

GREAT STREETS BTV

Downtown Street Design & Construction Standards



Presented to:
Transportation, Energy, Utilities Committee
October 17, 2017

What is a “great street”?

A GREAT STREET IS...

PRIVATE



PUBLIC



Burlingtonians have said they'd like to see improvements on the street and these are the zones where those improvements can happen.

A GREAT STREET IS...

WALKABLE & BIKEABLE

PRIVATE



PUBLIC



Clear
Sidewalks



Bike Path &
Buffer

Burlingtonians have said they'd like to see improvements on the street and these are the zones where those improvements can happen.

A GREAT STREET IS...

WALKABLE & BIKEABLE

SUSTAINABLE

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Clear Sidewalks



Bike Path & Buffer



Stormwater/ Rain Gardens

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A GREAT STREET IS...

WALKABLE & BIKEABLE

SUSTAINABLE

VIBRANT

PRIVATE



PUBLIC



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Building
Frontage

Clear
Sidewalks

Bike Path &
Buffer

Stormwater/
Rain Gardens

A GREAT STREET IS...

WALKABLE & BIKEABLE

SUSTAINABLE

VIBRANT

FUNCTIONAL

PRIVATE



PUBLIC



Burlingtonians have said they'd like to see improvements on the street and these are the zones where those improvements can happen.

Building Frontage

Clear Sidewalks

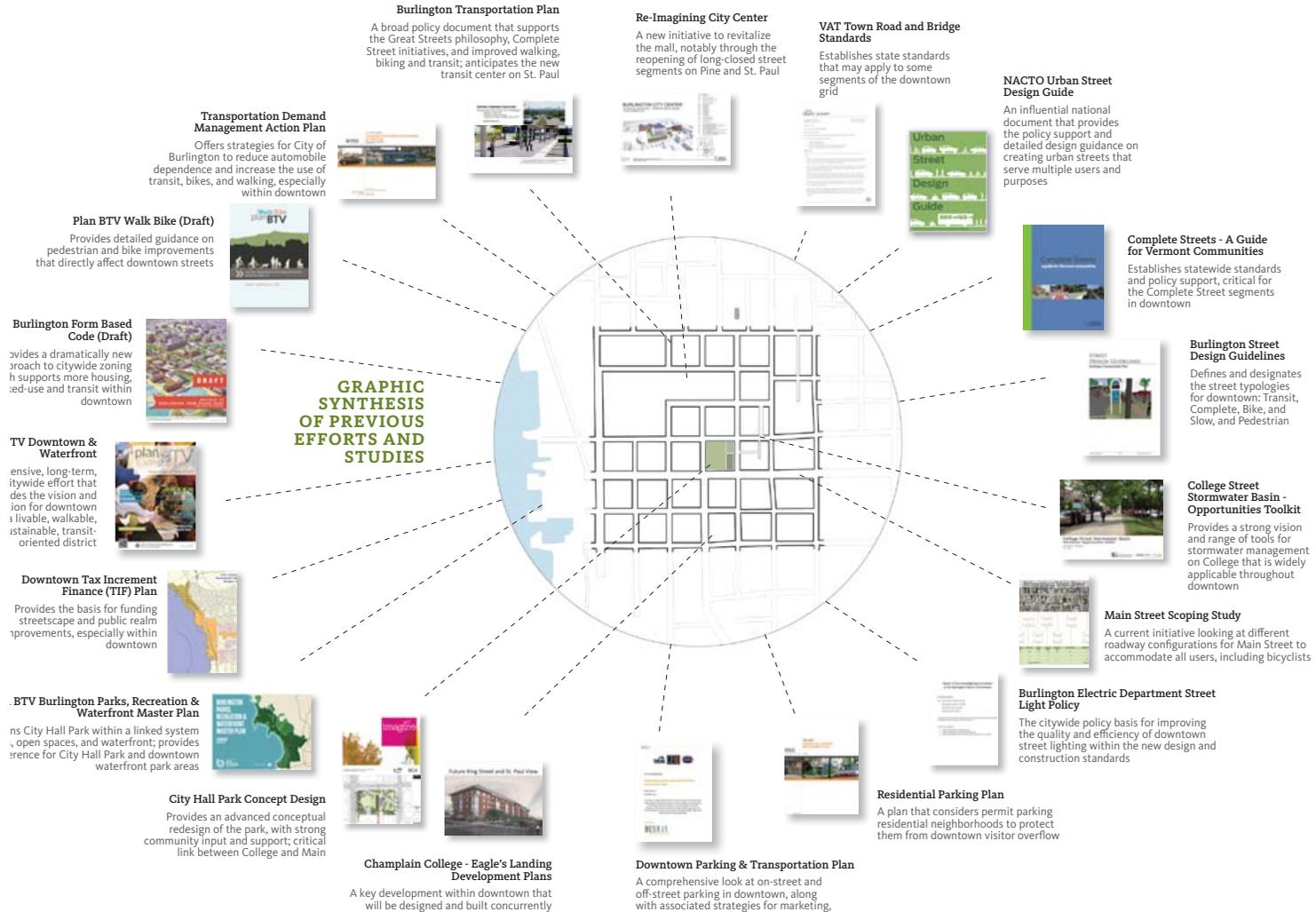
Tree Belt/ Furnishings

Bike Path & Buffer

Stormwater/ Rain Gardens

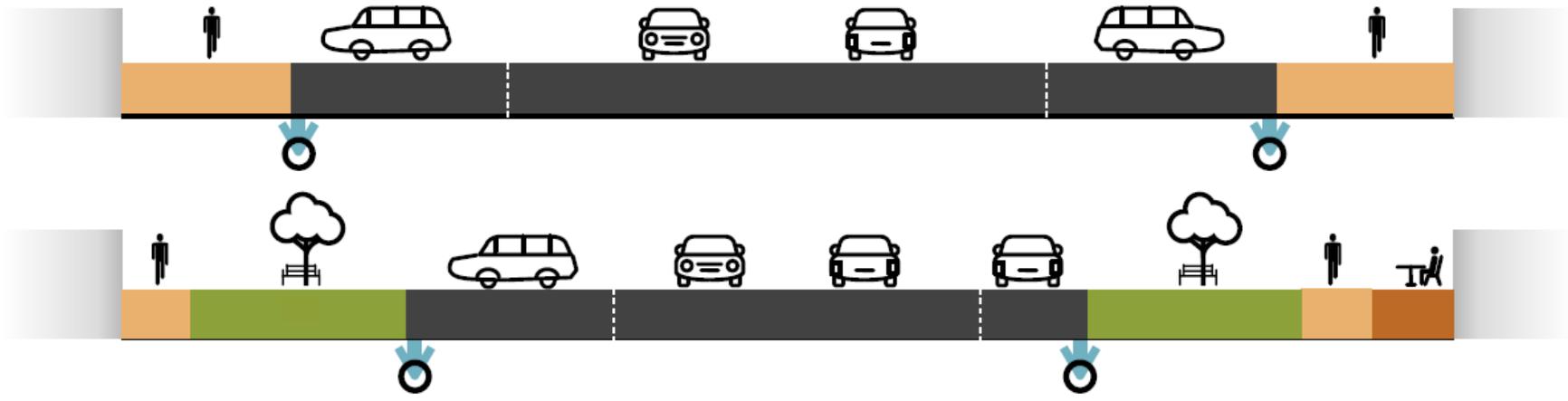
Parking/ Roadway

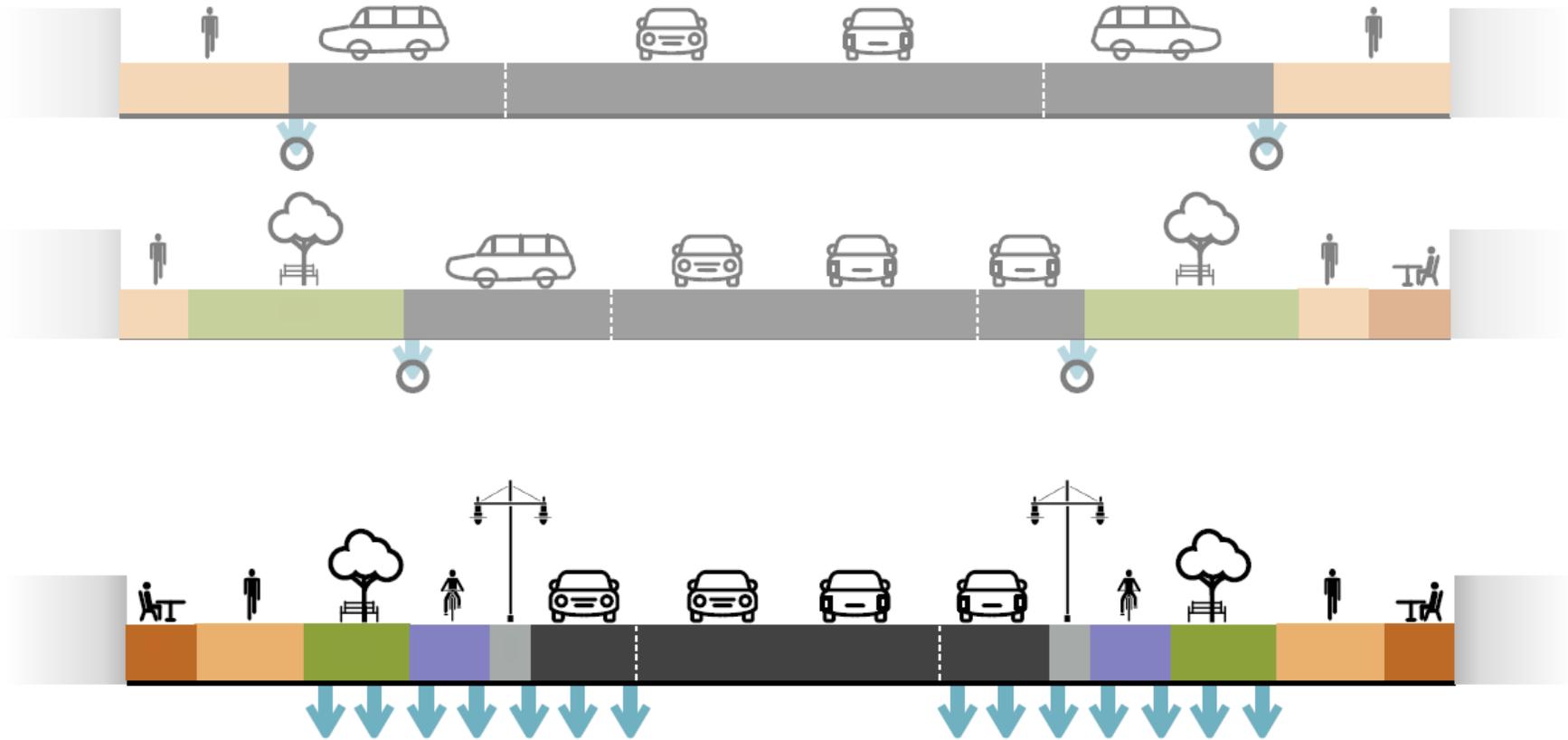
A VISION DERIVED FROM...



**How will the standards
transform BTV's streets?**

RESTORE BALANCE AMONG USERS/USES...



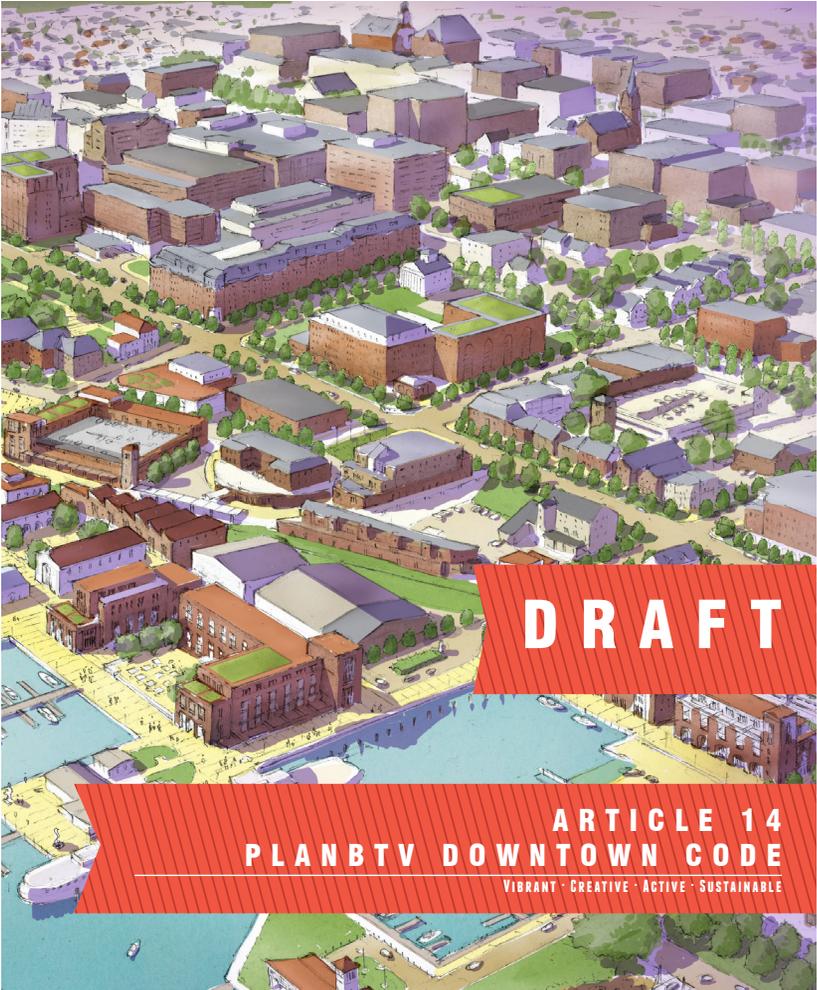


UNIFIED (NOT UNIFORM) VISUAL LANGUAGE...



GREAT STREETS BTV

City of Burlington
Downtown Street Design & Construction Standards



DRAFT

ARTICLE 14 PLANBTV DOWNTOWN CODE

VIBRANT · CREATIVE · ACTIVE · SUSTAINABLE

The creation of this Code was a collaboration of the City of Burlington and Town Planning & Urban Design Collaborative LLC.
Learn more at: www.burlingtonvt.gov/planBTV/

City Council Public Hearing DRAFT: Sept. 18, 2017

REFRAME THE CENTER OF DOWNTOWN...



What do the standards do?

THE STANDARDS DO:

- Identify **common palette of materials & furnishings** to implement on streets over time
- **Compliment Church Street's visual character**, without replicating wholesale
- Create a public realm that **showcases buildings, signs, public art**, etc as the unique and authentic elements within downtown
- **Combine city, state, federal requirements** regarding rights-of-way in a single document
- Include **preferred and alternate elements to allow flexibility** to adapt to unique conditions, project budgets, other constraints
- Take **precedence over other City policies/guidance** regarding the right-of-way, unless otherwise noted

THE STANDARDS DO NOT:

- Mandate the **immediate reconstruction of streets or replacement** of all fixtures/elements; instead, anticipate application of standards as projects occur or elements reach end of life
- Provide **specific designs for each street**; some streets will require corridor-specific studies
- Inventory **all conditions that may exist** in the right-of-way, especially unknown subsurface conditions

PROVIDE A CRITICAL RESOURCE TO:

- **Planners & project managers** responsible for overseeing projects within the public right-of-way, including city departments and outside agencies
- **Professional street designers** preparing the specific plans for a public right-of-way
- **People who experience streets**, via all modes and for all purposes, and will benefit from a more predictable development of public streets

How to use the standards?

PROJECT MANAGER

1.

Review
**Design
Considerations**
for the street/
corridor

2.

Identify
**Proposed
Future Street
Type**

Include details in Scope
of Work, RFPs/RFQs for
consultant services...

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Then, project
development
or scoping
phase...



**PROJECT MANAGER or
PROFESSIONAL & USERS**

3.

Select appropriate
options to layout
**Roadway &
Pedestrian
Zones**

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Review **Design Considerations** for the street/ corridor

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PROJECT MANAGER or PROFESSIONAL & USERS

PROFESSIONAL STREET DESIGNER

6.

Use **Materials & Furnishings Palette** to select materials, furnishings, etc

5.

Utilize **Street & Intersection Assemblies** to select & place needed elements

4.

Layout design, applying all pertinent **Zone Dimensions** to selected options

Finally, prepare plans & construction documents, cost estimates, etc. based on...

3.

Select appropriate options to layout **Roadway & Pedestrian Zones**

Bringing it all together: St. Paul Street Plans

PROJECT MANAGER

1.

Review
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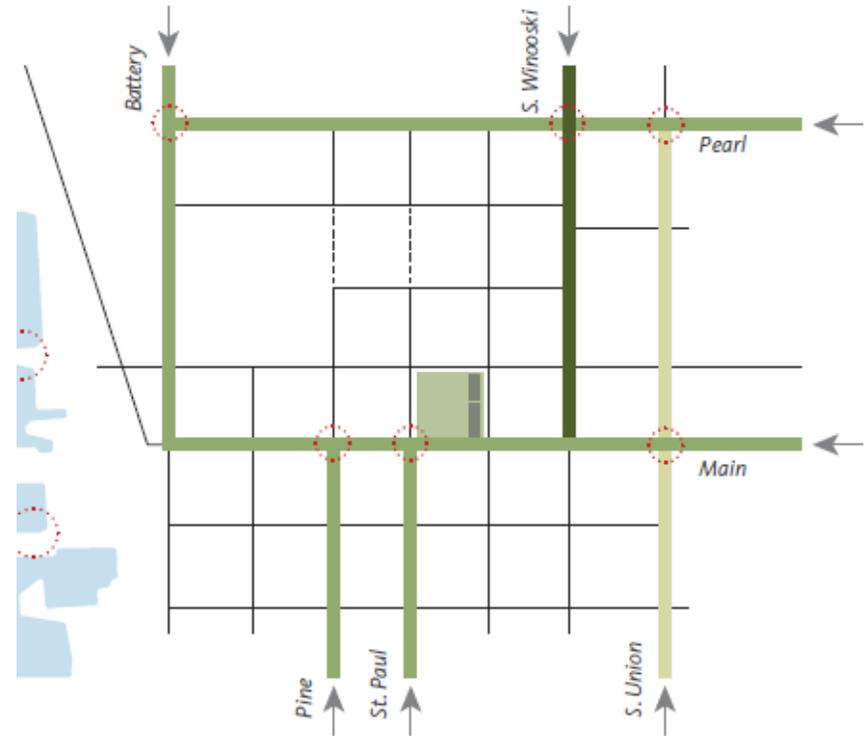
2.

Identify
**Proposed
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Type**

Include details in Scope
of Work, RFPs/RFQs for
consultant services...

1.a. REVIEW INVENTORY OF CONDITIONS

- Current pavement width 38.5' - 55'; two-way street, left turn lane at Main
- Current parallel on-street parking all block-faces, with diagonal east side b/w Main-King
- Overhead utilities King-Maple, standard cobrahead lighting assembly
- Limited street trees in sidewalk cut-outs north of King, standard greenbelt south of King
- Major linkage into downtown from south; anticipated future connectivity through mall site



1.b. REVIEW DESIGN CONSIDERATIONS

- **Recommended Street Type: Typical Downtown Commercial**
- Pairs with Church St. to “reframe center” of downtown; gateway from south
- Proposed Roadway Width: 35' (i.e. curb-to-curb); Proposed Design Speed: less than 25mph
- All street frontages require shop fronts per planBTV Downtown Code
- Walk-Bike Plan does not indicate separated bike facilities; transit service
- Underground overhead utilities

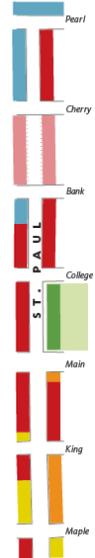
Primary North-South Streets

Burlington's Downtown Streets: Design Considerations for Street Corridors

ST. PAUL ST.

Design Considerations
St. Paul serves as a gateway into downtown from Route 7 and Shelburne Road from the south. The redevelopment of the Burlington Town Center anticipates that the block between Cherry and Bank streets will be reestablished, where it will merge with the new transit center. Its prevailing ROW is 66', but there are several exceptions, including south of Main where it was made wider to accommodate diagonal parking, and on the proposed Town Center block, which will only be 60'.

The block that adjoins City Hall Park is currently closed to vehicles during the Saturday Farmers Market, and was recently reconstructed. It forms an important pairing with Church St., as the two streets bracket City Hall Park and form part of the “pinwheel” that pivots around the park. St. Paul has numerous historic structures, and will be home to the new Eagles Landing development of Champlain College between King and Maple. PlanBTV Walk/Bike indicates that bike facilities should be implemented on the northern part of St. Paul near its terminus with Pearl Street, in order to connect the downtown core with the protected bike facility proposed for the east-west corridor bounding downtown.



Character/Uses	
Urban Regional Linkages	South: Major historic connector to Shelburne Rd.
Terminus within Downtown	North: storefronts @ Pearl
Terrain	Gently sloped
High Point/Low Point	High: 222' @ Pearl Low: 199' @ Maple
Views	none
Length	2190' (5330')
Number of Blocks	West: 5 (6) East: 5 (6)
Intersecting Streets	7
Intersections	7 total 4 (6) cross, 3 (0) "T"
Prevailing ROW	66' b/w Pearl-Main 82.5' b/w Main-Maple
Prevailing Roadway	40'
Classification	Class II b/w Pearl-Cherry, Bank-Main Class II b/w Main-Maple
Future Design Speed	≤ 25MPH
Bus Service	Yes, b/w Pearl-Cherry (Transit Center)
Utilities & Lighting	Underground utilities b/w Pearl-Cherry, Bank-King; overhead b/w King-Maple. Ornamental light poles b/w College-Main.
Water Systems	Sanitary sewer and stormwater may be some slippage of stormwater. Soil conditions are unknown
Recommended Street Type	Typical Downtown Commercial

46

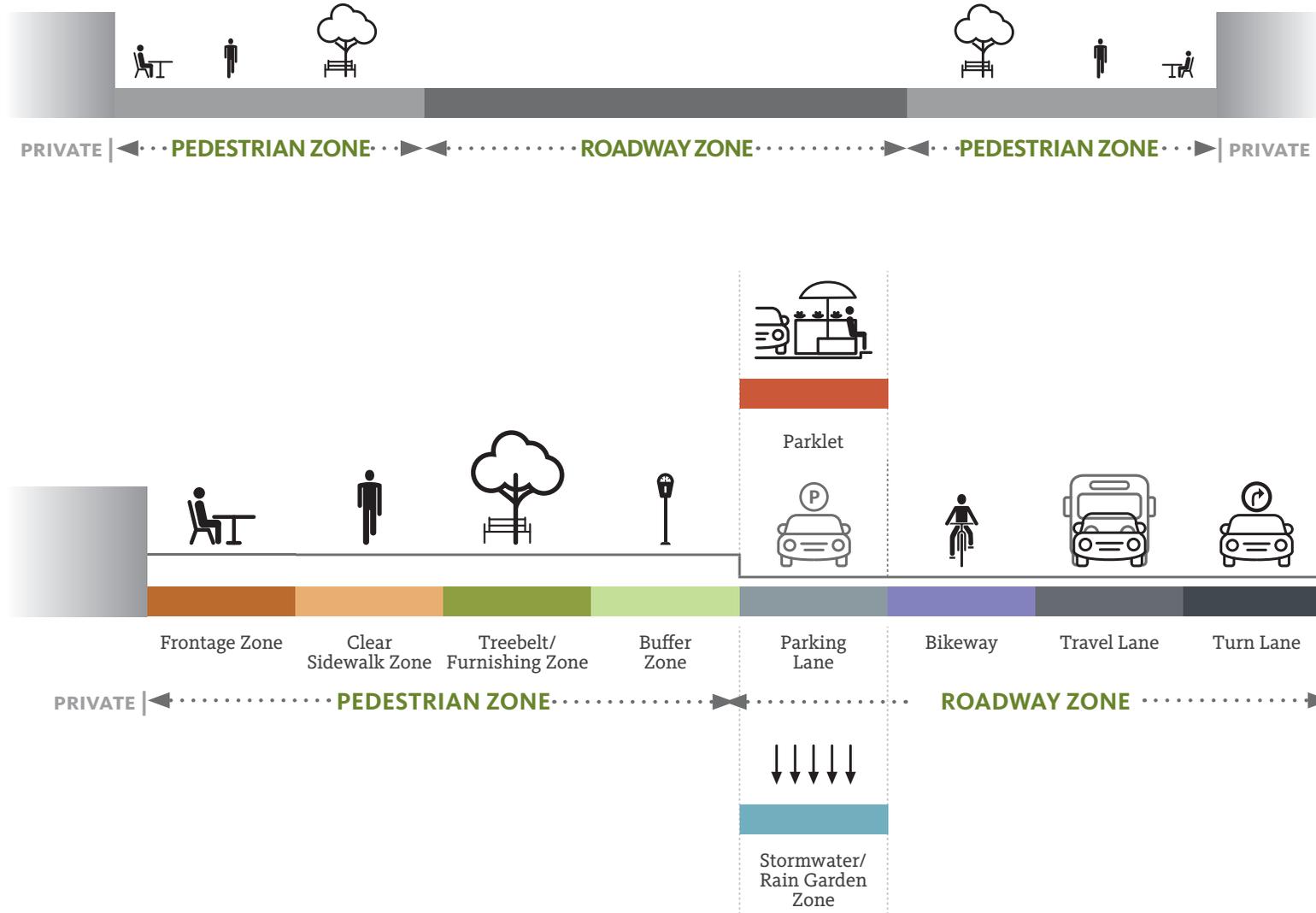
City of Burlington

Downtown Street Design Standards

2. IDENTIFY FUTURE STREET TYPE

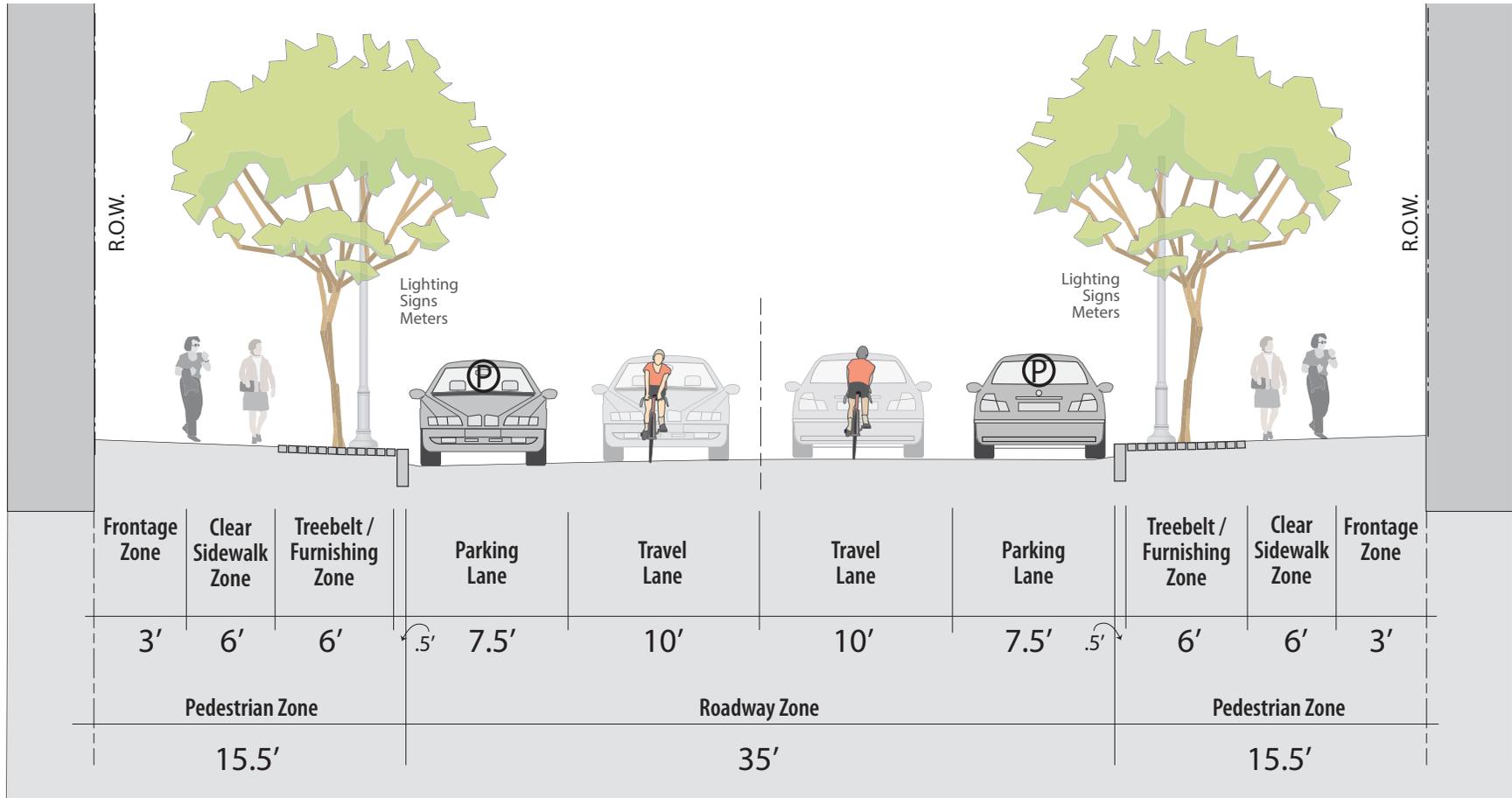
- **Downtown Commercial Street**
 - Typical (66' ROW, 35' Roadway)
 - Minimum (66' ROW, 28' Roadway)
- **Special Downtown Commercial Street**
(99' ROW, 38' Roadway)
- **Downtown Commercial Street- Transit**
 - Typical (66' ROW, 40' Roadway)
 - Minimum (66' ROW, 37' Roadway)
- **Downtown Residential Street**
(66' ROW, 30' Roadway)

2. STREET TYPE- Cross Section & Zone Options



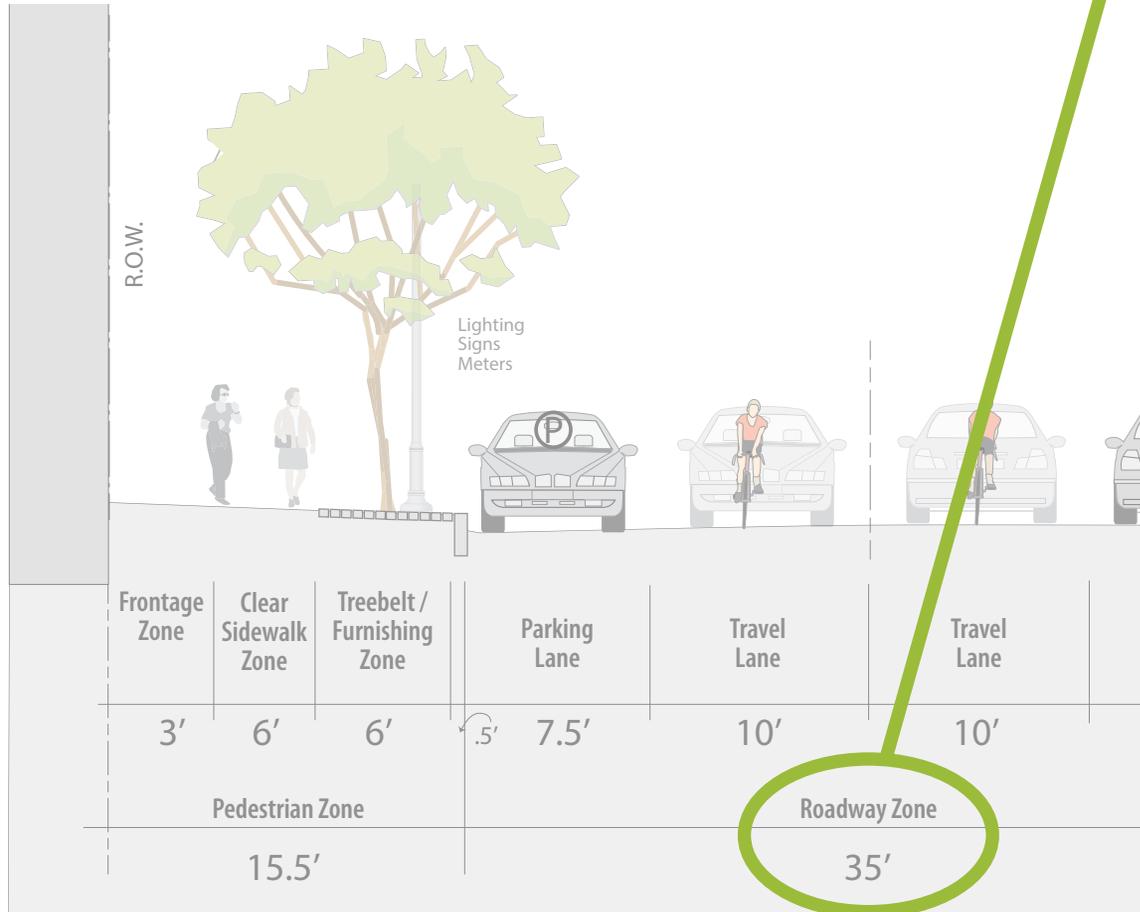
ST PAUL STREET: TYPICAL COMMERCIAL STREET

35' Roadway Zone—31' Pedestrian Zone



ROADWAY ZONE OPTIONS

35' Roadway Zone—31' Pedestrian Zone



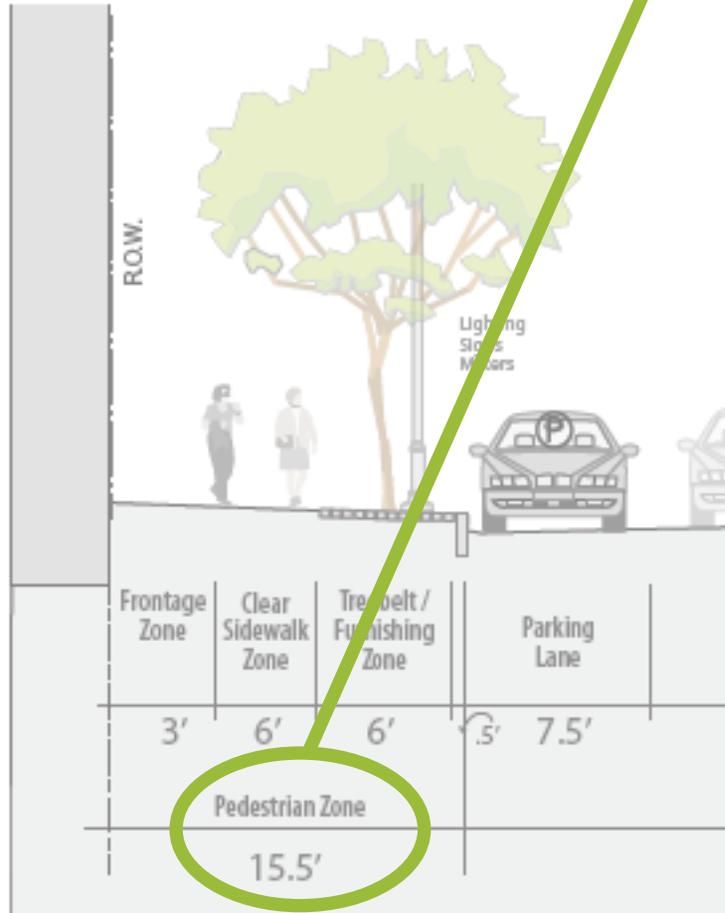
Roadway Zone Options

Options for zone arrangements within the roadway based on streets' unique characteristics and identified plans.

▼	▼	▲	▲
Park	Travel	Travel	Park
7.5'	10'	10'	7.5'
▼	▼	▲	▲
Bike	Travel	Travel	Bike
5' + 2.5'	10'	10'	2.5' + 5'
▼	▼	▲	▲
Park	Travel	Travel	Bike
7.5'	10'	10'	2.5' + 5'

PEDESTRIAN ZONE OPTIONS

35' Roadway Zone—31' Pedestrian Zone



Pedestrian Zone Options

Options for zone arrangements outside the curb based on streets' unique characteristics and adjacent land uses.

15.5 FEET	Curb	Buffer Zone *	Tree Belt/ Furnishing Zone	Clear Sidewalk Zone **	Frontage Zone ***
Preferred	6"	0'	6'	6'	3'
Minimum	6"	0'	6'	5'	0'

* A 12" buffer is required to meet the 18" minimum setback from curb face to vertical obstructions when adjacent to parking. When there is no buffer zone, no vertical elements can be within the outermost 18" of the tree belt.

** The ADA minimum 4' walkway (with 5' width every 200') may be applied.

*** Minimum 1' Frontage Zone required next to built structure, except on residential streets.

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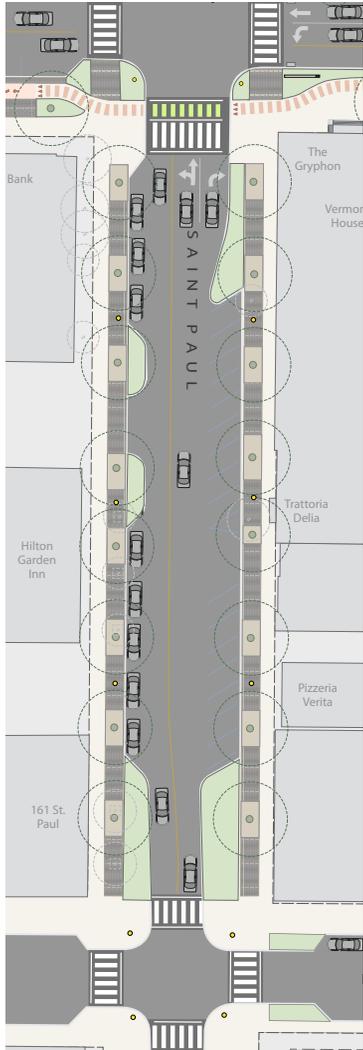


**PROJECT MANAGER or
PROFESSIONAL & USERS**

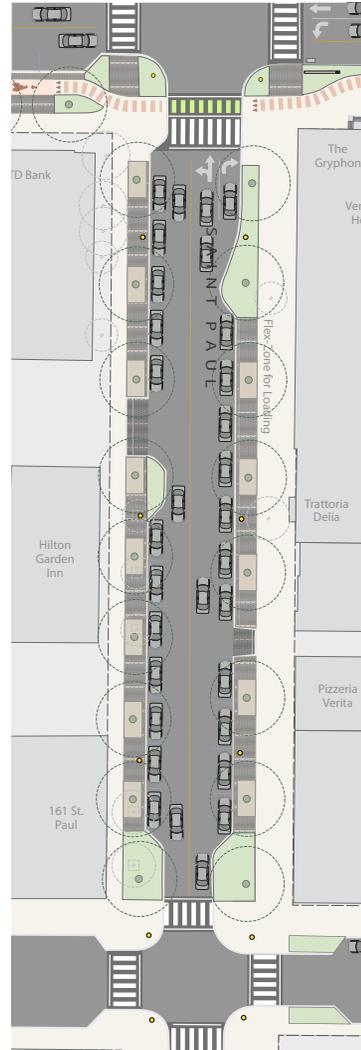
3.

Select appropriate
options to layout
**Roadway &
Pedestrian
Zones**

3. SELECT APPROPRIATE LAYOUT OPTIONS



VS



BALANCE USERS & USES

WALKABLE & BIKEABLE

SUSTAINABLE

VIBRANT

FUNCTIONAL

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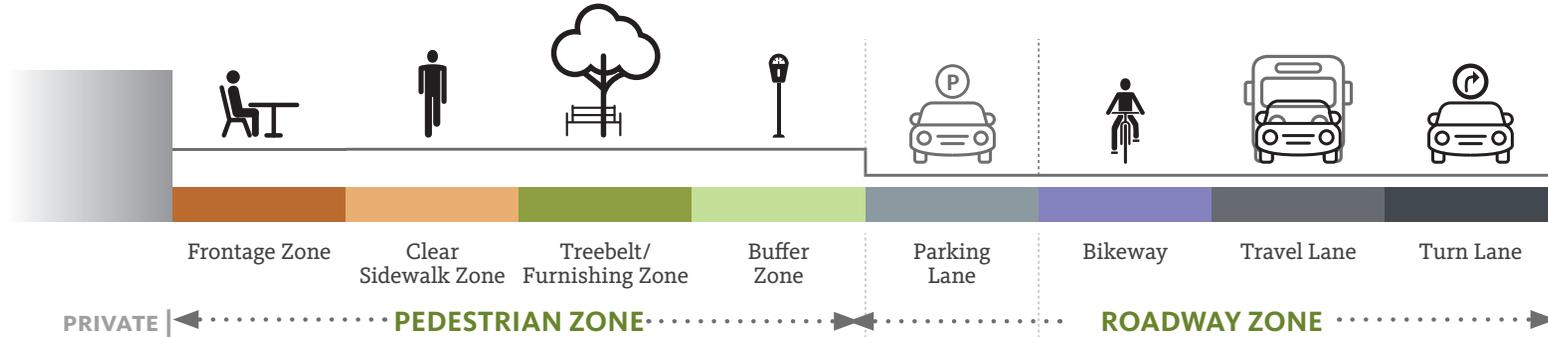
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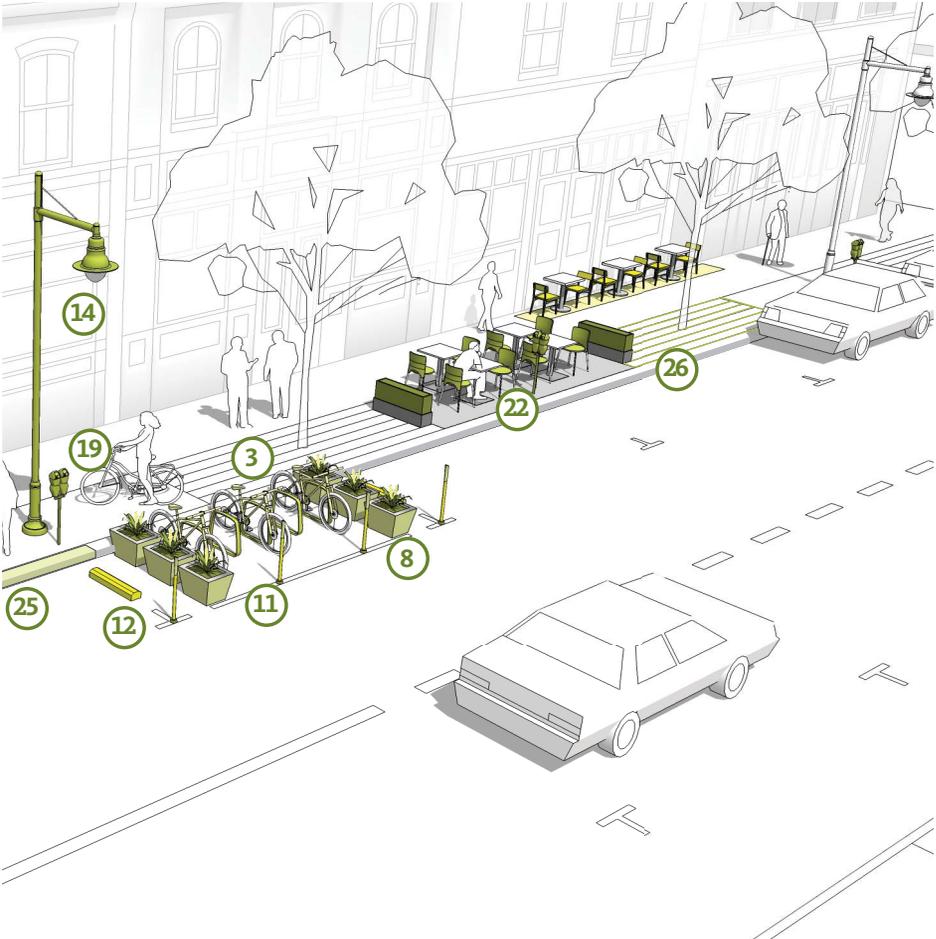
4. LAYOUT DESIGN- ZONE DIMENSIONS



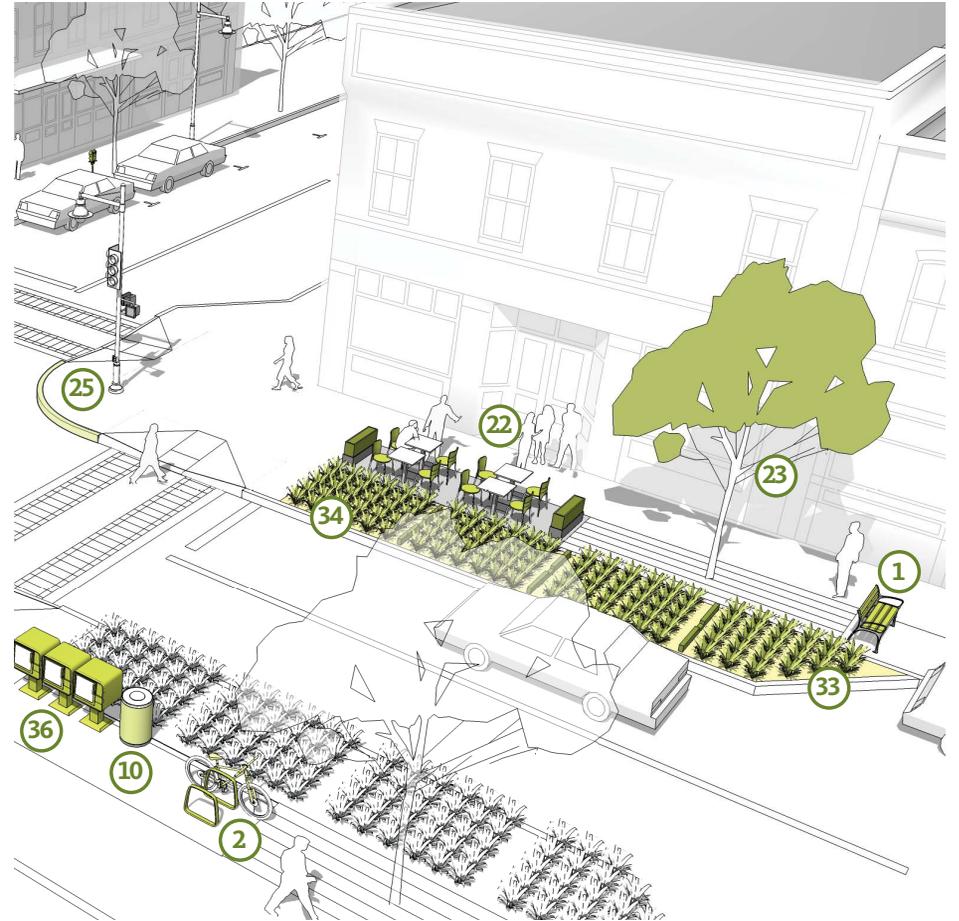
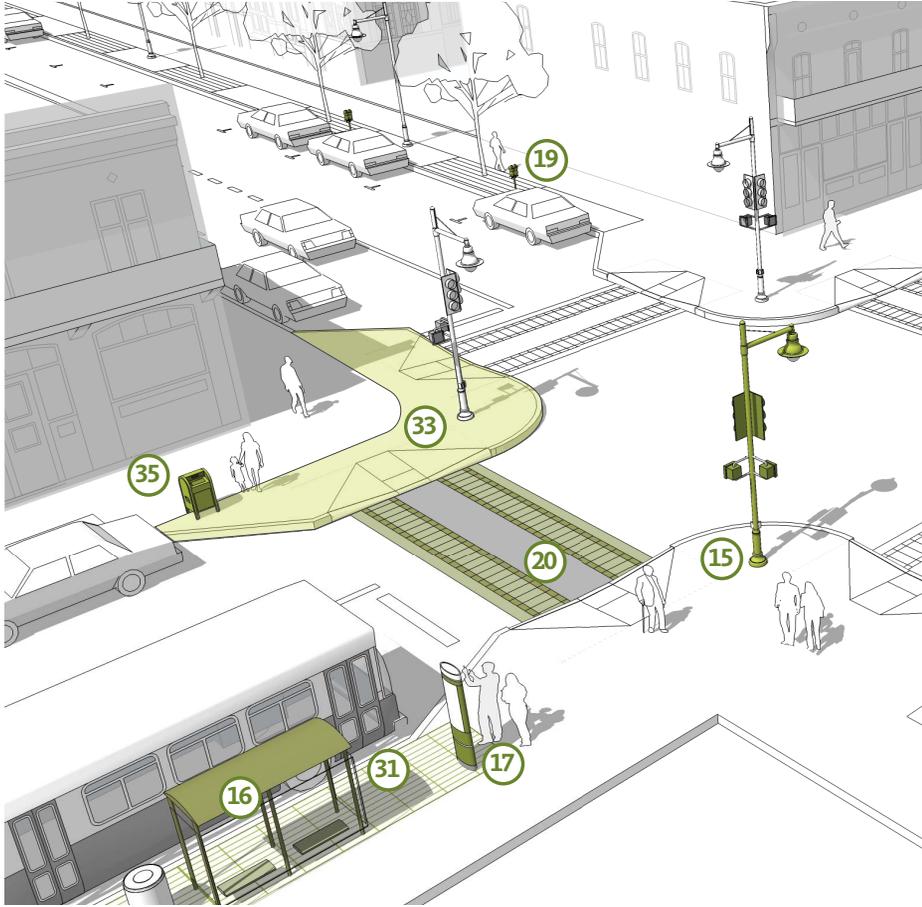
Zone	Dimensions	Considerations	Add'l Info
Travel Lane 	10' minimum; 10.5' minimum on transit/truck routes	<ul style="list-style-type: none"> • Wider travel lanes (11' to 12') are appropriate in locations with high volumes of heavy vehicles. • Travel lane widths of 10' generally provide adequate safety in urban settings while discouraging speeding. City may choose to use 11' lanes (10.5' min.) on designated truck and bus routes. 	VTrans ref. dwg. Standard E-193 Pavement Marking Details <i>App. A-7</i>
Clear Sidewalk Zone 	5' width minimum; see Preferred for each street type Slab thickness: 5" residential 8" commercial	The Sidewalk Zone should be clear of any obstructions including utilities, traffic control devices, trees, and furniture. While these guidelines prescribe more generous preferred sidewalk zone widths during street reconstruction projects, they also establish a total minimum sidewalk width of 5' for several Street Types. The ADA minimum walkway width is 4', with a 5' width every 200'; this may be applied when severe dimensional constraints exist. When reconstructing sidewalks and relocating utilities, all utility access points and obstructions should be relocated outside of the Sidewalk Zone.	

5. SELECT STREETSCAPE ELEMENTS & SITING

MIDBLOCK



5. SELECT STREETScape ELEMENTS & SITING



PLACEMAKING OPTIONS



5. SELECT STREETScape ELEMENTS & SITING



5. SELECT STREETScape ELEMENTS & SITING

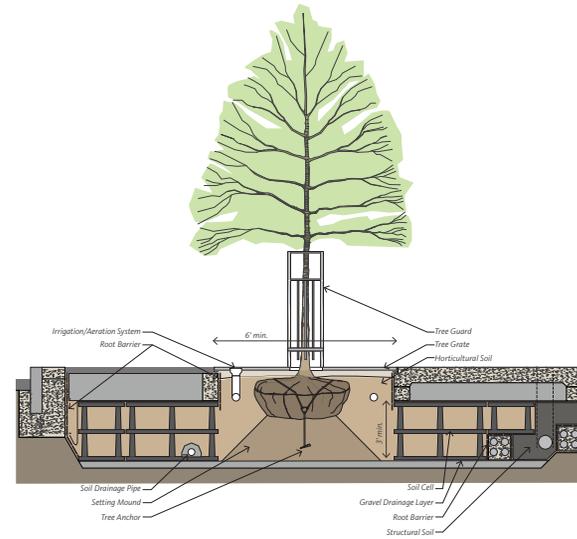


6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE



6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE

- Bikeway types, marking & signage
- Street tree species, treebelt types, planting and spacing details, and subsurface details
- Stormwater facility types, planting and sizing details
- Street light design parameters, technology, poles & fixtures, layouts; utility pole lights and traffic control signals; temporary/festive lighting



Gleditsia triacanthos v. inermis
Halka Honeylocust
Height: 30-40'



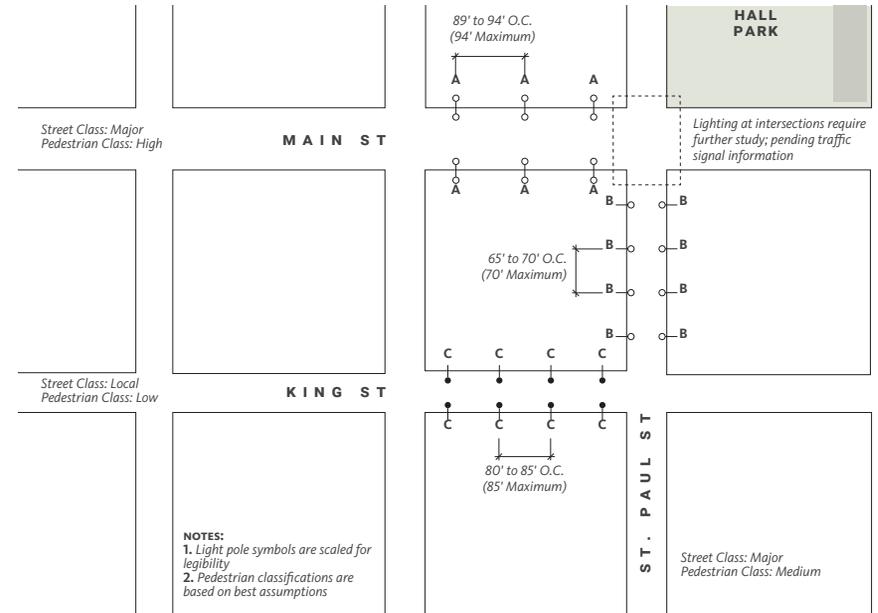
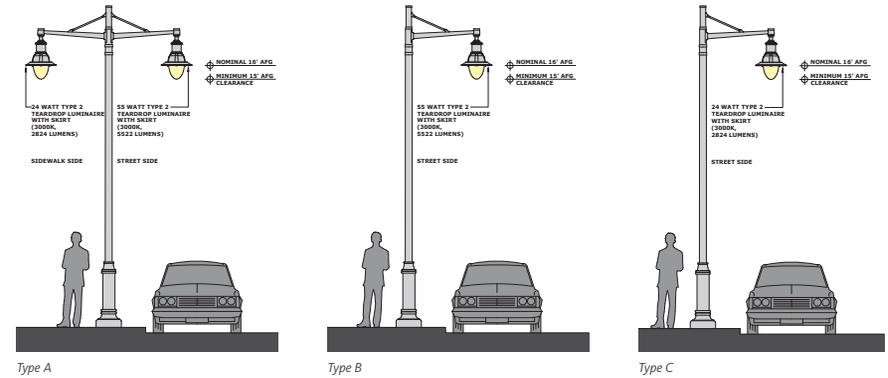
Gleditsia triacanthos v. inermis
Imperial Honeylocust
Height: 25-30'



Gleditsia triacanthos v. inermis
Skyline Honeylocust
Height: 35-45'

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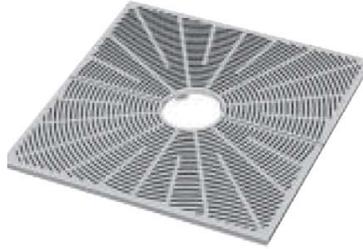
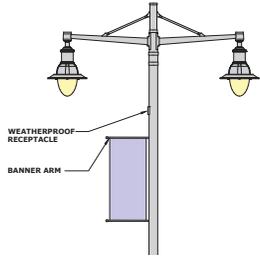


6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE

- Pedestrian & Roadway Zone materials (road, sidewalk, curb, ramps, crosswalks, etc)
- Seating- benches, movable seating
- Bike parking facilities, bus shelters
- Parking Meters
- Parklets, bollards
- Planters
- Trash & Recycling containers



6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE



- Public toilets
- Tree & trench grates, tree guards
- Street Light Pole Banners
- Wayfinding Signs & Info
- Map Kiosks
- Bulletin Boards
- Street Signs

6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE



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Burlington
Great Streets

Street Element Scorecard
CARD 1

1. **APPROPRIATE**
fits with Burlington's Character

2. **AESTHETIC**
general attractiveness

3. **FUNCTIONAL**
serves current uses

4. **ADAPTABLE**
can be modified to serve possible future needs

5. **AFFORDABLE**
initial cost meets project budget

6. **SUSTAINABLE**
helps meet environmental goals

7. **MAINTAINABLE**
ongoing costs meet City's capacities and budget

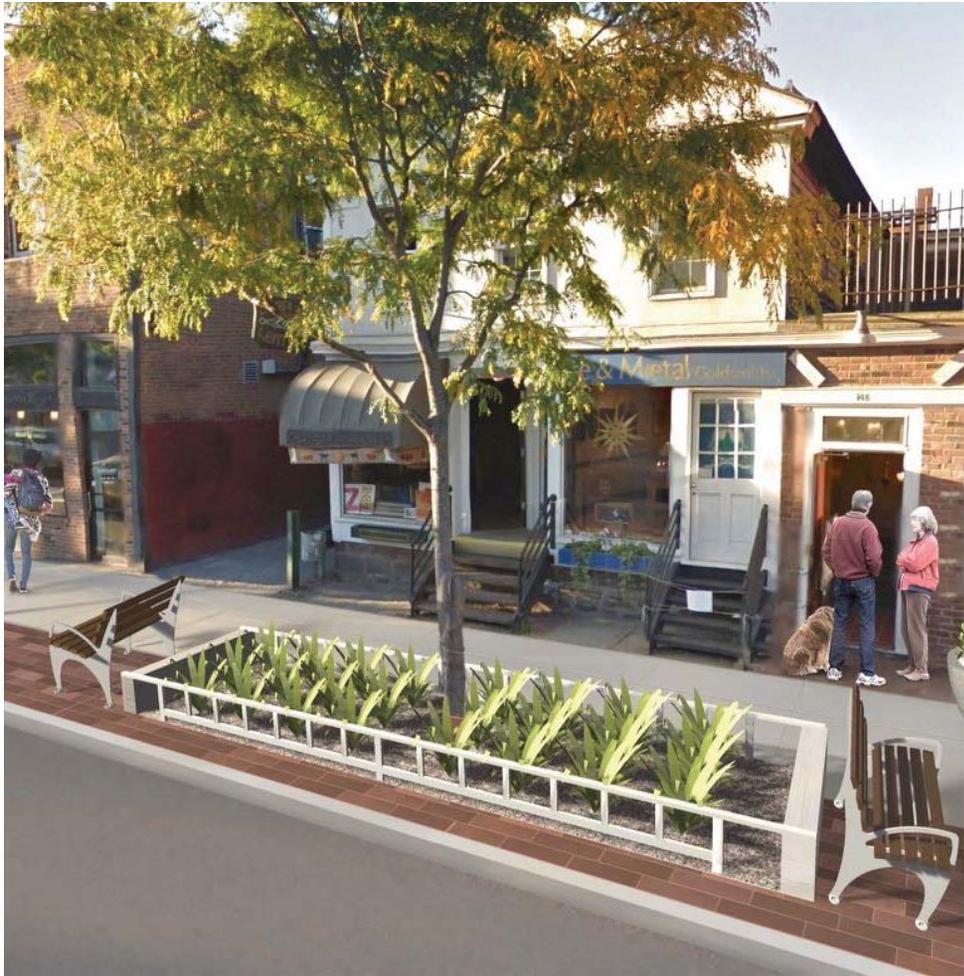
8. **FLEXIBLE**
can be integrated well with existing city elements

9. **AVAILABLE**
reliable and ready suppliers

TOTAL
out of 45

	1	2	3	4	5	6	7	8	9	TOTAL
PEDESTRIAN LIGHTS										
OPTION A.	5	3	4	4	5	2	3	4	4	34
OPTION B.	4	3	2	2	5	1	2	3	3	26
OPTION C.	5	3	4	3	5	2	3	4	4	28
STREET TREES										
OPTION A.	5	3	4	4	5	5	3	4	4	37
OPTION B.	3	3	2	5	1	2	3	1	5	25
OPTION C.	4	3	2	4	5	1	2	3	4	28
TREE GRATES										
OPTION A.	2	3	3	4	5	2	2	3	4	28
OPTION B.	4	3	5	3	4	5	3	5	5	37
OPTION C.	4	3	5	4	5	4	4	5	4	38

6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE



6. CHOOSE FROM MATERIALS & FURNISHINGS PALETTE

RECOMMENDED OPTION



Vera—by mmcité

Dimensions	28" W x 32" H 3 lengths available: 2', 5', 6'
Material	Galvanized Steel Frame & Resysta Board Seat & Back OR Galvanized Steel Frame & Steel Round Grid Seat & Back
Finish	RAL 9007 Gray Aluminum powdercoat
Armrests	Intermediate armrest available
Installation	Anchor with manufacturer-provided hardware. Install per manufacturer instructions.
Manufacturer	mmcité
Models	Resysta: 2' (LV157); 5' (LV155); 6' (LV156) Metal: 2' (LV257); 5' (LV255); 6' (LV256)
Note	Resysta material information on next page and in <i>Appendix section A-8</i>

RECOMMENDED OPTION



Resysta Material

Materials	Rice husk, common salt, mineral oil
Characteristics	Water resistant Frost-proof UV resistant No pest or fungal decay Long lifetime Low maintenance Fully recyclable Contributes to LEED Certification
Color	Color can range from a pale greenish-yellow to a darker brown.
Manufacturer	Resysta
Reference	http://www.resysta.com/material-resysta.html http://resysta.mmcite.com/en
Note	Resysta material information in <i>Appendix section A-8</i>

ALTERNATE OPTION



Custom Bench

Description	Custom benches may be designed for incorporation into the row subject to city approval based on structural performance and aesthetic considerations.
Performance	Custom Benches must be capable of withstanding a concentrated load of 200 lbf applied at any point and in any direction; a uniform load of 50 lbf/ft applied horizontally and concurrently with uniform load of 100 lbf/ft applied vertically downward. Custom Benches shall meet or exceed the requirements of applicable local and state building codes.
Material	Custom Benches must be made of durable materials, capable of resisting corrosion in Burlington's high-salt environment.
Finish	Custom Benches must be finished to resist rust, peeling, chipping, cracking, mold, and mildew. Warranty for 5 years from date of installation.
Installation	Mount permanent Custom Benches to streetscape pavement or a concrete base with corrosion-resistant hardware.

Adopting the Standards

DESIGN TEAM PROCESS INCLUDED:

- **Analysis of existing elements** in use in the public ROW, in some cases on adjacent private property
- Collect **feedback about the elements of a Great Street** in first public meeting
- **Selection of elements** to meet Great Streets Principles; local conditions; applicable local, state, federal standards
- **Compliment**, not replicate Church Street aesthetics
- Provide a range of **recommended, alternative options** for elements
- **Tested elements on concept plans**- city & public feedback
- **Refined recommendations** & provided additional detail
- Detailed review of elements by **staff in 10+ departments/divisions of the City**

NEXT STEPS

- Review with City Boards & Commissions- October, November
- Staff complete technical evaluation & revisions with design team
- DPW approval & recommendation of adoption to City Council
- City Council adoption upon Board & Commission recommendations- December

