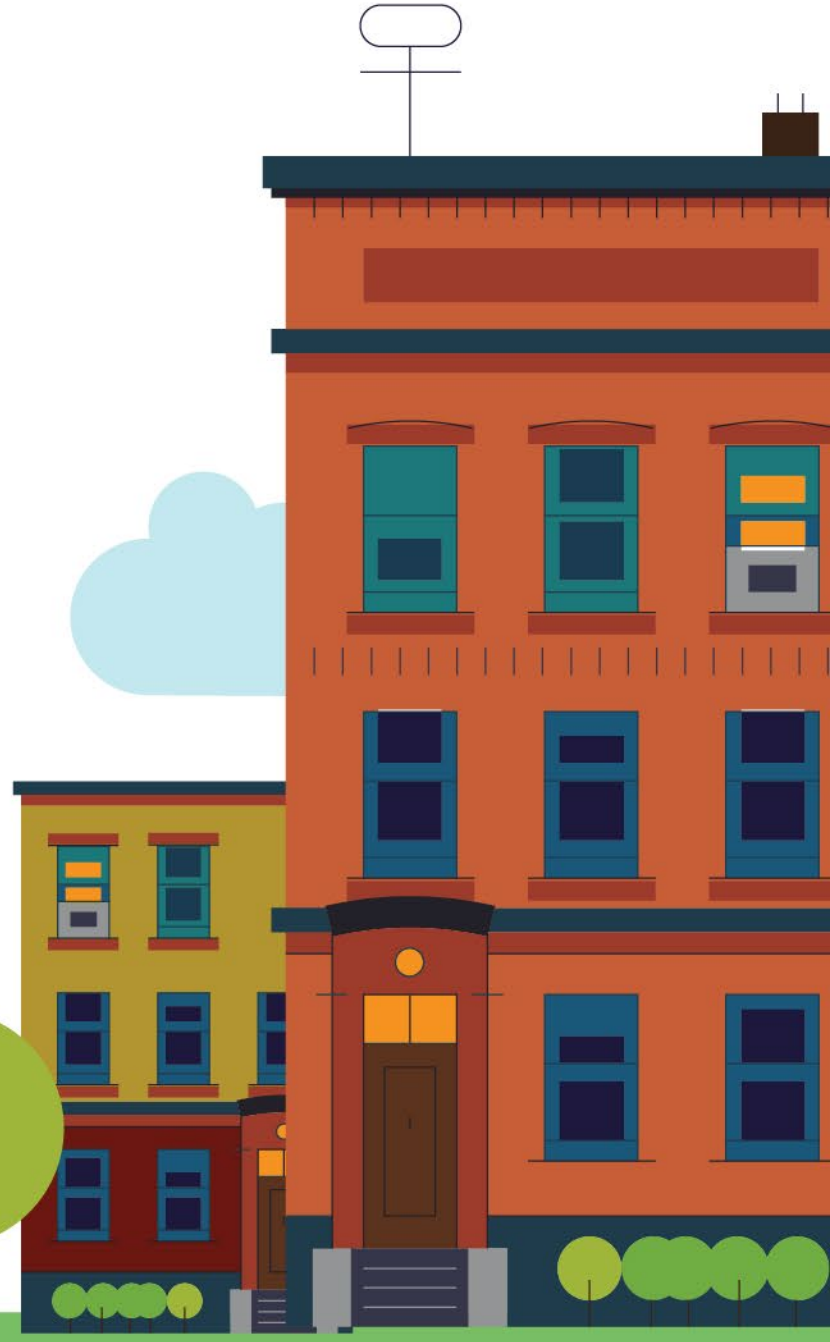
Affordable Housing

Home In Tacoma Project

Landscaping Code Coordination

Working Document



INITIAL LANDSCAPING RECOMMENDATIONS

Part of the Home in Tacoma project, these recommendations were developed by Mithun in a collaborative effort with updates to Tacoma's Urban Residential zoning and standards to promote Middle Housing development **and** tree canopy based on public priorities.

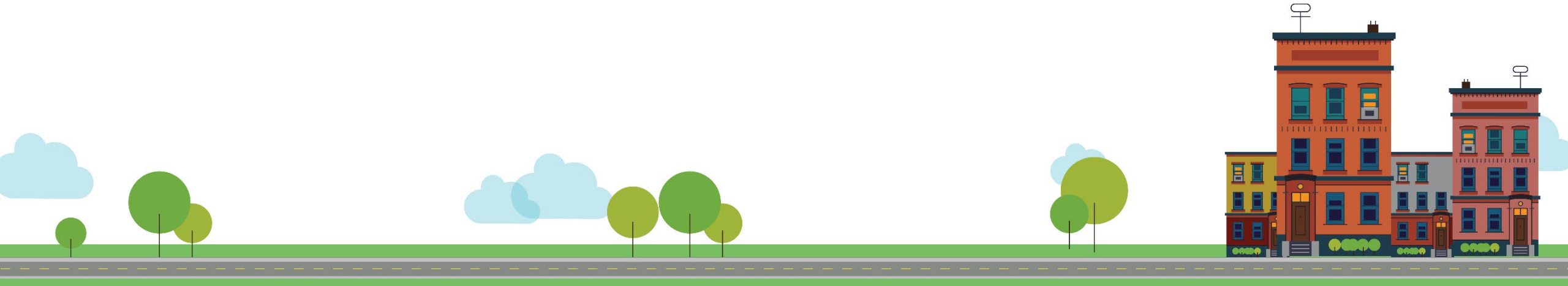
Affordable Housing

Trees + Development

Tacoma's adopted 30% tree canopy goal, as well as public input, has expressed the importance of trees. But addressing the housing crisis in tandem with a changing climate of more summer heat and winter rainfall requires allowing both development **AND** tree growth, rather than preferencing one at the expense of the other. These recommendations aim to support both, while enhancing ease of use and flexibility of Tacoma's code.

There are some tradeoffs, such as staffing and cost implications, and development limitations resulting from retention of existing trees. The flexibility and predictability offered by a Green Factor approach can address some of the tradeoffs more effectively but would need to be explored Citywide, outside of Home in Tacoma.

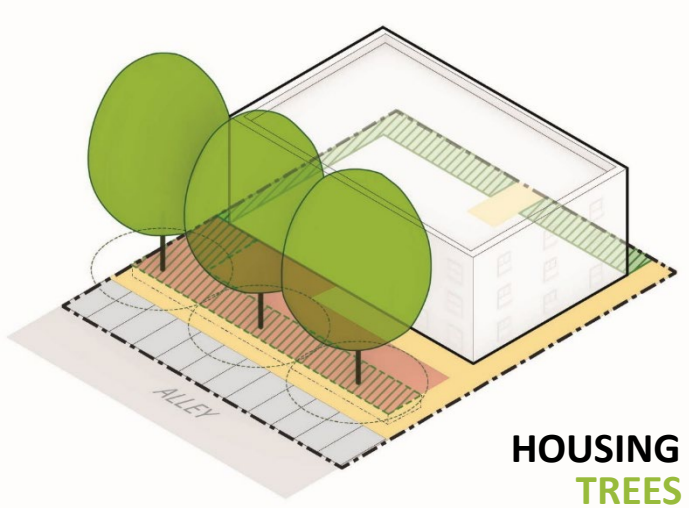
How can we move forward to achieve this balance? Ongoing consultation with the developer industry, general public, Council and decision makers, and public utilities will continue to inform landscaping code recommendations.



Landscaping Code Updates to Promote Housing + Trees

Objectives:

- Balance elements that need space on a lot: housing, trees, planting, amenity space, pedestrian access & parking
- Simplify landscaping code
- Require trees (/tree credits) for all developments
- Implement tree preservation requirements on private property
- Match code requirements to best practices / available science to support long term tree health
- Ensure long term maintenance through inspections and bonds (staffing/resourcing implications)
- Where possible, align with current right-of-way tree standards updates



Anticipated Outcomes:

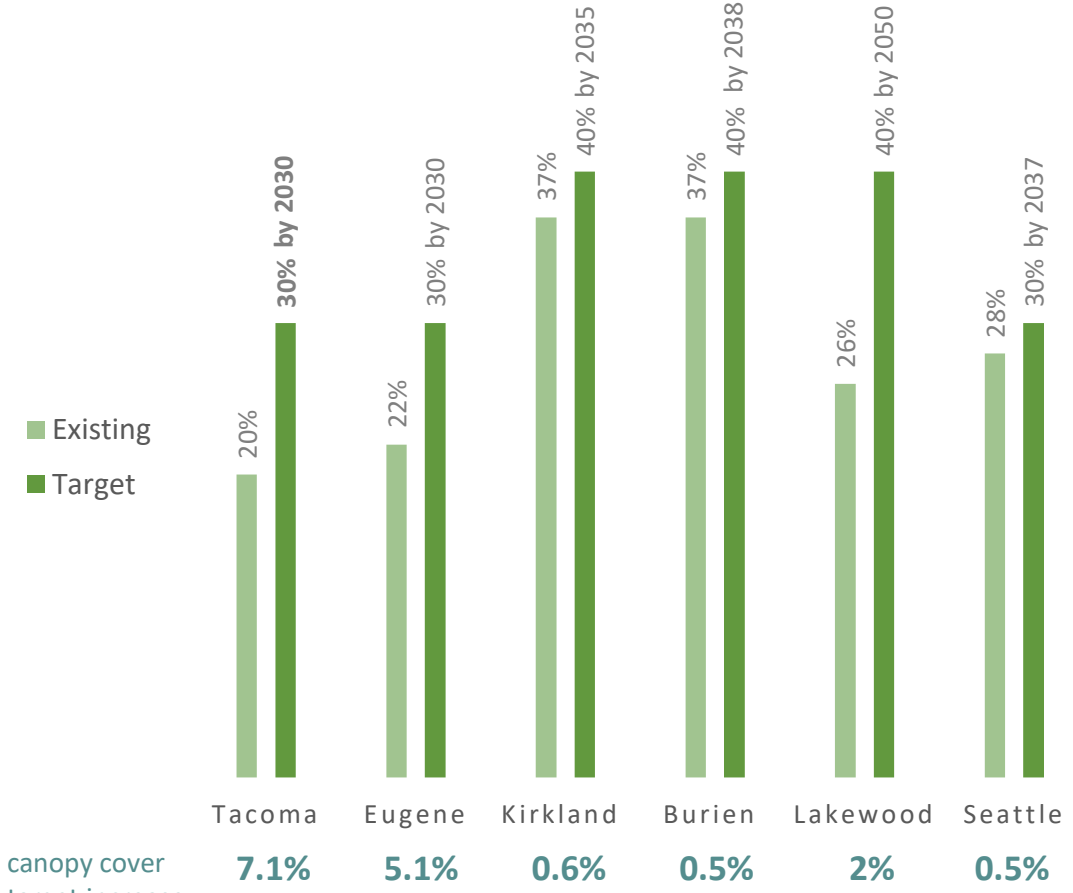
- Significant urban forestry benefits that support Citywide 30% tree canopy goal
- Moderate increase in regulatory cost / staff time
- Minor impact on housing development cost, with potential development limitations on sites with valuable existing trees.

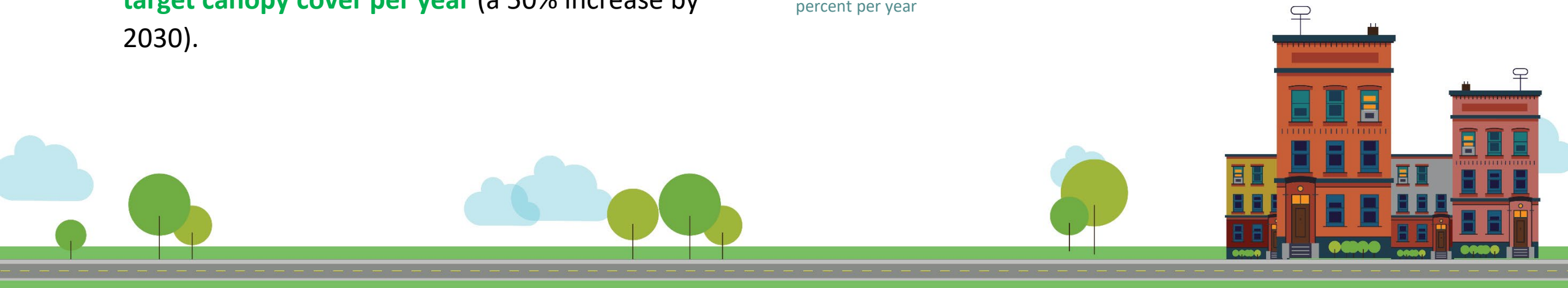
Tree Canopy Targets

In relation to benchmarked cities:

- Eugene, OR (Middle housing)
- Kirkland, WA (Middle housing, 2022 Tree & Landscaping ordinance, Green Factor Amendment)
- Burien, WA (2021 Tree & Landscaping ordinance)
- Lakewood, WA (2022 Tree Preservation ordinance)
- Seattle, WA (2023 Tree ordinance)

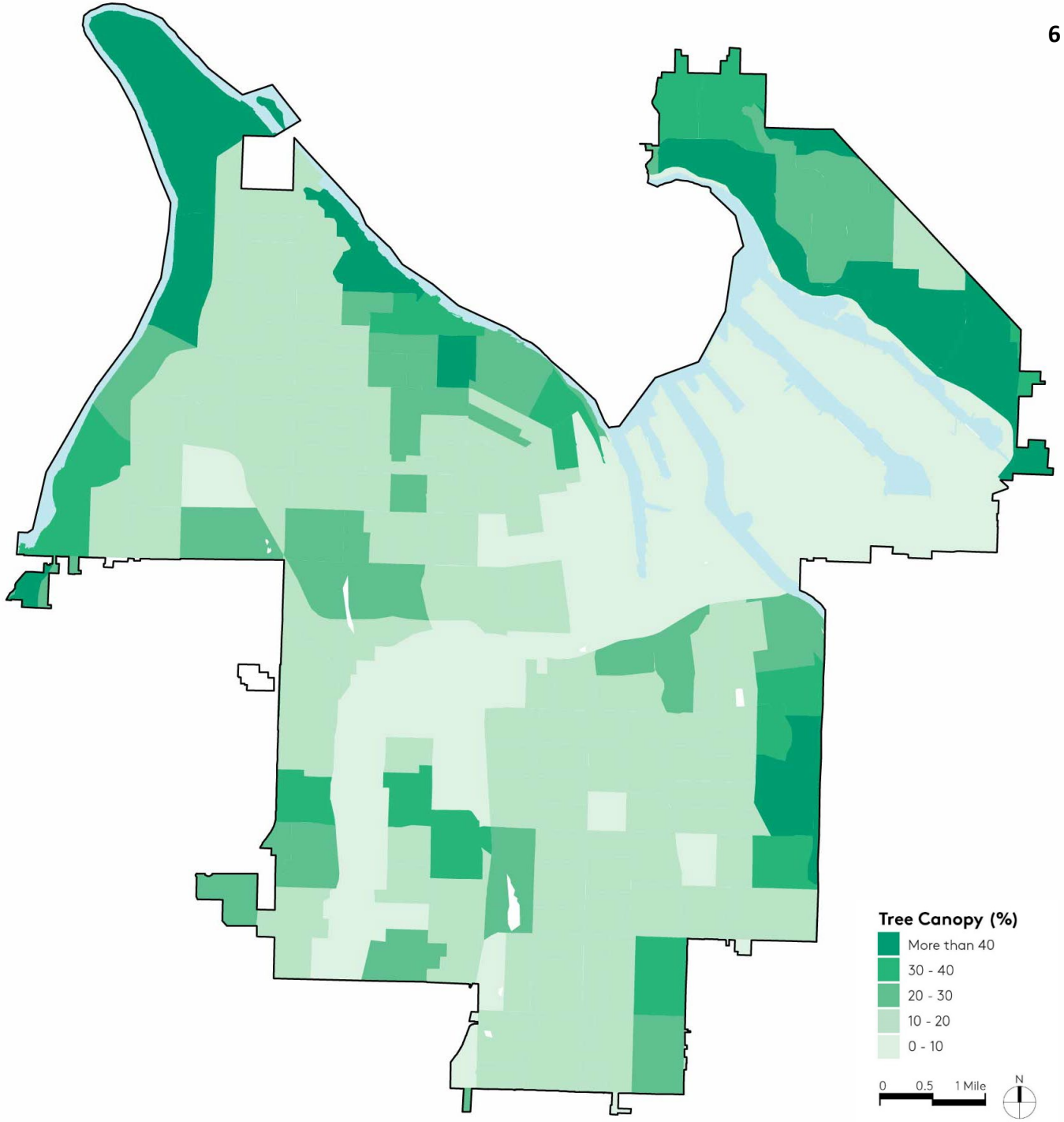
- Tacoma has the **lowest tree canopy cover with 20%** compared to Kirkland and Burien with 37%.
- Tacoma has the **greatest difference in existing vs. target canopy cover per year** (a 50% increase by 2030).





Existing Citywide Tree Canopy

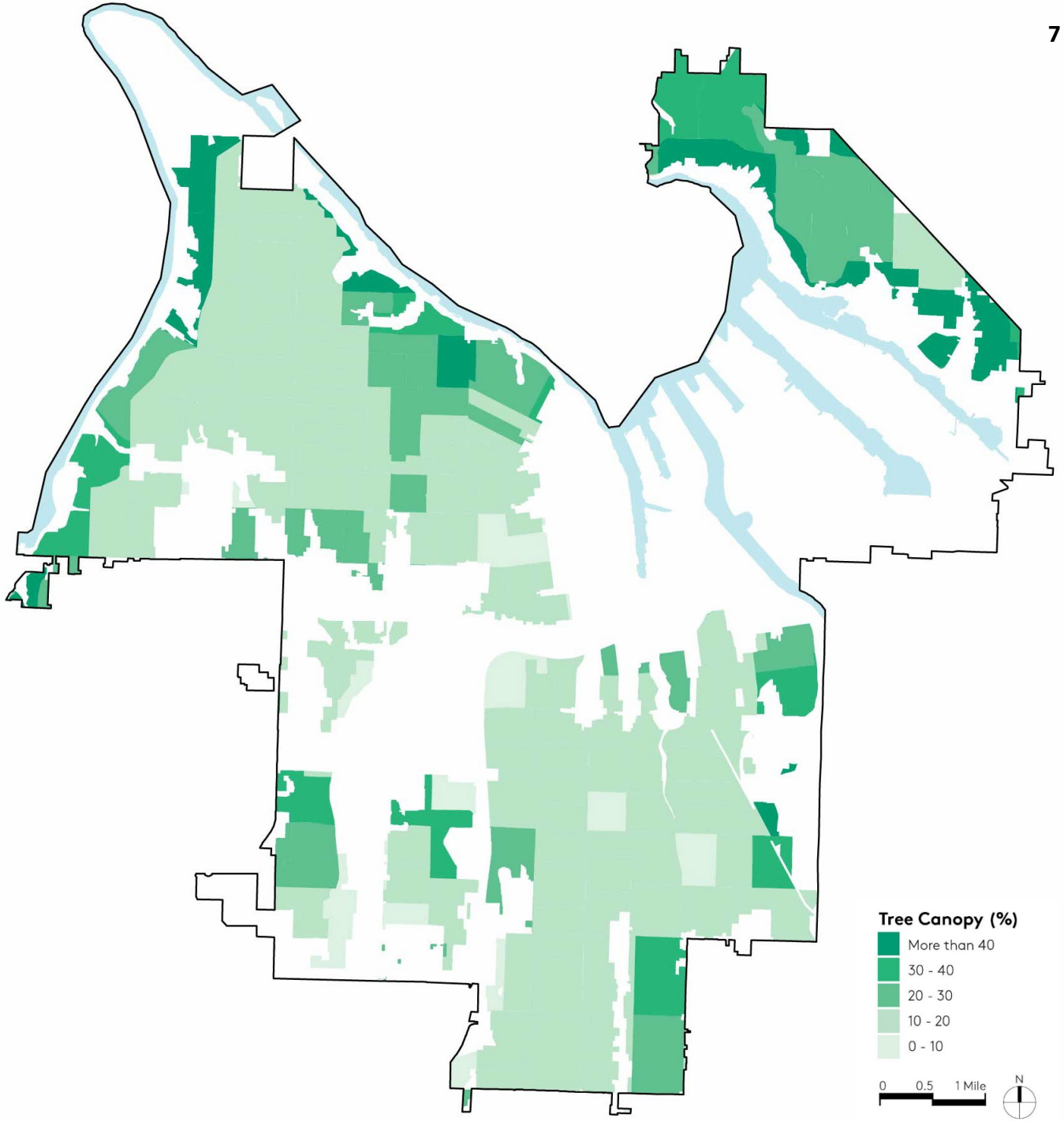
Tacoma's tree canopy is currently **20%** averaged across the city.



Citywide Tree Canopy & Middle Housing

The existing tree canopy in Middle Housing zones is approximately **18%**.

Middle housing zones cover approximately 50% of the city's land area, while public right-of-way covers approximately 20%.

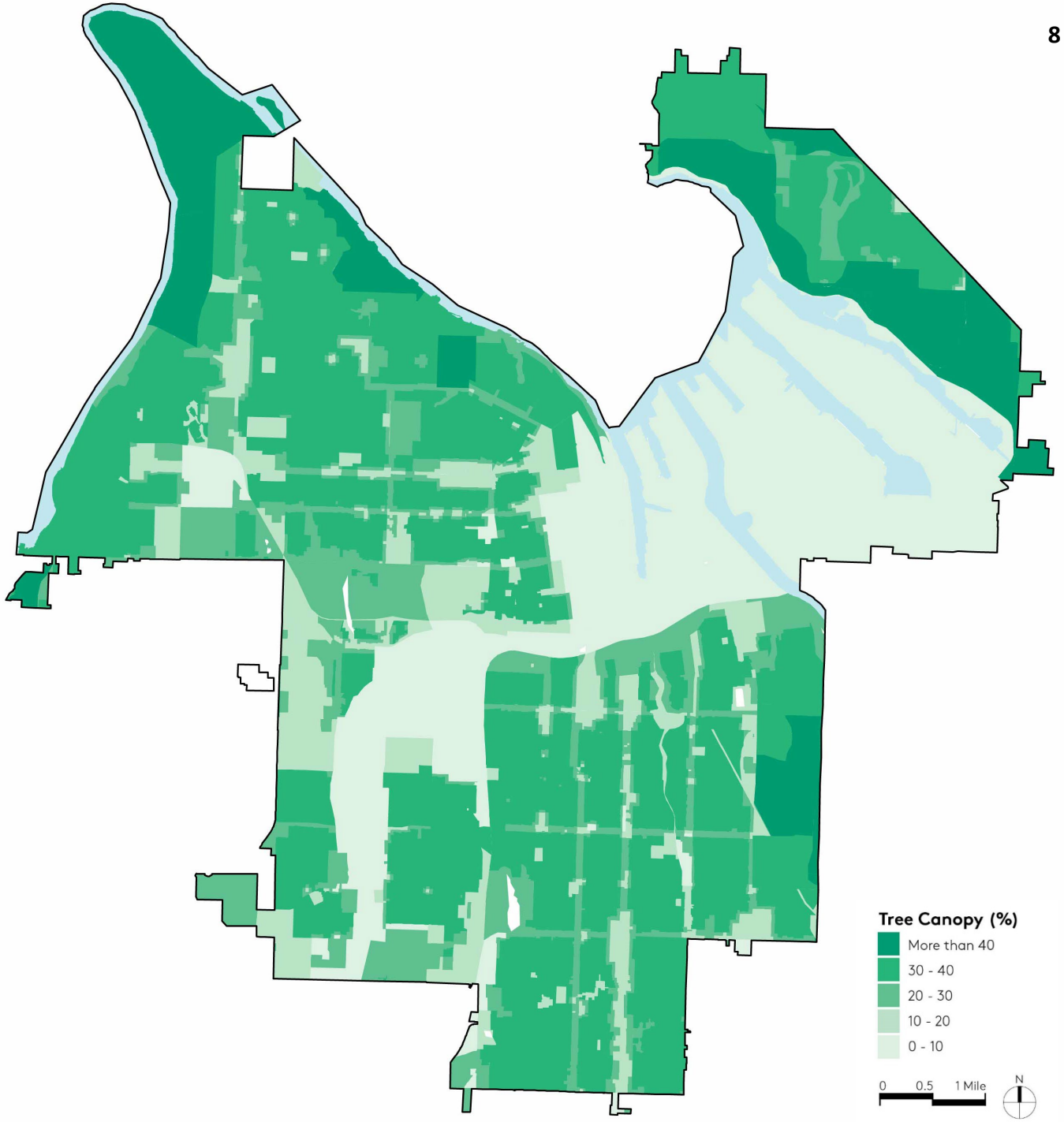


Citywide Tree Canopy & Middle Housing

Right-of-way and Middle Housing are the two largest land areas with the greatest potential for increased tree canopy.

If the average tree canopy across Middle Housing zones and public rights-of-way grew to approximately **32%**,* Tacoma could reach its **30%** tree canopy goal citywide.

* This estimate does not account for annual tree loss from storms, which would suggest an even higher target.



12/6 PLANNING COMMISSION MEETING LANDSCAPING TOPICS

- Suspended Pavement Systems
- Aligning Trees & Stormwater BMPs
- Fee in Lieu
- Right Tree Right Place
- Flexibility for Tree Groves
- Tree Retention
- Table of Contents: Code sections for Revision

Tacoma Affordable Housing

Costs/Benefits of Suspended Pavement Systems (SPS / Soil Cells)

Costs

- **Rough cost per cubic foot of soil provided:**
  - **$16-20**. This would include all excavation, labor and materials. It would not include the paving, the tree or the removal of site soil if imported soil is used in the cells. (source: Deep Root Silva Cells)
- **Approximate cost per tree by soil volume:**
  - 1,500 cu ft/tree (large+) = 1,500 x $16 = $24,000/tree
  - 1,200 cu ft/tree (large) = 1,200 x $16 = $19,200/tree
  - 1000 cu ft/tree (medium) = 1000 X $16 = $16,000/tree
  - 500 cu ft/tree (small) = 500 x $16 = $8,000/tree

Efficiencies

- **Efficiency at scale:** Projects over ~$40k likely at the lower end of the range above, and those below ~$40k at the higher end of the range.
- **Efficiency with shared soil:** Science suggests that if the soil volume is connected such that trees can share volume, soil volumes can be reduced by 30-40%.

Benefits

- Street trees with this support live over 50 years, while typical urban conditions without this support will need to be replaced every 13 years. Return on investment is approximately $25,000 over 50 years. See assumptions here: https://www.deeproot.com/silvapdfs/resources/articles/LifecycleCostAnalysis.pdf

Lifecycle Costs & Benefits for Trees with Suspended Pavement Systems

Lifecycle Costs and Benefits over 50 years	Tree Without Silva Cells: Estimated Lifespan 13 years	Notes for Tree Without Silva Cells	Tree With Silva Cells: Estimated Lifespan 50+ Years	Notes for Tree With Silva Cells
Installation Costs	$4,000	Estimated at $1,000 per tree, installed 4 times over a 50 year study period	$14,000	Estimated at $14,000 per tree, installed 1 time over a 50 year study period
Total Benefits	$2,717.66	Includes savings from reduced building energy costs, stormwater interception, increased property values, and the net value of carbon sequestration in the tree.[1]	$41,769	Includes savings from reduced building energy costs, stormwater interception, increased property values, the net value of carbon sequestration in the tree,[1] bioretention,[3] and stormwater utility fee credit.[4]
Total Maintenance Costs	$1,211.95	Includes estimated costs for pruning, pest and disease control, infrastructure repair, irrigation, cleanup, liability and legal costs, and administration costs.[2]	$2,341.75	Includes estimated costs for pruning, pest and disease control, infrastructure repair, irrigation, cleanup, liability and legal costs, administration costs[2] and bioretention maintenance.
Removal Costs	$600	Estimated at $200 per tree, 3 times over a 50 year study period	$0	Removal Costs
Net Lifecycle Cost	**$3,094.29**		**$-25,427.25**	

Table 1: Urban Tree Lifecycle Costs and Benefits for a 50 Year Study Period, Based on Typical Costs and Benefits for Minneapolis, MN

Source: https://www.deeproot.com/silvapdfs/resources/articles/LifecycleCostAnalysis.pdf

Aligning Trees & Stormwater BMPs

- Coordinate across City departments to encourage stormwater strategies that complement urban tree canopy.
- Discuss potential for Suspended Pavement Systems (aka Soil Cells) to be included as stormwater Best Management Practice.

NET PRESENT VALUE FOR TREE WITH SILVA CELLS FOR STORMWATER VS. TREE WITHOUT SILVA CELL

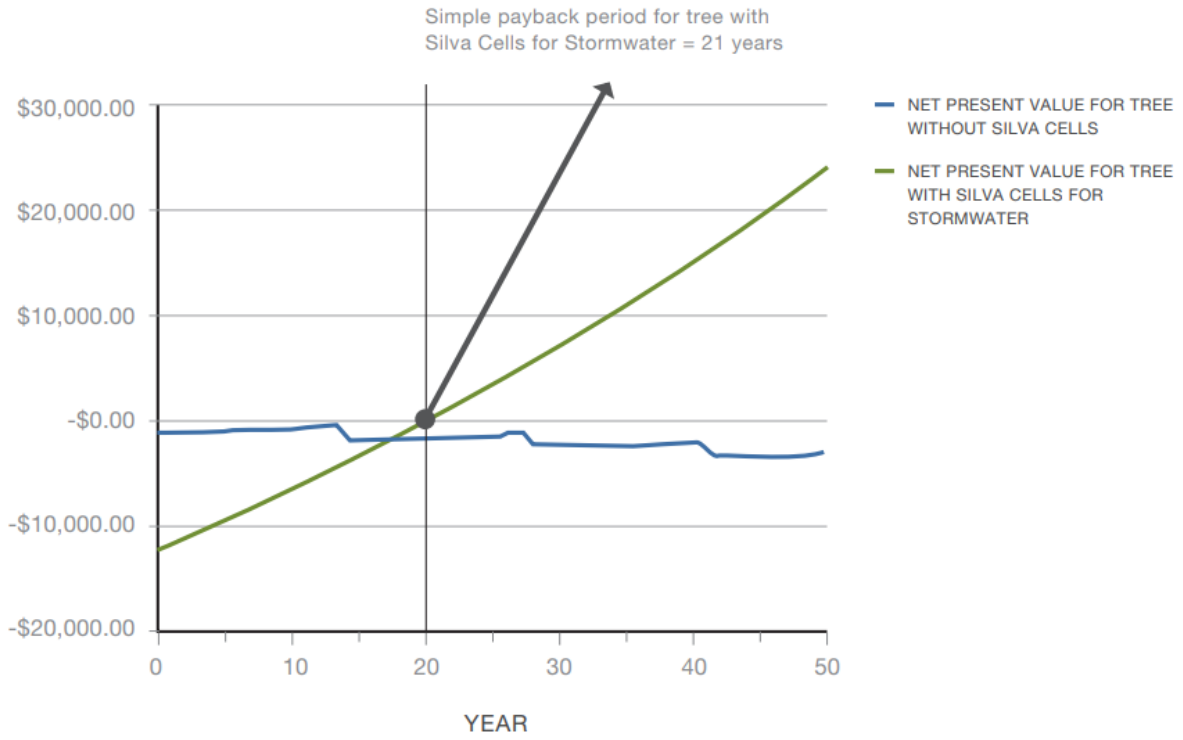


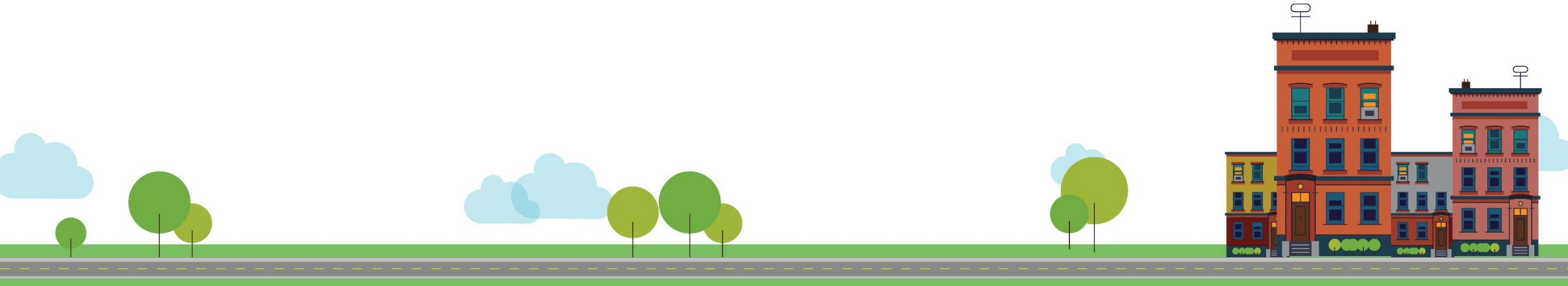
Figure 3: Net Present Value of a **Tree Without Silva Cells** vs. a **Tree With Silva Cells for Stormwater** over 50 years (Tree Without Silva Cells modeled as a tree planted in a 4'x4'x4' tree pit surrounded by compacted soil; Tree With Silva Cells for Stormwater modeled as a tree with Silva Cells for Stormwater with 1000 c.f. of bioretention soil)

Fee in Lieu: Opportunities to Address Program Issues

There are limited sites where the City can plant trees.

Existing trees have larger canopies and are higher performing than new trees.

- Limit conditions for fee-in-lieu option:
  - Consider only allowing fee in lieu when meeting tree requirements would limit by-right development potential.
  - Consider only allowing fee in lieu when the above point is true ***and*** alternative urban heat reduction / stormwater benefits are provided (i.e. green roofs, bioretention, etc.)



Right Tree Right Place

The goal of using the "right tree in the right place" is achieved through the following factors:

Size of Tree:

- Clearances that identify setbacks from utilities, roads and buildings in the landscaping zoning code

Sun/Shade:

- Appropriate species identified by the landscape architect/designer.

Moisture:

- Appropriate species identified by the landscape architect/designer. Future updates to the UFM could indicate appropriate species for bioretention.

Special Conditions:

- Appropriate species to locate under utilities are indicated in the UFM

Flexibility for Tree Groves

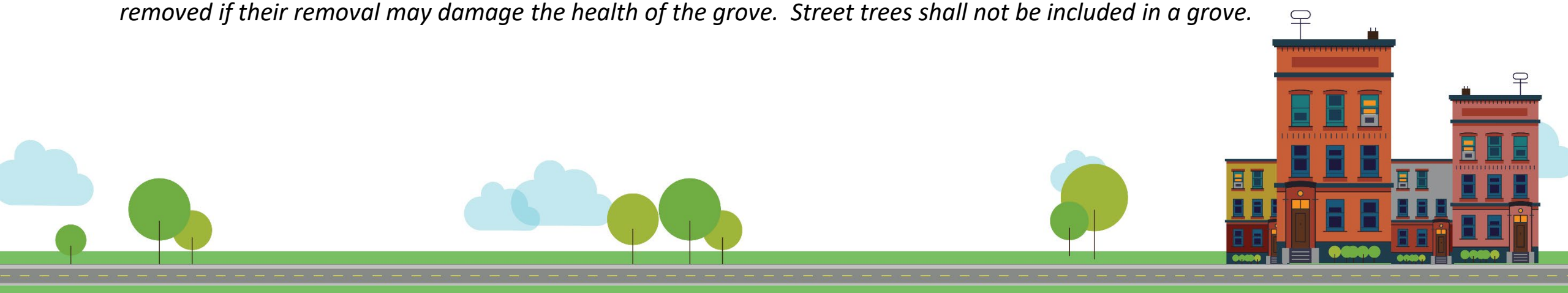
Tree groves provide greater benefit than individual trees.

How Proposed Revisions Incentivize Tree Groves:

- Soil volume requirement allows reduced volumes per tree when shared by multiple trees
- Reduced trunk to trunk clearances allow medium and large trees to be planted in more locations, increasing the likelihood of tree groves
- Retaining existing tree groves will receive additional tree credits

Definition of a Tree Grove (Example from Seattle Director's Rule)

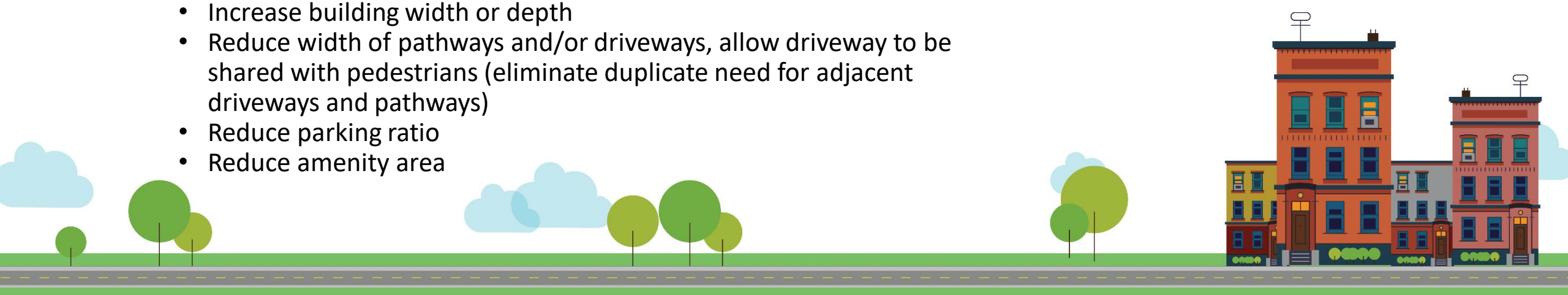
8 or more trees that form a continuous canopy. Small trees and/or understory vegetation that is part of the grove cannot be removed if their removal may damage the health of the grove. Street trees shall not be included in a grove.



Tree Retention: Potentials for Discussion

- **Credits for Retained Trees**
  - Additional credit for retention of a tree grove
  - Opportunity to simplify credit & allocate by Diameter at Breast Height (DBH) only, with threshold at 12” (approximating 13-year threshold)
    - Ex: Each inch DBH under 12” = 75 credits.
      Each inch over 12” DBH = 150 credits. (needs testing)
- **Retention Flexibility: District & building design standards**
  - Relax building setbacks (in the front, back and/or sideyards)
  - Relax building separation
  - Increase building height in front and/or backyards
  - Increase building width or depth
  - Reduce width of pathways and/or driveways, allow driveway to be shared with pedestrians (eliminate duplicate need for adjacent driveways and pathways)
  - Reduce parking ratio
  - Reduce amenity area

Determining Tree Credits for Existing Trees:
(Tacoma’s existing code)
One required tree per retained tree of equal size
2 required trees per retained tree 8"-20" DBH
3 required trees per retained tree 20"-32" DBH
4 required trees per retained tree >32" DBH
Retained trees count as small, medium or large according to their species
Evergreen trees planted above minimum evergreen requirement gives a credit of 1.1 trees.
Parking lot flexibility given when over 2/3 trees are evergreen.



Proposed Revisions to Standards

- **Proposed Revisions to Landscaping Standards (General / All Zones)**
  - Credits for small, medium and large trees
  - Minimum tree planting area
  - Minimum soil volumes
  - Tree spacing
- **Proposed Revisions to District Standards (Urban Residential Zones)**
  - Tree Removal Requirements on private property
  - Tree Retention Credits
  - Fee in lieu
  - Exemptions from landscaping requirements
  - Required trees / Tree credits by zone
  - Street trees
  - Parking lot landscaping requirements
- **Beyond Home in Tacoma: Revisions for Further Study**
  - Green Factor
  - Future Recommendation: Revisions to other zones for consistency

Tacoma **Affordable Housing**

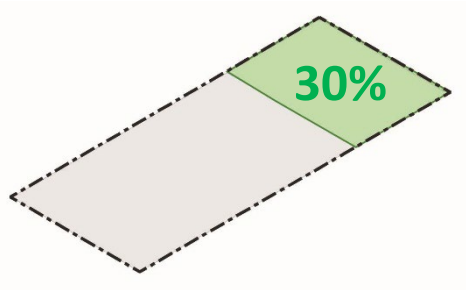
LANDSCAPING STANDARDS (GENERAL/ALL ZONES)

Affordable Housing

Tree “Credits” Concept

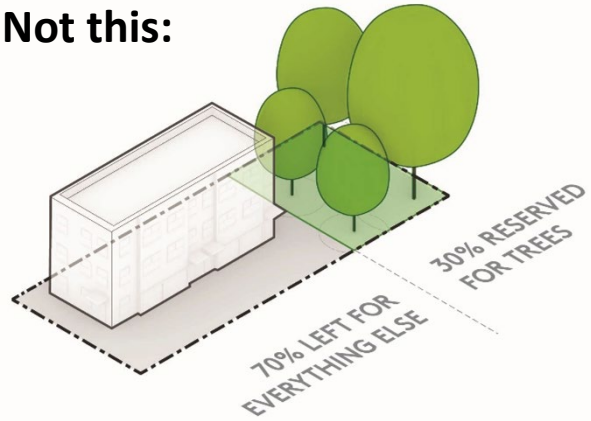
These recommendations propose tree “credits” as a concept to quantify the value of a given tree for the purposes of defining how many trees are required on a given site. This is only a language change from existing standards and is calculated the same as existing requirements for tree canopy coverage by percentage. Removing redundant tree standards and communicating credits as a concept separate from canopy area simplifies requirements and helps convey that trees can overlap with other uses like paths and parking, and are not “taking up” the full area under their canopies.

When 30% of the lot area is used to calculate tree requirements, what does this mean?

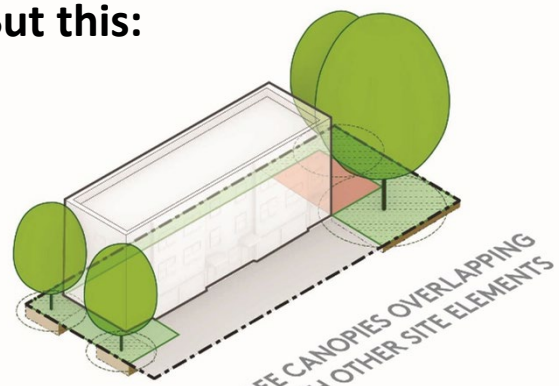


The percentage of lot area is used to determine how many trees or "tree credits" are required on a site.

Not this:



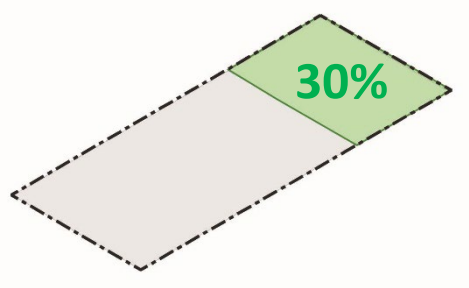
But this:



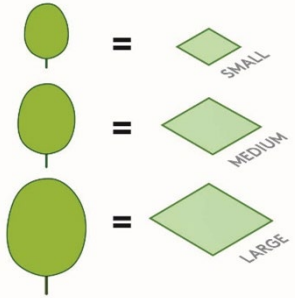
Credit for Small, Medium & Large Trees

Both existing and new trees provide value, and therefore are worth a certain amount of credit. An existing tree's species and trunk diameter determines how many "credits" are earned for retaining the tree. For new trees, credits are allocated based on whether the mature size of the planted tree species is considered small, medium or large in the Urban Forest Manual.

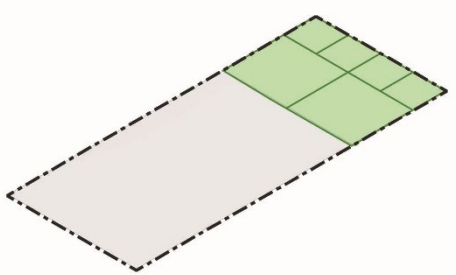
District standards establish the number of tree credits required for a given site and project based on the lot area (i.e. 25%, 30% or 35% by zone). These "credits" can be met by adding the values earned by retained trees and new trees.



The percentage of lot area is used to determine how many trees or "tree credits" are required on a site.



Both existing and new small, medium, and large trees are each worth a certain amount of credit toward this target area.



** See next page for translation from concept to code revision*

Credit for Small, Medium & Large Trees

Citywide / all zones
Existing credits for small, medium and large trees (defined in square feet to suggest connection to canopy) 300 sf for small trees, 500 sf for medium trees, 1,000 sf for large trees
Proposed credits for small, medium and large trees (“sf” removed) 200 credits for small trees, 500 credits for medium trees, 1,000 credits large trees

Additional recommendation: increase the species designated as “large” trees in the Urban Forest Manual

Why?

- **Reducing the credit allocated to small trees can incentivize the planting of medium and large trees, which provide more benefit toward stormwater management and urban heat island reduction.**

Tree Planting Area

Citywide / all zones

Existing minimum tree planting area
Area: Small: 4' x 6' min, Medium: 5' x 8' min, Large: 6' x 10' min.

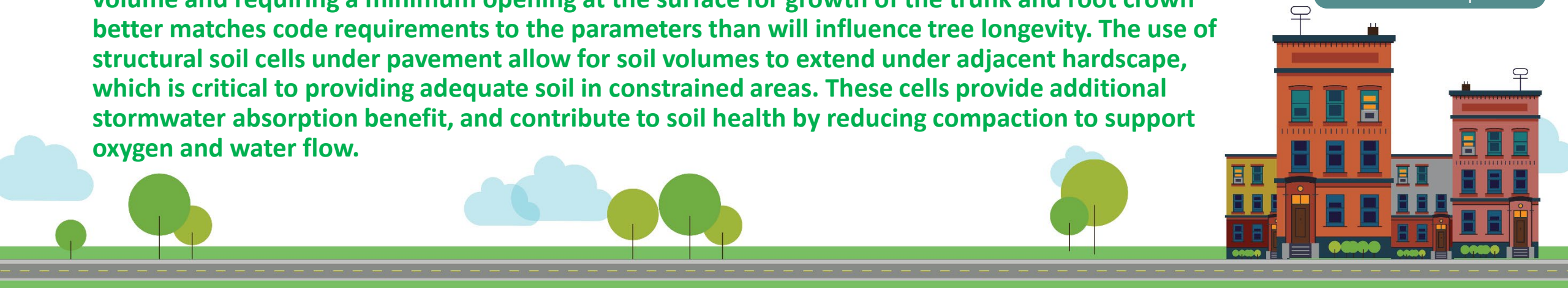
Proposed minimum tree planting area
Minimum 5’ width planting area, with allowances for reduction to 4’ width if required to provide ADA sidewalk or if existing structures or infrastructure restrict planting area. If 5’ width is not achievable, trees must be selected from species approved in Urban Forest Manual for structural integrity in reduced planting.

Note: This sets a minimum 5’ x 5’ opening for trees at the surface, with volume requirements defining the amount of soil required for each tree. Flexibility for a reduction to 4’ width accommodates existing right-of-way designed to 4’planting width dimensions. Urban Forest Manual updates could define which species are allowed in planting areas that are 4’ wide.

Why?

- **Soil “volume” is more critical than “area” for tree health. Focusing requirements on a minimum volume and requiring a minimum opening at the surface for growth of the trunk and root crown better matches code requirements to the parameters than will influence tree longevity. The use of structural soil cells under pavement allow for soil volumes to extend under adjacent hardscape, which is critical to providing adequate soil in constrained areas. These cells provide additional stormwater absorption benefit, and contribute to soil health by reducing compaction to support oxygen and water flow.**

Note: To be coordinated with current right-of-way tree standards updates



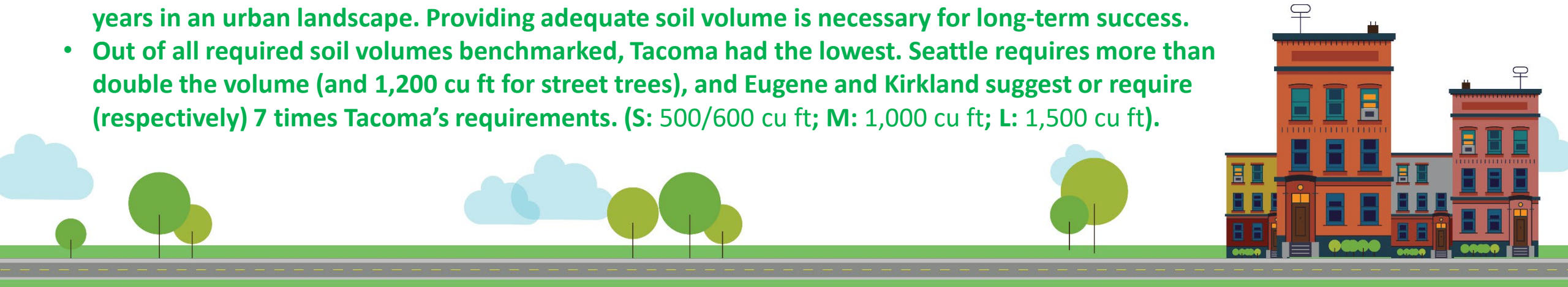
Minimum Soil Volume Per Tree

Citywide / all zones
Existing minimum soil volumes Soil volume: Small: 72 cu ft, Medium: 120 cu ft, Large: 180 cu ft
Proposed minimum soil volumes Soil volume: Small: 500 cu ft, Medium: 1,000 cu ft, Large: 1,500 cu ft Soil volume can be shared by multiple trees, provided each individual S / M / L tree has no less than 500 / 800 / 1200 cubic ft soil volume, respectively.

Note: Suspended Pavement Systems (i.e. "Silva cells" count toward soil volumes

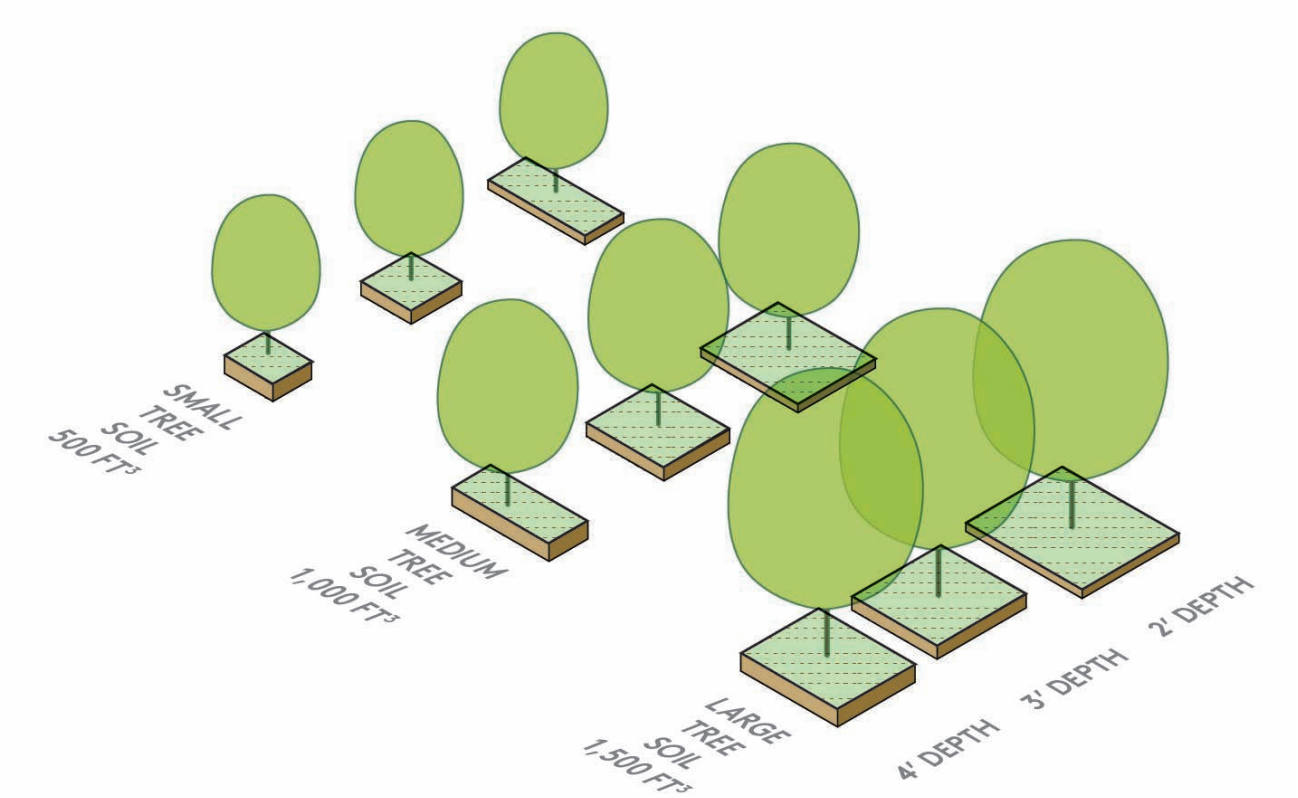
Why?

- **Trees do not provide significant benefits until 8 to 12 years of age, yet the average tree lifespan is 7 years in an urban landscape. Providing adequate soil volume is necessary for long-term success.**
- **Out of all required soil volumes benchmarked, Tacoma had the lowest. Seattle requires more than double the volume (and 1,200 cu ft for street trees), and Eugene and Kirkland suggest or require (respectively) 7 times Tacoma's requirements. (S:** 500/600 cu ft**; M:** 1,000 cu ft**; L:** 1,500 cu ft**).**

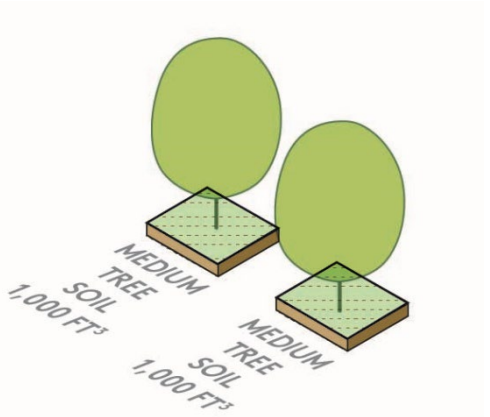


Explaining Soil Volume Standards

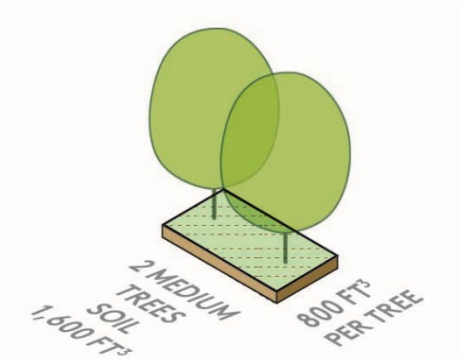
Soil volumes can be met with many different geometries:



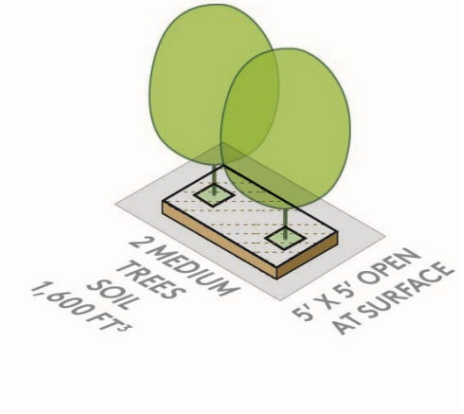
Soil volumes might occur in separate planting areas for different trees:



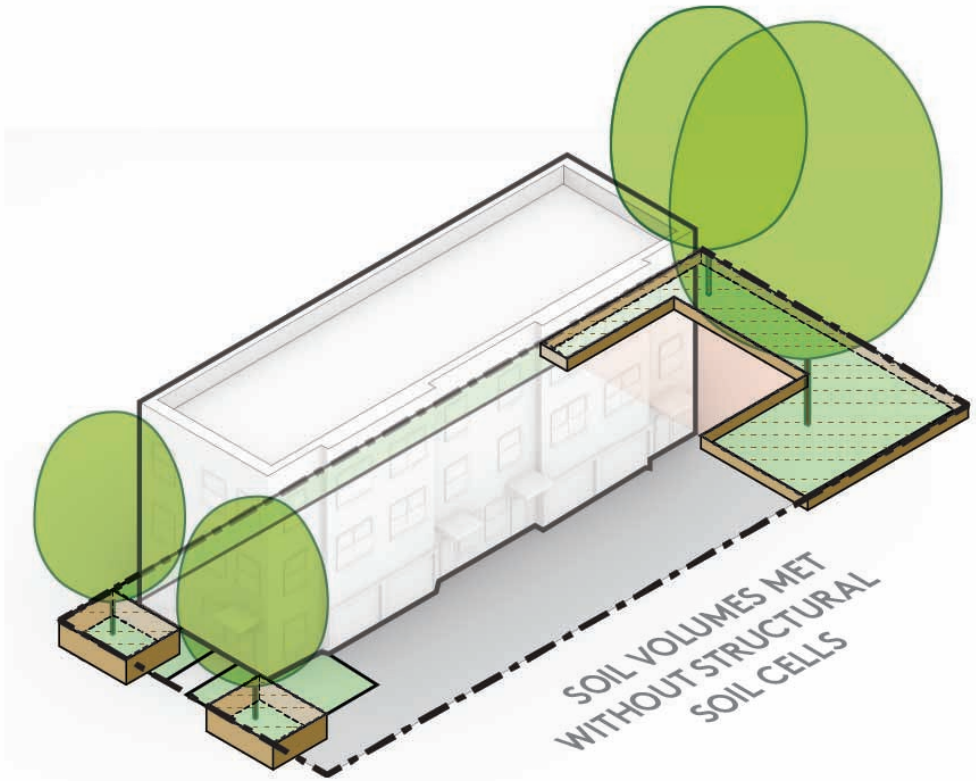
But shared soil volumes allow a lower volume to be used per tree:



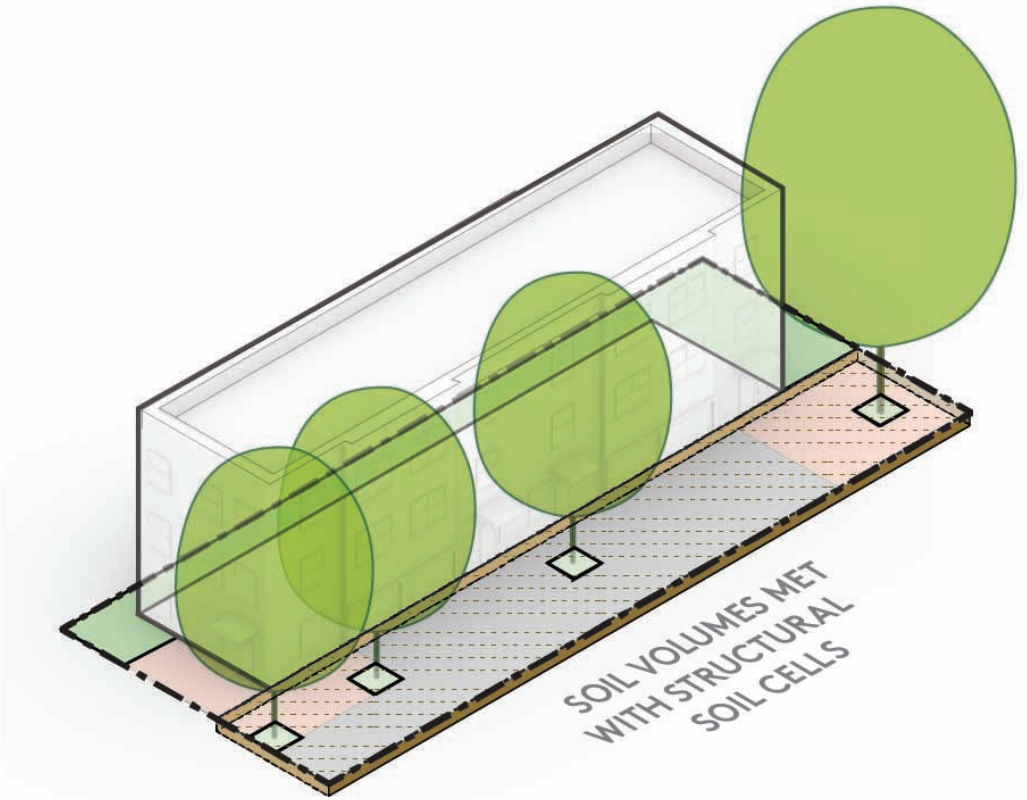
And with soil cells, paving can extend over soil to allow for overlapping uses:



Explaining Soil Volume Standards



On many lots, these soil volume requirements can be attained with no use of suspended pavement systems (soil cells).



On constrained sites, or where additional paving is desired, soil cells can provide required soil volume underground, while openings at the surface may be reduced as small as 5’ x 5’ as shown above.

Minimum Tree Clearances

Citywide / all zones
Existing tree spacing Minimum trunk-to-trunk distance: Small: 10' min, Medium: 25' min, Large: 40' min.
Proposed tree spacing Minimum trunk-to-trunk distance: Small: 10' min, Medium: 16' min, Large: 22' min. Minimum trunk-to-building distance: Small: 7' min, Medium: 8' min, Large: 12' min.

Why?

- **Reducing the minimum spacing between medium and large trees can incentivize their planting over small trees on constrained sites.**
- **Reducing minimum spacing enables trees to be planted on constrained urban sites, frequently where their benefits are most needed**
- **Reducing minimum spacing also acknowledges that not all trees live to old age, and prioritizes making it possible to plant the trees in the first place**

Small, Medium & Large Trees
Overview of Proposed Standards

Potential to study:
Require 1,200 cubic feet of soil for large trees (1,000 cu ft if shared)

Offer additional 200 credits for "large+" trees (trees plus soil) that provide 1,500 cubic feet of soil

Proposed Standards \ Tree Size	Small tree	Medium tree	Large tree
Tree Credits	200 credits	500 credits	1,000 credits
Minimum Planting Area*	5' x 5'	5' x 5'	5' x 5'
Soil Volume	500 ft^3	1,000 ft^3 (or 800 ft^3 if shared**)	1,500 ft^3 (or 1,200 ft^3 if shared**)
Minimum Trunk-to-Trunk Tree Spacing	10 feet	16 feet	22 feet
Minimum Trunk-to-Building Clearance	7 feet	8 feet	12 feet

** This is the minimum opening for soil at the surface, provided structural soil cells are used to provide adequate volume underground. The minimum width can be reduced from 5' to 4' if ADA sidewalk (4' min. width) is otherwise infeasible.*

*** Soil volume can be shared by multiple trees, provided each individual Small / Medium / Large tree has no less than 500 / 800 / 1,200 cubic ft soil volume, respectively.*

DISTRICT STANDARDS: URBAN RESIDENTIAL ZONES

Tacoma Affordable Housing

Tree Removal Requirements

Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing permit requirements for removal Permit only required for critical areas and right-of-way tree removal		
Proposed permit requirements for removal Require a permit for removal of all trees greater than 6” DBH (diameter at breast height) both associated with and not associated with development on private property Consider restriction on construction permit review where trees have been illegally removed On site replacement required, or fee in lieu		

Why?

- **Trees do not provide significant benefits until 8 to 12 years of age, yet the average tree lifespan is about 7 years in an urban landscape. This suggests the need to regulate removal of existing trees and encourage retention through incentives to meet citywide tree canopy goals.**

Potential to model after Seattle Code:

- Tier 1 trees can only be removed in emergency / if hazardous
- Tier 2 can only be removed if limiting development potential (max lot coverage in Seattle)
- Tier 3 & 4 can be removed with development permit

Tier 1: Heritage Trees
Tier 2: 24” DBH or greater, tree groves, species per Director’s rule
Tier 3: 12” < 24” DBH minus Tier 2 trees per Director’s rule
Tier 4: 6” < 12” DBH

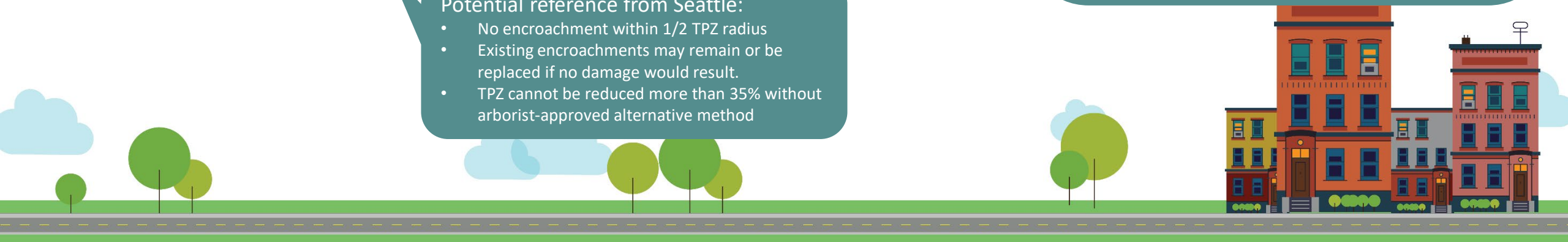
Tree Retention Credits

Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing Tree Retention Requirements & Credits Retained trees provide credit toward landscaping requirements.		
Proposed Tree Retention Requirements & Credits Retained trees provide credit toward landscaping requirements (no change to credit allocation to the right) Tree requirements clearly allow both retained and new trees to count toward required “tree credits” based on lot area. Flexibility offered where tree retention would limit by-right development. Defined maximum encroachment within tree protection zone for retained tree.		

Determining Tree Credits for Existing Trees:
(Tacoma’s existing code)
One required tree per retained tree of equal size
2 required trees per retained tree 8"-20" DBH
3 required trees per retained tree 20"-32" DBH
4 required trees per retained tree >32" DBH
Retained trees count as small, medium or large according to their species
Evergreen trees planted above minimum evergreen requirement gives a credit of 1.1 trees.
Parking lot flexibility given when over 2/3 trees are evergreen.

Potential reference from Seattle:

- No encroachment within 1/2 TPZ radius
- Existing encroachments may remain or be replaced if no damage would result.
- TPZ cannot be reduced more than 35% without arborist-approved alternative method



Fee in Lieu of Tree Replacement

Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing fee in lieu Price per tree: $750.00		
Proposed fee in lieu Consider fee in lieu proportional to tree size (see next page for fee precedents). Policy decision needed for applicability and enforcement. Recommendation: • Trees over 24” DBH cannot be removed. • Trees 12” ≤ 24” DBH can only be removed if retention would limit by-right development. Fee in lieu allowed if onsite replacement is not feasible. • Trees 6” ≤ 12” DBH can be removed if corresponding tree credits are replaced onsite. Fee in lieu allowed if onsite replacement is not feasible. • Less than 6” DBH not regulated		

Why?

- **Fee in lieu provides resources for new tree planting when on-site replacement is not possible and deters unnecessary removal of existing trees. Because trees of larger diameter provide greater stormwater, cooling and shading benefits, more resources are required to make up for their loss. The next page includes two precedents for determining fees.**

Fee in Lieu of Tree Replacement

Preservation, Fee in Lieu (Private Trees)			
Trees ≥12 and <20 inches diameter	$	1,800.00	per tree
Trees ≥20 inches diameter	$	450.00	per inch
Planting and Establishment, Fee in Lieu	$	675.00	per on-site tree
Planting and Establishment, Fee in Lieu	$	450.00	per inch
NON-DEVELOPMENT			
Removal Application (1-3 trees)	$	100.00	
≥4 trees, Additional Fee	$	25.00	per tree
Replanting Waiver Application	$	100.00	
Root Inspection	$	178.00	
Pruning Permit (no inspection required)		no charge	
Pruning Application (Inspection Required)	$	50.00	
Planting Application		no charge	
Chemical Treatment Application	$	150.00	
Appeal Application	$	200.00	
Tree Attachment Applic:Tree Attachment Application	$	300.00	
Ornamental Lighting Application (1-10 trees)	$	35.00	
11-50 trees, Additional Fee	$	45.00	
51-100 trees, Additional Fee	$	75.00	
101-200 trees, Additional Fee	$	100.00	
201-500 trees, Additional Fee	$	175.00	
>500 trees, Additional Fee	$	250.00	
Planting and Establishment, Fee in Lieu	$	450.00	per inch

Portland Tree Fees are broken down in a detailed table, distinguishing between "Development" and "Non-development"

"The fee per tree is the entire cost of establishing a new tree in accordance with standards described by the City Forester. The cost includes materials and labor necessary to plant the tree, and to maintain it for 5 years. The fee will be reviewed annually and, if necessary, adjusted to reflect current costs."

Payment categories	Required mitigation	Payment In-Lieu*
Significant trees 12" and larger (that are not Exceptional)	Cost of (2) two-inch diameter replacement trees	$436
Exceptional trees as defined by the Exceptional Tree Director's Rule (x -2022)	Cost per square inch** of trunk for each tree removed	$17.87/square inch

* Additional City costs may be covered by the payment in addition to what is shown in the Table such as to cover establishment of planted trees for a period, likely three to five years.

**Area in square inches of tree removed is calculated as follows:

- Measure diameter of tree at breast height (DBH) as defined in SMC 25.11 in inches and divide by 2 to get the radius.
- Square the radius and multiply by PI (r^2 x 3.14) to get the area in square inches of the removed tree measured at DBH.

Seattle fee in lieu is determined by Guide for Plant Appraisal, with additional fees for Significant and Exceptional trees to cover establishment of planted trees for a period (3-5 years):

Nursery purchase price* / square inches of the nursery tree** = unit cost to replace tree
Square inches of tree removed*** X unit cost to replace the tree = payment in lieu amount

*Nursery purchase price = the average price of common trees found on sites in Seattle per survey from area nurseries.
**Square inches of the nursery tree is the average size of replacement tree per survey from area nurseries.
***Square inches of tree removed provided by permit applicant.

SDCI shall periodically conduct update to the inputs for the formula above including surveys of regional tree nursery prices to provide the resulting payment to be provided in subsequent rule(s).

Exemptions from Landscaping Requirements

Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing landscaping requirement exemptions Single-family, duplex and triplex exempt from landscaping requirements, except street trees		
Proposed: No exemption from landscaping standards for single, two and three family and townhouse developments		

Why?

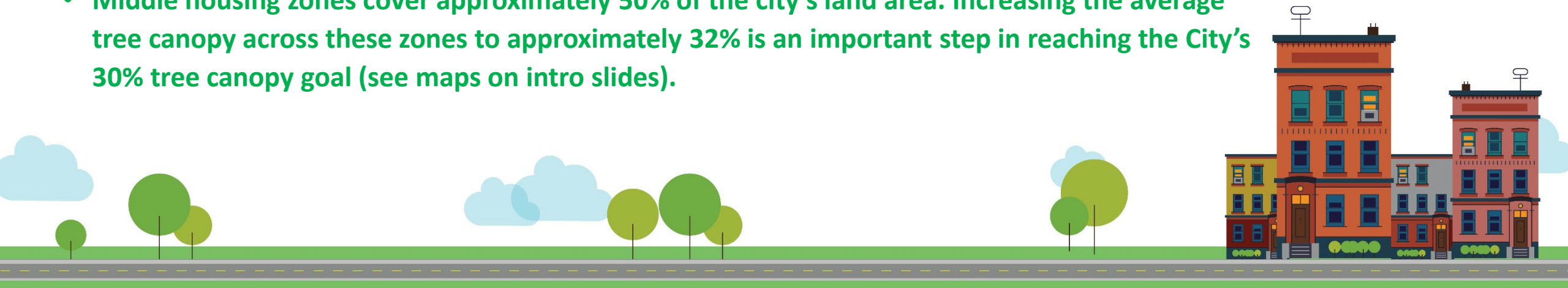
- **Middle housing zones cover approximately 50% of the city's land area. Meeting citywide tree canopy goals requires that landscaping requirements extend to these housing types.**

Required Trees / Tree Credits by Zone

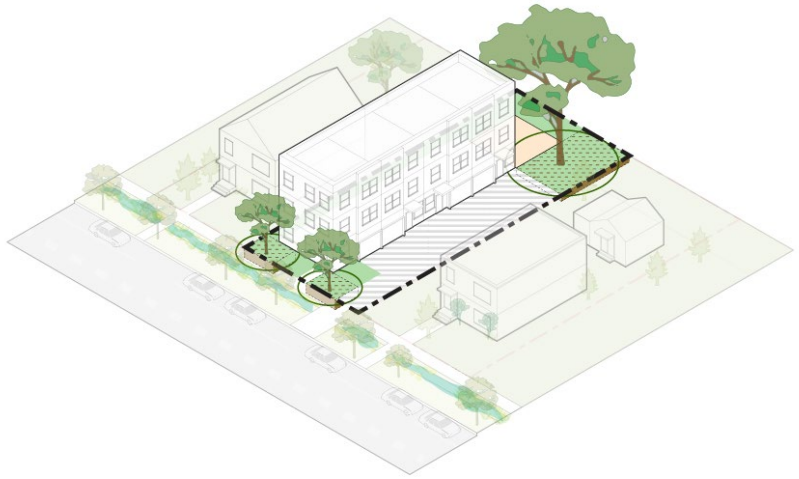
Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing Required Trees (Canopy Coverage) R-1, R-2, R-2 SRD, HMR-SRD: not required R-3, R-4-L: 30% lot area R-4: 20% lot area		
Proposed Required Tree Credits per 35% lot area	30% lot area	25% lot area

Why?

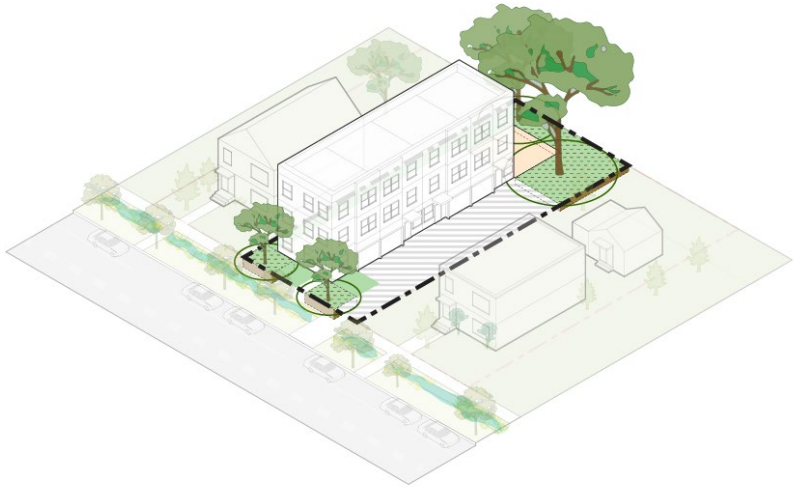
- **Middle housing zones cover approximately 50% of the city's land area. Increasing the average tree canopy across these zones to approximately 32% is an important step in reaching the City's 30% tree canopy goal (see maps on intro slides).**



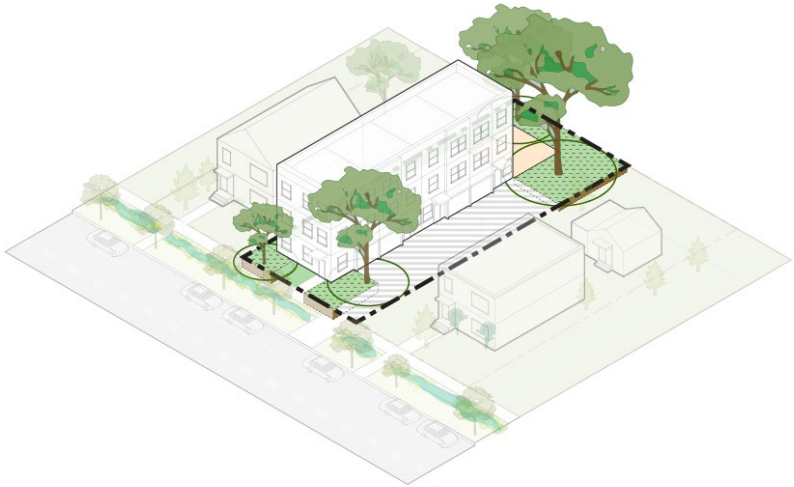
Tree Credits – Visual Comparison



Zone: UR-1, 2, 3
Units: 4
FAR: 1
Height: 35’
Parking: 1 stall/unit
Amenity Space: 492 SF/unit
Tree Credits: Equivalent to
25% lot area



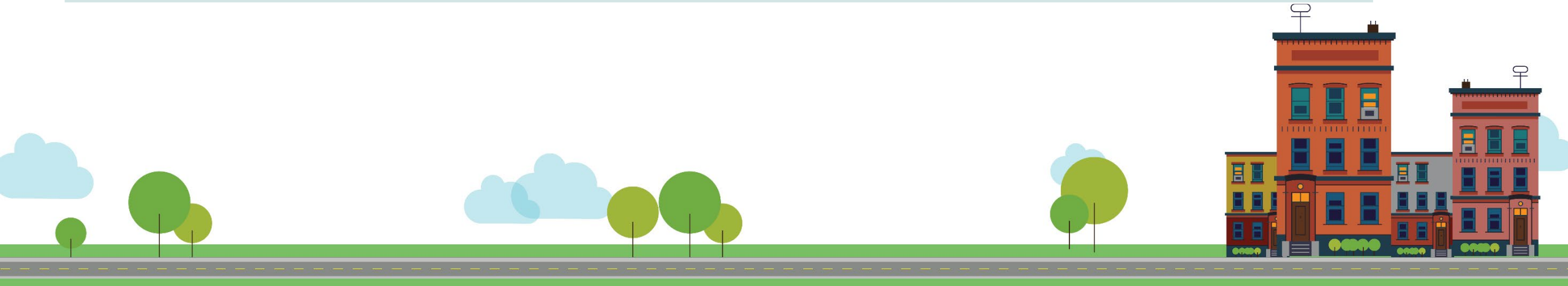
Zone: UR-1, 2, 3
Units: 4
FAR: 1
Height: 35’
Parking: 1 stall/unit
Amenity Space: 492 SF/unit
Tree Credits: Equivalent to
30% lot area



Zone: UR-1, 2, 3
Units: 4
FAR: 1
Height: 35’
Parking: 1 stall/unit
Amenity Space: 492 SF/unit
Tree Credits: Equivalent to
35% lot area

Street Trees

Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing Street Trees 4 small, 3 medium, or 2 large trees per 100’ of street frontage. Exemptions: • Where not feasible to provide in right-of-way, trees within 10' of property line can count toward requirement • Single Family		
Proposed Street Trees • Existing requirements maintained, with exemption for Single Family removed • To be coordinated with current right-of-way tree standards updates		

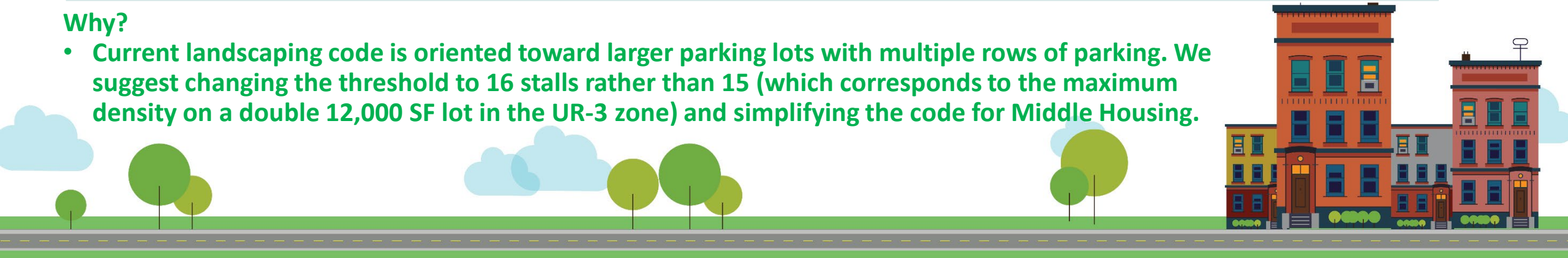


Parking Lot Landscaping

Urban Residential (UR-1) (Lowscale)	**Urban Residential (UR-2)** (Lowscale)	**Urban Residential (UR-3)** (Midscale)
Existing Parking Area Tree Minimum - Overall One Small Tree per 700 square feet; one Medium Tree per 1,000 square feet; or, one Large Tree per 1,400 square feet of parking lot area. (a) Parking Lot Perimeter Landscaping is not required in M-2 or PMI Districts (b) Parking lots of 15 stalls or less are not required to meet Interior Planting requirements. (c) Parking lots of 15 stalls or less, located behind buildings and accessed by alleys, are exempt from the Site Perimeter requirement.		**Existing Parking Lot – Interior Planting Requirements.** A mixture of trees, shrubs and groundcover meeting the following requirements: (a) At least one Small Tree per 200 sf, one Medium Tree per 300 sf; or one Large Tree per 400 sf of landscaped area. (b) Trees planted shall be generally evenly distributed over the site. Shrubs and groundcover plants as required above. (c) Trees placed to create a canopy in desired locations without obstructing necessary view corridors.
Proposed: Parking lot landscaping requirements focus on distribution. No parking-specific tree calculation; all trees count toward required tree credits per lot area. Parking Lot Perimeter Landscaping is not required in UR-1, UR-2, UR-3 Districts Parking Landscape Requirements for 16 stalls or less: (a) No stall shall be more than 50 feet from a tree trunk. (b) Long rows of parking shall be broken by islands or peninsulas with trees, such that there are no more than eight parking stalls in a row without a tree. Where this cannot be accommodated within the interior landscape, trees may be located in the perimeter landscape within 10' of the parking area. (c) Parking lot trees may be counted toward overall District Standard for tree credits based on lot area		

Why?

- **Current landscaping code is oriented toward larger parking lots with multiple rows of parking. We suggest changing the threshold to 16 stalls rather than 15 (which corresponds to the maximum density on a double 12,000 SF lot in the UR-3 zone) and simplifying the code for Middle Housing.**



Inspections / Bonding

Some cities have implemented systems for post-planting follow up / bonding requirements. For more information, City staff in the following cities could provide insight into workload implications:

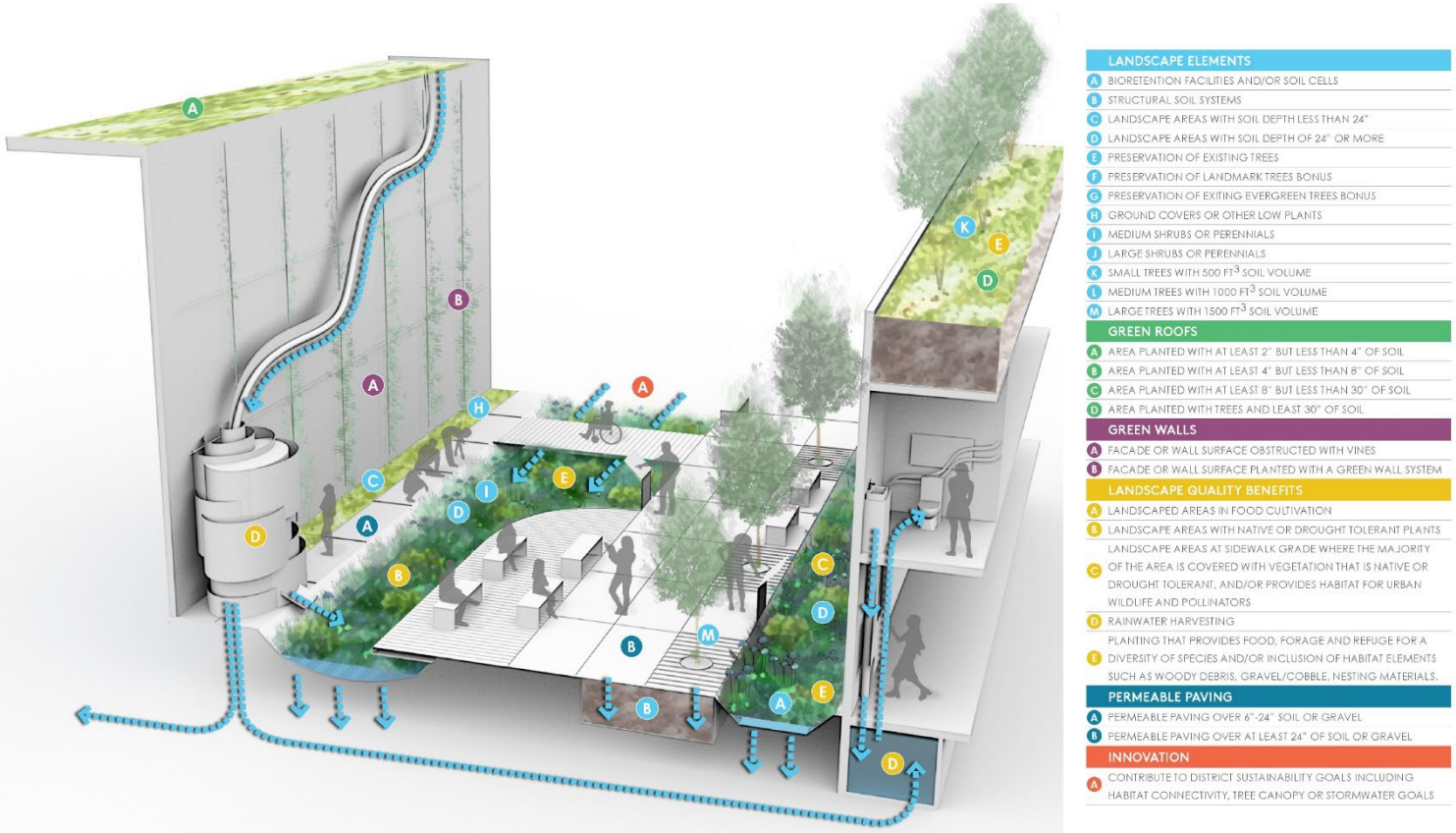
- Security deposit / letters of credit required for all replacement trees to ensure survival (Victoria, B.C.)
- Bonds for proper maintenance (Burien, Lakewood)
- Maintenance Periods:
  - 5 years / life of “development” (Kirkland)
  - Life of “project” (Burien)
  - Life of “project” (Seattle)
  - 3 years / life of “project” (Tacoma)

BEYOND HOME IN TACOMA
REVISIONS FOR FURTHER STUDY

Affordable Housing

For Further Study: Green Factor

Green Factor is a tool that provides flexibility to support increased housing and equivalent benefits of tree function such as green roofs, vegetation layers, soils and pervious surfaces. Taken together, the landscaping benefits can improve quality of life, as illustrated below.



Required inputs from the developer are clearly identified

Minimum score can be defined by zone

Revised 12/28/10

Green Factor Score Sheet SEATTLE×green factor

Project title: 1145 NW MARKET ST

		enter sq ft of parcel			
	Parcel size *(enter this value first)* *	19,993		SCORE	0.402
	Landscape Elements**	**Totals from GF worksheet**		**Factor**	**Total**
A	**Landscaped areas (select one of the following for each area)**				
1	Landscaped areas with a soil depth of less than 24"	enter sq ft 1325		0.1	133
2	Landscaped areas with a soil depth of 24" or greater	enter sq ft 2772		0.6	1,663.2
3	Bioretention facilities	enter sq ft 0		1.0	-
B	**Plantings (credit for plants in landscaped areas from Section A)**				
1	Mulch, ground covers, or other plants less than 2' tall at maturity	enter sq ft 0		0.1	-
2	Shrubs or perennials 2'+ at maturity - calculated at 12 sq ft per plant (typically planted no closer than 18" on center)	enter number of plants 509	6108	0.3	1,832
3	Tree canopy for "small trees" or equivalent (canopy spread 8' to 15') - calculated at 75 sq ft per tree	enter number of plants 3	225	0.3	68
4	Tree canopy for "small/medium trees" or equivalent (canopy spread 16' to 20') - calculated at 150 sq ft per tree	enter number of plants 0	0	0.3	-
5	Tree canopy for "medium/large trees" or equivalent (canopy spread of 21' to 25') - calculated at 250 sq ft per tree	enter number of plants 3	750	0.4	300.0
6	Tree canopy for "large trees" or equivalent (canopy spread of 26' to 30') - calculated at 350 sq ft per tree	enter number of plants 1	350	0.4	140.0
7	Tree canopy for preservation of large existing trees with trunks 6"+ in diameter - calculated at 20 sq ft per inch diameter	enter inches DBH 58	1160	0.8	928.0
C	**Green roofs**				
1	Over at least 2" and less than 4" of growth medium	enter sq ft 0		0.4	-
2	Over at least 4" of growth medium	enter sq ft 3840		0.7	2,688.0
D	**Vegetated walls**	enter sq ft 0		0.7	-
E	**Approved water features**	enter sq ft 0		0.7	-
F	**Permeable paving**				
1	Permeable paving over at least 6" and less than 24" of soil or gravel	enter sq ft 0		0.2	-
2	Permeable paving over at least 24" of soil or gravel	enter sq ft 0		0.5	-
G	**Structural soil systems**	enter sq ft 0		0.2	-

A greater "factor" incentivizes certain elements by offering more credit

For Further Study:
Green Factor & Alignment with Other Zones

Citywide / all zones

Implementing Green Factor is a large project that cannot be accomplished in Home in Tacoma, but should be considered for implementation citywide

Existing
No Green Factor requirement

Proposed:
Green Factor system
Extension of the Urban Residential approach to other zones for consistency

Why?

- **Development Flexibility:** Green Factor allocates credit to trees and other landscape elements that provide similar benefits, so the green strategies chosen can closely match the opportunities of each site and project, while providing the cooling, shading, and stormwater benefits of trees.
- **Ease of Use:** Requirements are combined in a single worksheet with a clearly defined minimum score
- **Incentivizing Large Trees:** The weighting of each element allows cities to incentivize certain elements over others.
- **Staffing Capacity:** Time needed for staffing enforcement is limited because landscape architects certify that installation is aligned with permit drawings