16.5m Right-of-Way & Streetscape Rationale

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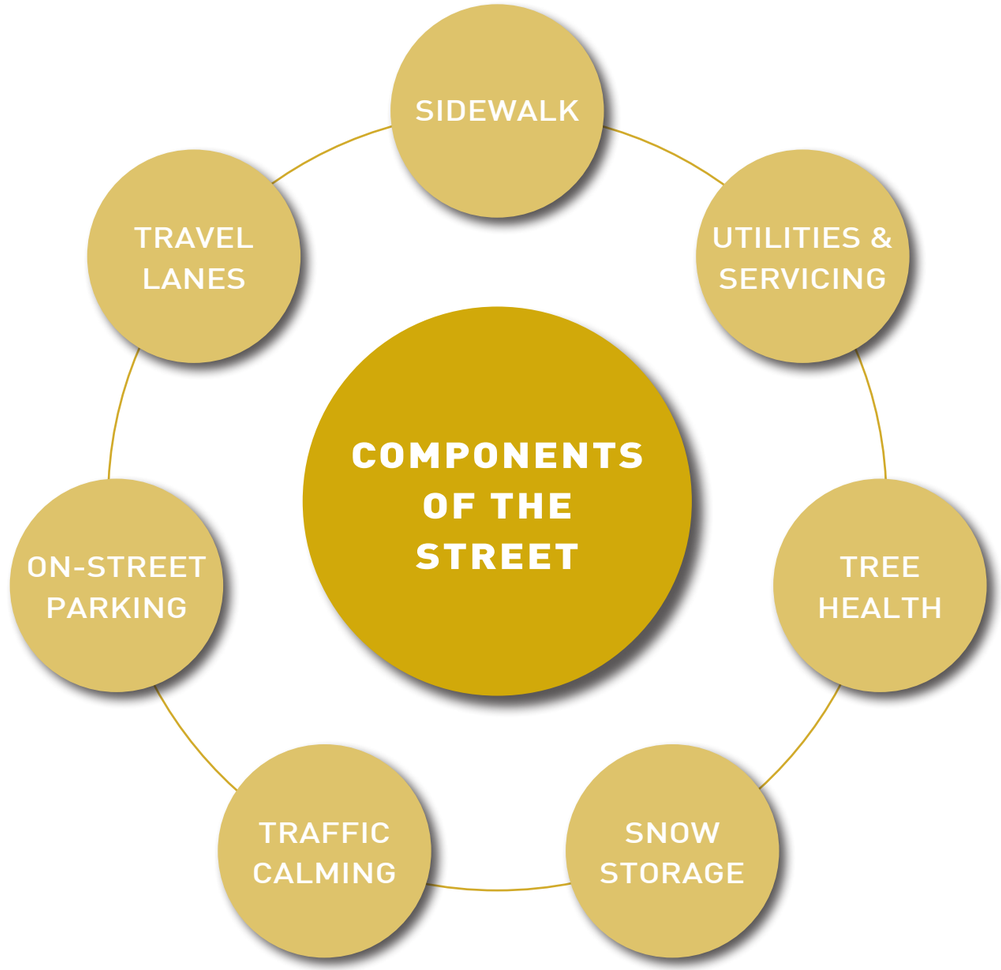
Executive Summary

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

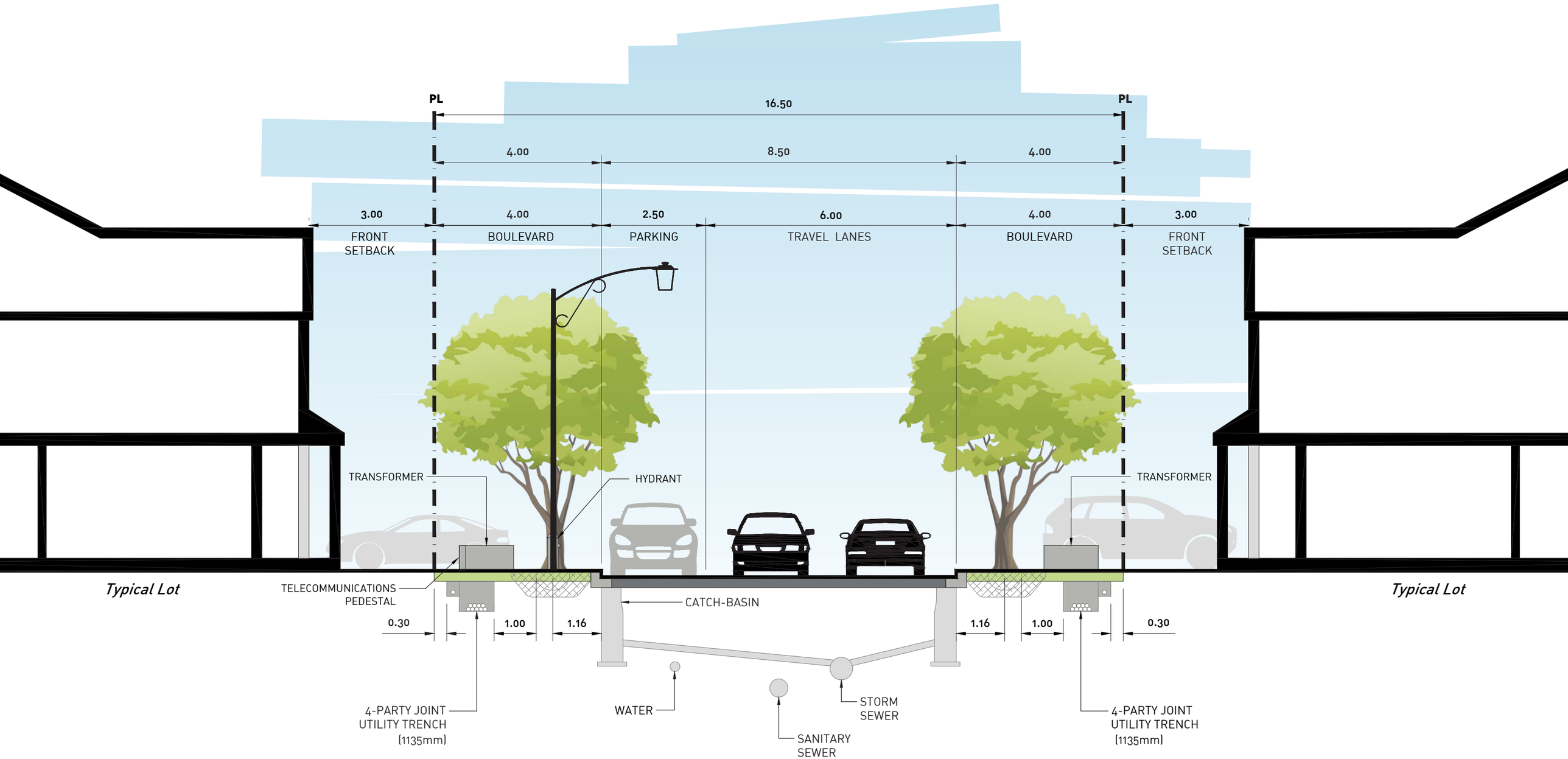
"lost opportunity to use streets as a component of the public realm with trees and sidewalks"

"lack of trees, sidewalks and cycling facilities discourage active transportation"

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

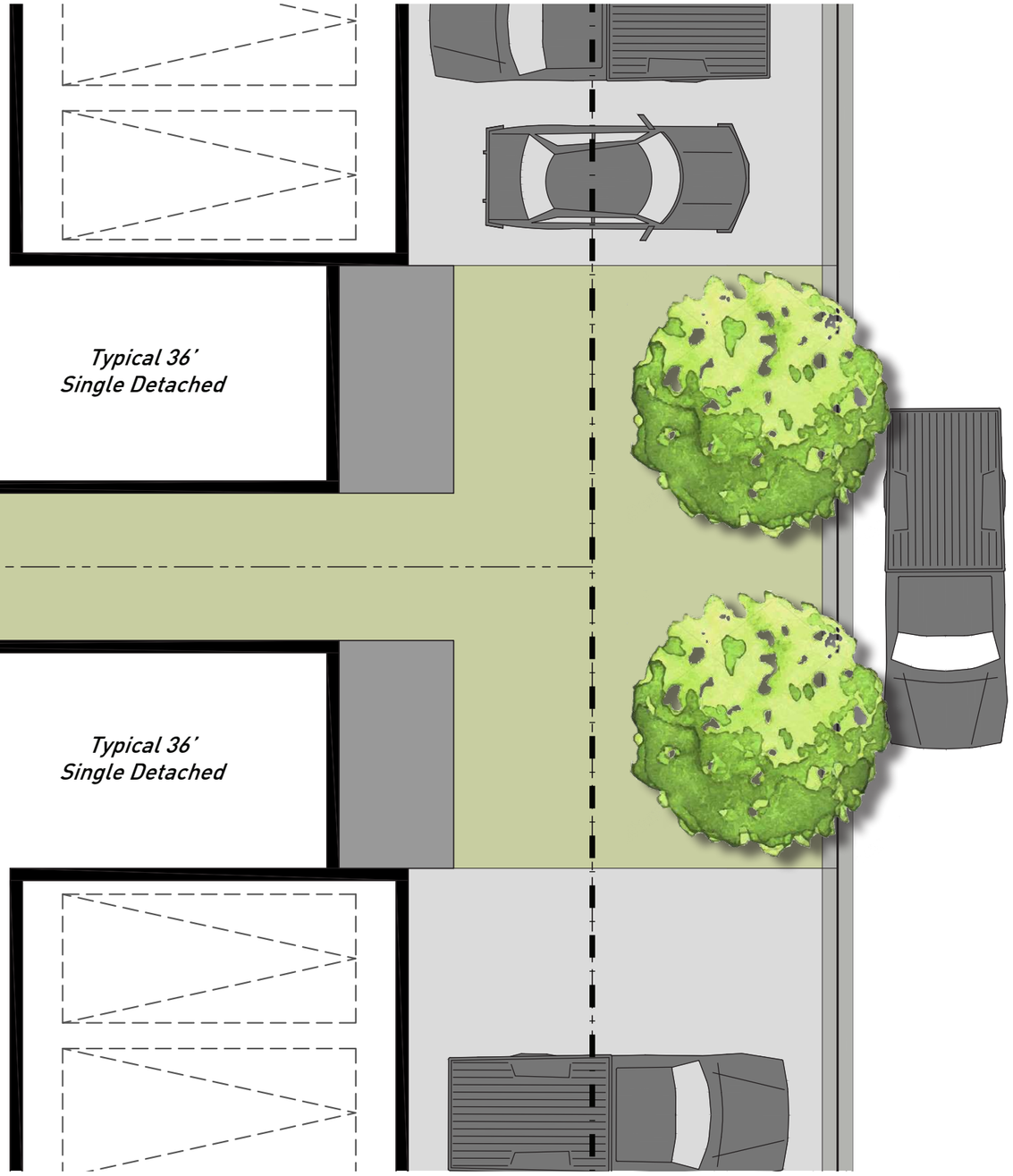
City of Ottawa's 16.5m Right-of-Way

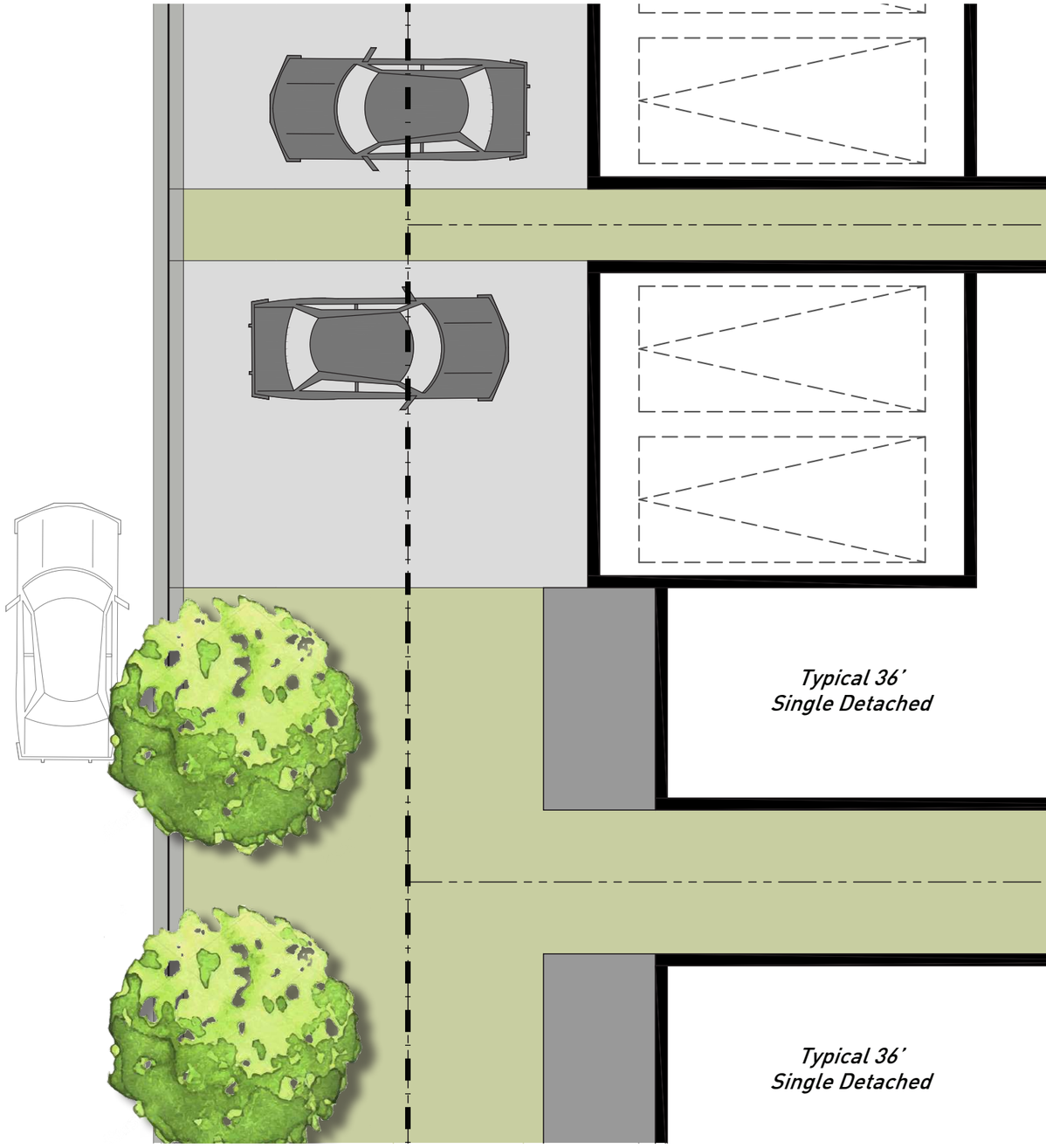
WITHOUT SIDEWALK | SECTION



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)

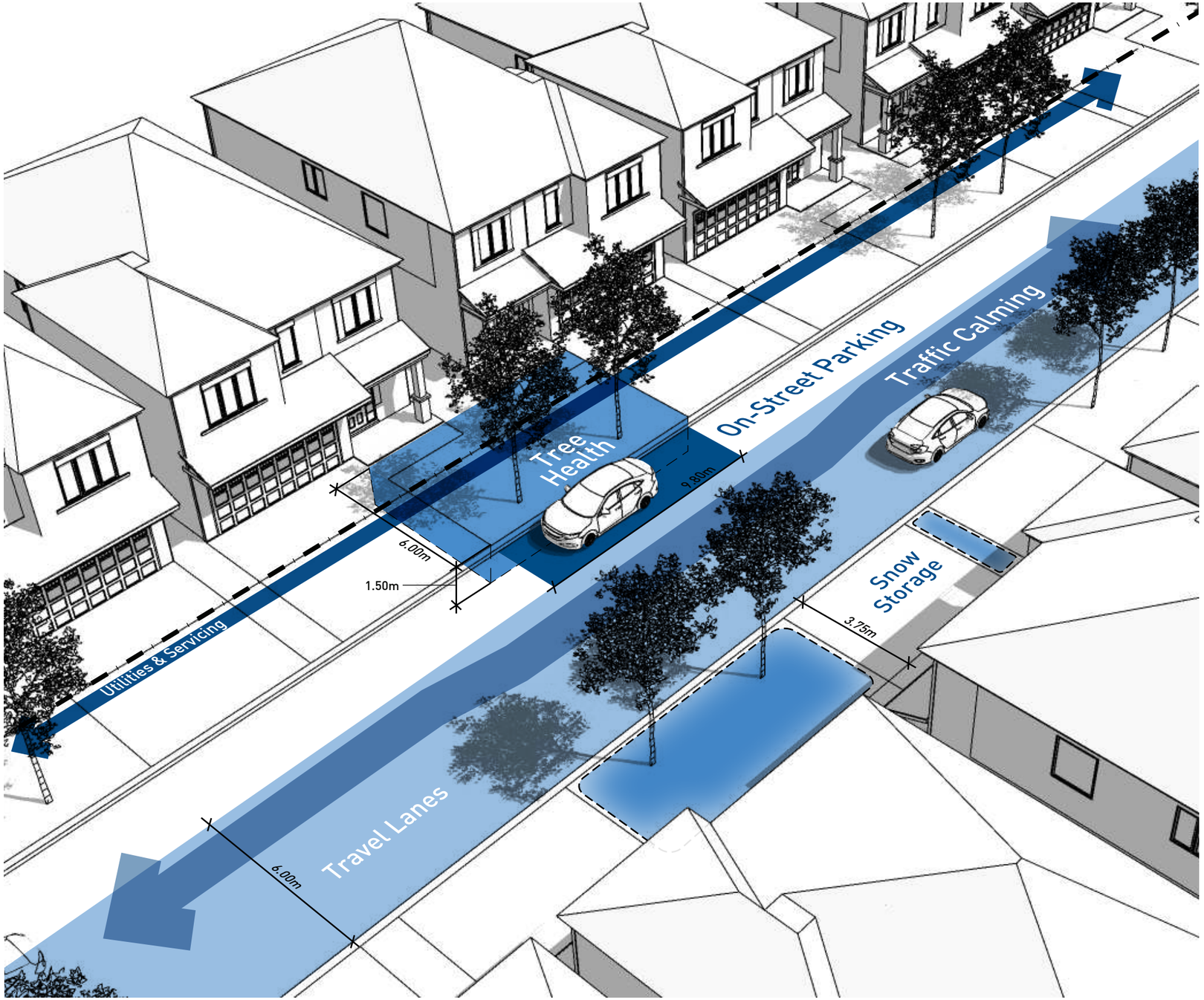
On-Street Parking
- 9.80m Between Driveways (Typical)
- Accommodates 1 Car Only

Traffic Calming
- On-Street Parking Provides Some Traffic Calming

Snow Storage
- 41.25m^2 of Snow Storage (Typical) (11.00m [9.80m + 1.20m] x 3.75m)

Tree Health
- 88.20m^3 of Soil Volume (Typical) (9.80m x 6.00m x 1.50m)

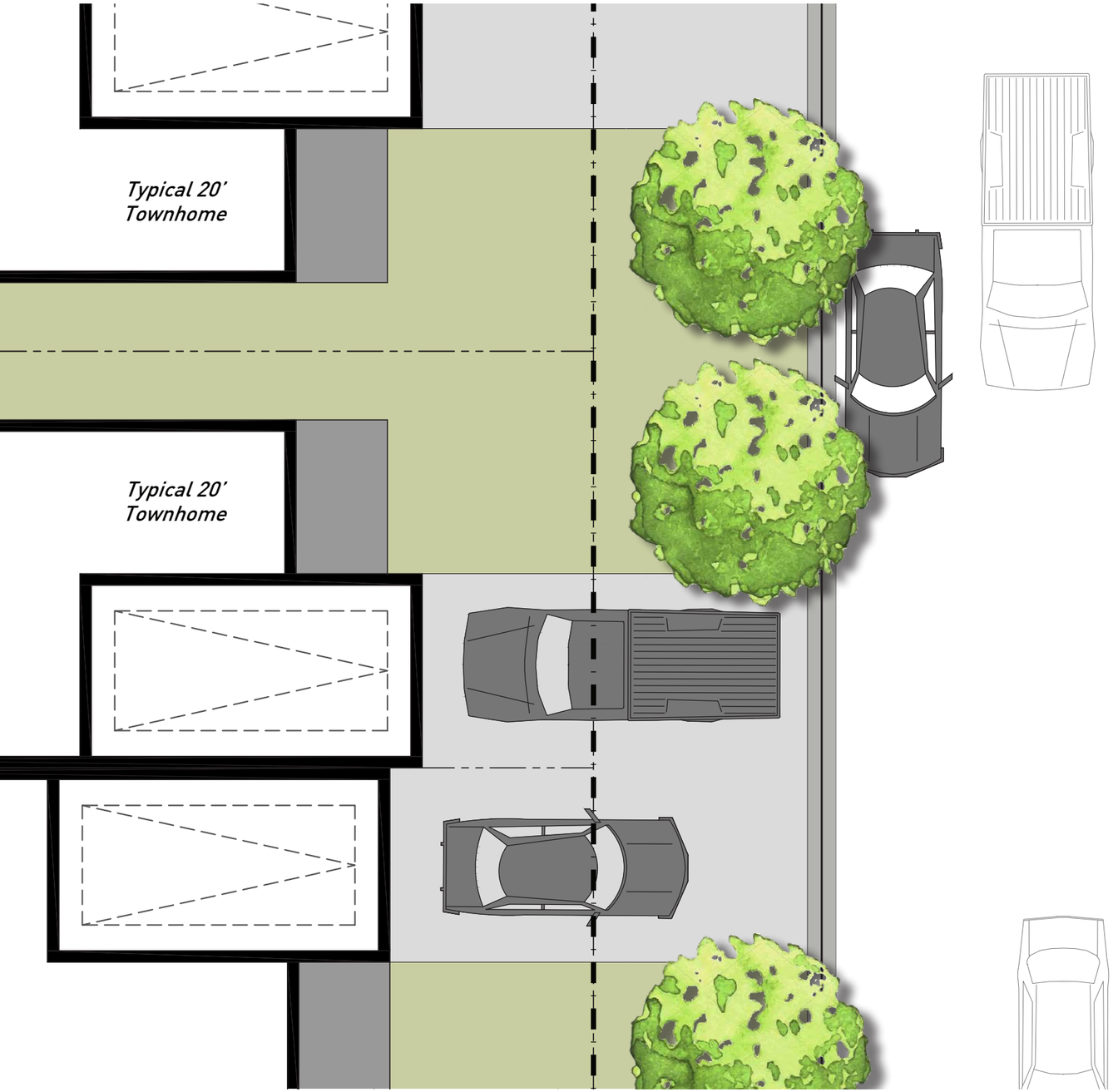
Utilities & Servicing
- Joint Utility Trenches (1.135m) Located Within the Boulevards on Both Sides of the Street

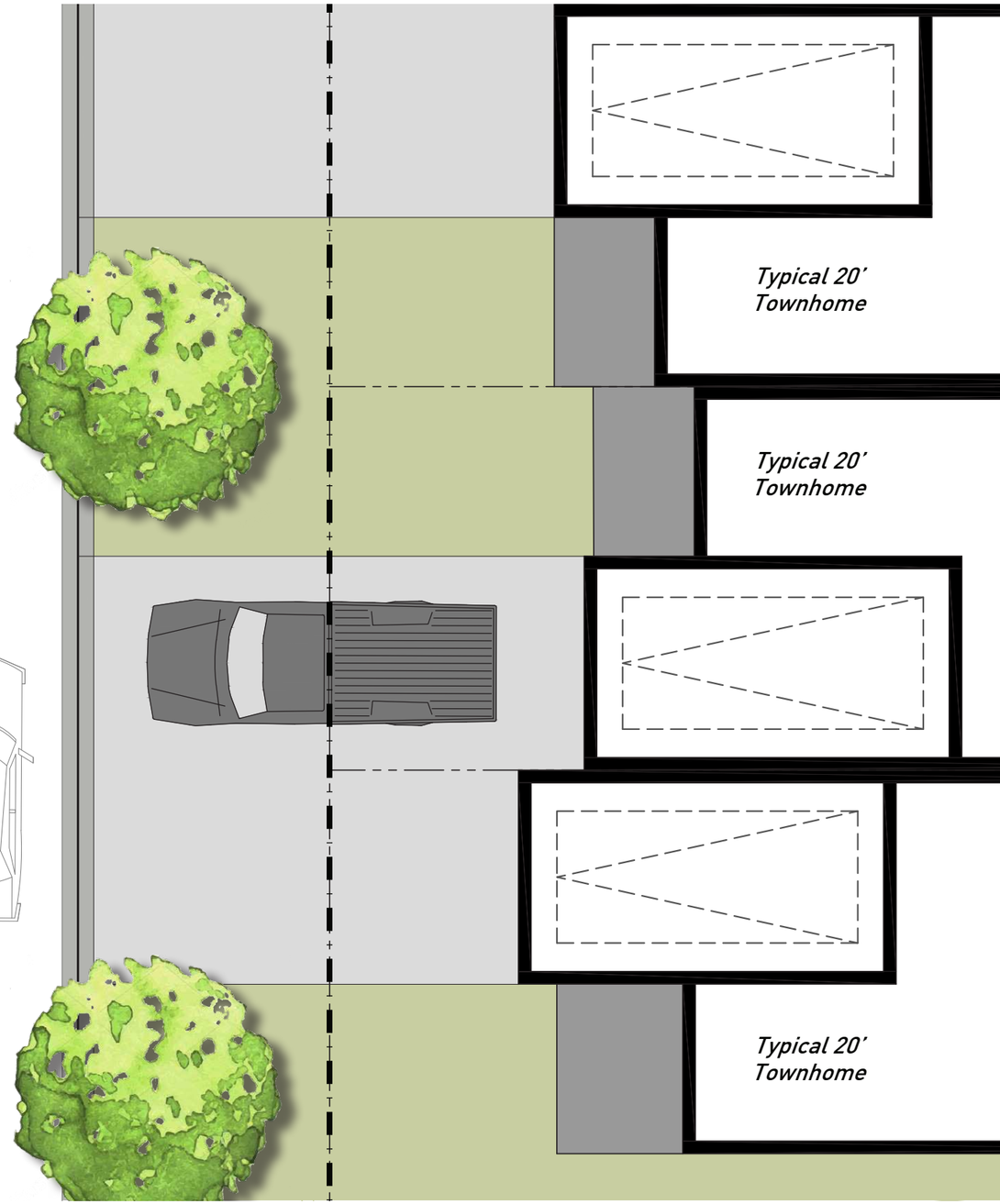


* Typical 36' Single Detached Home Demonstrated

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

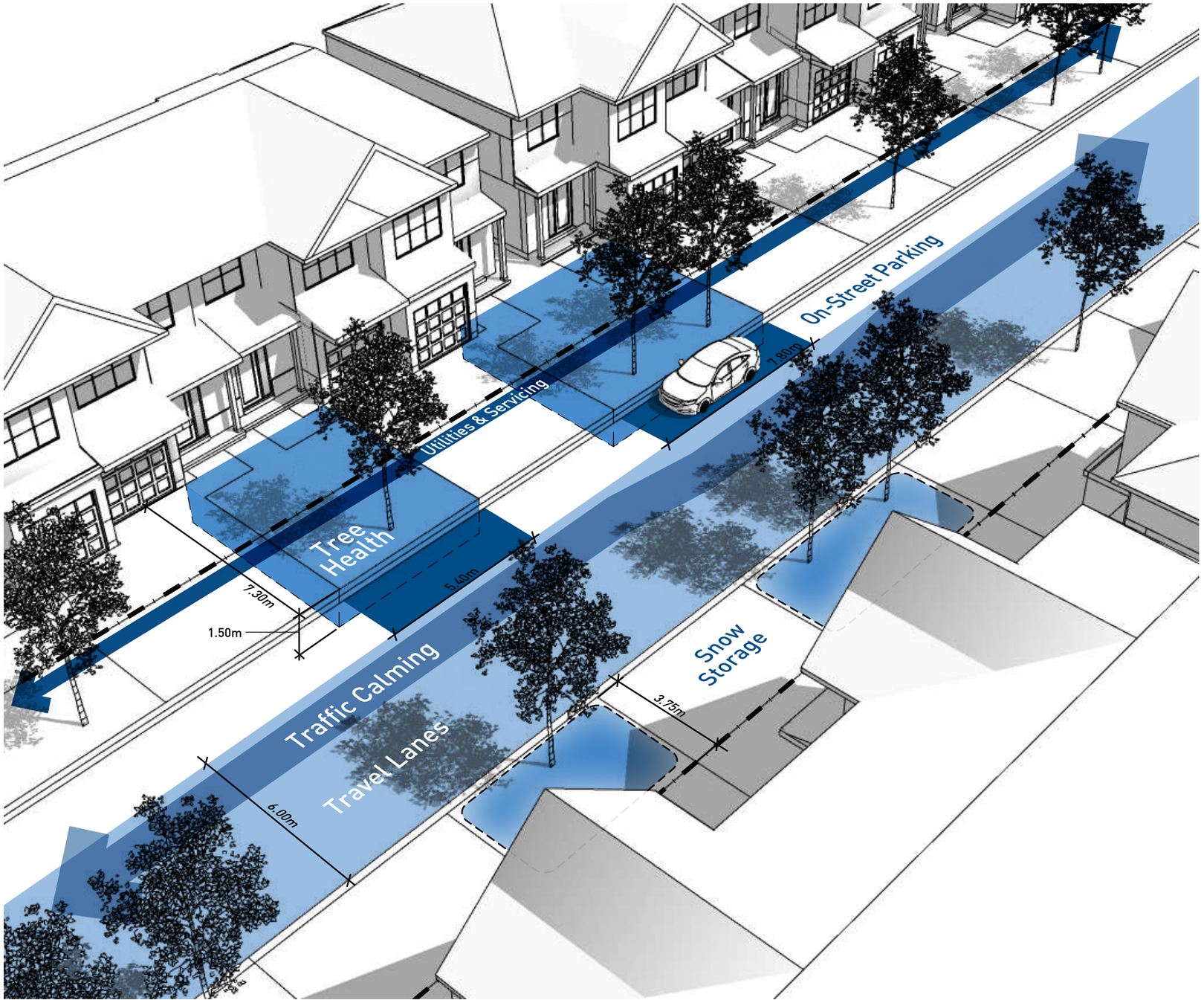
Traffic Calming
- On-Street Parking Provides Some Traffic Calming

Snow Storage
- 49.50m^2 of Snow Storage (Typical) (13.20m [5.40m + 7.80m] x 3.75m)

Tree Health
- Typical Soil Volumes:
  Internal Units = 59.13m^3 (5.40m x 7.30m x 1.50m)
  End Units = 85.41m^3 (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

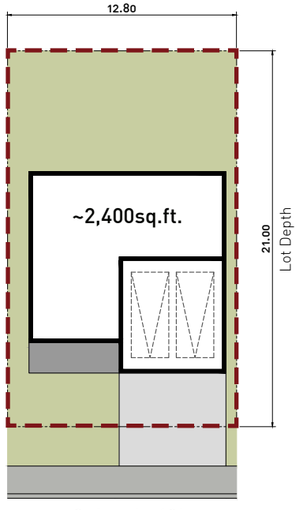


"ROW cross-sections, roadway widths, and design speeds should respond to built form and land use context"

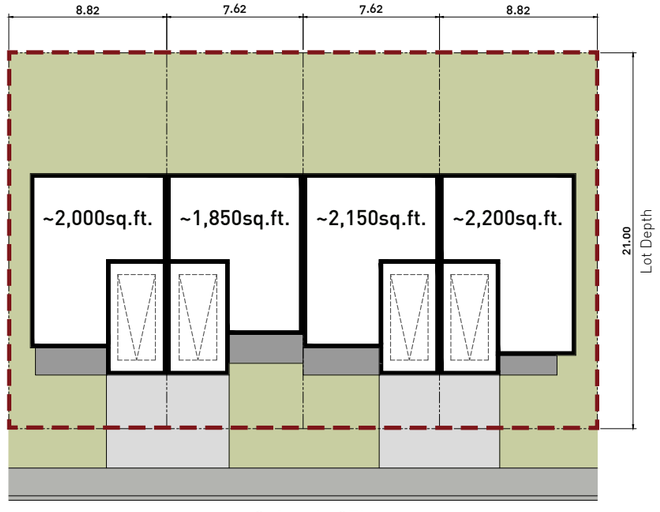
- Building Better and Smarter Suburbs: Strategic Directions and Action Plan (pg. 48)

Caivan's OpenPlan™
LOT COMPARISON FIGURE

Caivan's OpenPlan™

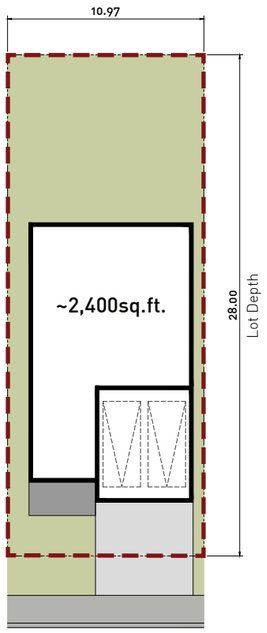


Caivan's 42'
Single Detached
LOT AREA: 268.8m²

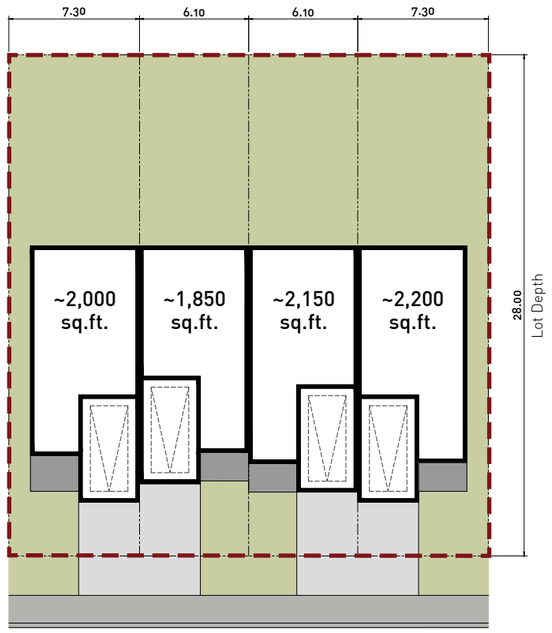


Caivan's 25'
Townhome
LOT AREA: 160.0-185.2m²

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'

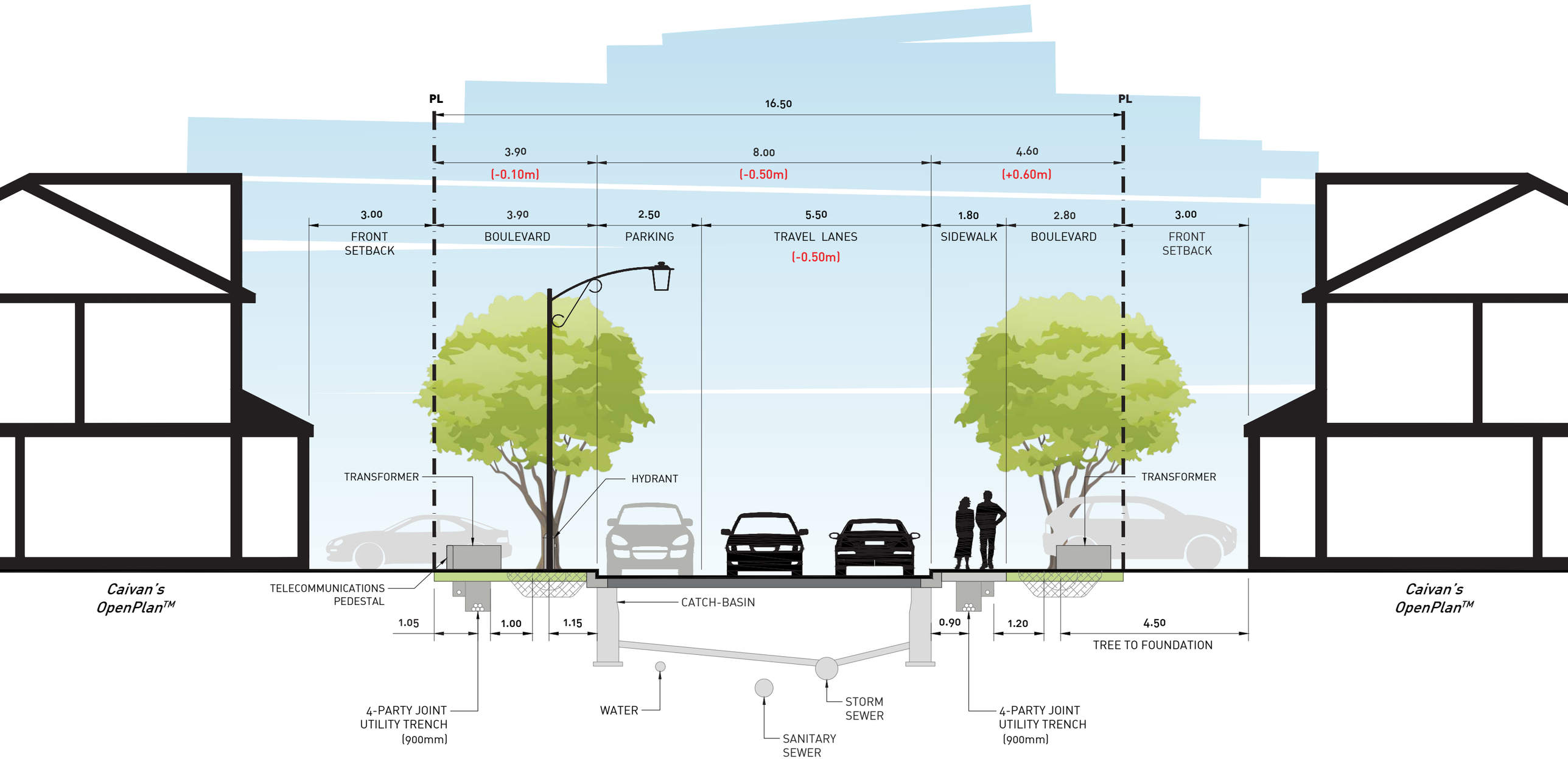
Caivan's 16.5m Right-of-Way

"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

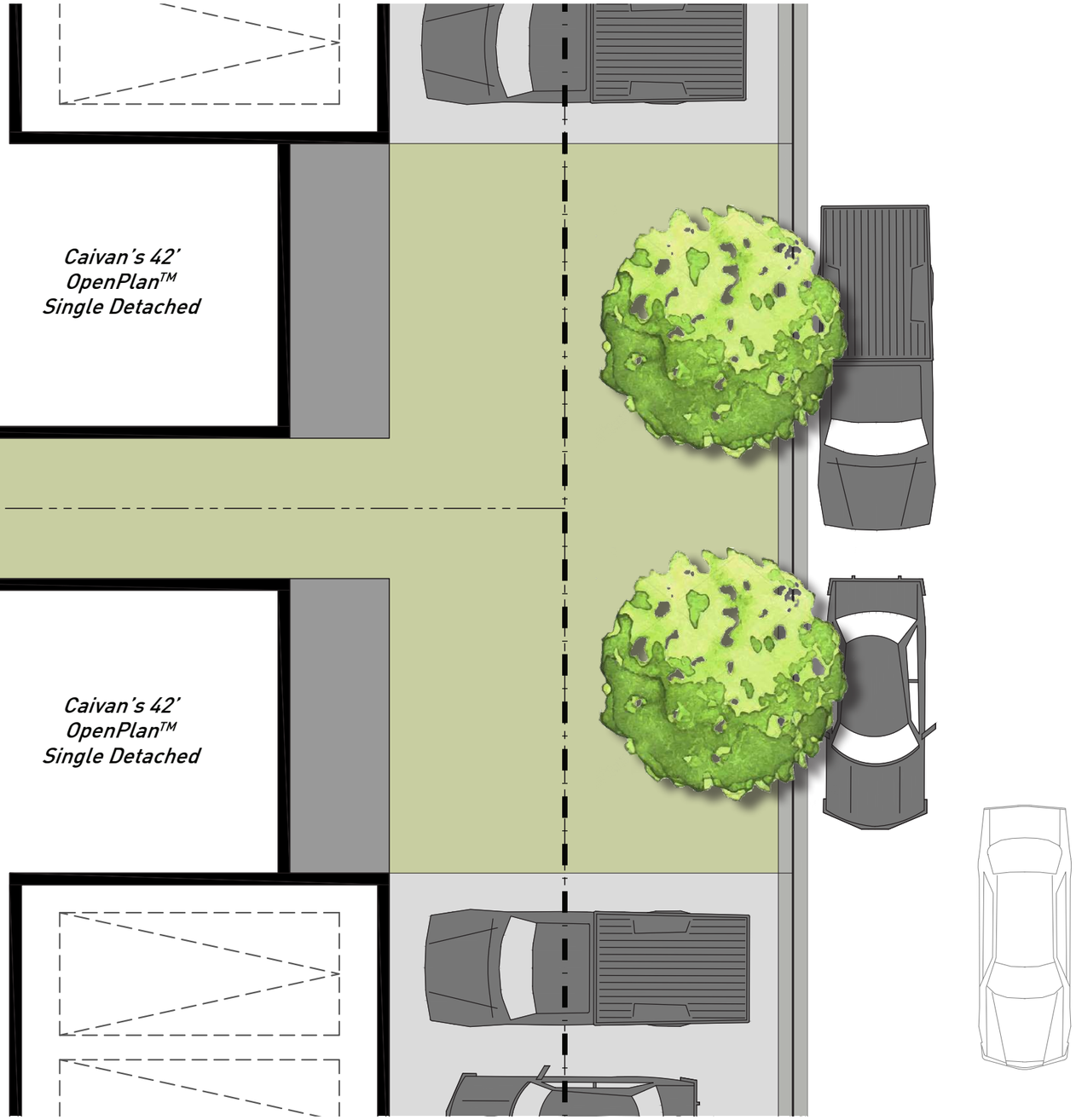


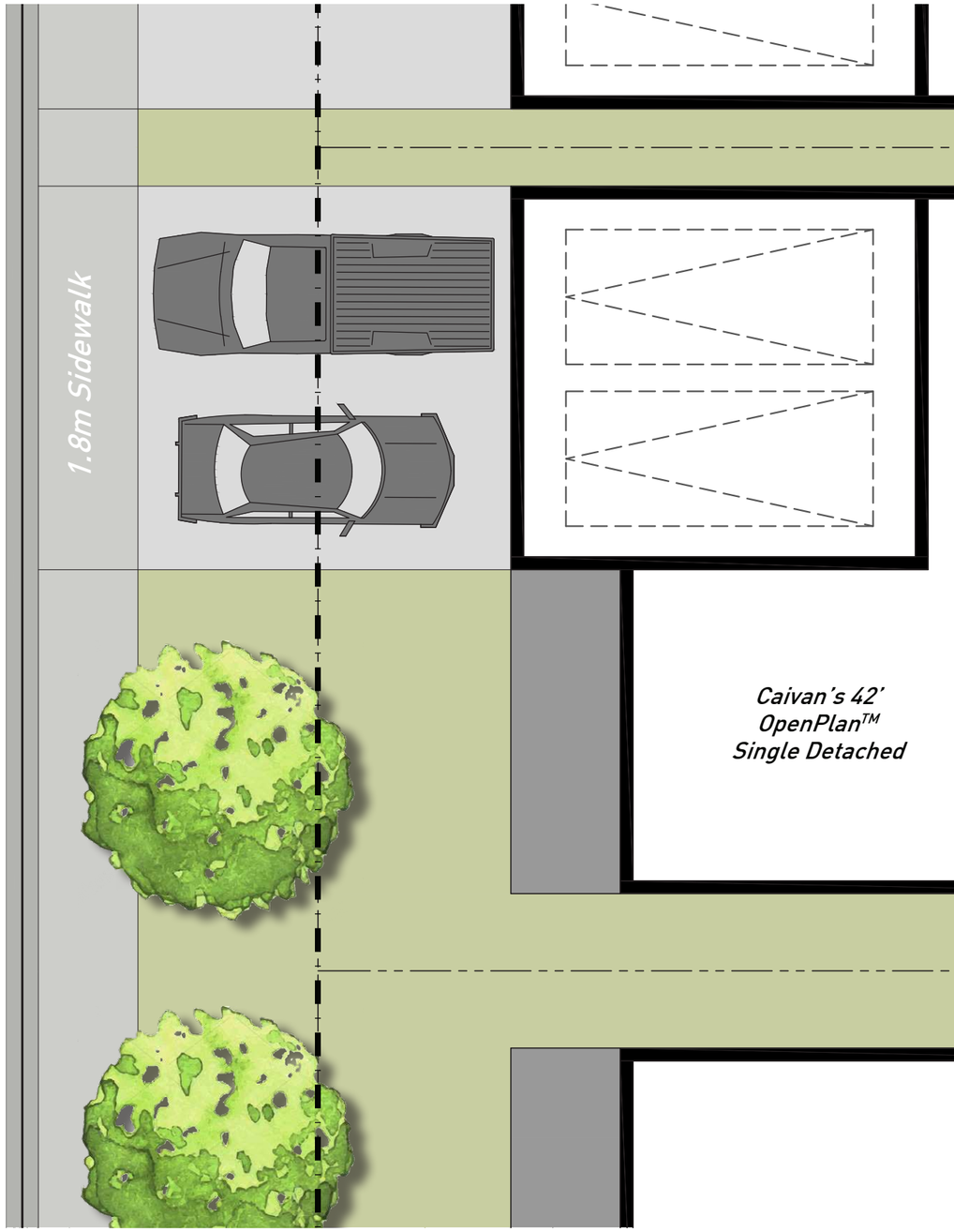
Caivan's OpenPlan™

Caivan's OpenPlan™

Caivan's 16.5m Right-of-Way

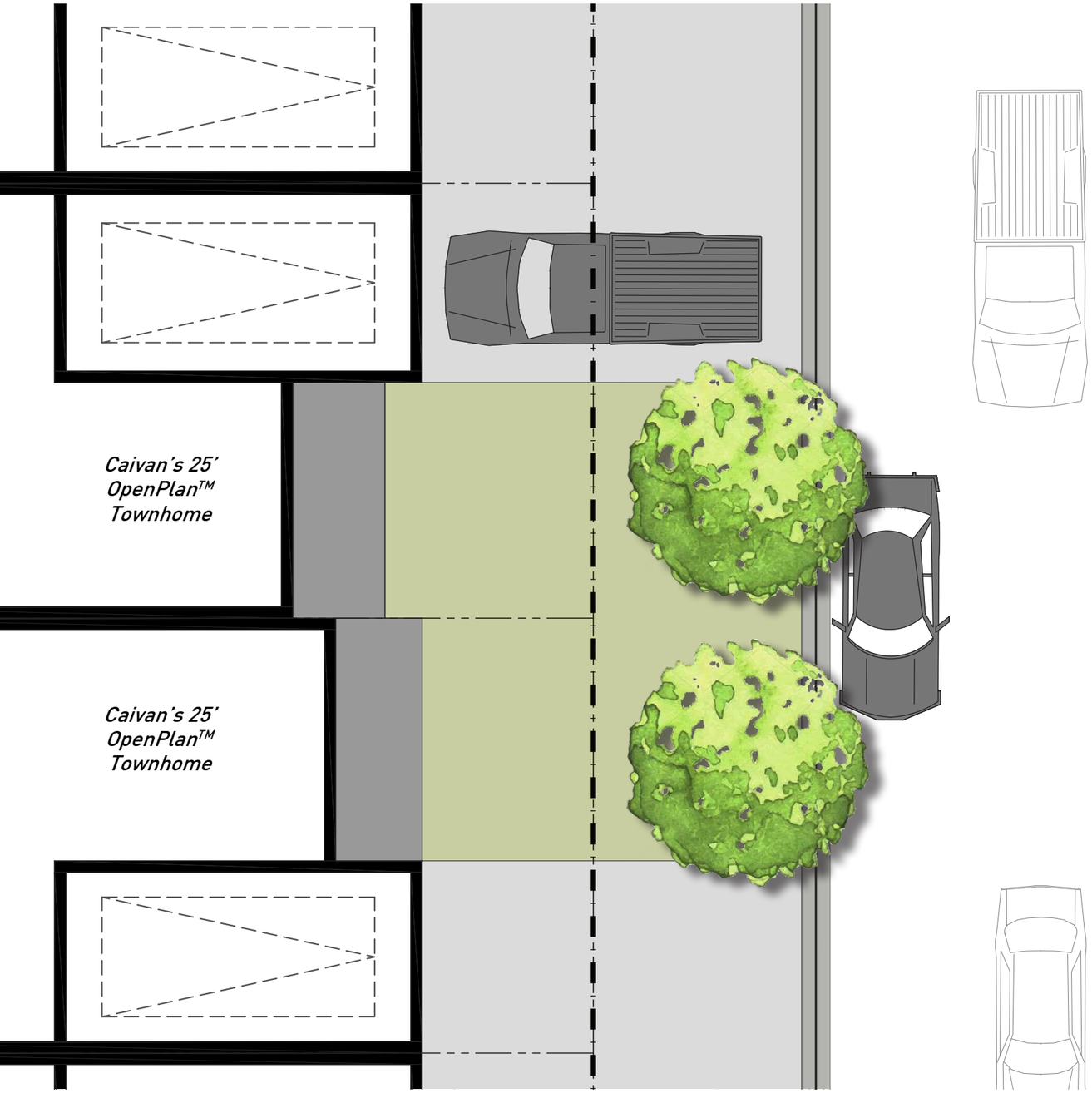
WITH SIDEWALK | SINGLE DETACHED PLAN

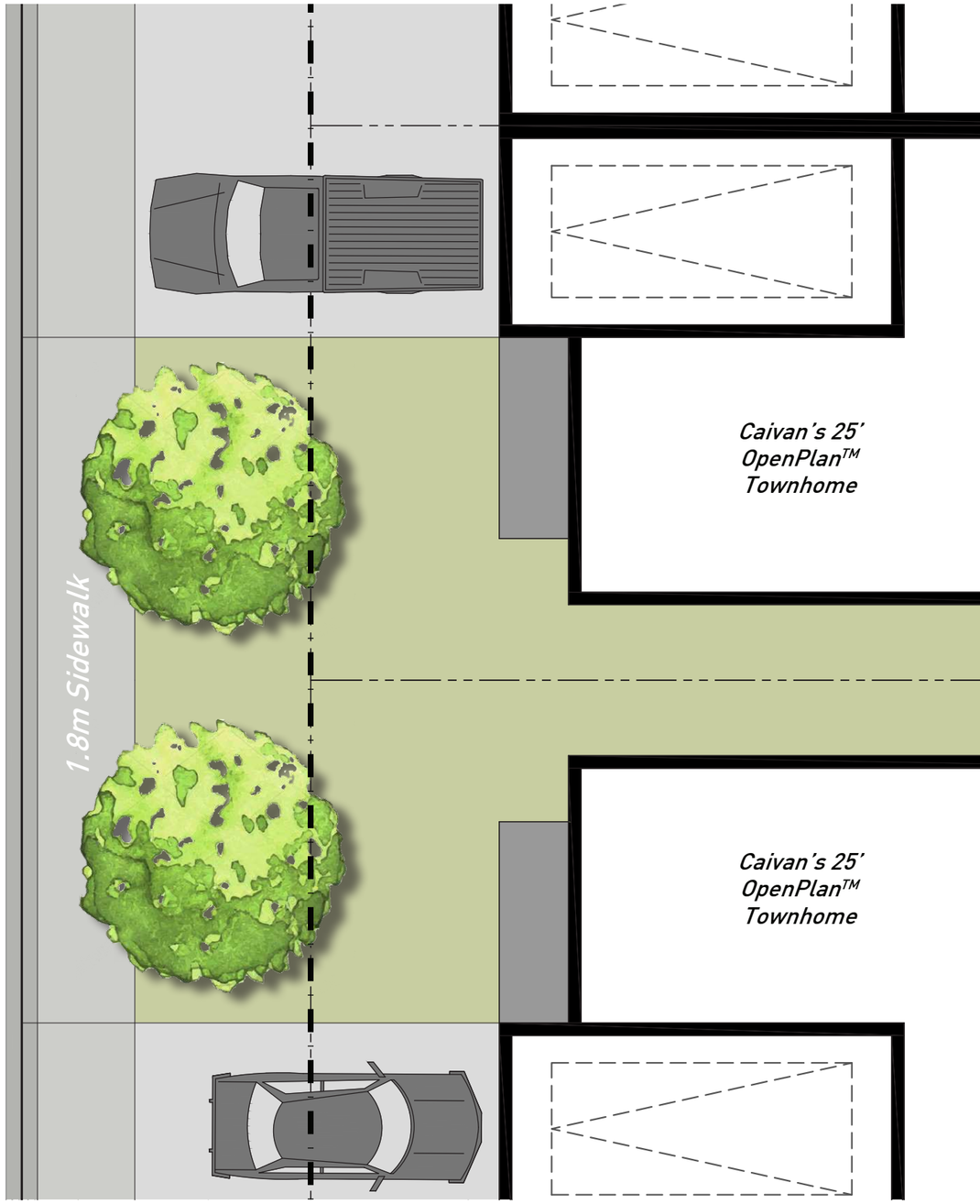




Caivan's 16.5m Right-of-Way

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)

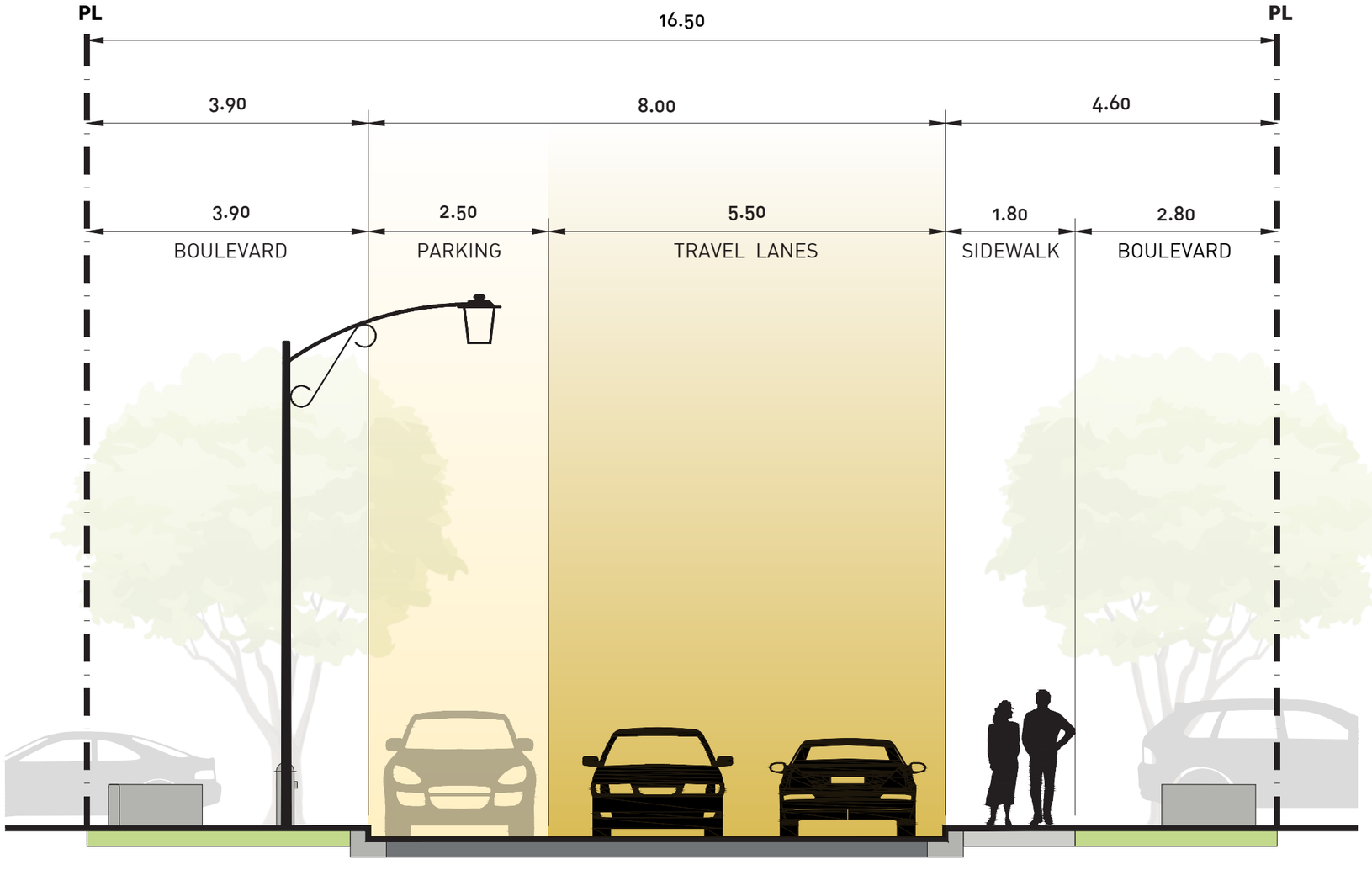
Caivan's 16.5m Right-of-Way
WITH SIDEWALK

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"

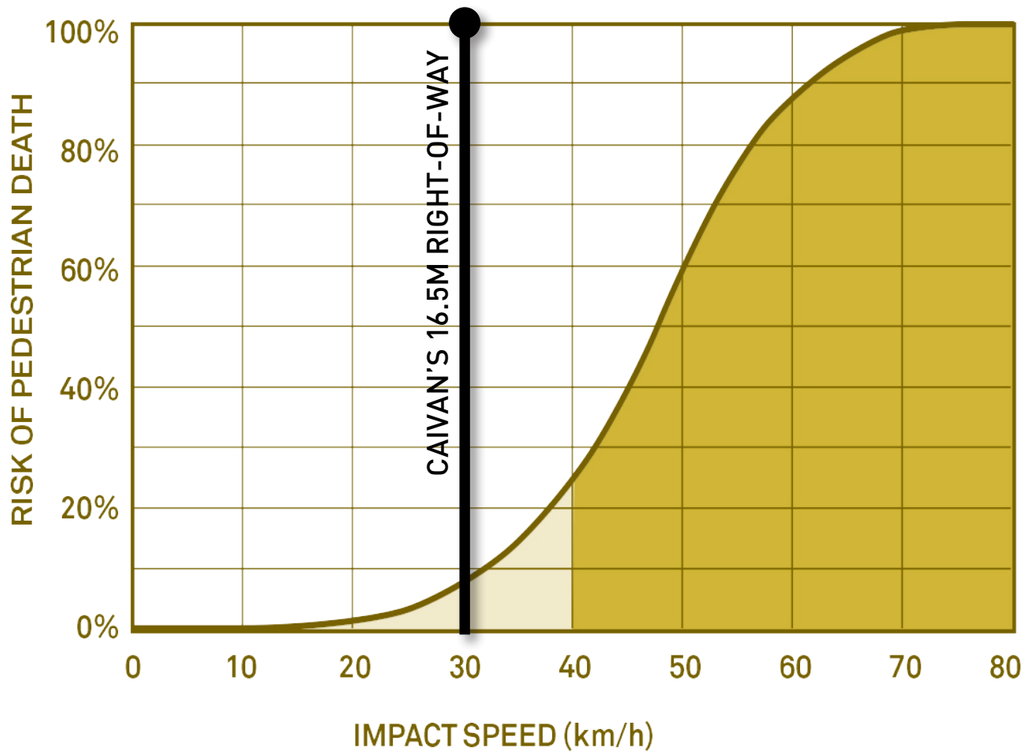
- Building Better and Smarter Suburbs: Strategic Directions and Action Plan (pg. 48)

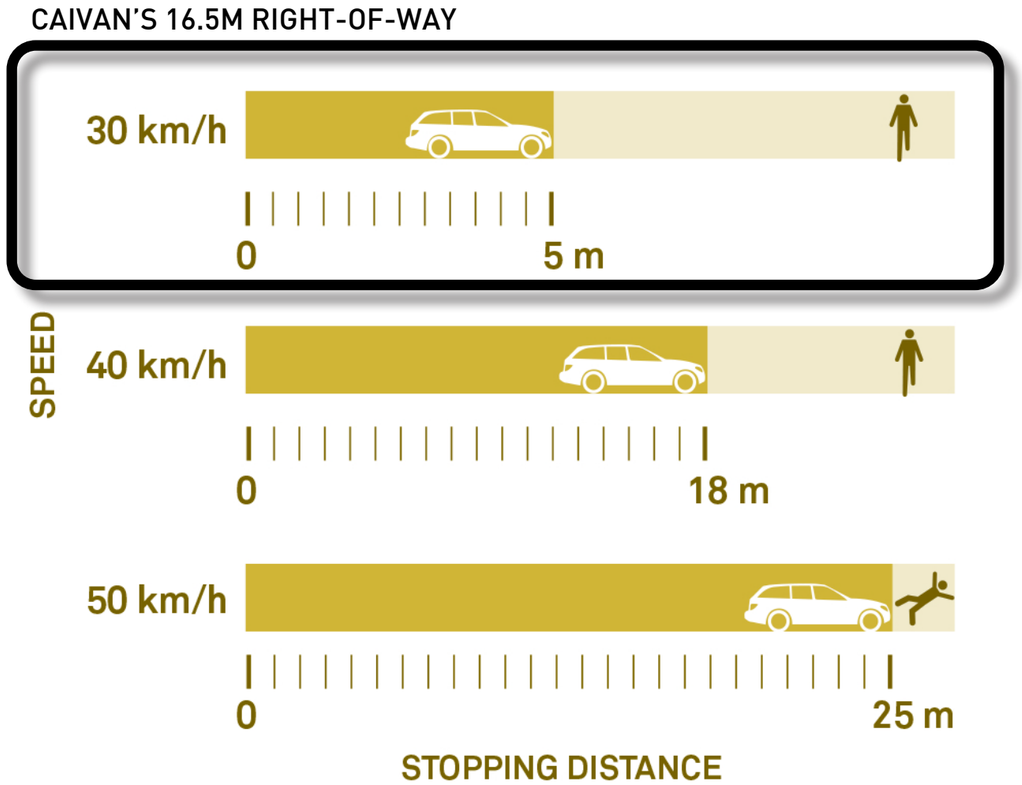


2.75m Travel Lane (-0.25m)
*(-3.75km/h)

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

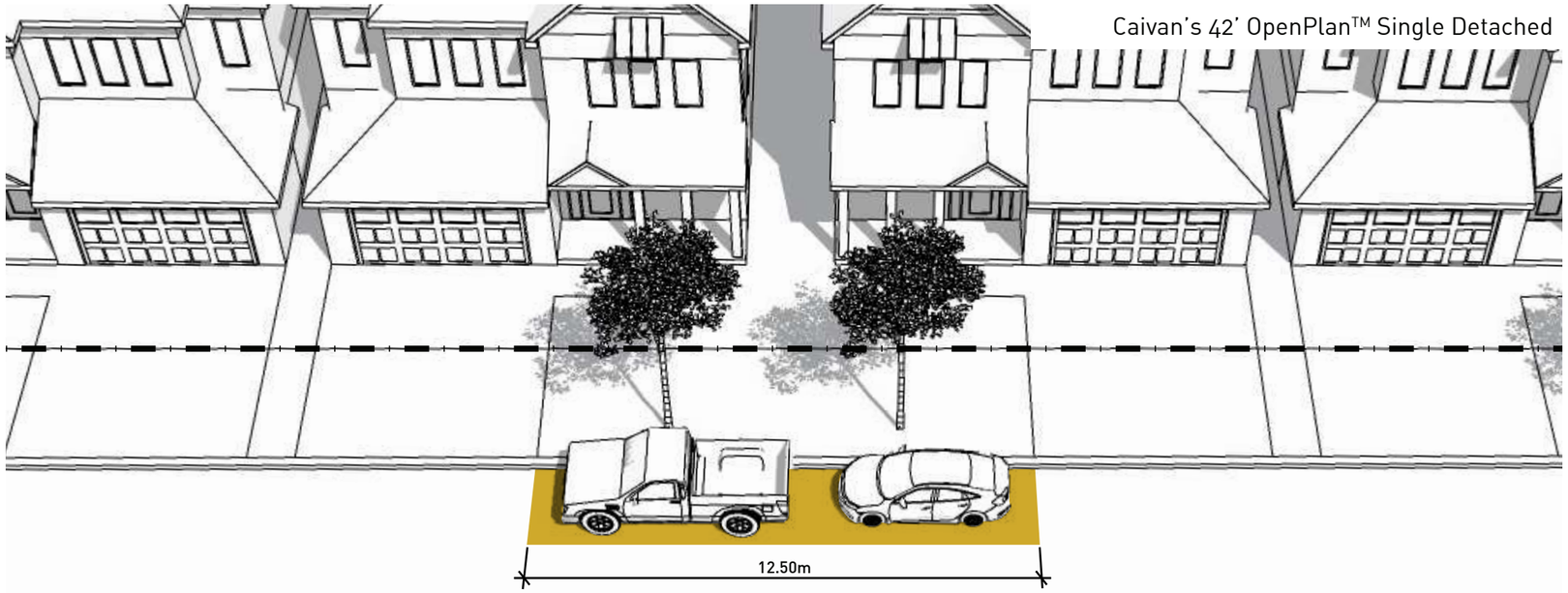
Caivan's 25' OpenPlan™ Townhome On-Street Parking:

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

Length
10.90m
(+3.10m)
(+1 Car)

+5 parking spaces over 100m stretch of road

Caivan's 42' OpenPlan™ Single Detached



Caivan's 25' OpenPlan™ Townhome

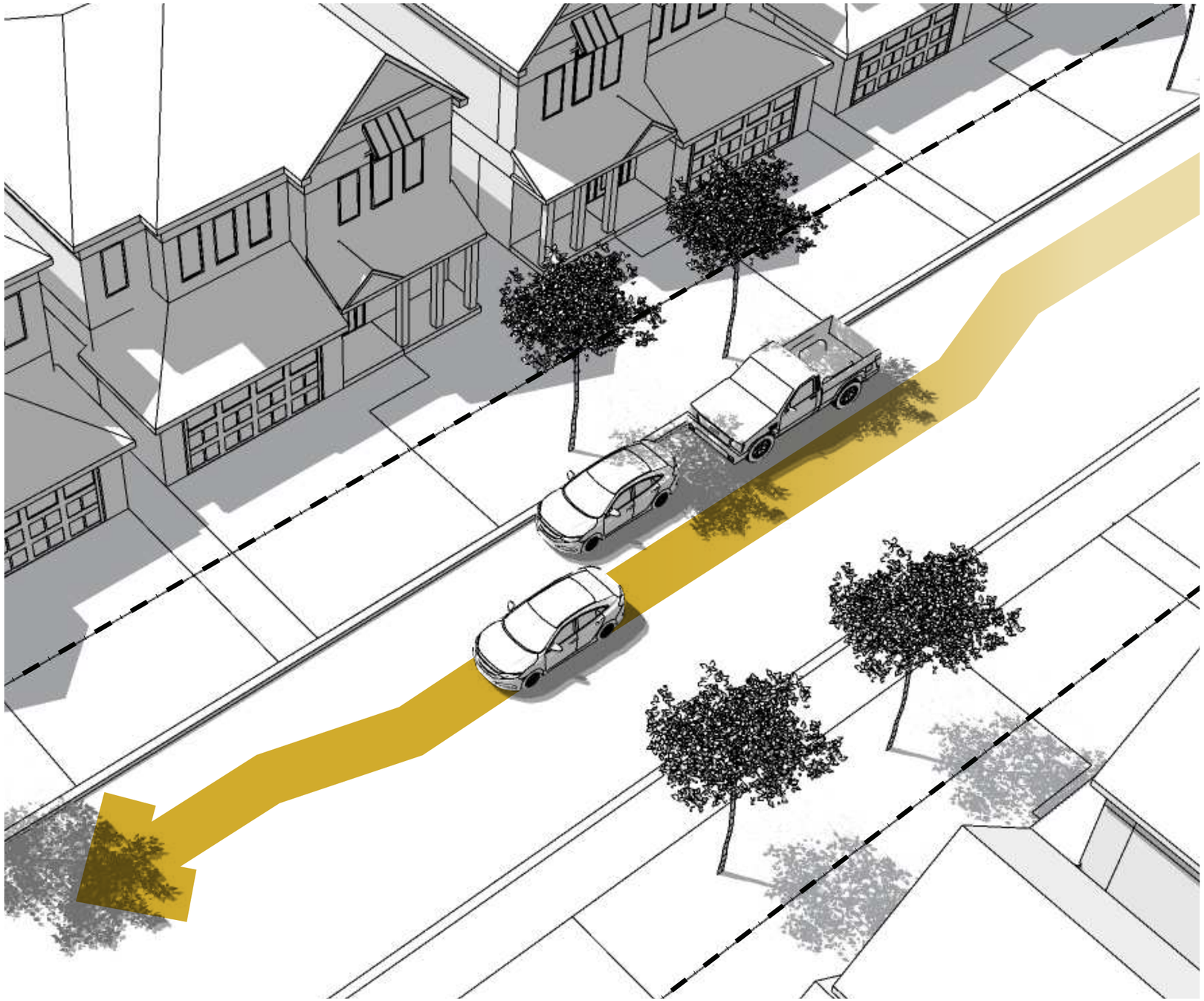
Caivan's 16.5m Right-of-Way
WITH SIDEWALK

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

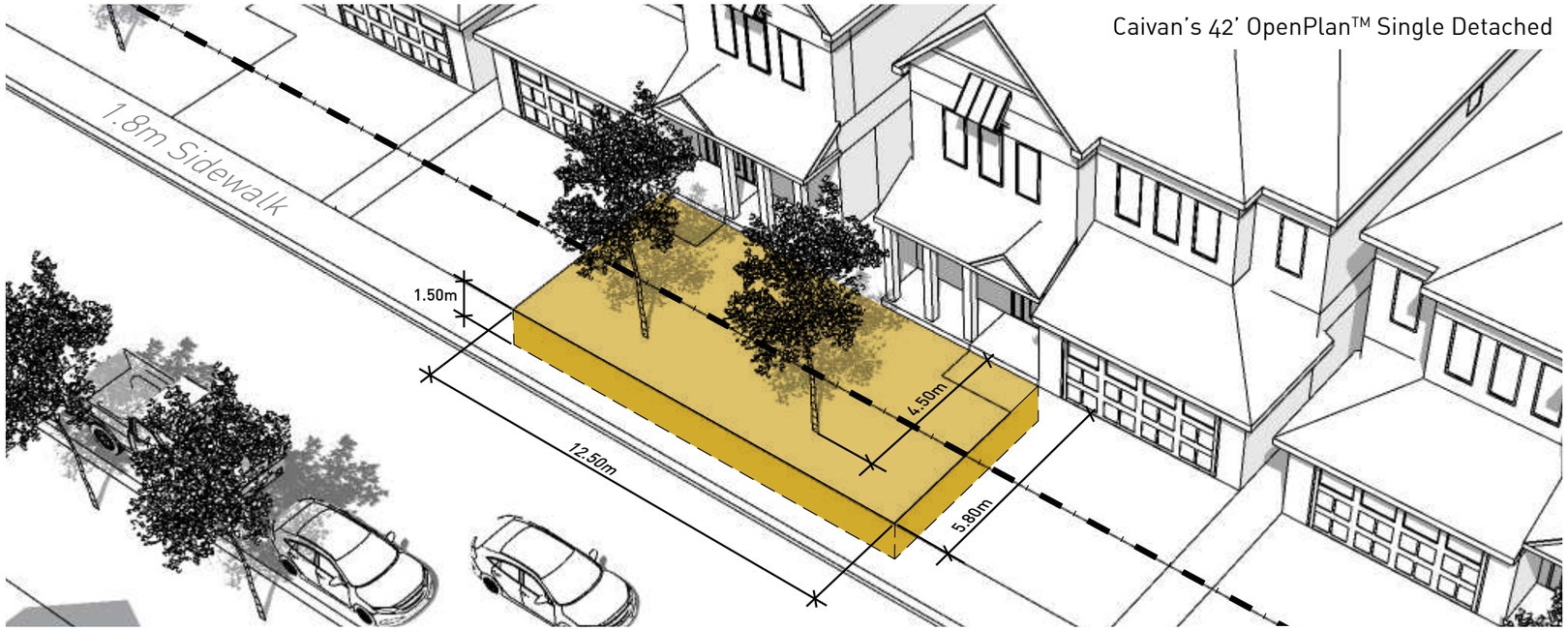
Caivan's 42' OpenPlan™ Single Detached

Caivan's 25' OpenPlan™ Townhome

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:

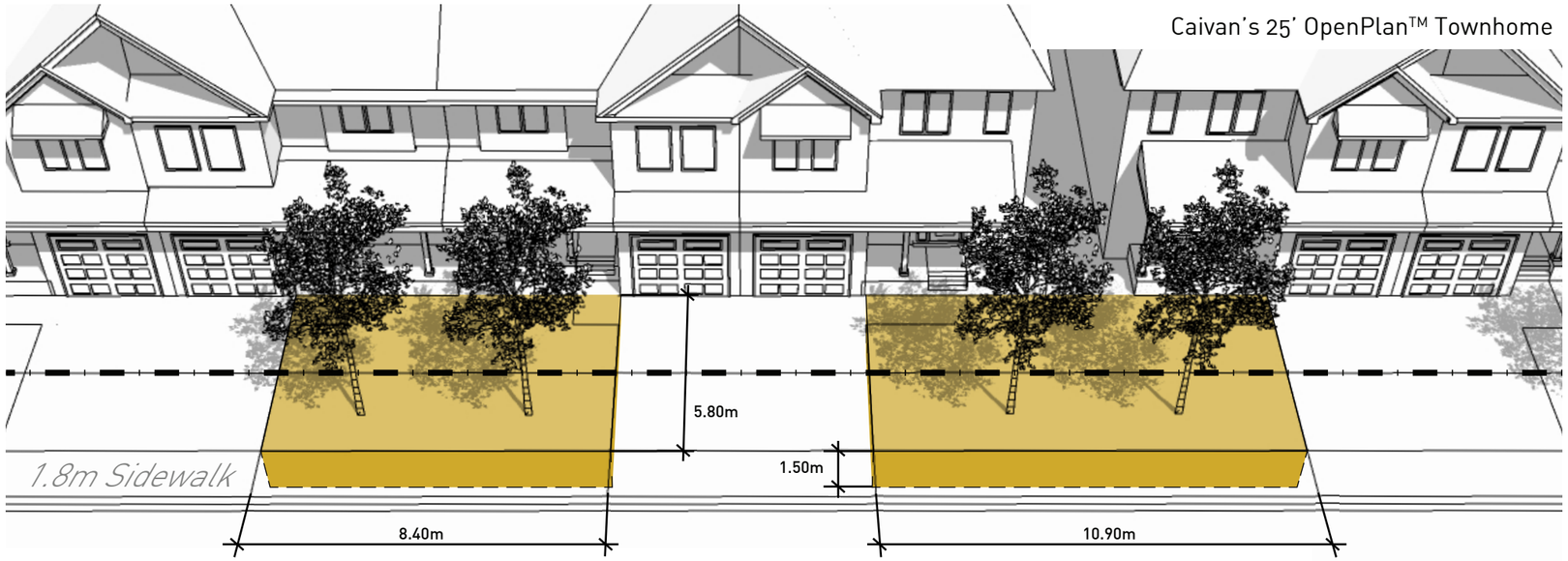
Length: 8.40m
Width: 5.80m
Depth: 1.50m

Soil Volume
73.08m³
(+13.95m³)

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

Soil Volume
94.83m³
(+9.42m³)

+44.00m³ over 100m stretch of road

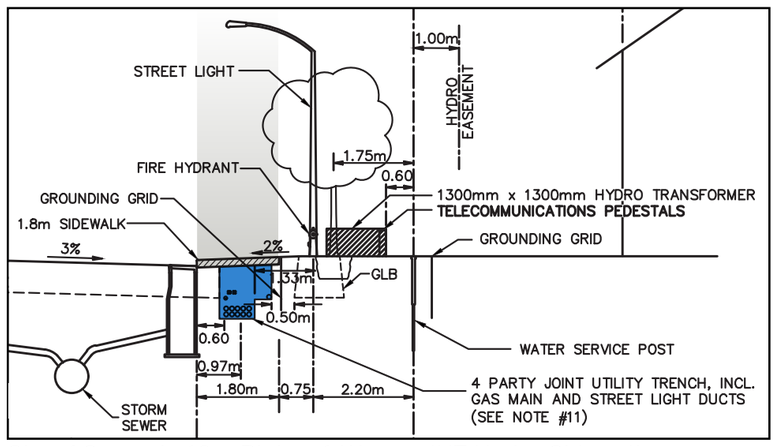


* Front Setback to Vary Based on Soil Conditions

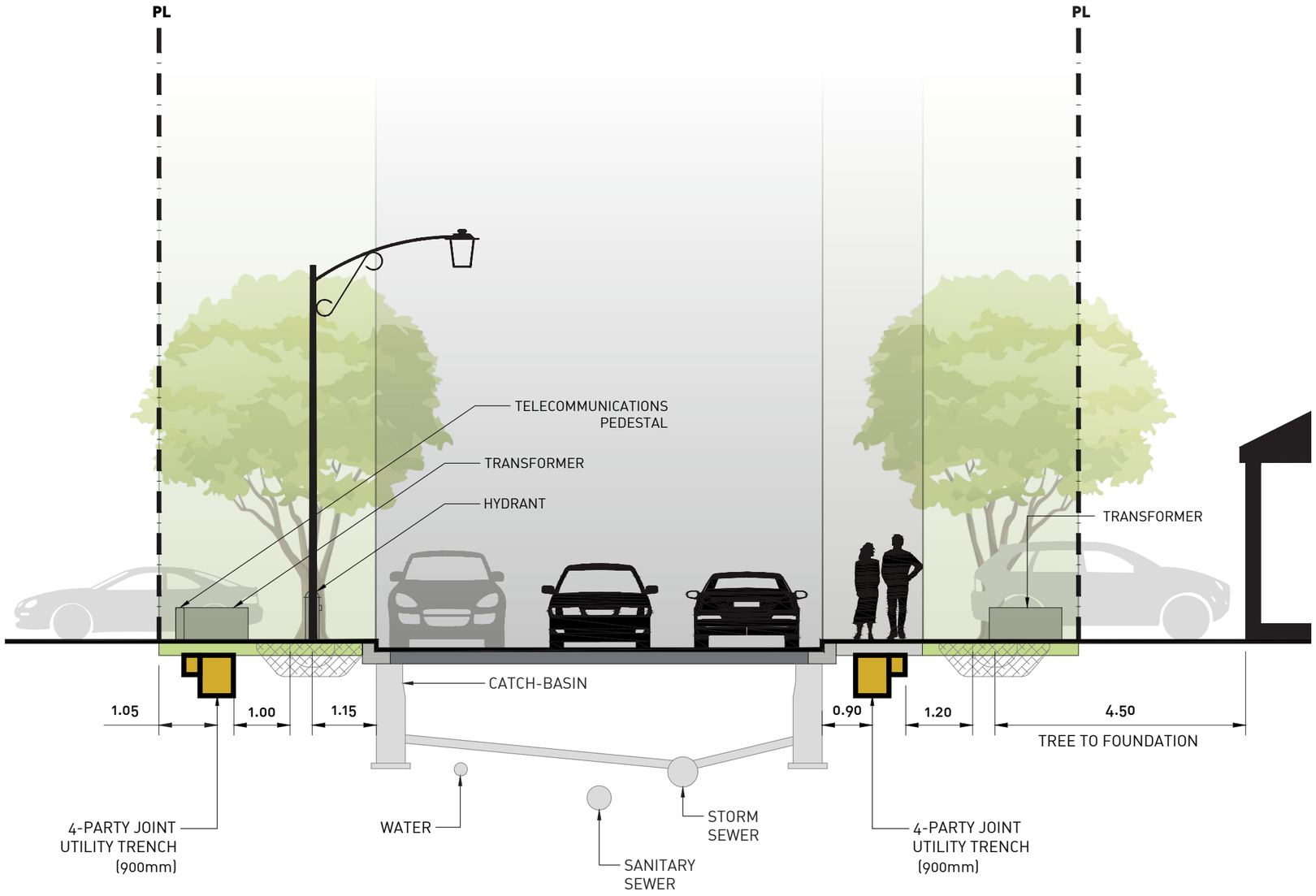
Caivan's 16.5m Right-of-Way
WITH SIDEWALK

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

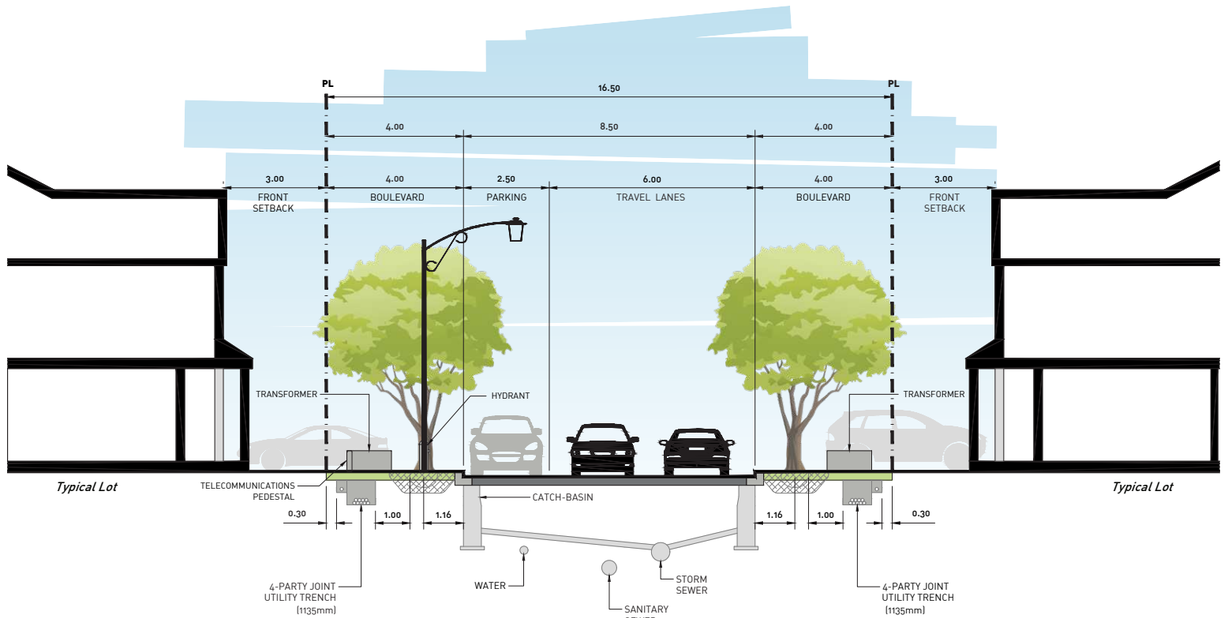


City of Ottawa's 18m Right-of-Way w. JUT Under Sidewalk



Caivan's 16.5m Right-of-Way
SUMMARY & COMPARISON

CITY OF OTTAWA'S 16.5M ROW
WITHOUT SIDEWALK



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

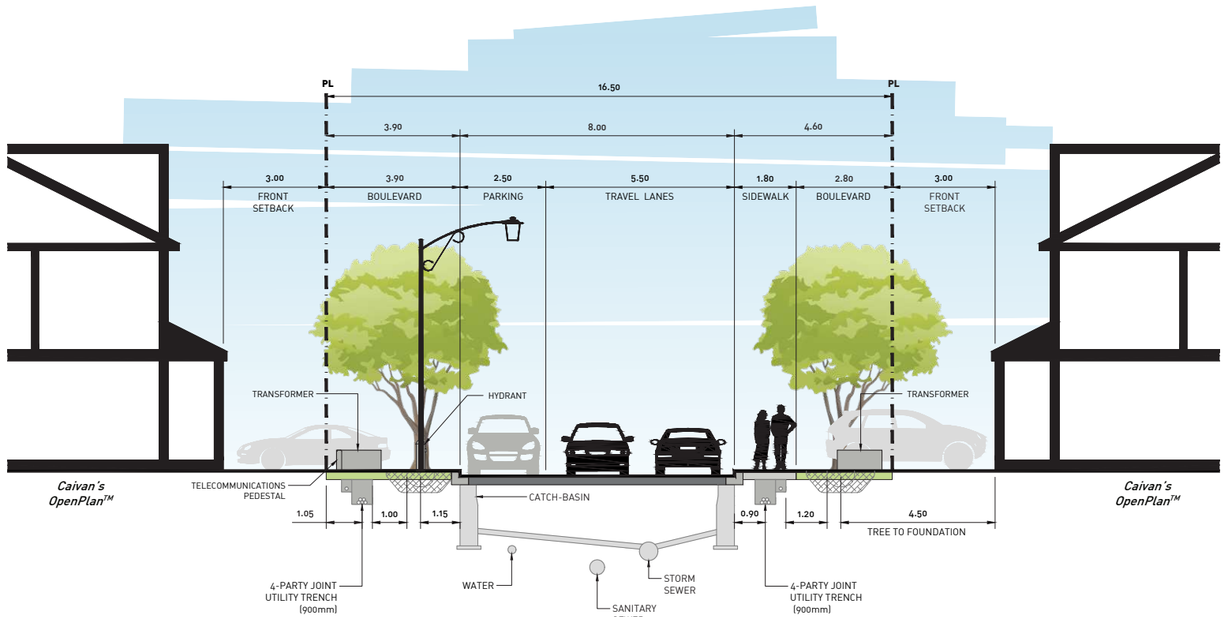
Traffic Calming
- On-Street Parking Provides Some Traffic Calming

Snow Storage
- Singles: 41.25m^2 (11.00m [9.80m +1.20m] x 3.75m) of Snow Storage
- Towns: 49.50m^2 (13.20m [5.40m + 7.80m] x 3.75m) of Snow Storage

Tree Health
- Singles: 88.20m^3 (9.80m x 6.00m x 1.50m) of Soil Volume
- Towns: 59.13m^3 (5.40m x 7.30m x 1.50m) & 85.41m^3 (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

CAIVAN'S 16.5M ROW
WITH SIDEWALK



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: 50.005m^2 (13.70m x 3.65m) (+8.755m^2) of Snow Storage
- Towns: 70.445m^2 (19.30m x 3.65m) (+20.945m^2) of Snow Storage

Tree Health
- Singles: 108.75m^3 (12.50m x 5.80m x 1.50m) (+20.55m^3) of Soil Volume
- Towns: 73.08m^3 (8.40m x 5.80m x 1.50m) (+13.95m^3) & 94.83m^3 (10.90m x 5.80m x 1.50m) (+9.42m^3) 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

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