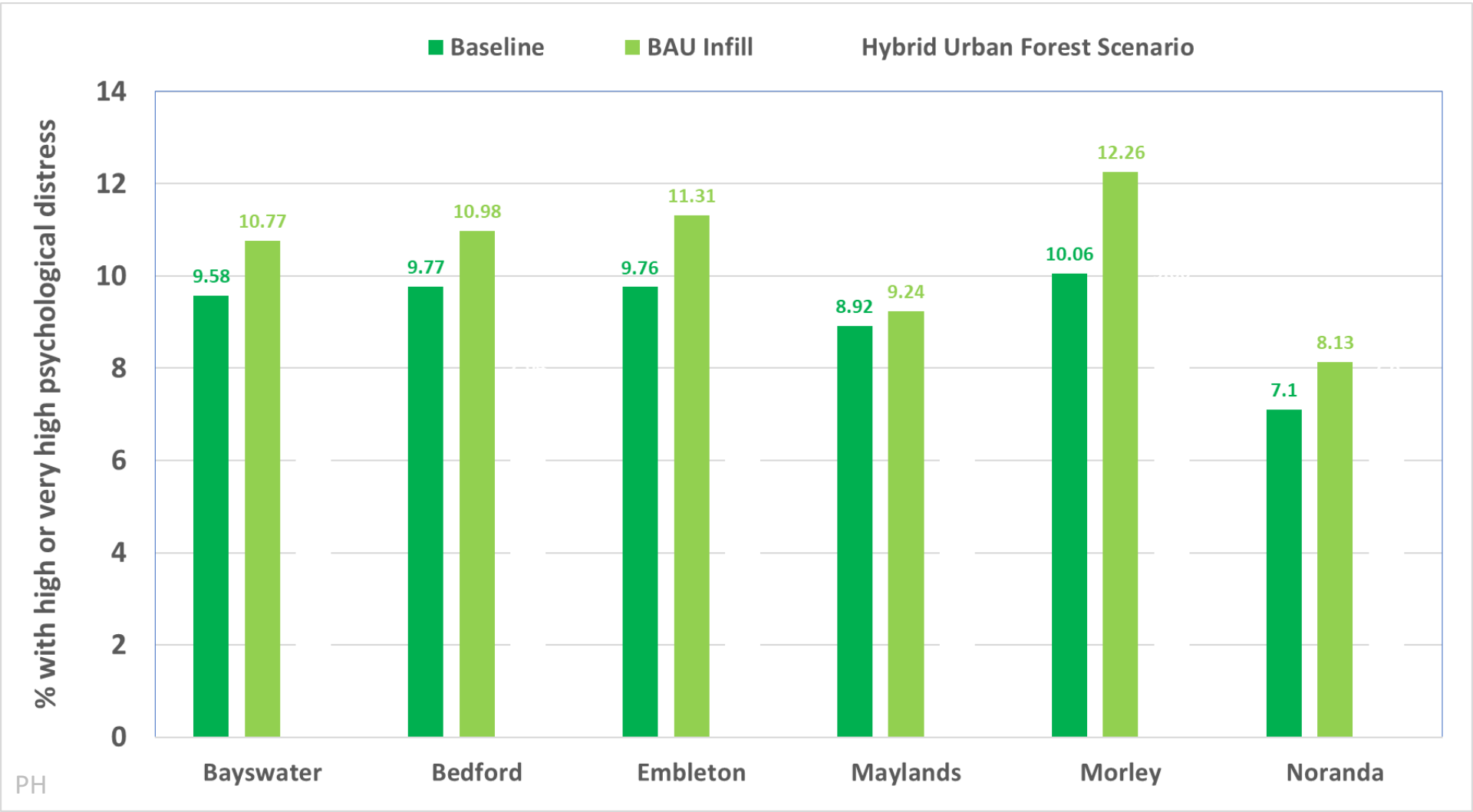
% with high or very high psychological distress = INCREASES



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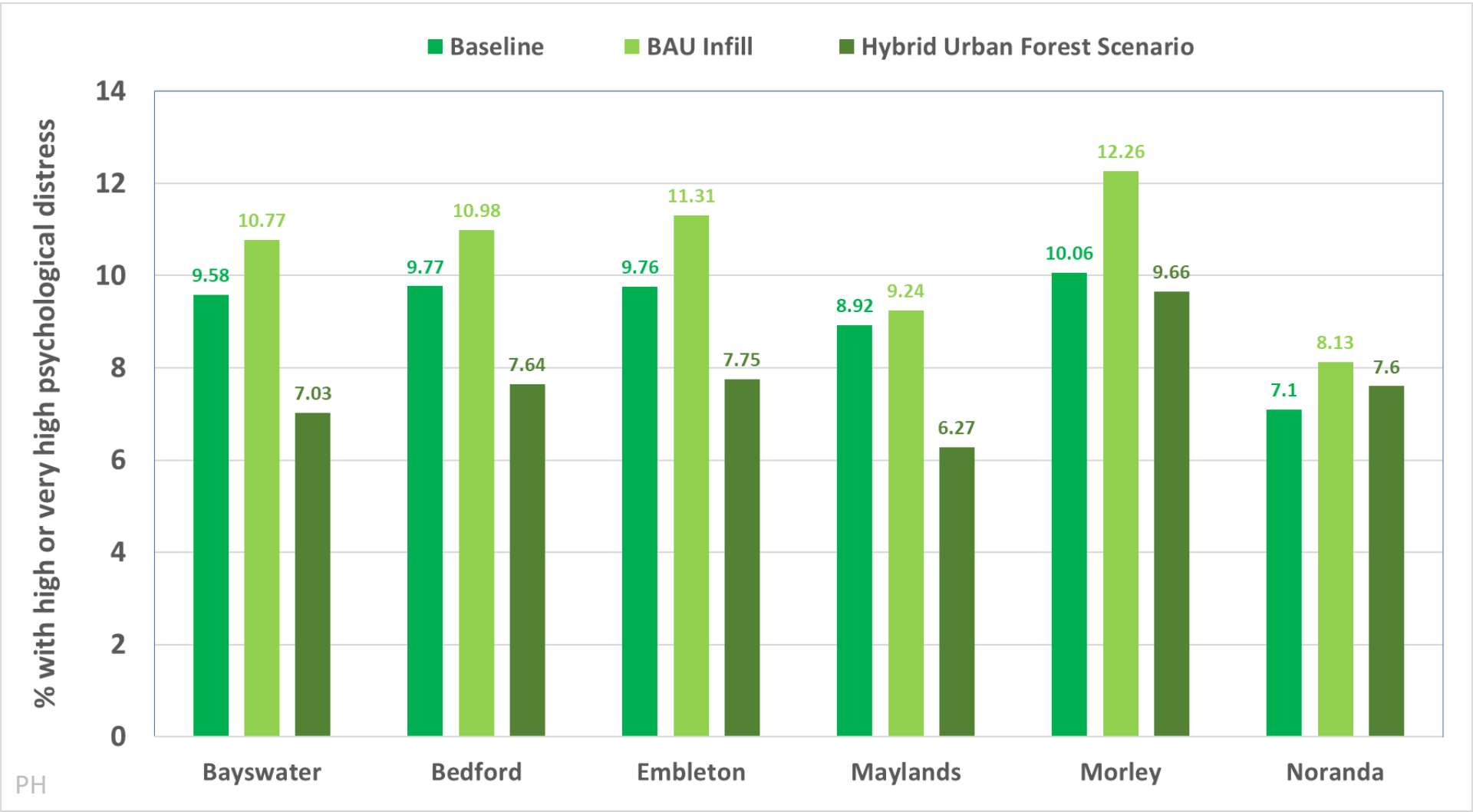
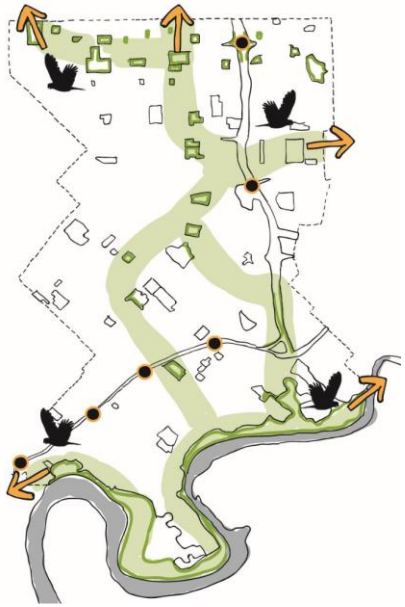
% with high or very high psychological distress = DECREASES



PH

Thanks for listening



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