



16.5m Right-of-Way & Streetscape Rationale

FEBRUARY 2021

CAIVAN

PREPARED FOR

CAIVAN

CAIVAN COMMUNITIES

2934 Baseline Road, Suite 302
Ottawa, Ontario K2H 1B2
t | 613.518.1864

CAIVAN.COM

PREPARED BY

NAK 
design strategies

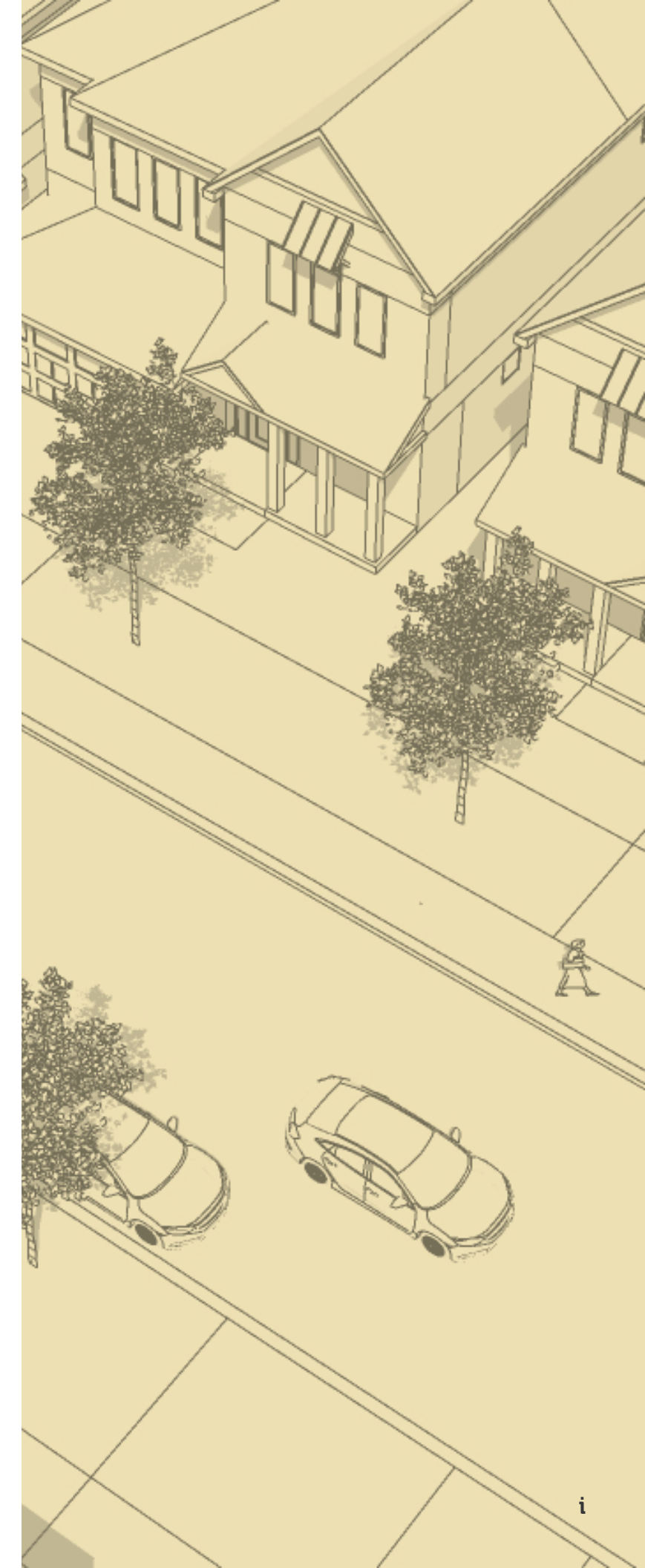
NAK DESIGN STRATEGIES

1285 Wellington Street
Ottawa, Ontario K1Y 3Y8
t | 613.237.2345

NAKDESIGNSTRATEGIES.COM

Table of Contents

Executive Summary	ii
City of Ottawa's 16.5m Right-of-Way	1
Caivan's OpenPlan™	7
Caivan's 16.5m Right-of-Way	9



Executive Summary

Caivan's 16.5m Right-of-Way and Streetscape Rationale has been generated to explore and justify the use of 16.5m right-of-ways, both with and without sidewalks that meet the City of Ottawa's minimum requirements, within Caivan communities. To rationalize the cross-sections, this document examines the City's current 16.5m right-of-way cross-section, compares Caivan's OpenPlan™ designs to typical land development standards in Ottawa, and breaks down the seven key components of the street.

Sidewalk
Travel Lanes
On-Street Parking
Traffic Calming
Snow Storage
Tree Health
Utilities & Servicing

To begin, this Rationale analyzes the City of Ottawa's 16.5m right-of-way cross-section with typical land development standards through the lens of the seven key components to establish baseline parameters (overall functionality and visual impact). Next, the document breaks down the benefits of Caivan's OpenPlan™ designs and their effect on the streetscape. Then using Caivan's OpenPlan™ designs, a 16.5m right-of-way with a sidewalk is evaluated using the seven components of the street to highlight the overall benefits and improvements to the streetscape.

Overall, this Rationale demonstrates how, when combined with Caivan's OpenPlan™ designs, 16.5m right-of-ways with and without sidewalks create more functional, compact, and visually appealing "Complete Streets".



City of Ottawa's 16.5m Right-of-Way

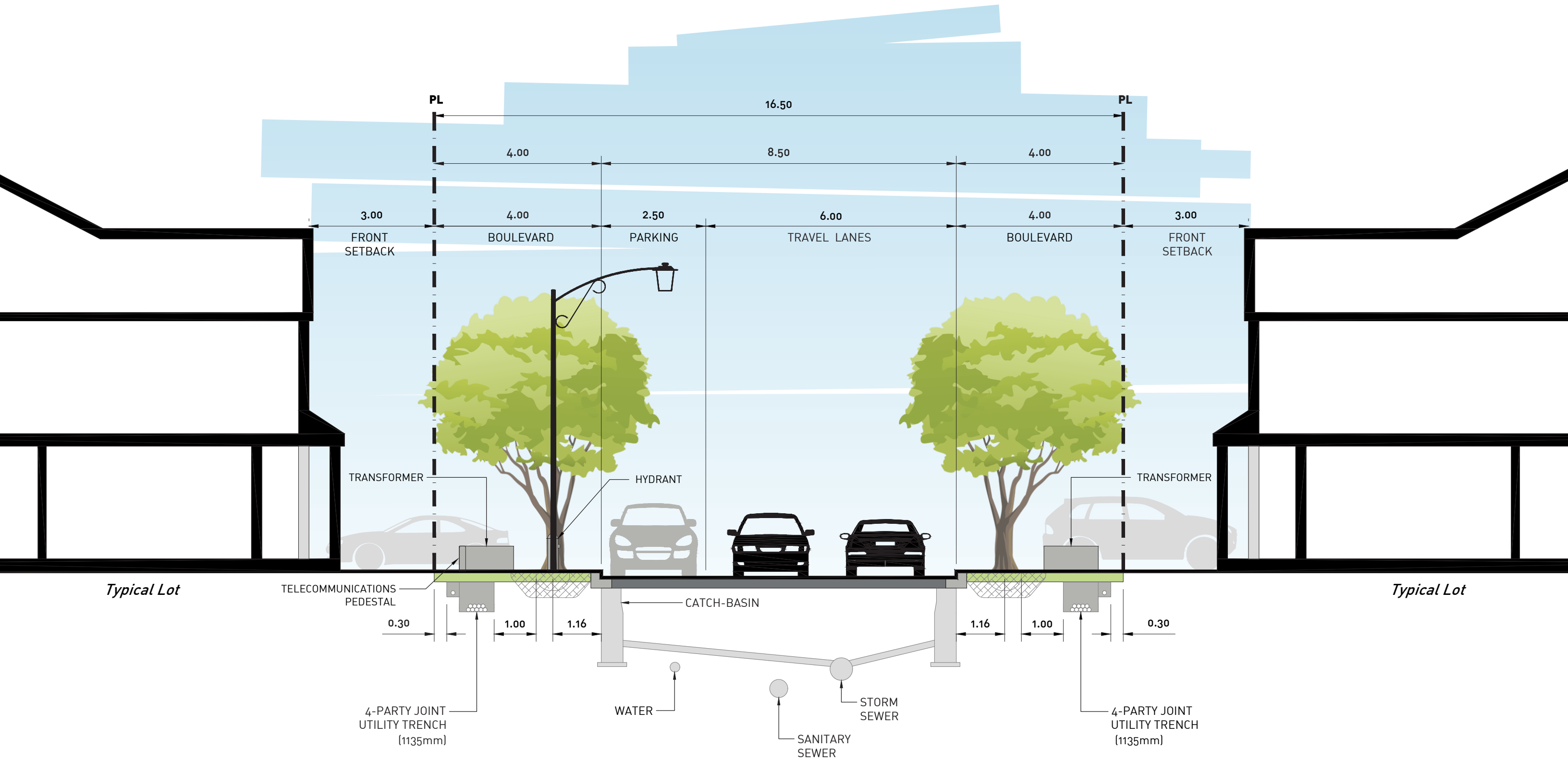
“lost opportunity to use streets as a component of the public realm with trees and sidewalks”

“lack of trees, sidewalks and cycling facilities discourage active transportation”

- Building Better and Smarter Suburbs: Strategic Directions and Action Plan (pg. 45)

City of Ottawa's 16.5m Right-of-Way

WITHOUT SIDEWALK | SECTION

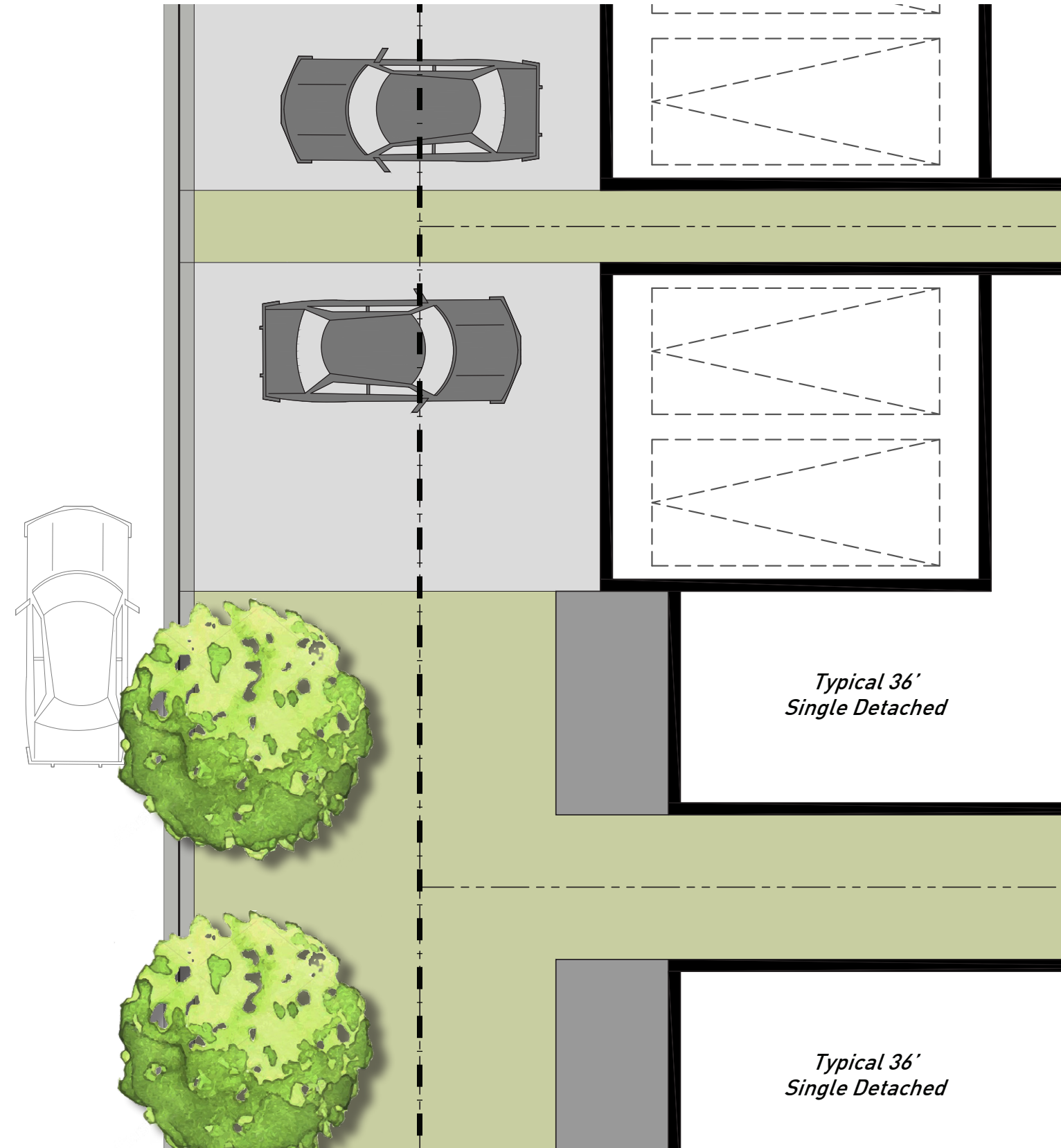
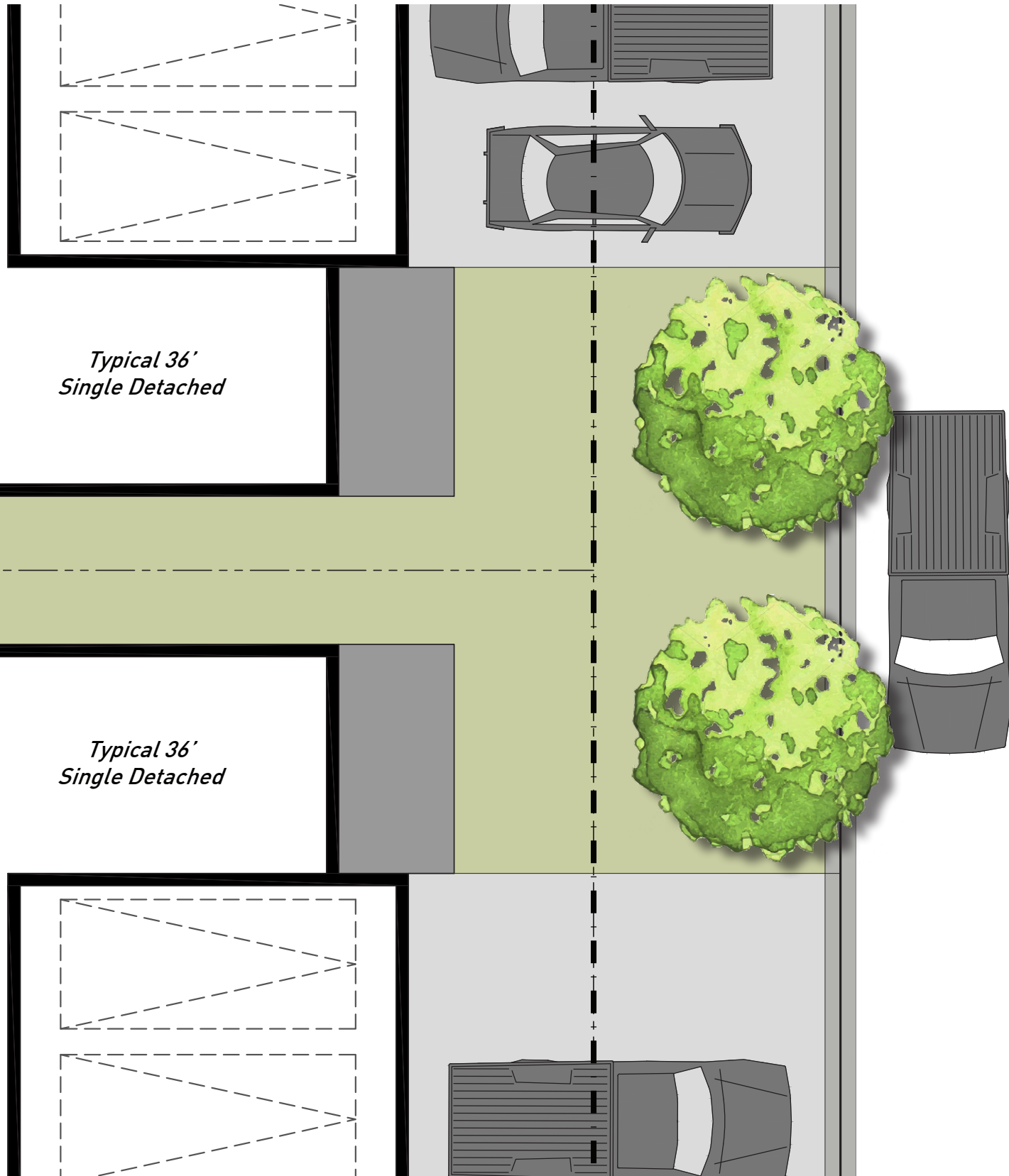


Typical Lot

Typical Lot

City of Ottawa's 16.5m Right-of-Way

WITHOUT SIDEWALK | SINGLE DETACHED PLAN

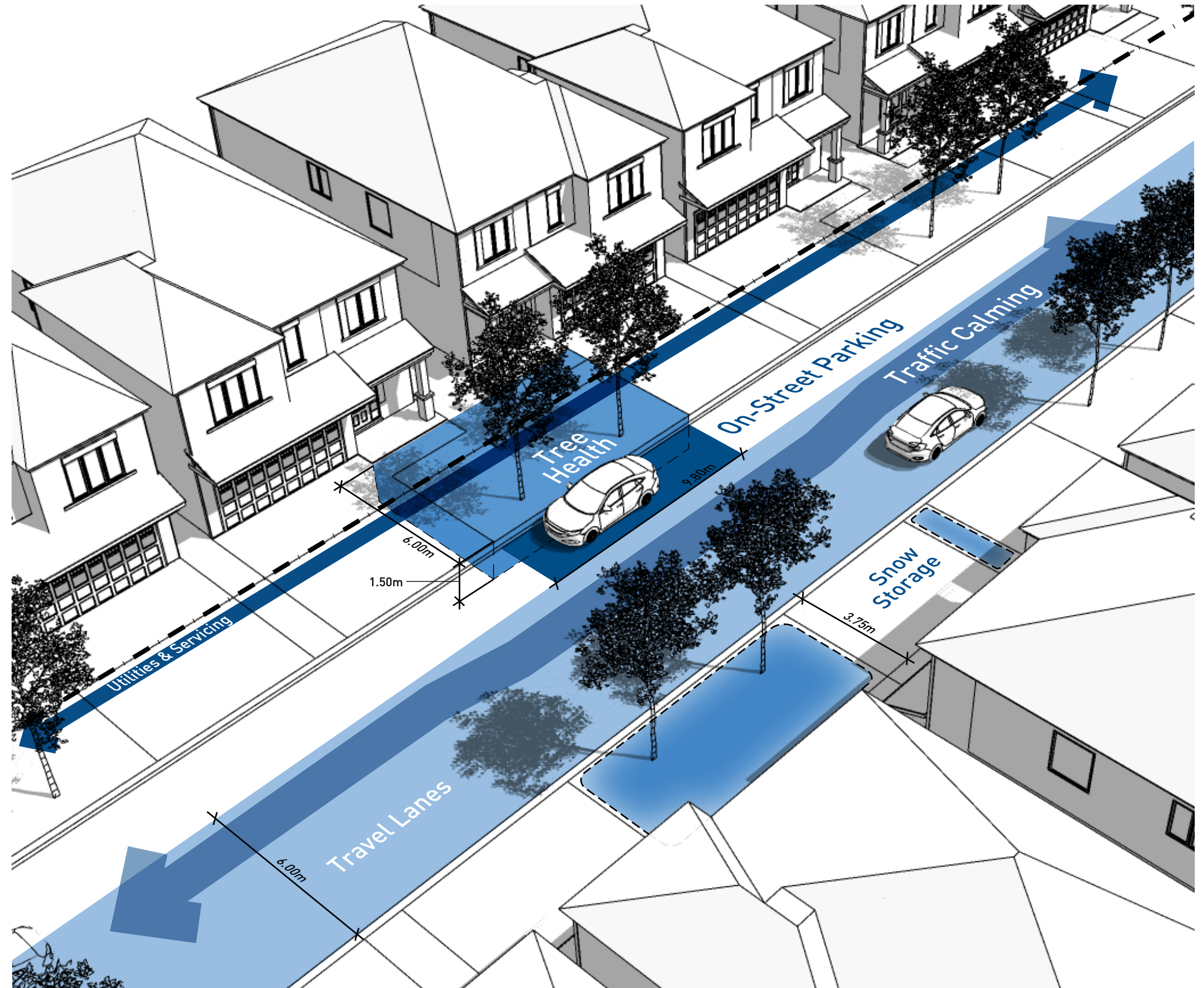


City of Ottawa's 16.5m Right-of-Way

WITHOUT SIDEWALK | SINGLE DETACHED

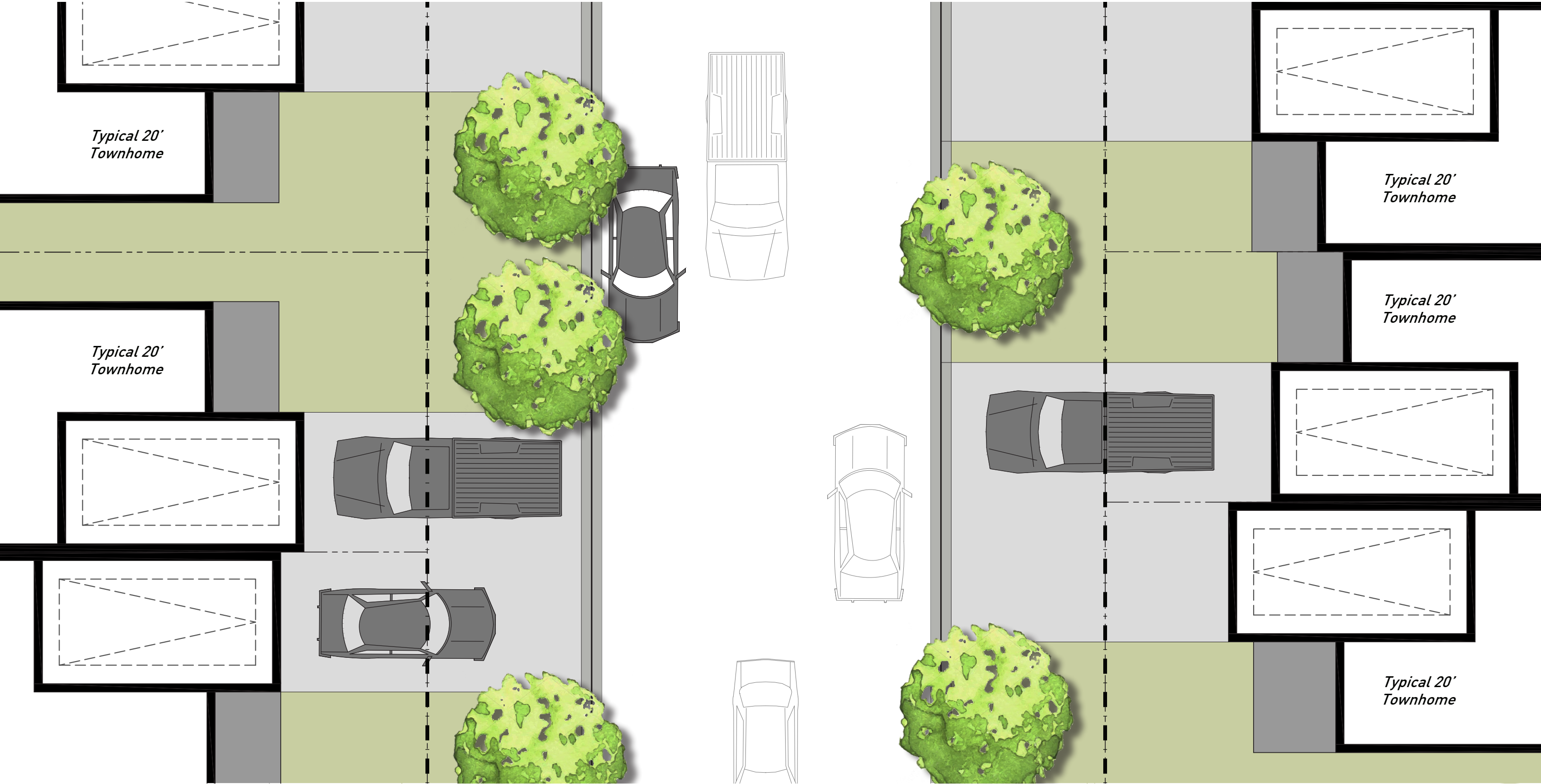
COMPONENTS OF THE STREET

- ✗ **Sidewalk**
 - No Sidewalk Provided
- ✓ **Travel Lanes**
 - 3.00m Travel Lanes (6.00m Combined)
- ✓ **On-Street Parking**
 - 9.80m Between Driveways (Typical)
 - Accommodates 1 Car Only
- ✓ **Traffic Calming**
 - On-Street Parking Provides Some Traffic Calming
- ✓ **Snow Storage**
 - 41.25m² of Snow Storage (Typical)
 - 11.00m [9.80m + 1.20m] x 3.75m
- ✓ **Tree Health**
 - 88.20m³ of Soil Volume (Typical)
 - 9.80m x 6.00m x 1.50m
- ✓ **Utilities & Servicing**
 - Joint Utility Trenches (1.135m) Located Within the Boulevards on Both Sides of the Street



* Typical 36' Single Detached Home Demonstrated

City of Ottawa's 16.5m Right-of-Way
 WITHOUT SIDEWALK | TOWNHOMES PLAN

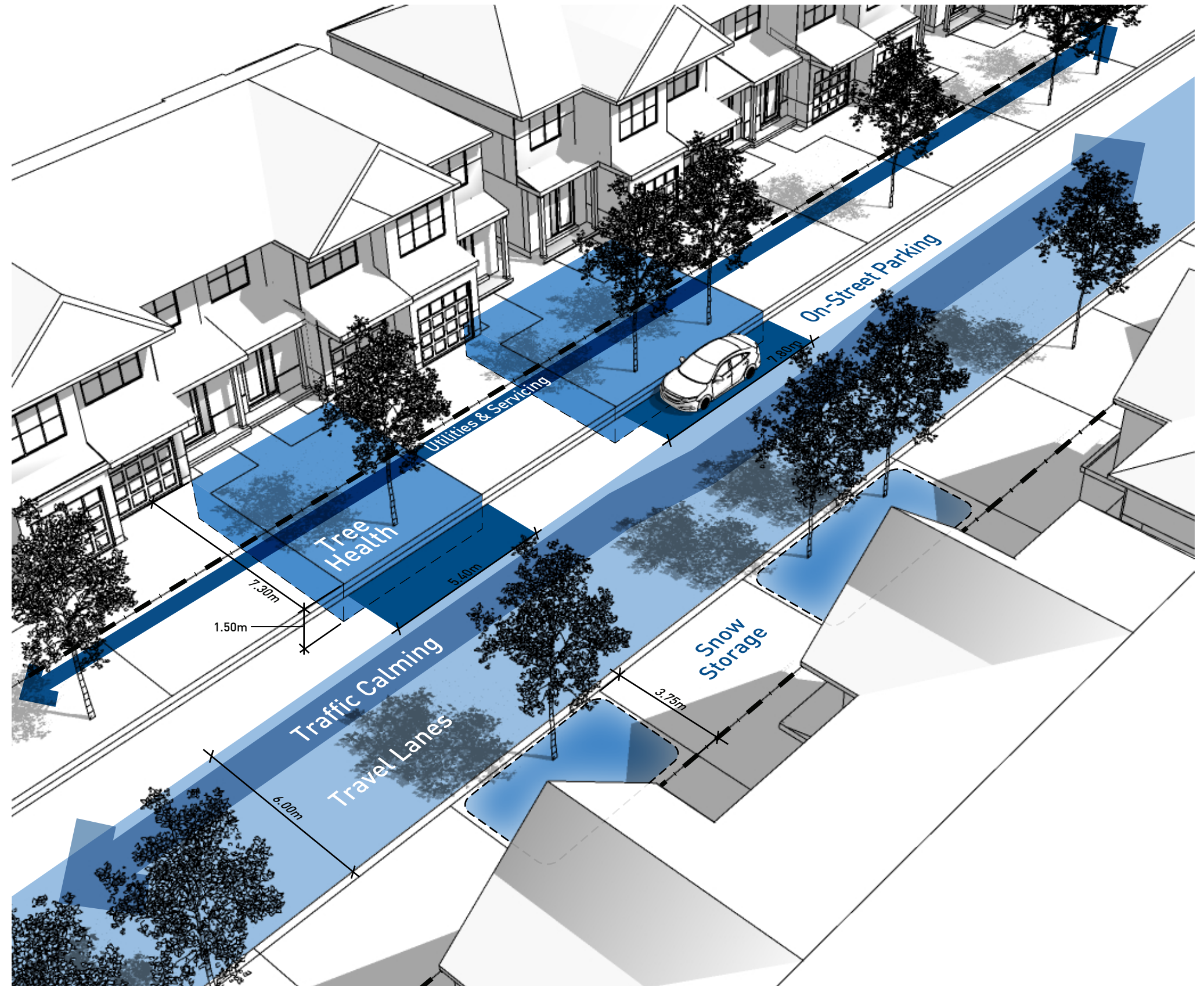


City of Ottawa's 16.5m Right-of-Way

WITHOUT SIDEWALK | TOWNHOMES

COMPONENTS OF THE STREET

- ✗ **Sidewalk**
 - No Sidewalk Provided
- ✔ **Travel Lanes**
 - 3.00m Travel Lanes (6.00m Combined)
- ✔ **On-Street Parking**
 - 5.40m & 7.80m Between Driveways
 - Limited Parking Spaces
- ✔ **Traffic Calming**
 - On-Street Parking Provides Some Traffic Calming
- ✔ **Snow Storage**
 - 49.50m² of Snow Storage (Typical)
(13.20m [5.40m + 7.80m] x 3.75m)
- ✔ **Tree Health**
 - Typical Soil Volumes:
Internal Units = 59.13m³ (5.40m x 7.30m x 1.50m)
End Units = 85.41m³ (7.80m x 7.30m x 1.50m)
- ✔ **Utilities & Servicing**
 - Joint Utility Trenches (1.135m) Located Within the Boulevards on Both Sides of the Street



* Typical 20' Townhome Demonstrated

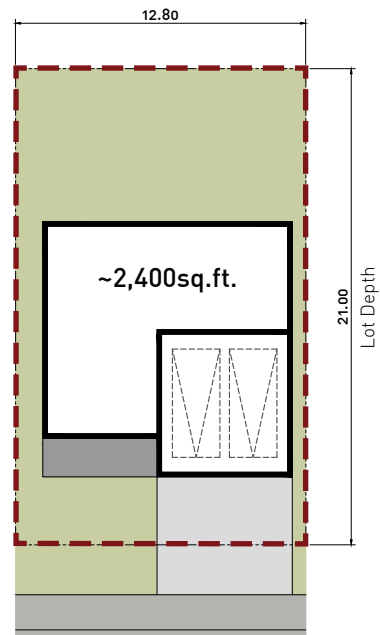
“ROW cross-sections, roadway widths, and design speeds should respond to built form and land use context”

- Building Better and Smarter Suburbs: Strategic Directions and Action Plan (pg. 48)

Caivan's OpenPlan™

LOT COMPARISON FIGURE

Caivan's OpenPlan™

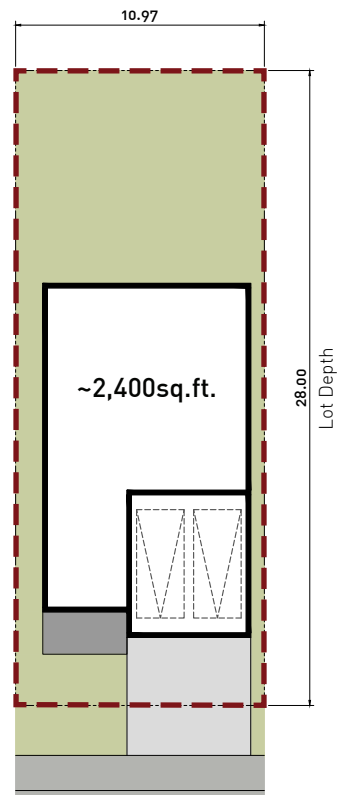


Caivan's 42'
Single Detached
LOT AREA: 268.8m²

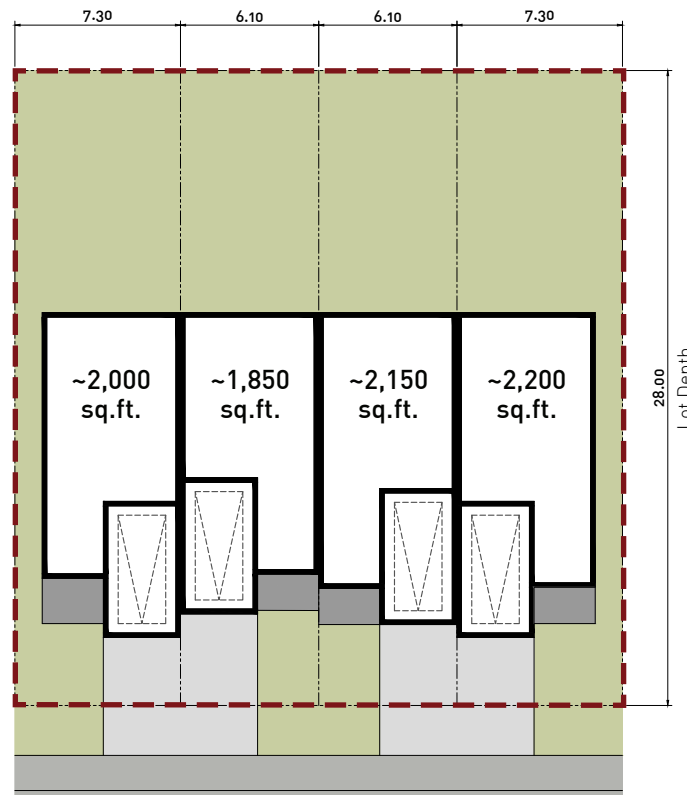


Caivan's 25'
Townhome
LOT AREA: 160.0-185.2m²

Typical Lots



Typical 36'
Single Detached
LOT AREA: 307.2m²



Typical 20'
Townhome
LOT AREA: 170.7-204.4m²

Compared to the typical land development standards in Ottawa, Caivan's OpenPlan™ designs decrease lot depths while increasing lot widths and overall density. As a result, this makes right-of-ways less car-dominated due to the wider lot widths while providing additional on-street parking, snow storage, and soil volume between driveways. In addition, Caivan's OpenPlan™ designs allow for greater community density compared to typical land development standards, provide greater active street frontage, and a sense of safety with more 'eyes on the street'.

Benefits to the OpenPlan™

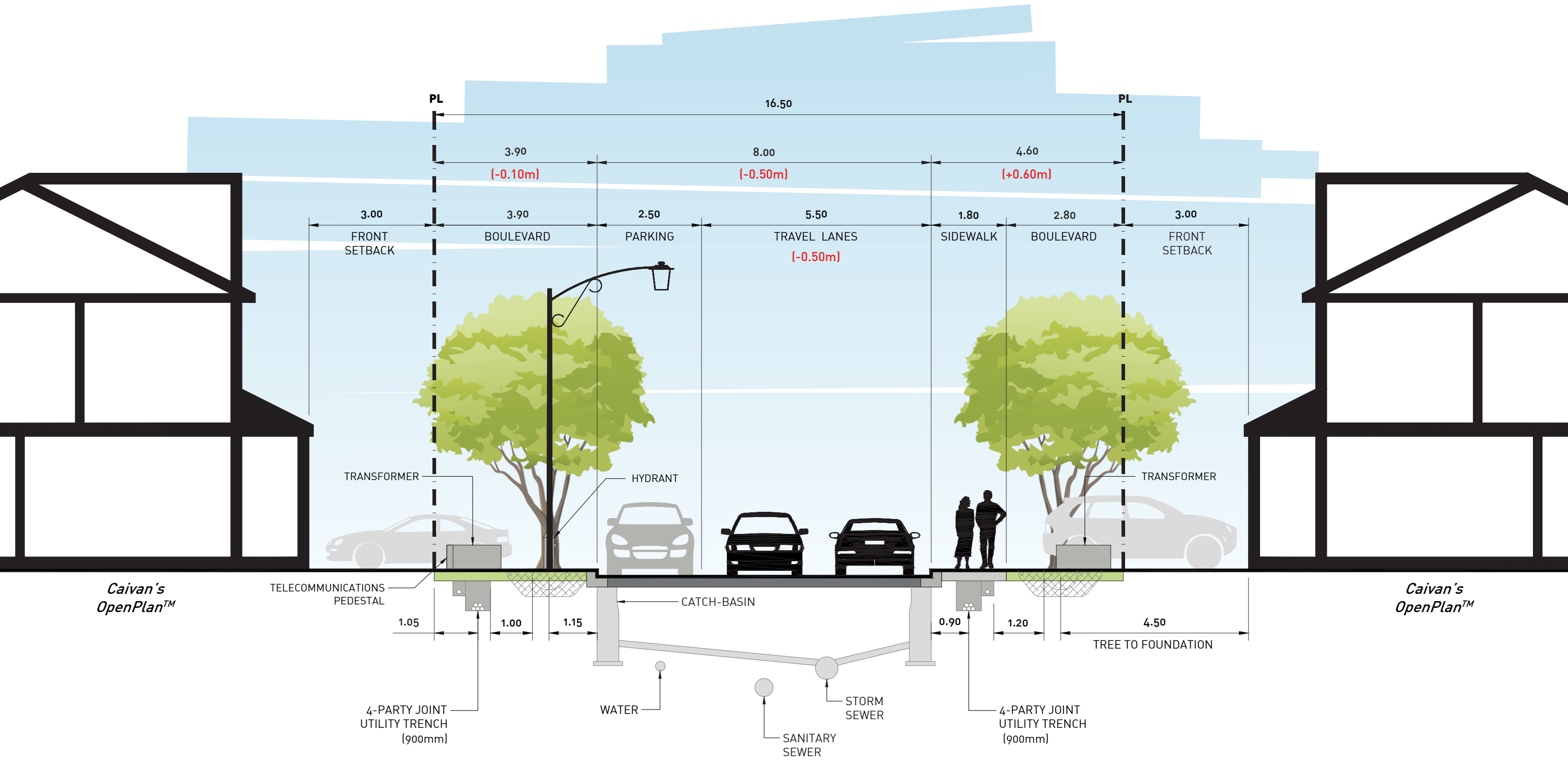
- +
 - +
 - +
 - +
 - +
 - +
 - +
- Greater Active Frontage
 - Less Car-Dominated
 - Additional On-Street Parking
 - Increased Soil Volume for Tree Growth
 - Greater Snow Storage Capacity
 - More 'Eyes on the Street'

Caivan's 16.5m Right-of-Way

“there is a need to re-examine space requirements in the ROW and consider opportunities for new efficiencies”

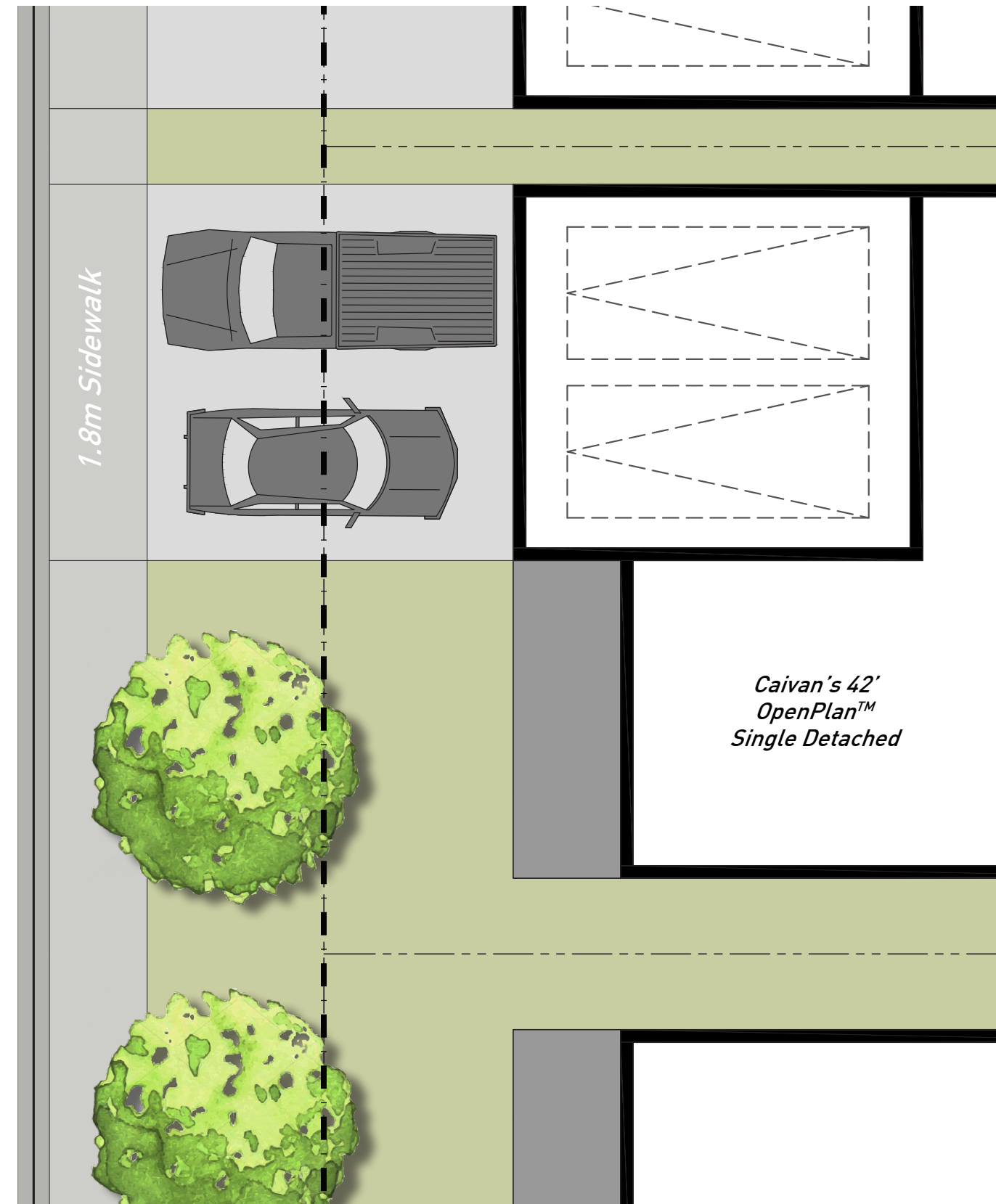
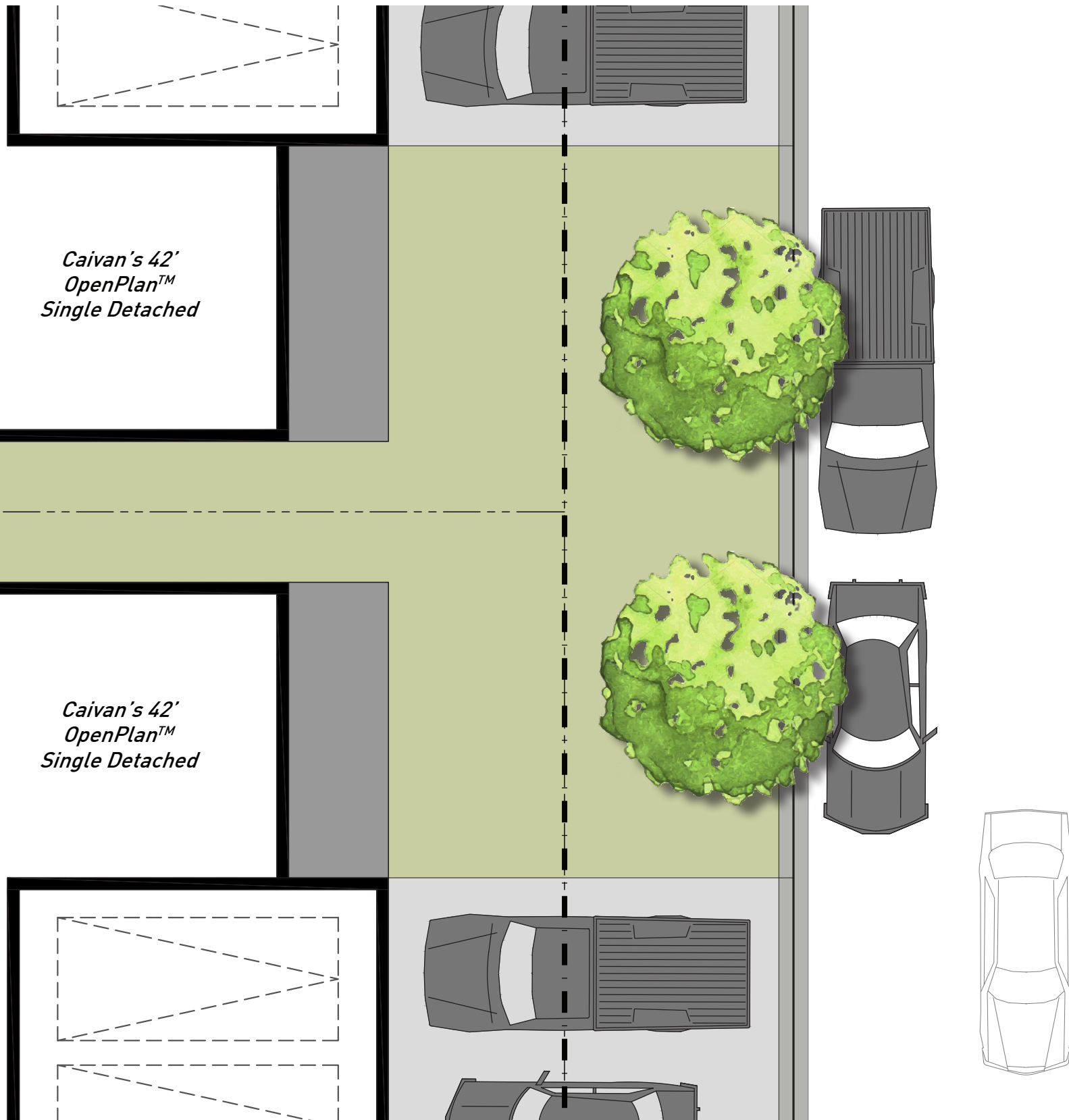
- Building Better and Smarter Suburbs: Strategic Directions and Action Plan (pg. 44)

Caivan's 16.5m Right-of-Way WITH SIDEWALK | SECTION



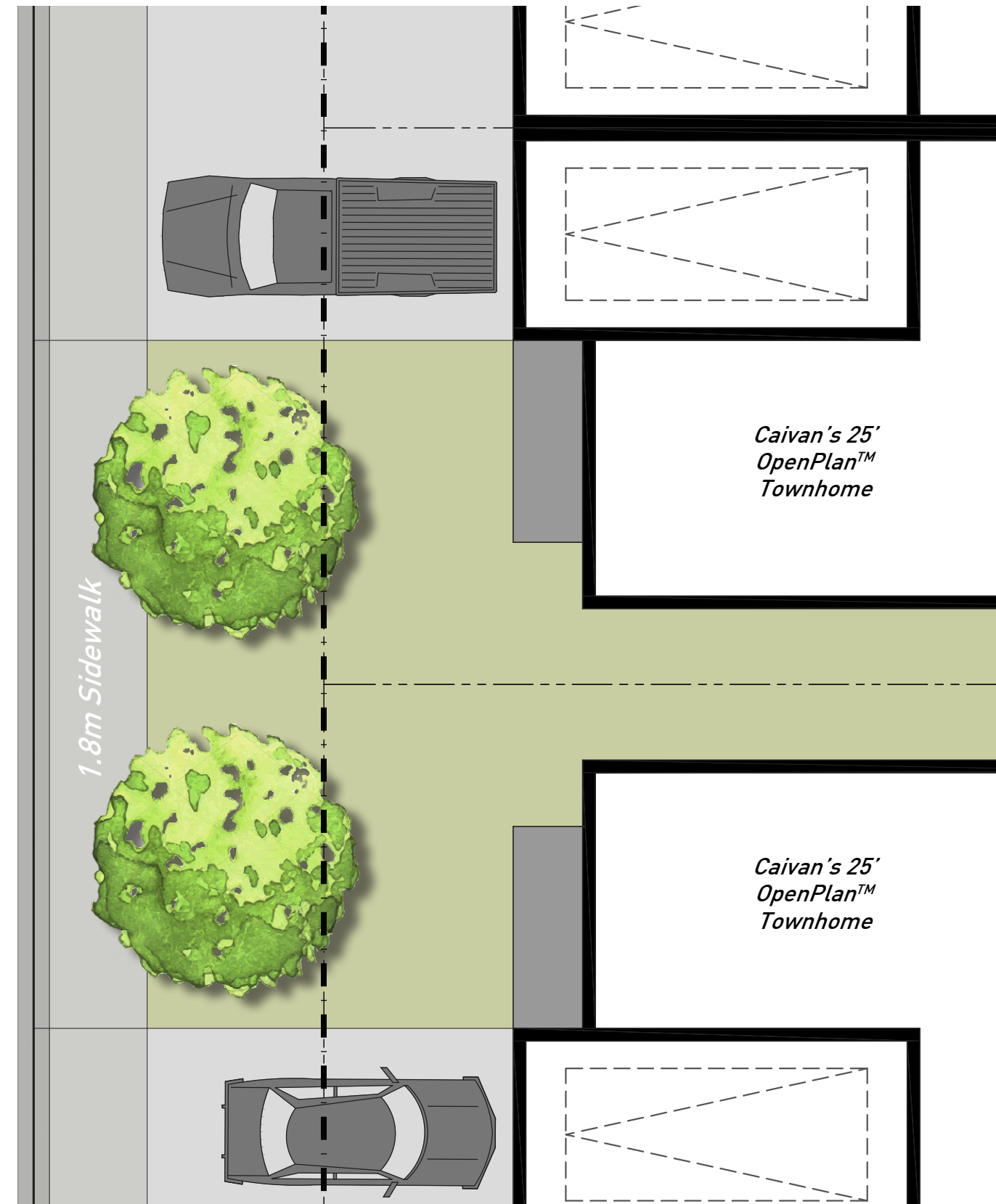
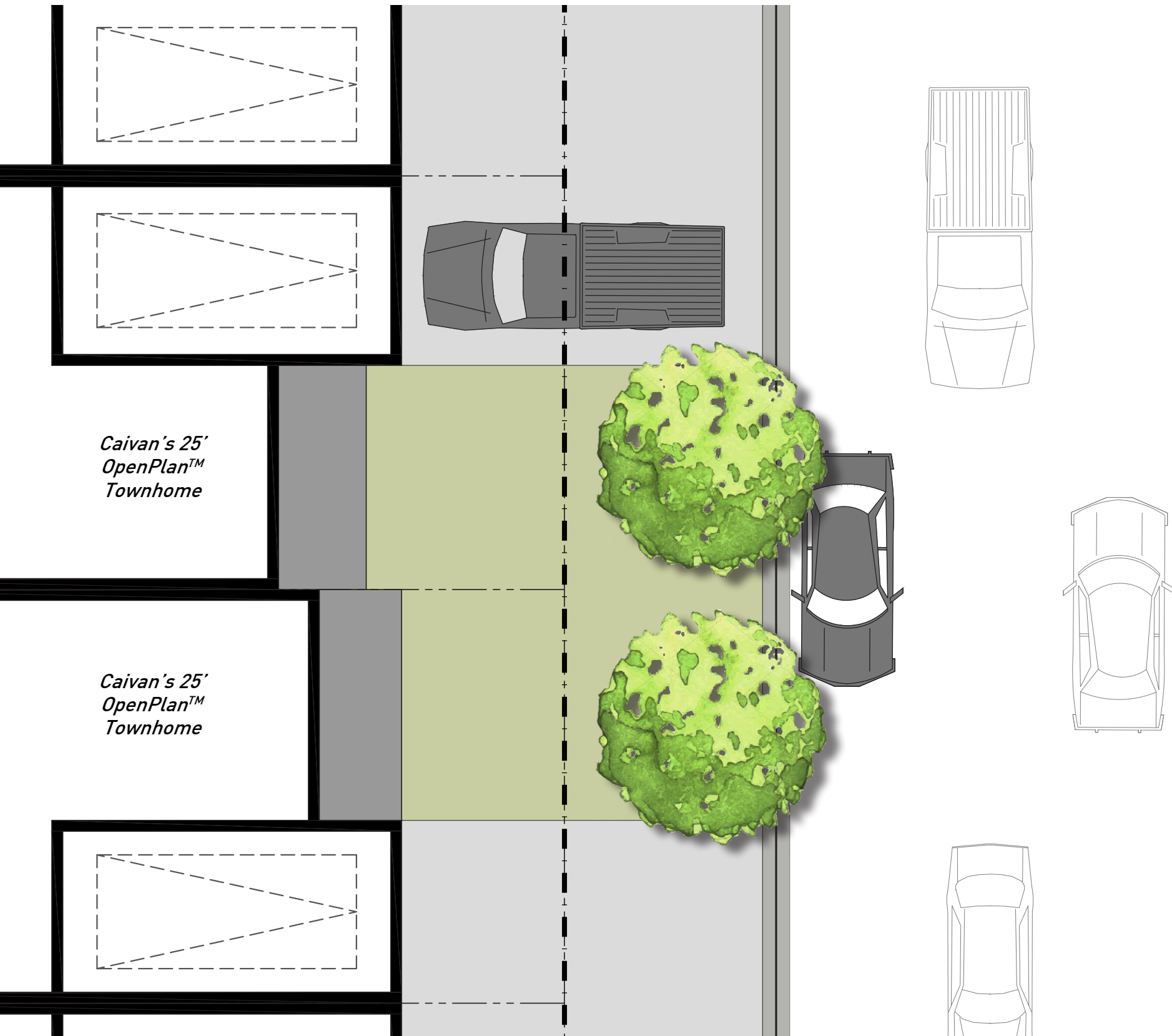
Caivan's 16.5m Right-of-Way

WITH SIDEWALK | SINGLE DETACHED PLAN



Caivan's 16.5m Right-of-Way

WITH SIDEWALK | TOWNHOMES PLAN



Caivan's 16.5m Right-of-Way WITH SIDEWALK

COMPONENTS OF THE STREET

● Sidewalk

- A 1.8m curb face sidewalk will improve pedestrian connectivity and overall community safety while promoting an active lifestyle and creating a 'complete street'

- Travel Lanes
- On-Street Parking
- Traffic Calming
- Snow Storage
- Tree Health
- Utilities & Servicing

“complete streets that include trees and sidewalks support active transportation”

- Building Better and Smarter Suburbs:
Strategic Directions and Action Plan (pg. 46)



Caivan's 16.5m Right-of-Way WITH SIDEWALK

COMPONENTS OF THE STREET

✓ Sidewalk

● Travel Lanes

- Narrower travel lane widths will reduce vehicular speeds and further improve overall pedestrian & cyclist safety

● On-Street Parking

● Traffic Calming

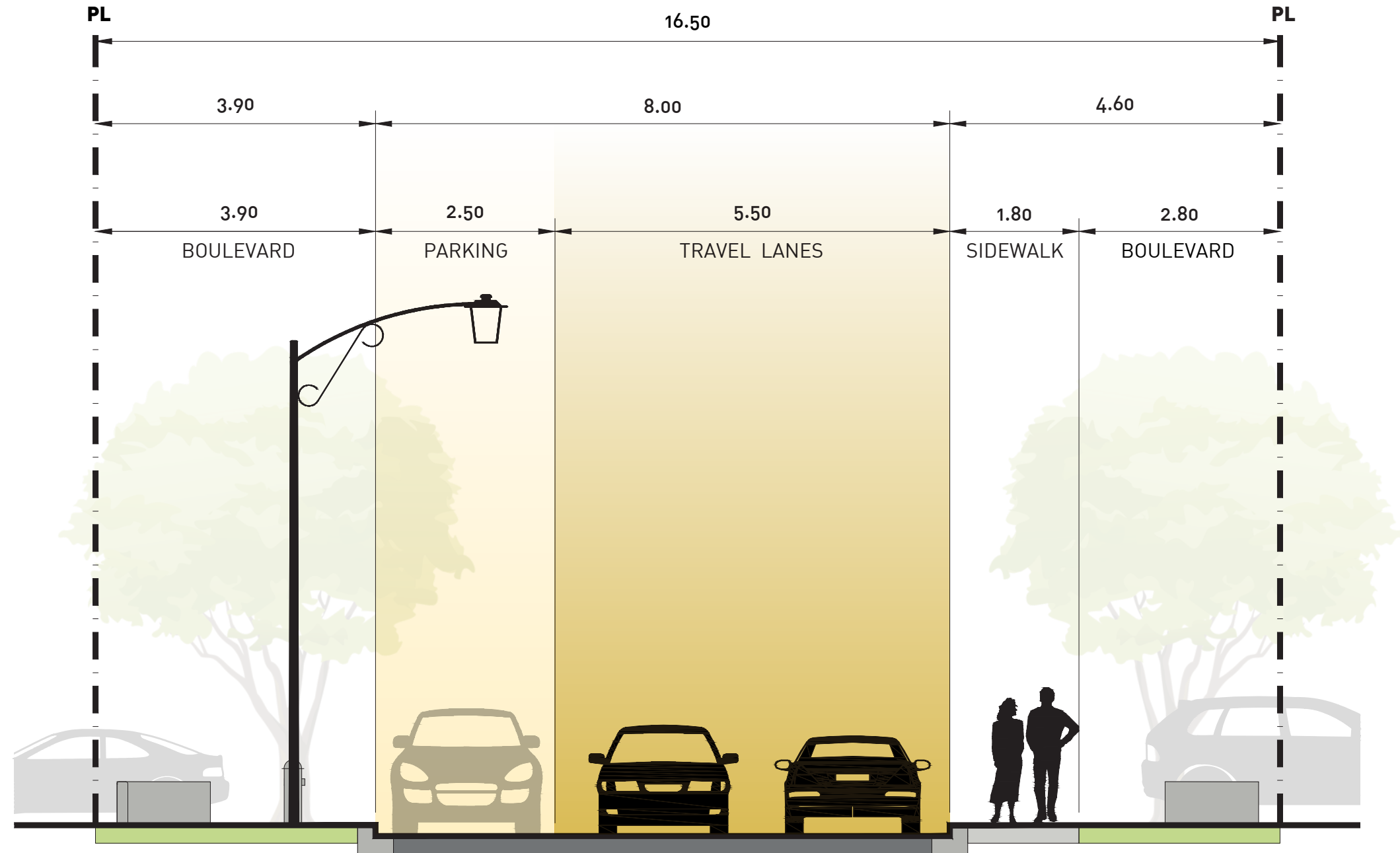
● Snow Storage

● Tree Health

● Utilities & Servicing

“reduce width of vehicle travel lanes in new ROW cross-sections”

- Building Better and Smarter Suburbs:
Strategic Directions and Action Plan (pg. 48)

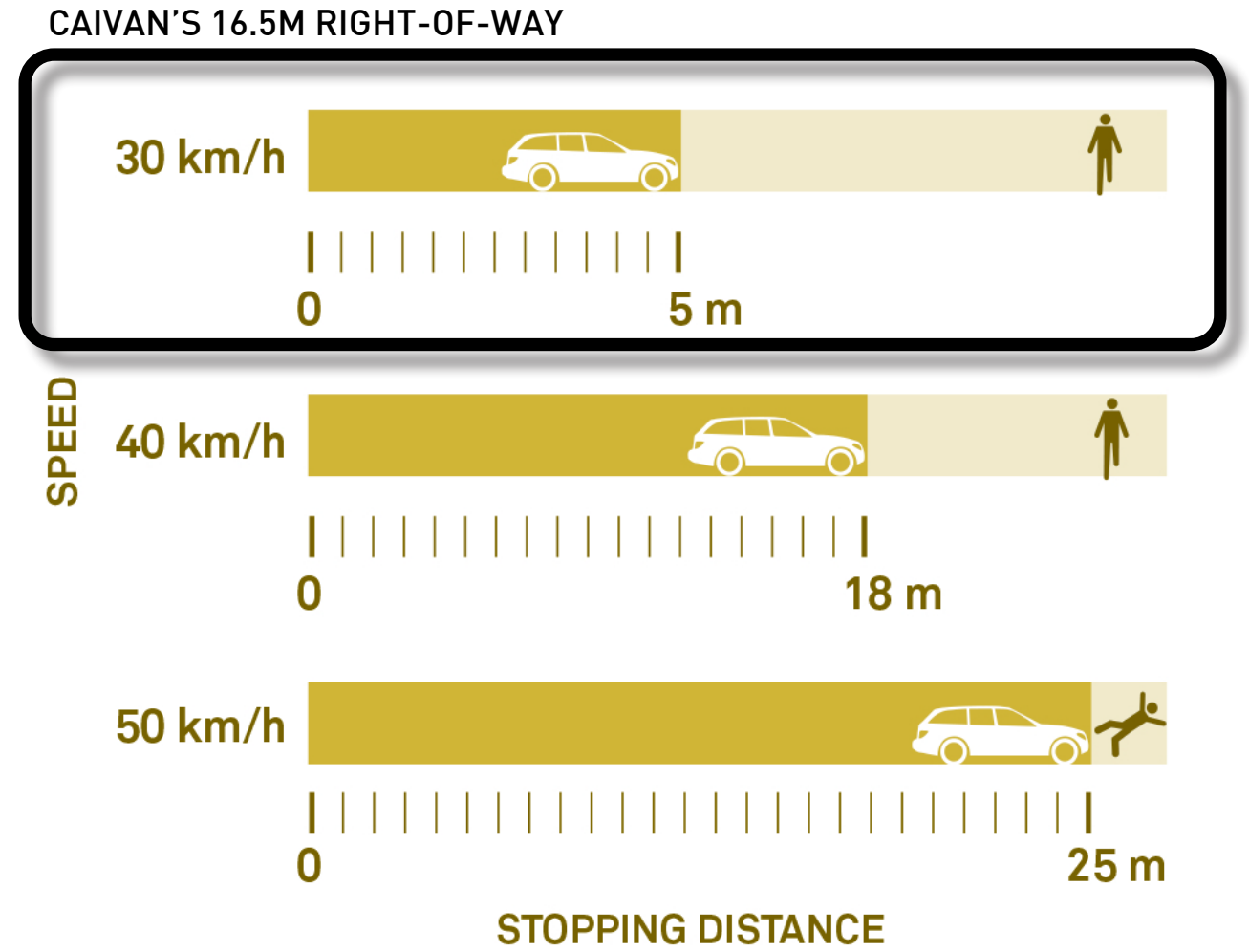
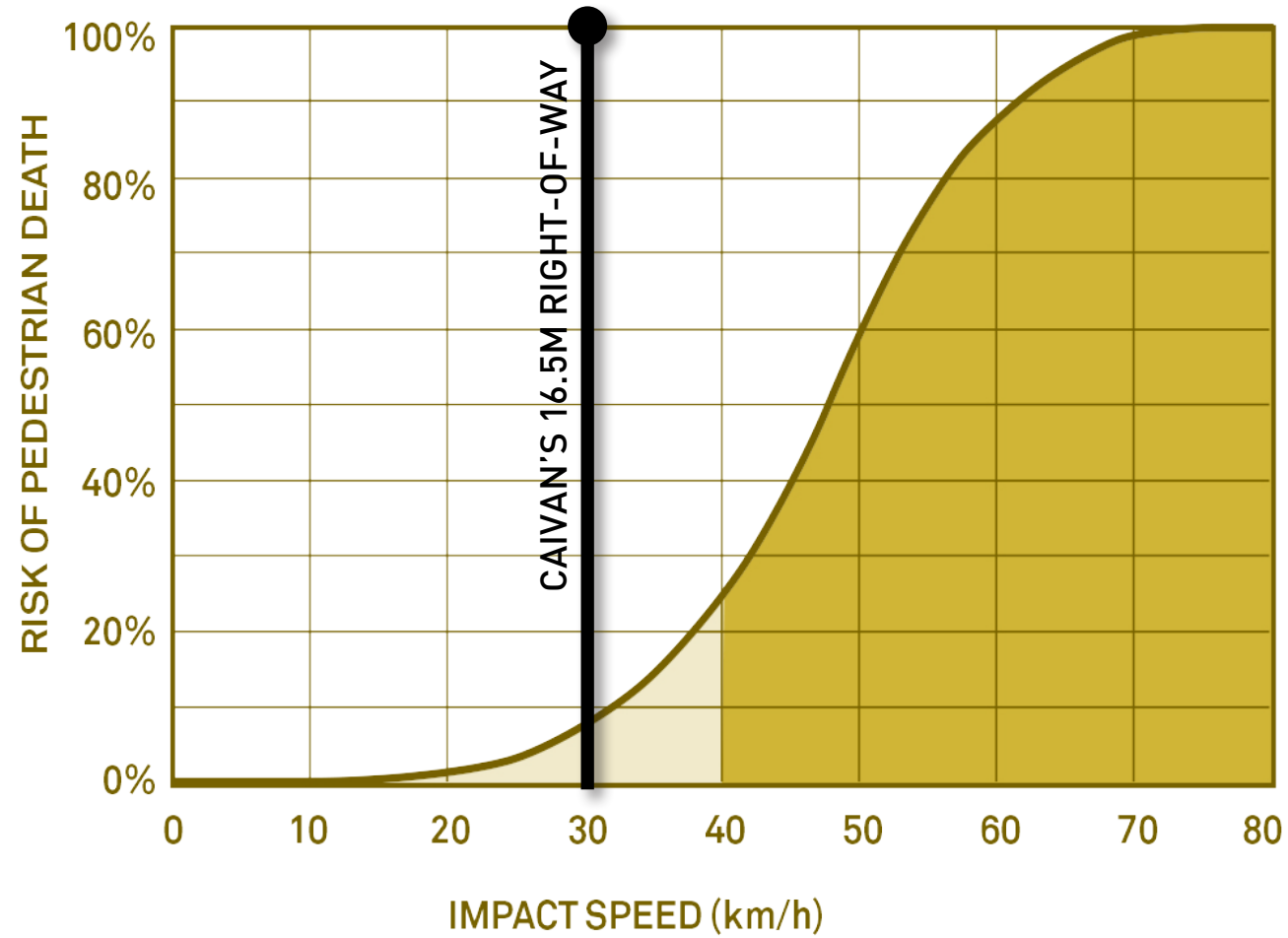


2.75m Travel Lane (-0.25m)
***(-3.75km/h)**

Caivan's 16.5m Right-of-Way

WITH SIDEWALK

TRAVEL SPEEDS






- Global Street Design Guide | Safe Streets Save Lives

“excessive road width encourages speeding and increases snow clearing costs”





- Building Better and Smarter Suburbs: Strategic Directions and Action Plan (pg. 45)

Caivan's 16.5m Right-of-Way WITH SIDEWALK

COMPONENTS OF THE STREET

-  Sidewalk
-  Travel Lanes
-  **On-Street Parking**

- Caivan's OpenPlan™ allows for an increase in on-street parking between driveways (Single Detached: accommodates 2 cars) (Townhomes: accommodates 1 large car or 2 small cars)

-  Traffic Calming
-  Snow Storage
-  Tree Health
-  Utilities & Servicing

Caivan's 42' OpenPlan™
Single Detached
On-Street Parking:

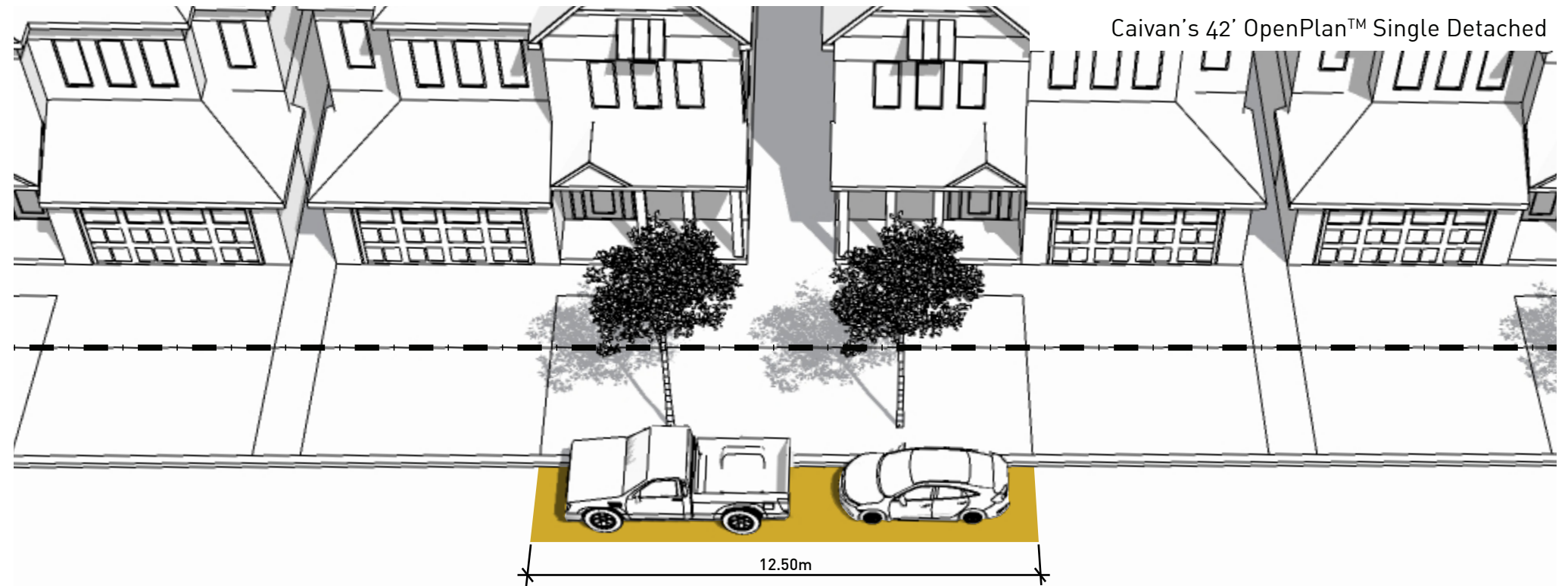
Length
12.50m
(+2.70m)
(+1 Car)

**+4 parking spaces over
100m stretch of road**

Caivan's 25' OpenPlan™
Townhome
On-Street Parking:

Length Length Length
8.40m 8.40m 10.90m
(+3.00m) **(+3.00m)** **(+3.10m)**
(1 Large Car or **(1 Large Car or** **(+1 Car)**
2 Small Cars)

**+5 parking spaces over
100m stretch of road**



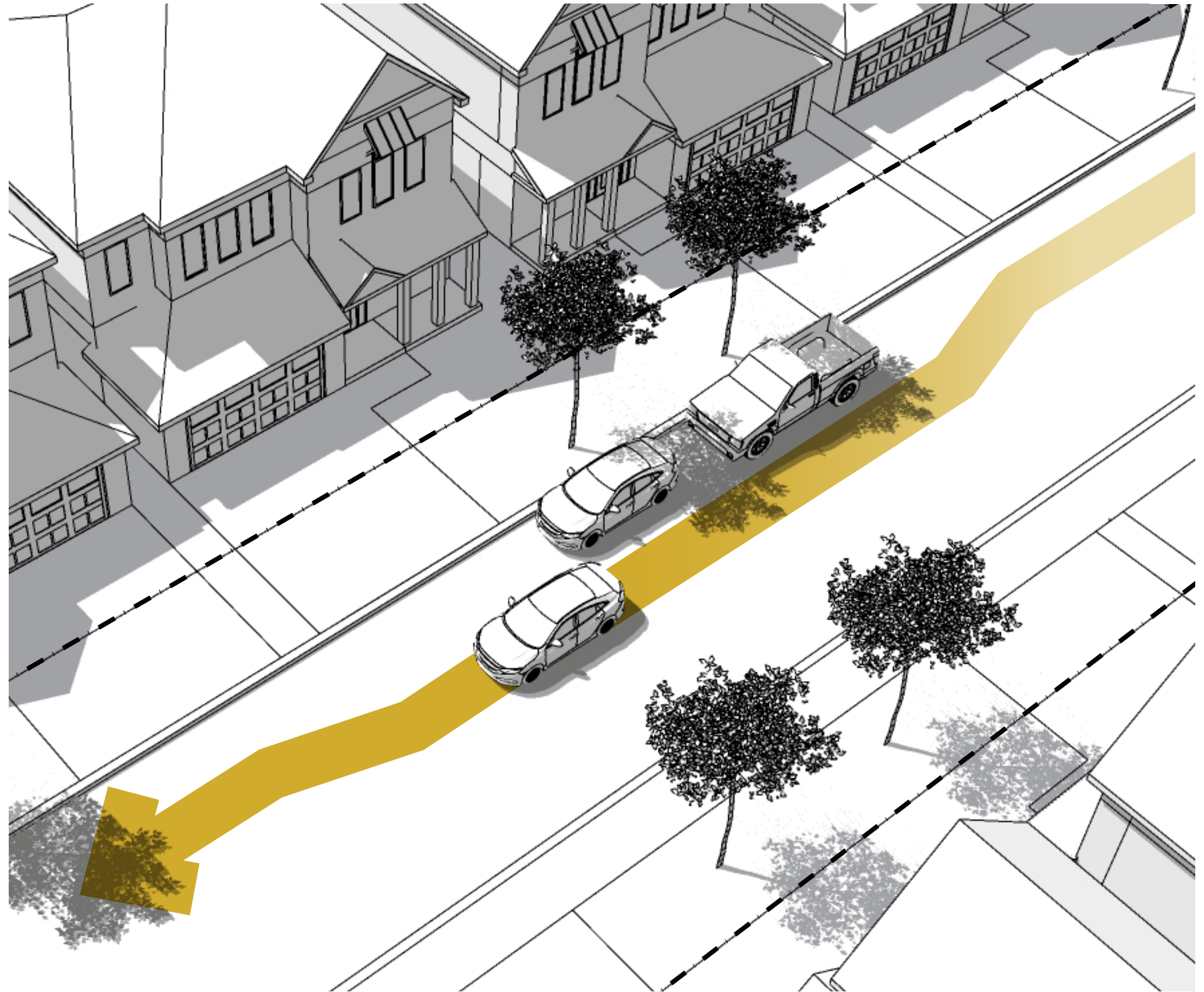
Caivan's 16.5m Right-of-Way WITH SIDEWALK

COMPONENTS OF THE STREET

- ✓ Sidewalk
- ✓ Travel Lanes
- ✓ On-Street Parking
- **Traffic Calming**
 - With the reduced travel lane widths, on-street parking will provide additional traffic calming - along with bulb-outs, pinch points, etc.
- Snow Storage
- Tree Health
- Utilities & Servicing

“use on-street parking as a traffic calming measure on streets already wide enough to accommodate on-street parking”

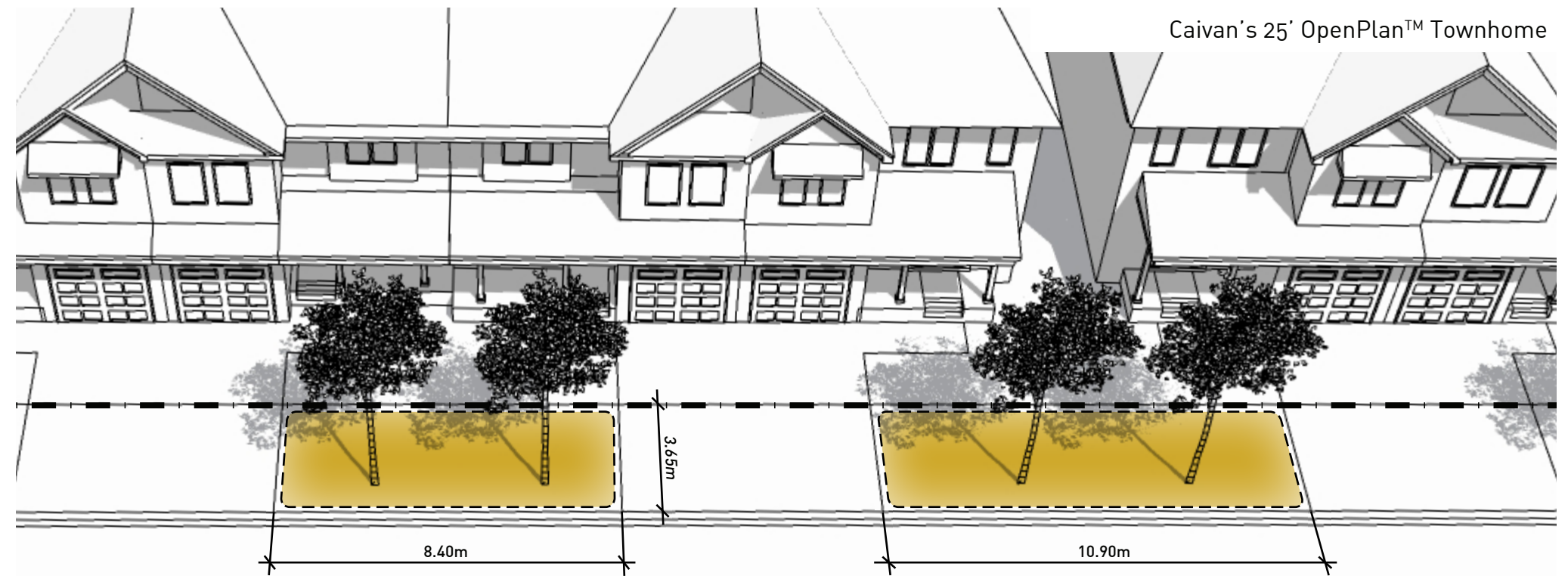
- Building Better and Smarter Suburbs:
Strategic Directions and Action Plan (pg. 42)



Caivan's 16.5m Right-of-Way WITH SIDEWALK

COMPONENTS OF THE STREET

- ✓ Sidewalk
- ✓ Travel Lanes
- ✓ On-Street Parking
- ✓ Traffic Calming
- **Snow Storage**
 - The increased distance between driveways also allows for increased snow storage along local road
- Tree Health
- Utilities & Servicing



Caivan's 42' OpenPlan™ Single Detached Snow Storage:

Length: 13.70m
Width: 3.65m

**Area = 50.005m²
(+8.755m²)**

**+42.00m² over
100m stretch of road**

Caivan's 25' OpenPlan™ Townhome Snow Storage:

Length: 19.30m
Width: 3.65m

**Area = 70.445m²
(+20.945m²)**

**+90.50m² over
100m stretch of road**

Caivan's 16.5m Right-of-Way WITH SIDEWALK

COMPONENTS OF THE STREET

- ✓ Sidewalk
- ✓ Travel Lanes
- ✓ On-Street Parking
- ✓ Traffic Calming
- ✓ Snow Storage
- **Tree Health**

- Street trees will be located on both sides of the street at a minimum of 4.5m from the building foundation and have an increased amount of soil volume for sufficient root growth

● Utilities & Servicing

Caivan's 42' OpenPlan™ Single Detached & Sidewalk Soil Volume:

Length: 12.50m
Width: 5.80m
Depth: 1.50m

Soil Volume
108.75m³
(+20.55m³)

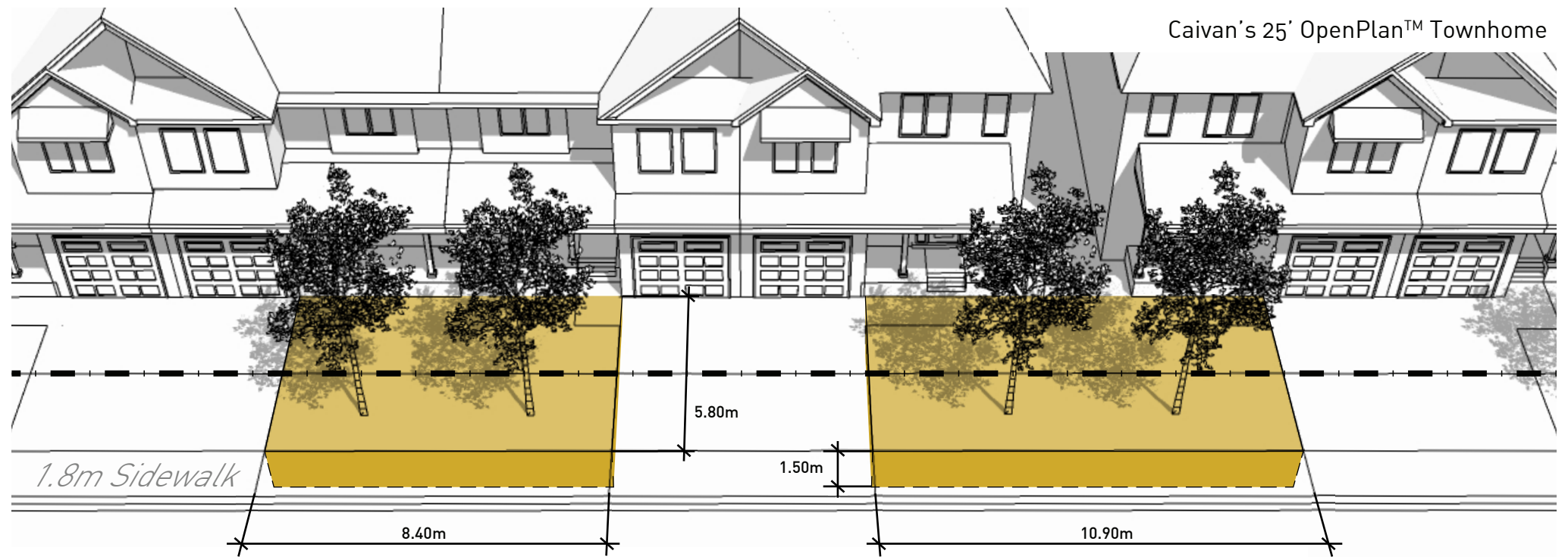
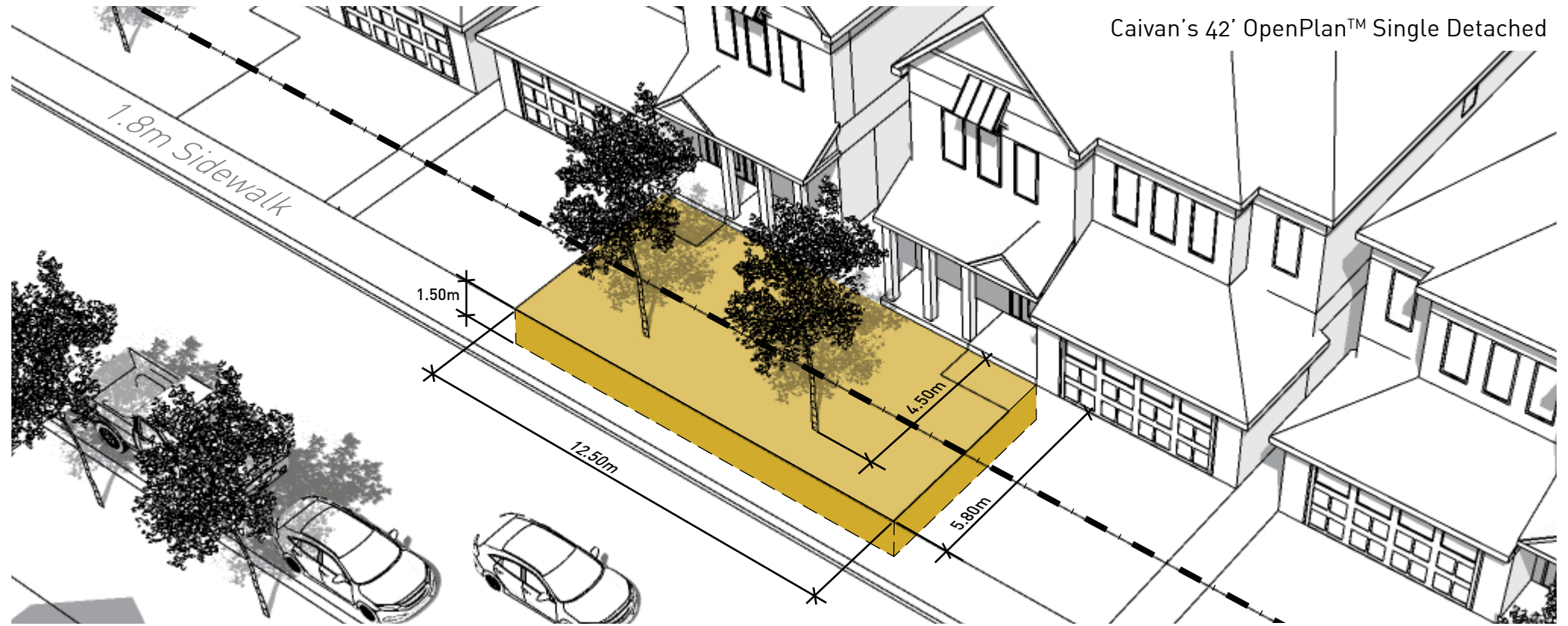
+120.00m³ over
100m stretch of road

Caivan's 25' OpenPlan™ Townhome & Sidewalk Soil Volumes:

Length: 8.40m Length: 10.90m
Width: 5.80m Width: 5.80m
Depth: 1.50m Depth: 1.50m

Soil Volume **Soil Volume** **Soil Volume**
73.08m³ **94.83m³**
(+13.95m³) **(+9.42m³)**

+44.00m³ over
100m stretch of road



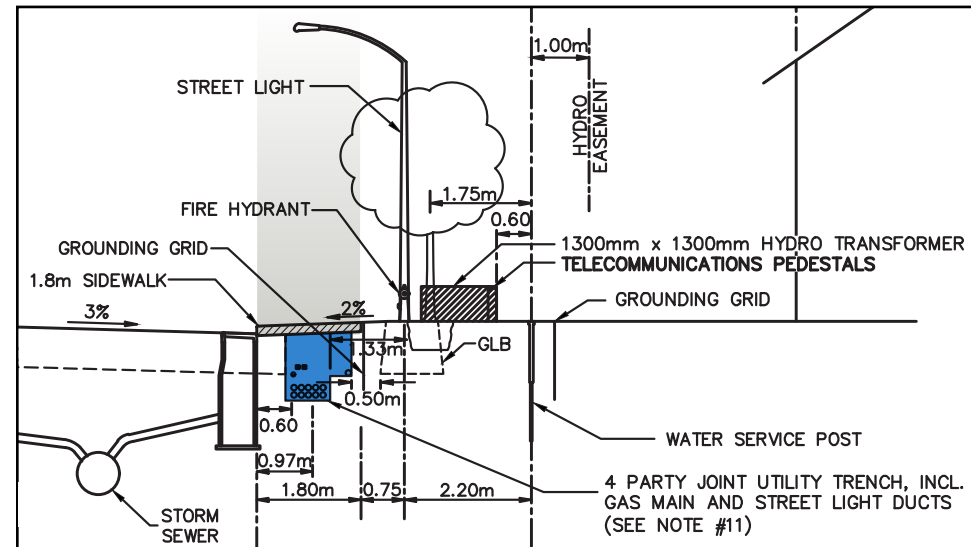
* Front Setback to Vary Based on Soil Conditions

Caivan's 16.5m Right-of-Way WITH SIDEWALK

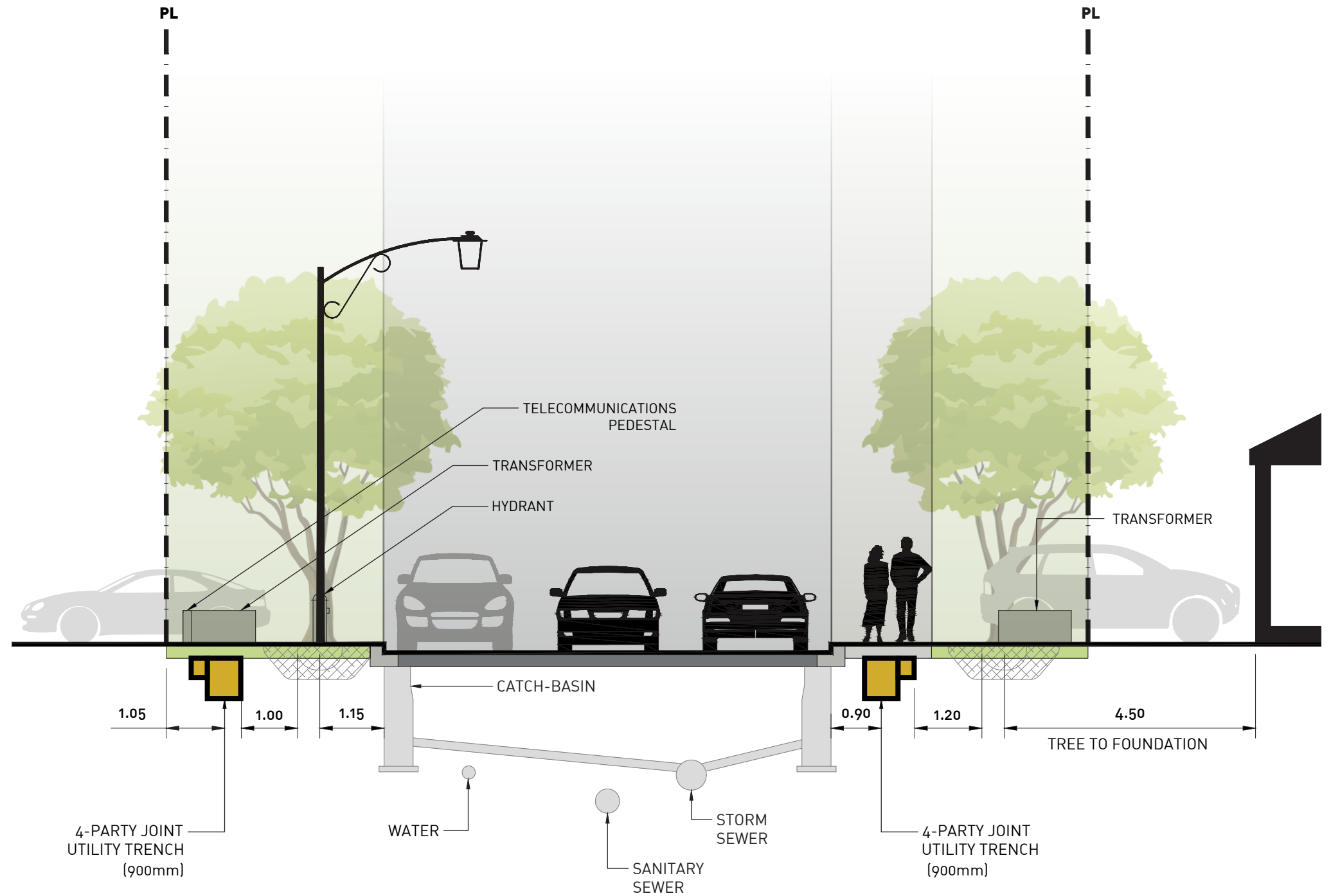
COMPONENTS OF THE STREET

- ✓ Sidewalk
- ✓ Travel Lanes
- ✓ On-Street Parking
- ✓ Traffic Calming
- ✓ Snow Storage
- ✓ Tree Health
- **Utilities & Servicing**

- Joint Utility Trenches (0.90m) located within the boulevard on one side and under the sidewalk on the other to create a compact streetscape and assure adequate spacing between elements



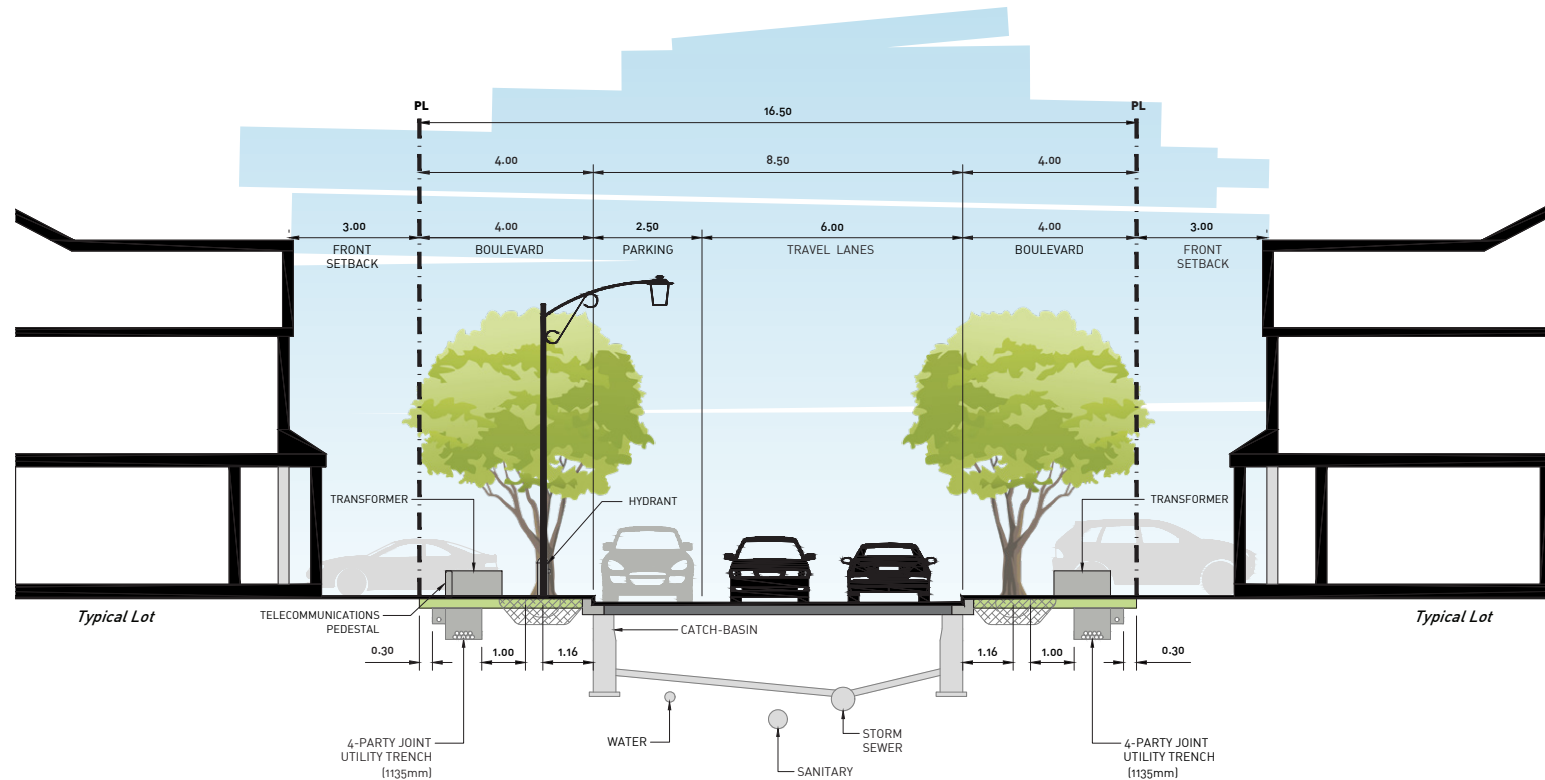
City of Ottawa's 18m Right-of-Way w. JUT Under Sidewalk



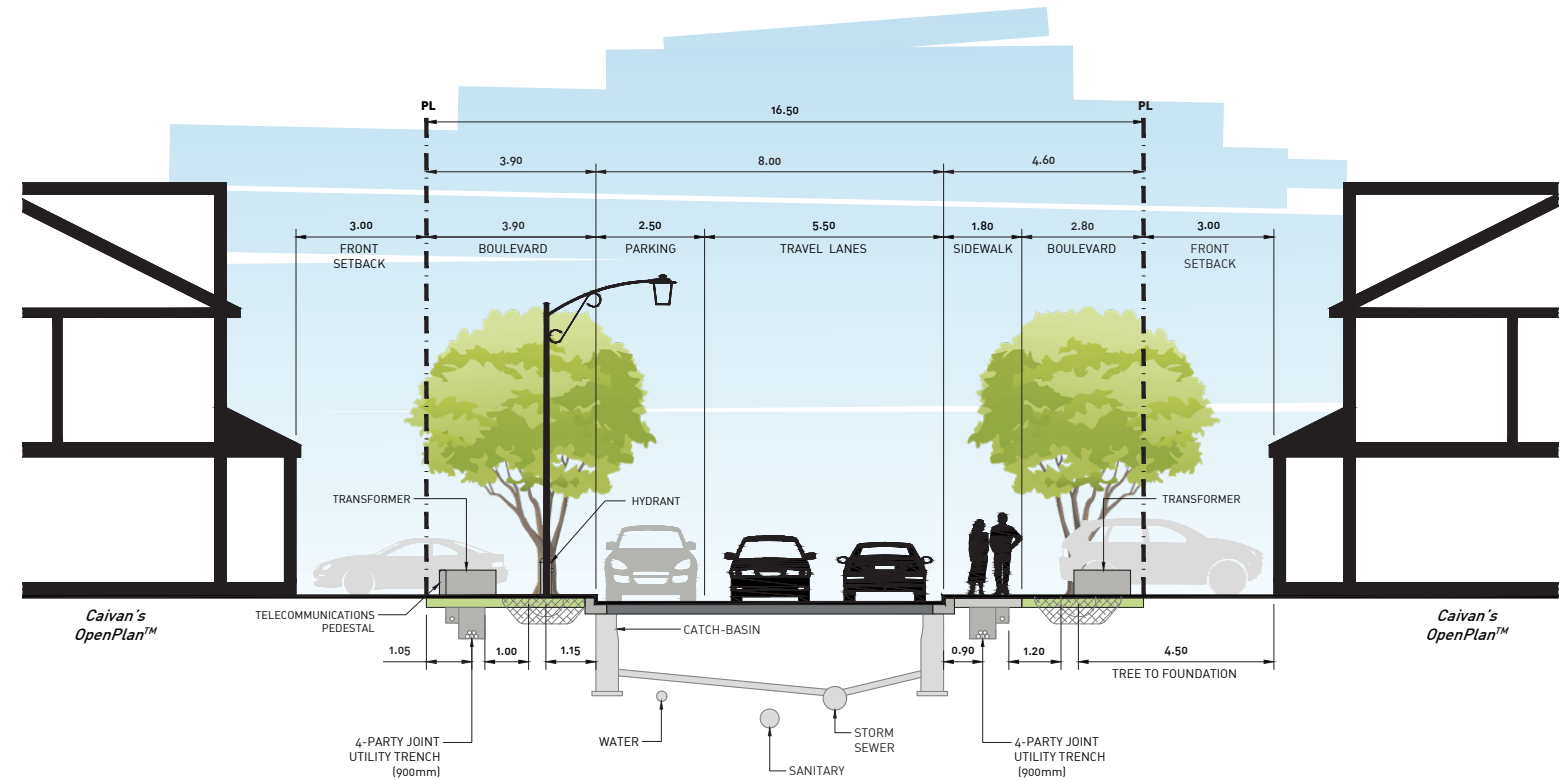
Caivan's 16.5m Right-of-Way








SUMMARY & COMPARISON








CITY OF OTTAWA'S 16.5M ROW WITHOUT SIDEWALK



CAIVAN'S 16.5M ROW WITH SIDEWALK



-  **Sidewalk**
 - No Sidewalk Provided
-  **Travel Lanes**
 - 3.00m Travel Lanes (6.00m Combined)
-  **On-Street Parking**
 - Singles: 9.80m Between Driveways = Accommodates 1 Car Only
 - Towns: 5.40m & 7.80m Between Driveways = Limited Parking Spaces
-  **Traffic Calming**
 - On-Street Parking Provides Some Traffic Calming
-  **Snow Storage**
 - Singles: 41.25m² (11.00m [9.80m + 1.20m] x 3.75m) of Snow Storage
 - Towns: 49.50m² (13.20m [5.40m + 7.80m] x 3.75m) of Snow Storage
-  **Tree Health**
 - Singles: 88.20m³ (9.80m x 6.00m x 1.50m) of Soil Volume
 - Towns: 59.13m³ (5.40m x 7.30m x 1.50m) & 85.41m³ (7.80m x 7.30m x 1.50m) of Soil Volume
-  **Utilities & Servicing**
 - Joint Utility Trenches (1.135m) Located Within the Boulevards on Both Sides of the Street

-  **Sidewalk**
 - 1.8m Curb Face Sidewalk on One Side of the Street
-  **Travel Lanes**
 - 2.75m Travel Lanes (5.50m Combined) [-0.25m = -3.75km/h]
-  **On-Street Parking**
 - Singles: 12.50m [+2.70m] Between Driveways = Accommodates 2 Cars [+1 Car]
 - Towns: 8.40m [+3.00m] & 10.90m [+3.10m] Between Driveways = Accommodates 3 Cars [+1 Car]
-  **Traffic Calming**
 - Reduced Travel Lane Widths & On-Street Parking will Provide Additional Traffic Calming
-  **Snow Storage**
 - Singles: 50.005m² (13.70m x 3.65m) [+8.755m²] of Snow Storage
 - Towns: 70.445m² (19.30m x 3.65m) [+20.945m²] of Snow Storage
-  **Tree Health**
 - Singles: 108.75m³ (12.50m x 5.80m x 1.50m) [+20.55m³] of Soil Volume
 - Towns: 73.08m³ (8.40m x 5.80m x 1.50m) [+13.95m³] & 94.83m³ (10.90m x 5.80m x 1.50m) [+9.42m³] of Soil Volume
-  **Utilities & Servicing**
 - Joint Utility Trenches (0.90m) Located Within the Boulevard on One Side of the Street and Under the Sidewalk on the Other

C A I V A N

NAK 
design strategies