

Designing Streets for the Competing Demands in an Urban Environment



Lawrence Marcus, Wallace Montgomery
Henri Stein McCartney, Fairfax County



What is the top
priority of urban
street design
guidance?

What is the
top priority of
urban street
design
guidance?

Option 1

Improve Mobility:

Urban streets will efficiently and reliably move people and goods to, from, and around the City.

What is the
top priority of
urban street
design
guidance?

Option 2

Be Accessible by Everyone:

Urban streets will be accessible by all modes, for people of all ages and abilities.

What is the
top priority of
urban street
design
guidance?

Option 3

Address Safety First:

**Urban streets will be designed to
eliminate severe injuries and fatalities.**

Prioritize
Safety First



***Where do you apply
urban street standards?***



In community gathering places



PORTLAND



Source: Jonathan Maus/Bike Portland

To connect communities



Where a city
highlights its culture



Where a wide variety
of users share space



In town centers:
suburban
becoming urban





In communities
that seek
flexible space







Creative urban street design
elements pop up in small
towns across the globe
Torres Vedras, Portugal



Torres Vedras, Portugal





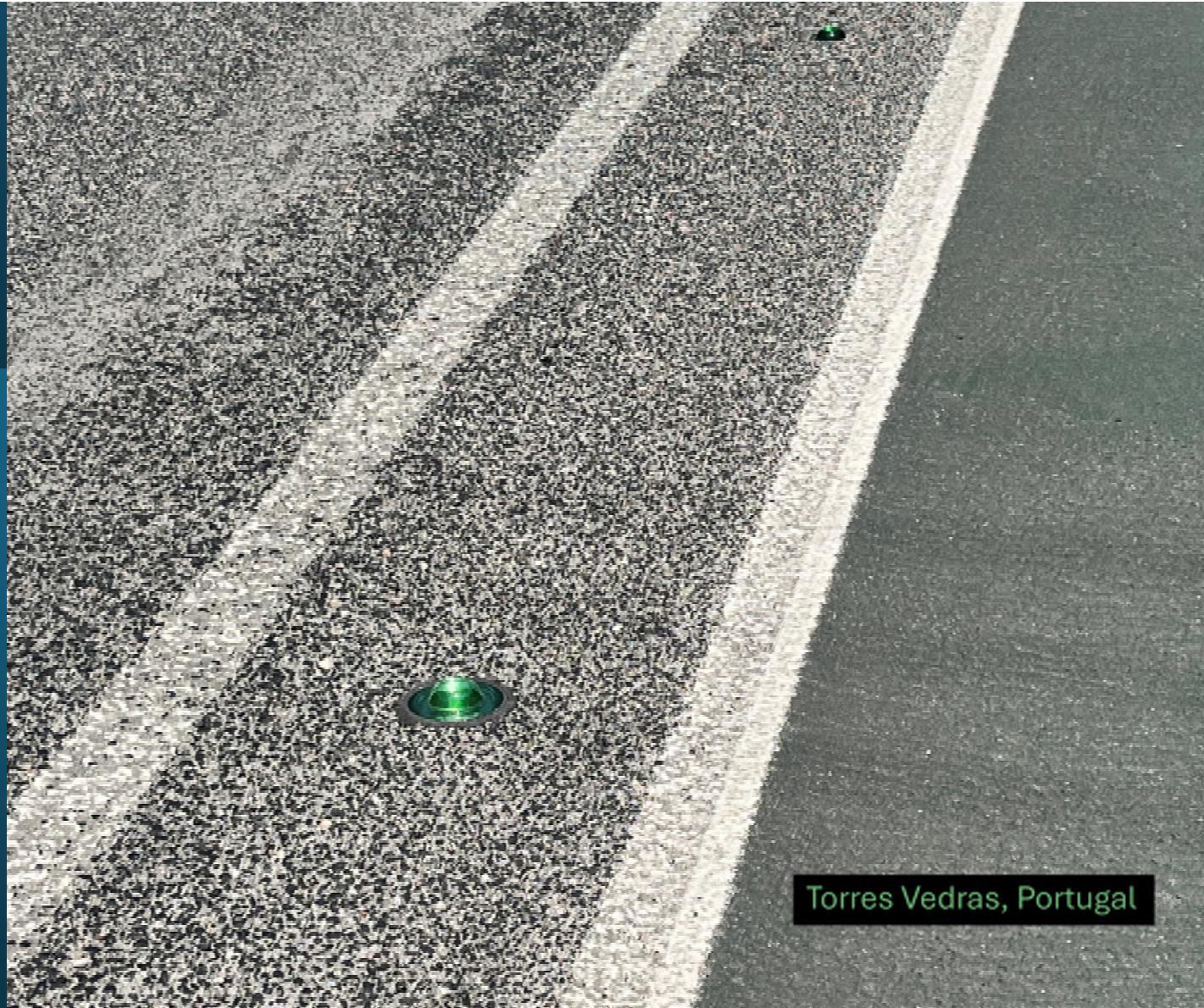
Torres Vedras, Portugal



Torres Vedras, Portugal



Treatments
continue to
evolve, even in
these small towns



Torres Vedras, Portugal

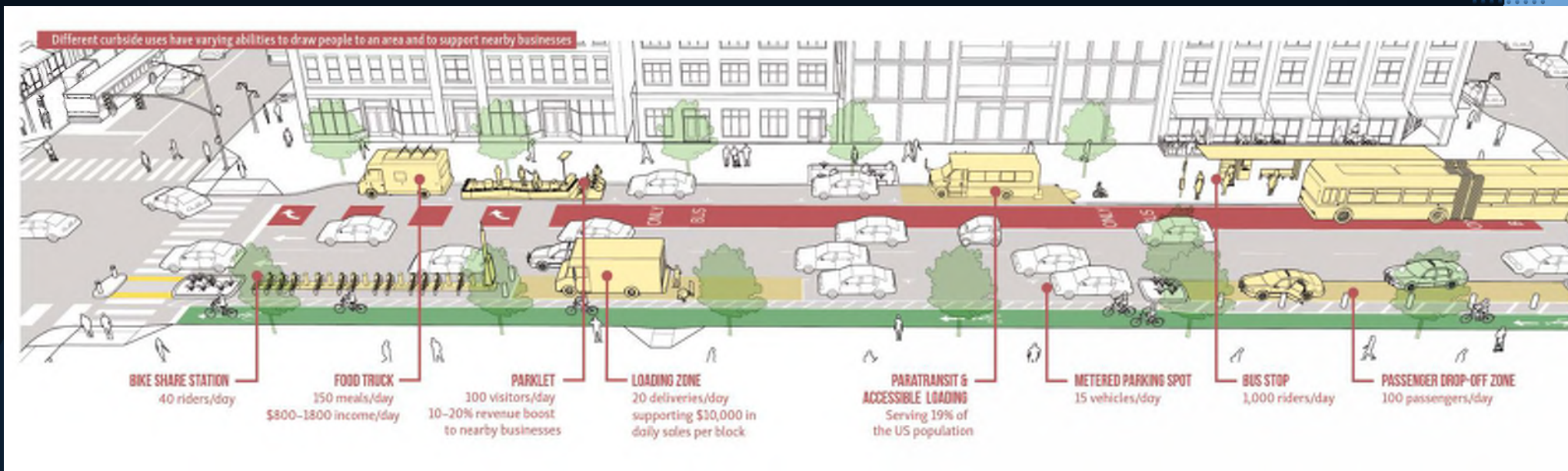
These evolving demands require attention to progressive design specifications



Source: Province of British Columbia

Your design
decisions
matter





The changing demands for our streets requires creative thinking to safely and efficiently move people on urban streets

How do you
accommodate
all these
competing
demands?



Does this cross section accommodate all users of all abilities in a safe manner?

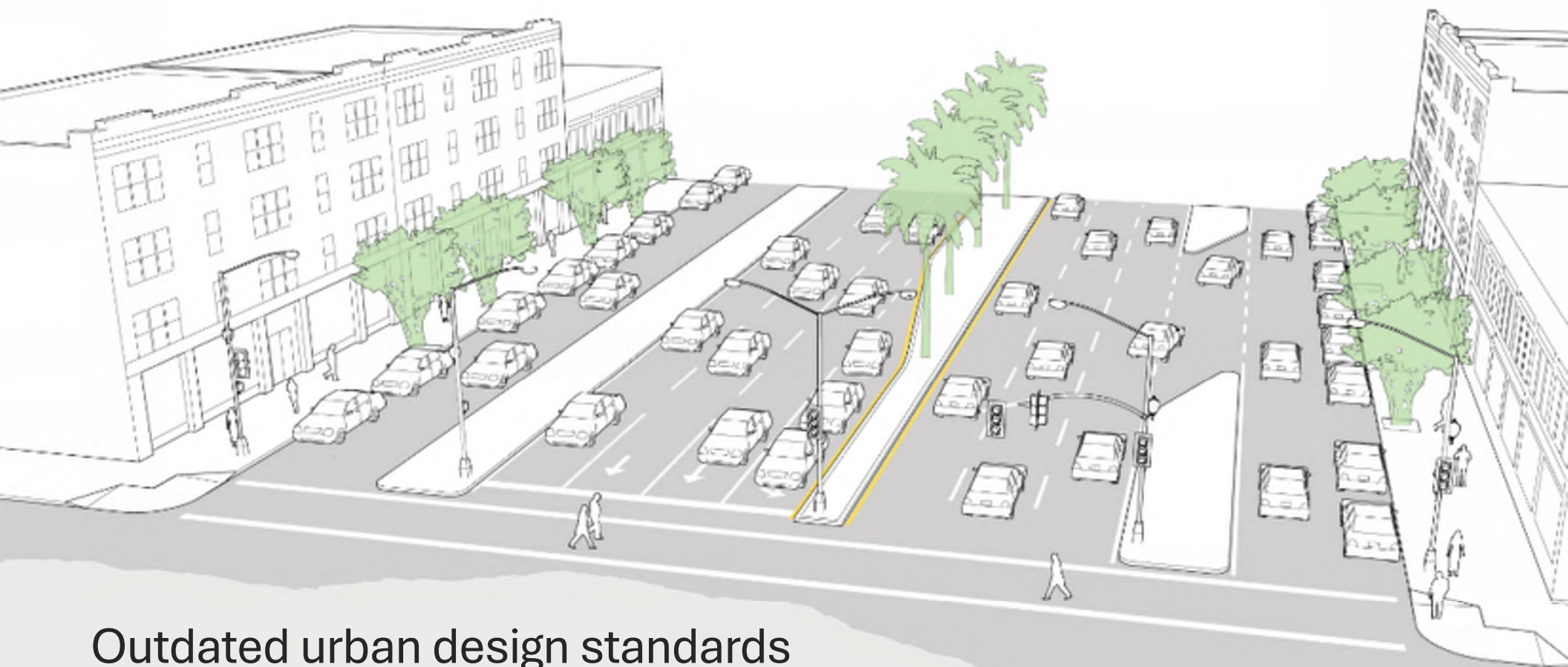


How about this
cross section?

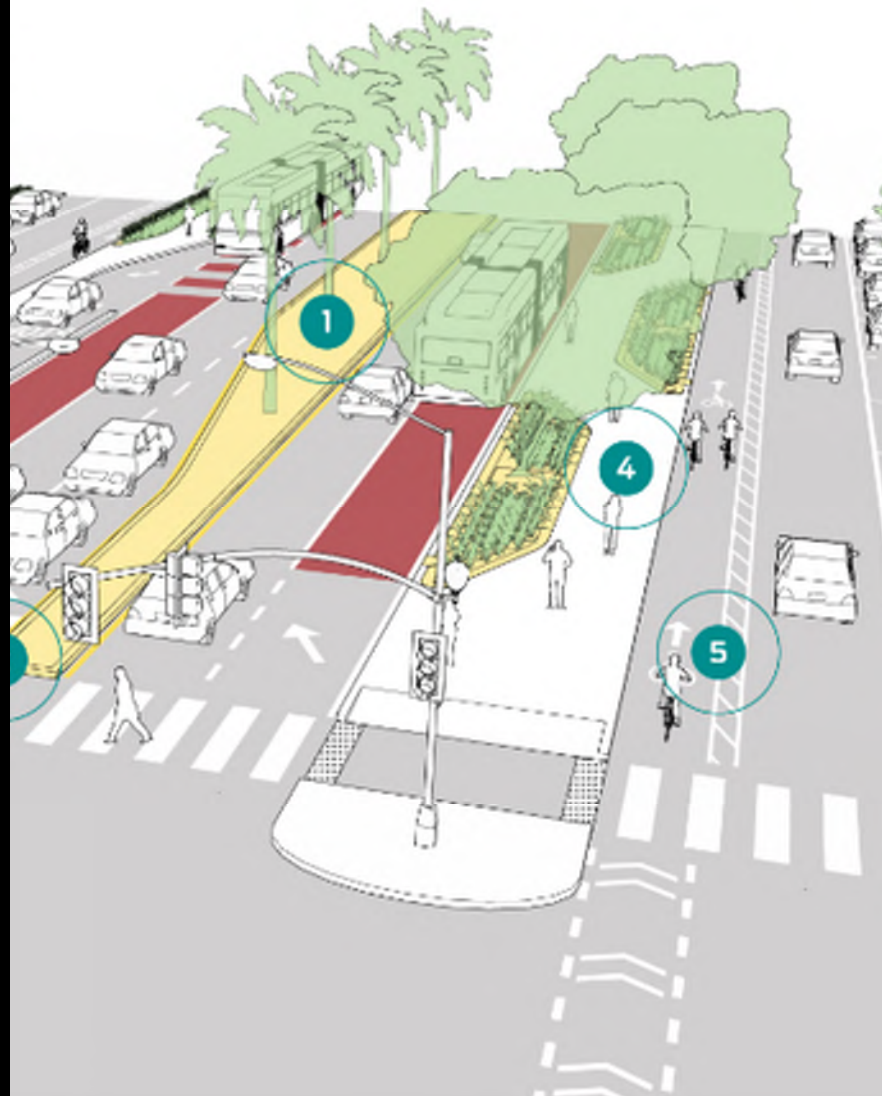


Better?
Why?





Outdated urban design standards
can become a canvas for creativity



Attention to the
entire right-of-way
matters, especially
at intersections

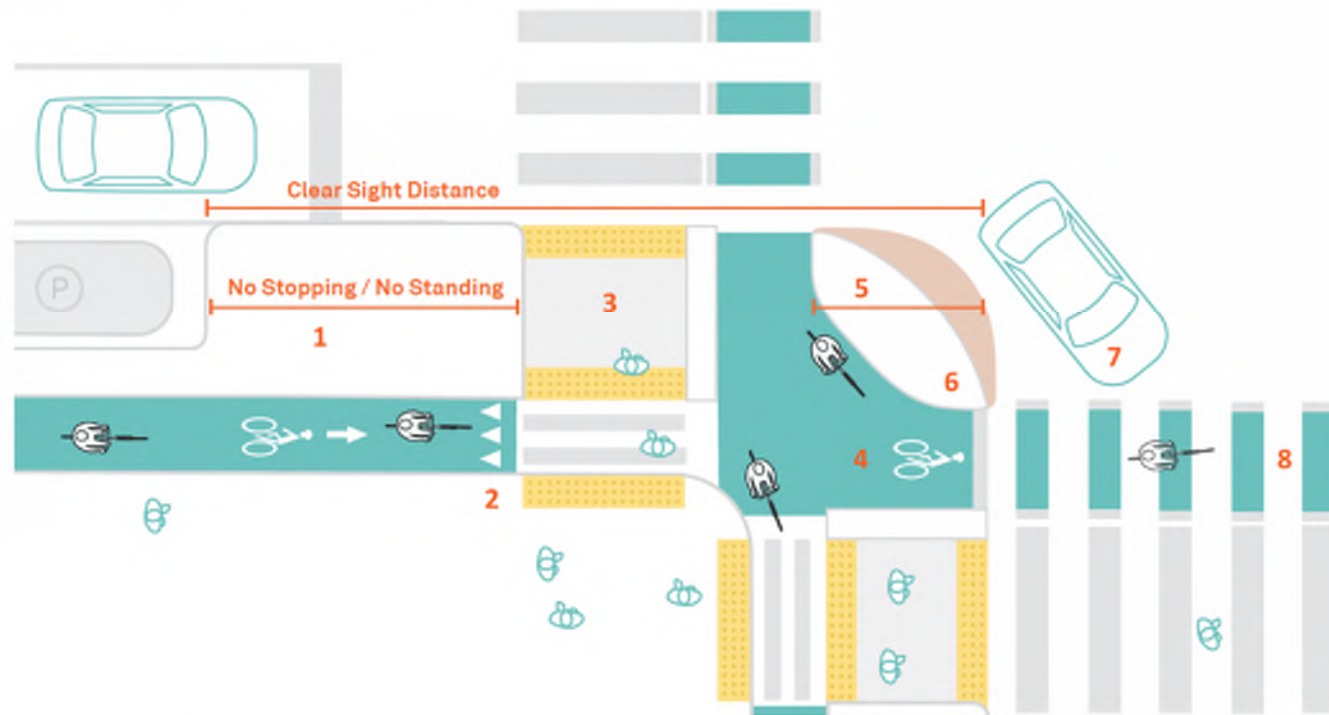


What are the new trends in urban street design guidance?



Protected Intersections

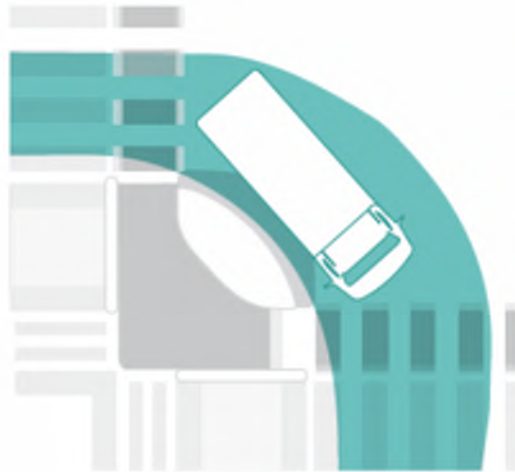
Protected Intersection Diagram



“Don’t Give Up at the Intersection”

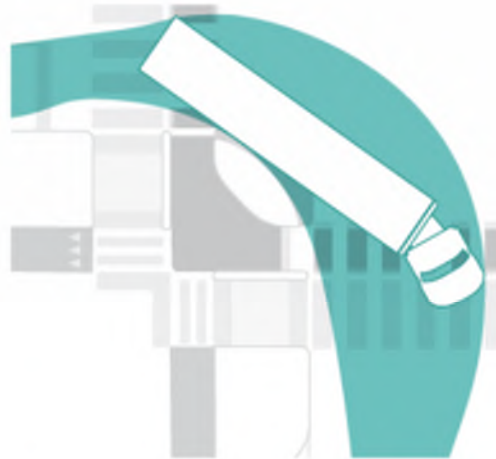
Design guidance is reassessing vehicle accommodation

Design Vehicle



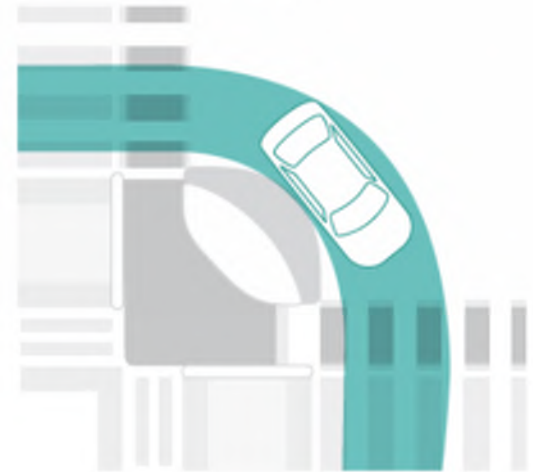
The **Design Vehicle** is the largest typical vehicle that will frequently use the street. For major streets and downtown settings, a DL-23 delivery truck is a

Control Vehicle



The **Control Vehicle** or accommodated vehicle is the largest vehicle that will infrequently use the street. For major streets and downtown settings, a WB-50

Managed Vehicle



The **Managed Vehicle** is the most common vehicle to use the street. It is typically smaller than the design vehicle which means it is capable of higher,

Tools to help designers
made decisions

Understand the City's default Modal Hierarchy

§ 40-37. MODAL HIERARCHY

City-wide

Baltimore's Modal Hierarchy



1 Walking



2 Cycling / Public Transit / Micromobility



3 Taxi / Commercial Transit / Shared Vehicles



4 Single Occupant Automobiles

Establish a City-wide Modal Hierarchy



Urban street
design
standards take
into account
street function
and land use
context



Designate Street Types to address land use context

- Downtown Commercial
- Downtown Mixed-Use
- Urban Village Main
- Urban Village Neighborhood
- Urban Village Shared Street
- Urban Center Connector
- Neighborhood Corridor
- Industrial Access
- Parkway
- Boulevard

Downtown Commercial

Downtown Commercial
Downtown Mixed-Use
Neighborhood Main Street
Neighborhood Commercial
Neighborhood Residential

Overview

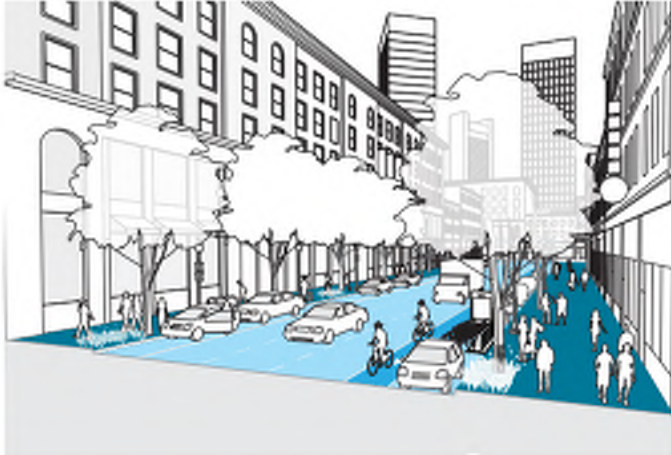
Downtown Commercial Streets define Boston's dense commercial core. These Street Types are found primarily in the Financial District, Government Center, Chinatown, the Leather District, Back Bay, and the South Boston Waterfront. Containing a mix of mid- and high-rise office buildings, the streets serve as international cultural destinations and connect with highways and transit hubs that serve the Greater Boston region.

These often iconic streets play a key role in the regional movement of people, and designs must support extremely high user volumes. Congestion, commercial vehicle traffic, and high volumes of pedestrians and bicycles, combined with relatively short blocks and numerous irregular intersections, make achieving the right modal balance a considerable challenge. Lined with a mix of centuries-old and modern

building facades and grand lobbies, these streets require wide sidewalks which typically feature enhanced finishes and materials. Designs must also respect the historic significance of these streets.

Example Streets

- Congress Street (Government Center/Financial District)
- State Street (Government Center/Financial District)
- Kneeland Street (Chinatown/Leather District)
- Summer Street (Financial District/South Boston Waterfront)
- Boylston Street (Back Bay)




Prioritize portions of a street's cross section



Table 1. Limited Right-of-Way Priorities

Street Type	Sidewalk Zone		Roadway Zone			
	Pedestrian Subzone	Furnishing Subzone	Curbspace	Curbside Lane Subzone	Travelway Subzone	Median Subzone
Downtown Commercial	1	2	3	6	4	5
On Bicycle Network	1	2	4	3	5	6
On Transit Network	1	2	4	3	5	6
On Truck Route	1	2	4	6	3	5
Downtown Mixed-Use	1	2	3	6	4	5
On Bicycle Network	1	2	4	3	5	6
On Transit Network	1	2	3	4	5	6
On Truck Route	1	2	4	6	3	5
Urban Village Main	1	2	3	6	4	5
On Bicycle Network	1	2	4	3	5	6
On Transit Network	1	2	3	5	4	6
On Truck Route	1	2	4	6	3	5
Urban Village Neighborhood	1	2	3	5	4	6
On Bicycle Network	1	2	4	3	5	6
On Transit Network	1	2	3	5	4	6
On Truck Route	N/A	N/A	N/A	N/A	N/A	N/A
Urban Village Shared Street	1	3	4	N/A	2	N/A
On Bicycle Network	1	3	4	N/A	2	N/A
On Transit Network	1	3	4	N/A	2	N/A
On Truck Route	N/A	N/A	N/A	N/A	N/A	N/A

Follow guiding principles

System Performance

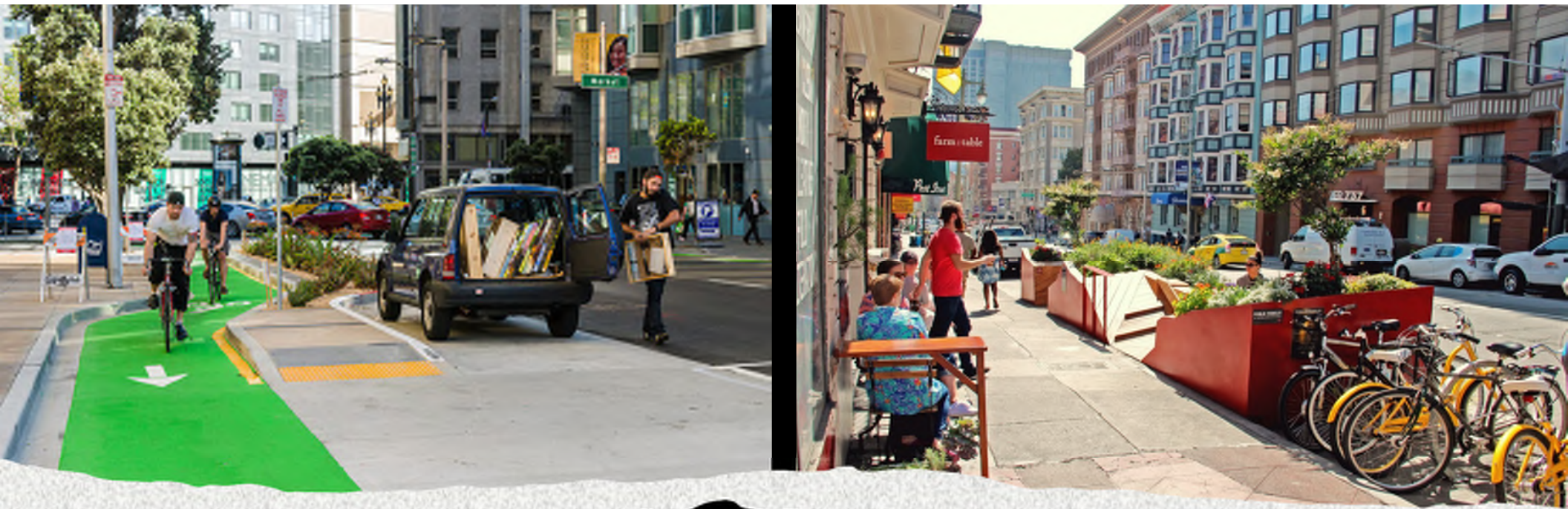
- **Address Safety First**: Baltimore streets will be designed to eliminate severe injuries and fatalities.
- **Be Accessible by Everyone**: Baltimore streets will be accessible by all modes, for people of all ages and abilities.
- **Improve Mobility**: Baltimore streets will efficiently and reliably move people and goods to, from and around the City.

Community Enhancement

- **Ensure Equity**: Baltimore streets will reflect equal opportunities for travel regardless of race, income, age, disability, health, English language proficiency, and vehicular access.
- **Represent Baltimore's Culture**: Baltimore streets will reflect neighborhood values and promote economic vitality.
- **Be Sustainable**: Baltimore street design methods will align with the City's broader goals of urban sustainability and protecting the environment.

Urban street
design is
complicated





Prioritizing / designing urban curb space is really complicated

Fairfax County Curbside Management Plan



Fairfax County Curbside Management

Today's Discussion:

1. Current Challenges
2. Need for a Progressive Program: Tysons
3. Solution: Countywide CMP and Tysons Launch
4. Approach:
 1. Create a digitized curb space inventory
 2. Determine a default curb space hierarchy
 3. Apply the hierarchy to prioritize curb space
5. Next Steps: Implementation / Technology Applications

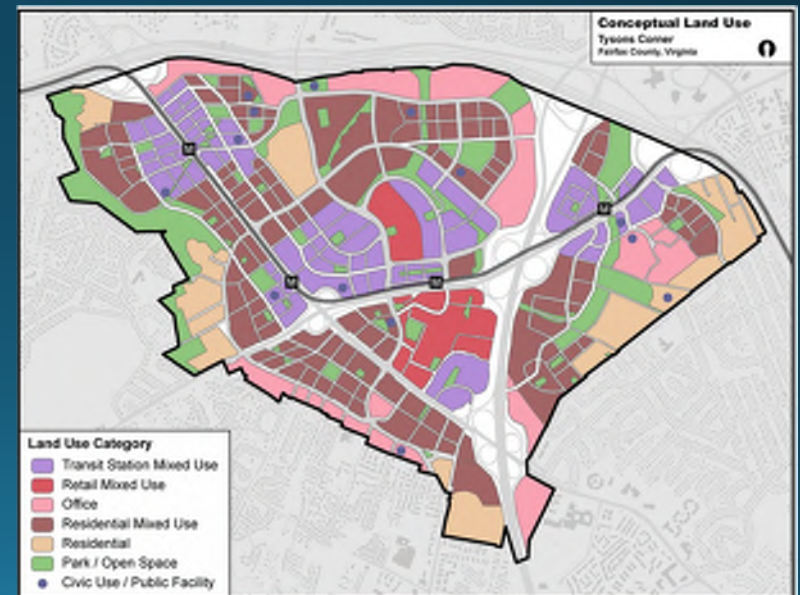
Fairfax County's Challenges



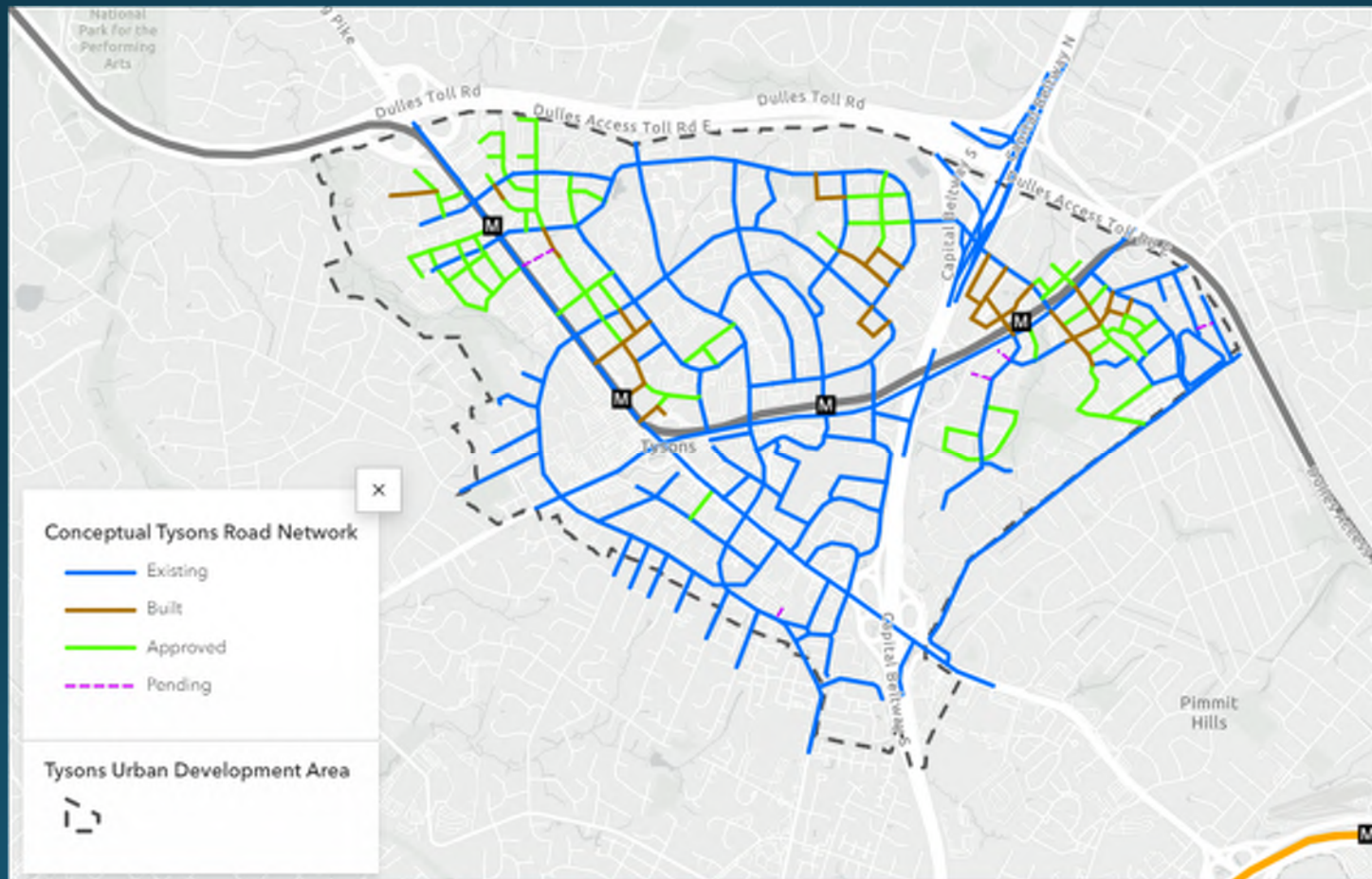
- Suburban becoming urban: limited street design flexibility
- VDOT oversight of public streets
- Limited parking program offerings
- No timed or paid parking program
- Limited County enforcement staff

Need for a Progressive Program: Tysons, Virginia

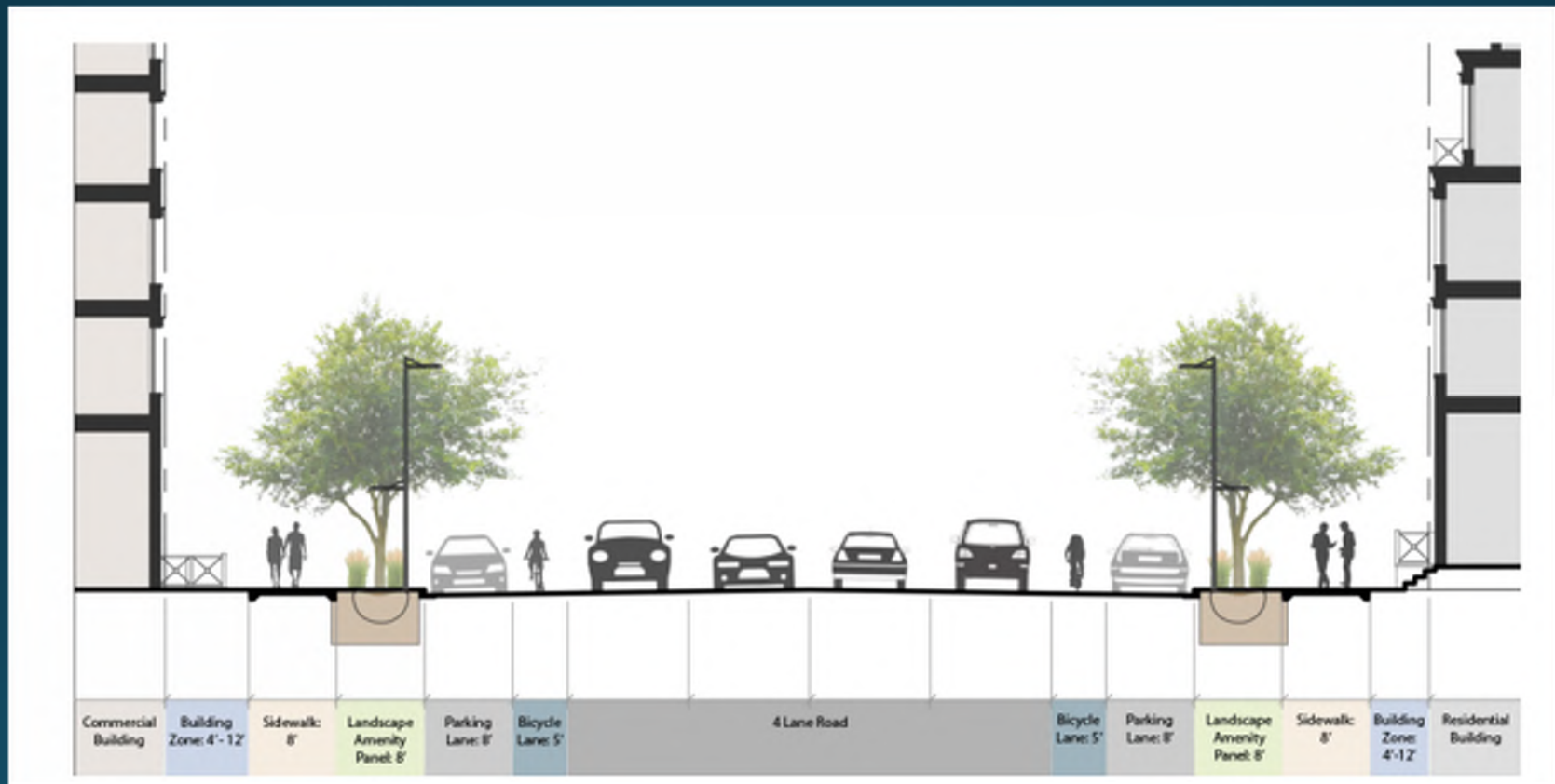
- Suburban Office Center to Vibrant Urban Center
- Comprehensive Plan updates in 2010
- Four new Metro stations in 2014
- New streetscape and street grid
- Goal for 2050:
 - ❖ Population of 100,000 residents
 - ❖ 200,000 jobs



Tysons Conceptual Street Grid



Tysons Streetscape Design Guidelines



Planning for the Future: Transforming Tysons into a Vibrant Urban Center 2024+

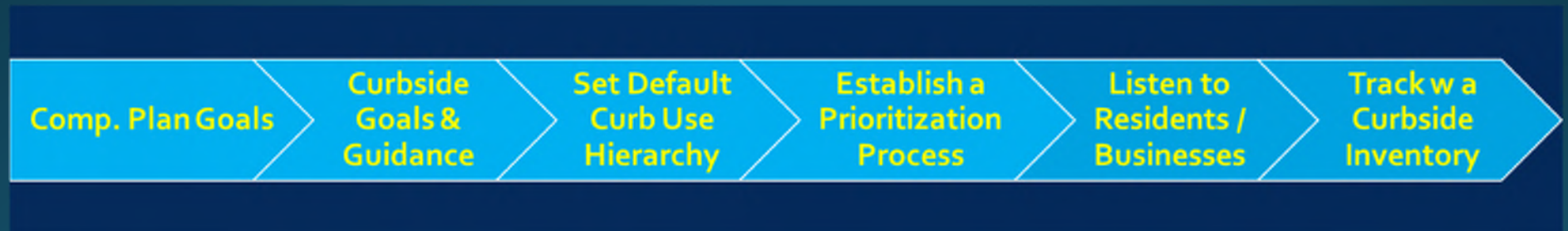


- How do we get there?

Solution:

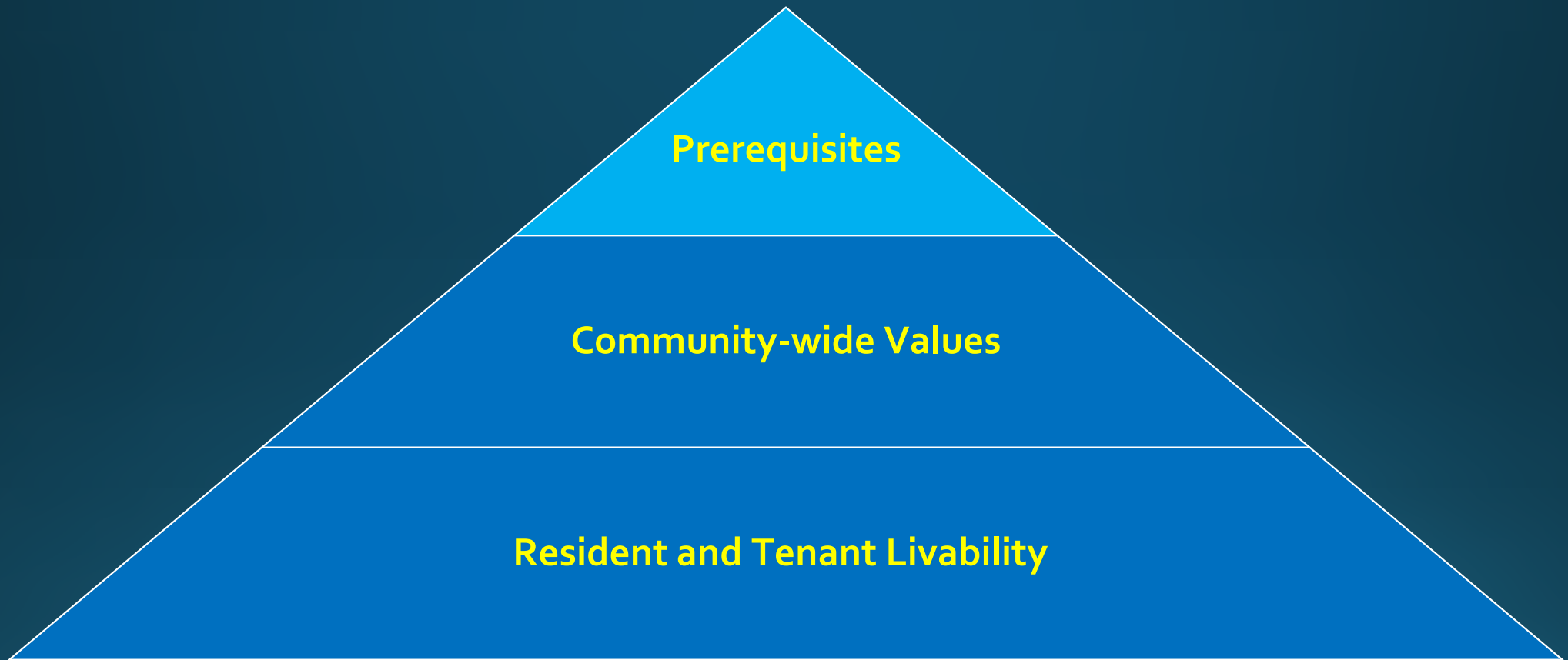
Countywide CMP and Tysons Pilot

- Curbside Goals & Guidance
- Curbside Inventory Requirements
- Default Hierarchy for Curb Space Use
- Prioritization Process to Optimize Curb Space Use
- Applications for Informed Decision-making



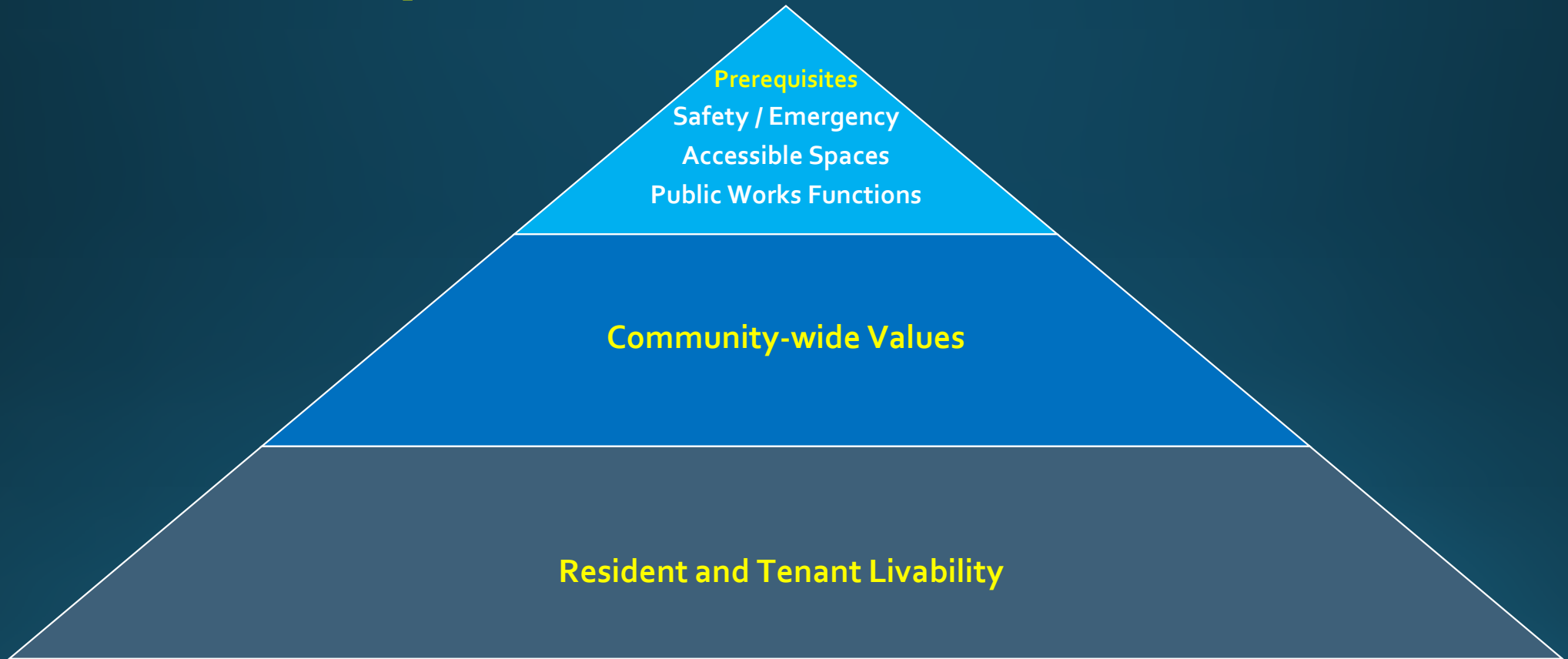
Establish a Default Curb Space Use Hierarchy

WHAT IS THE MOST IMPORTANT USE OF CURB SPACE?



Default Hierarchy for Curbside Use

Prerequisites



Default Hierarchy for Curbside Use: Prerequisites

Prerequisites: Safety, Accessibility, Public Works Operations



Greensboro Dr. Tysons, VA

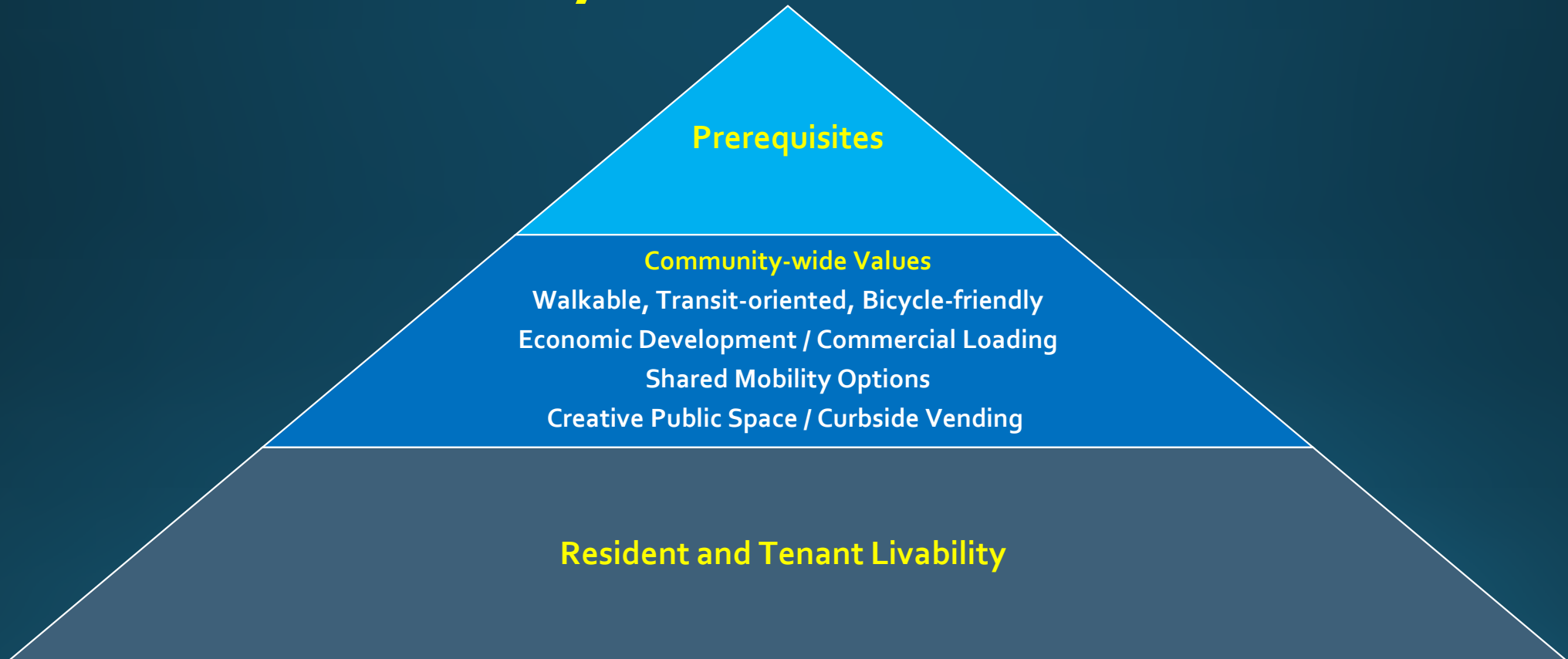
Legend

Safety, Accessibility, Public Works Operations:

- Buffer for Site Distance
- Buffer for Intersection Ops.
- Fire Hydrant Access Buffer
- Fire Hydrant
- ADA Curb Ramp
- Accessible Parking Space

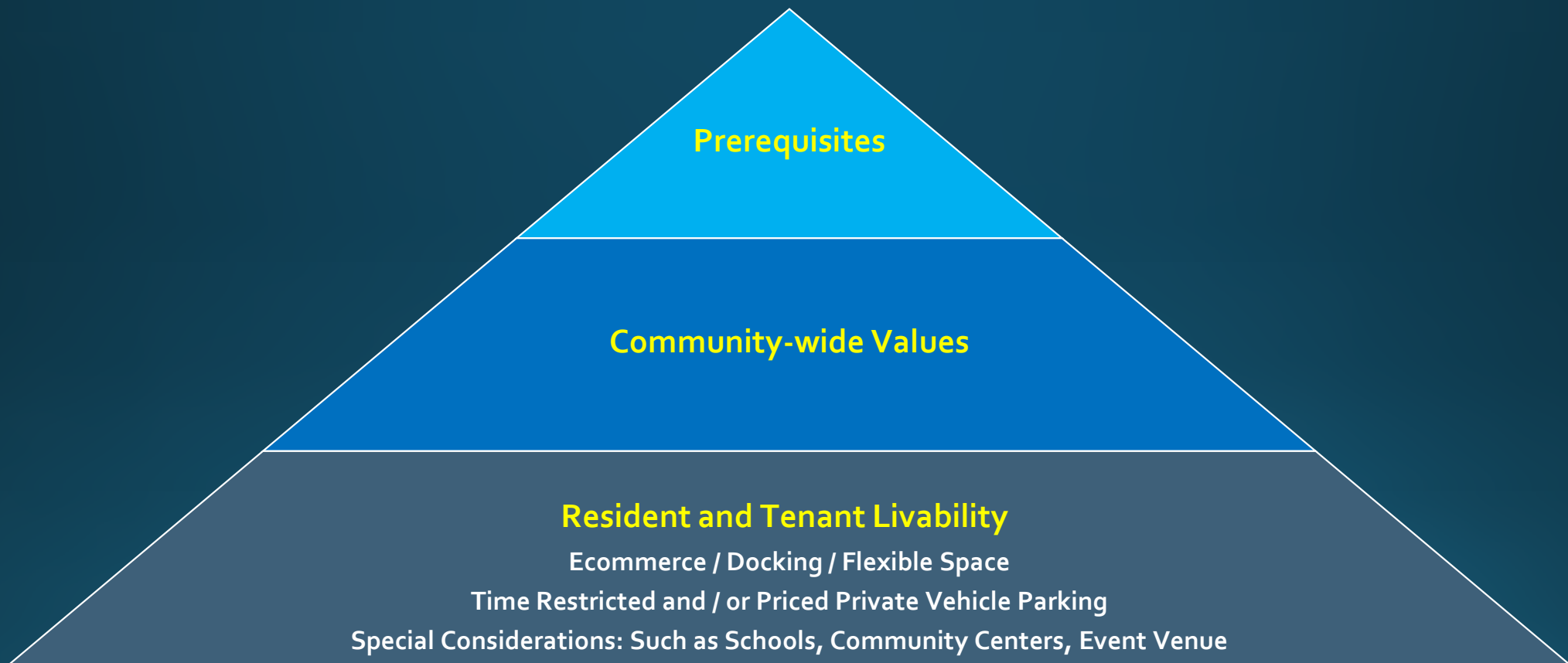
Default Hierarchy for Curbside Use

Community-wide Values



Default Hierarchy for Curbside Use

Resident and Tenant Livability



Resident & Tenant Livability: Take the Survey!

Would you recommend any of the following changes to improve conditions in your surrounding area? Select all that apply. (Greensboro)		
Recommended changes	Count	Percent
Decrease vehicle travel speed	1	9.09%
Improve street lighting	1	9.09%
Improve traffic signal timing	1	9.09%
Add pedestrian facilities (sidewalks or crossings)	3	27.27%
Add or change bicycle or micro mobility facilities	1	9.09%
Add paid on-street parking	1	9.09%
Increase parking enforcement	2	18.18%
Better Tysons Circulator service	1	9.09%
Grand Total	11	100.00%

ACTIVE SURVEYS

1

PROGRAM ASSESSMENT TOOL

Curbside Collaborative's self-assessment program uses a Capability Maturity Model (CMM) approach to benchmark a jurisdiction's status as well as map a path forward to a proactive, progressive, sustainable curbside management program.

General Assessment

SCAG Assessment

Fairfax Assessment

2

SURVEY OF CURB TENANTS

The tenant survey is an assessment of sidewalk and curb use to understand the needs of street tenants. The goal of the survey is to raise the voices of local businesses in order to guide local jurisdictions on creating a more efficient street, which meets tenant and curb-user needs.

Tenant Survey

3

SURVEY OF CURB USERS

The survey of curb space users seeks the input from the users of the curb that have a vested interest in improving its function, legibility, and availability in order to best serve competing needs of all stakeholders. The input of private sector vendors add valuable perspective for understanding the desired and current use of the curb, as well as the challenges users encounter in doing so. This information will help localities determine the best policies and strategies to optimize the use of this finite space.

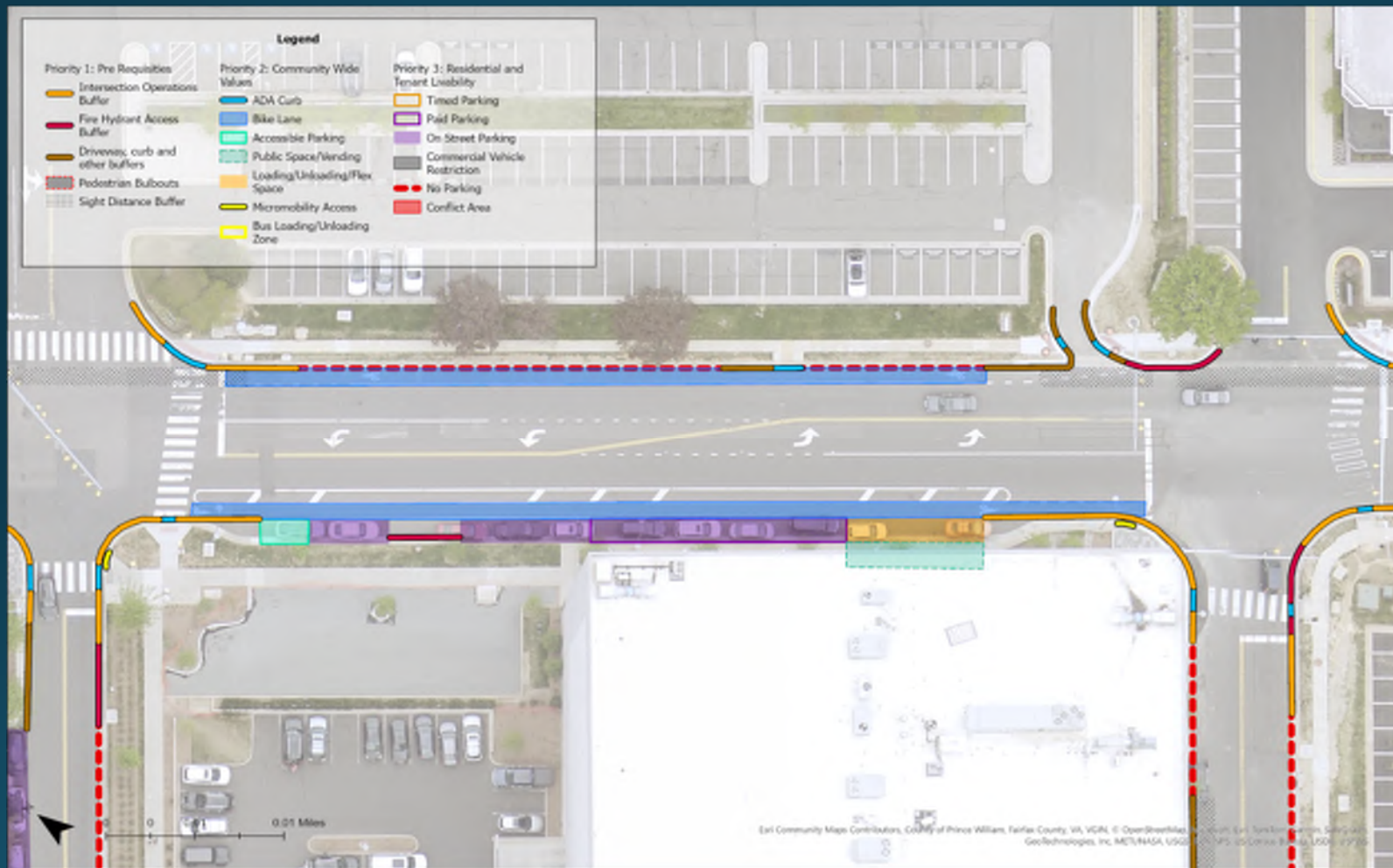
CURB SPACE MANAGEMENT SURVEYS

TYSONS, VA

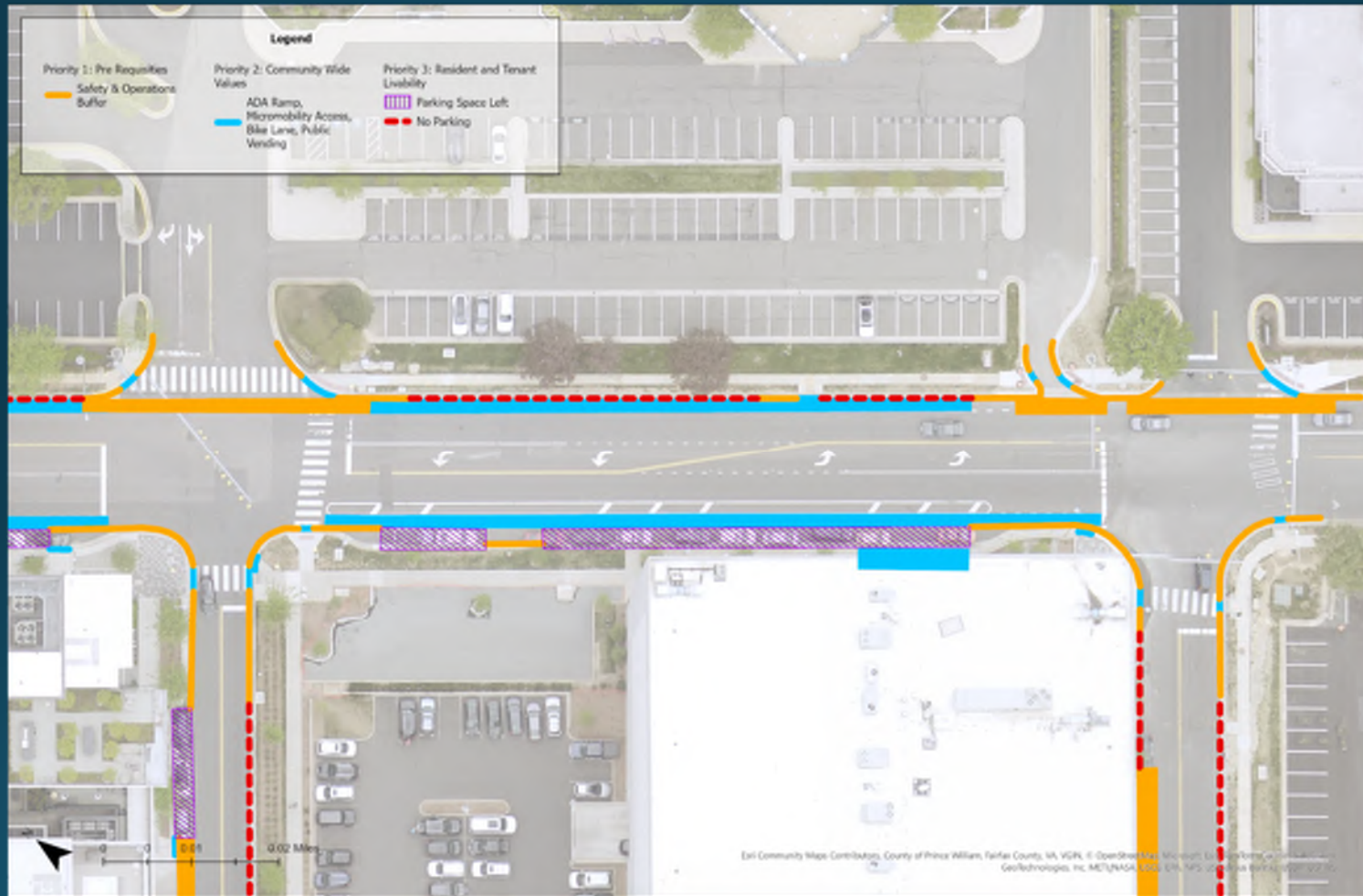
Property Manager Survey

Business Owner/Manager Survey

Full Application of Prioritization Process

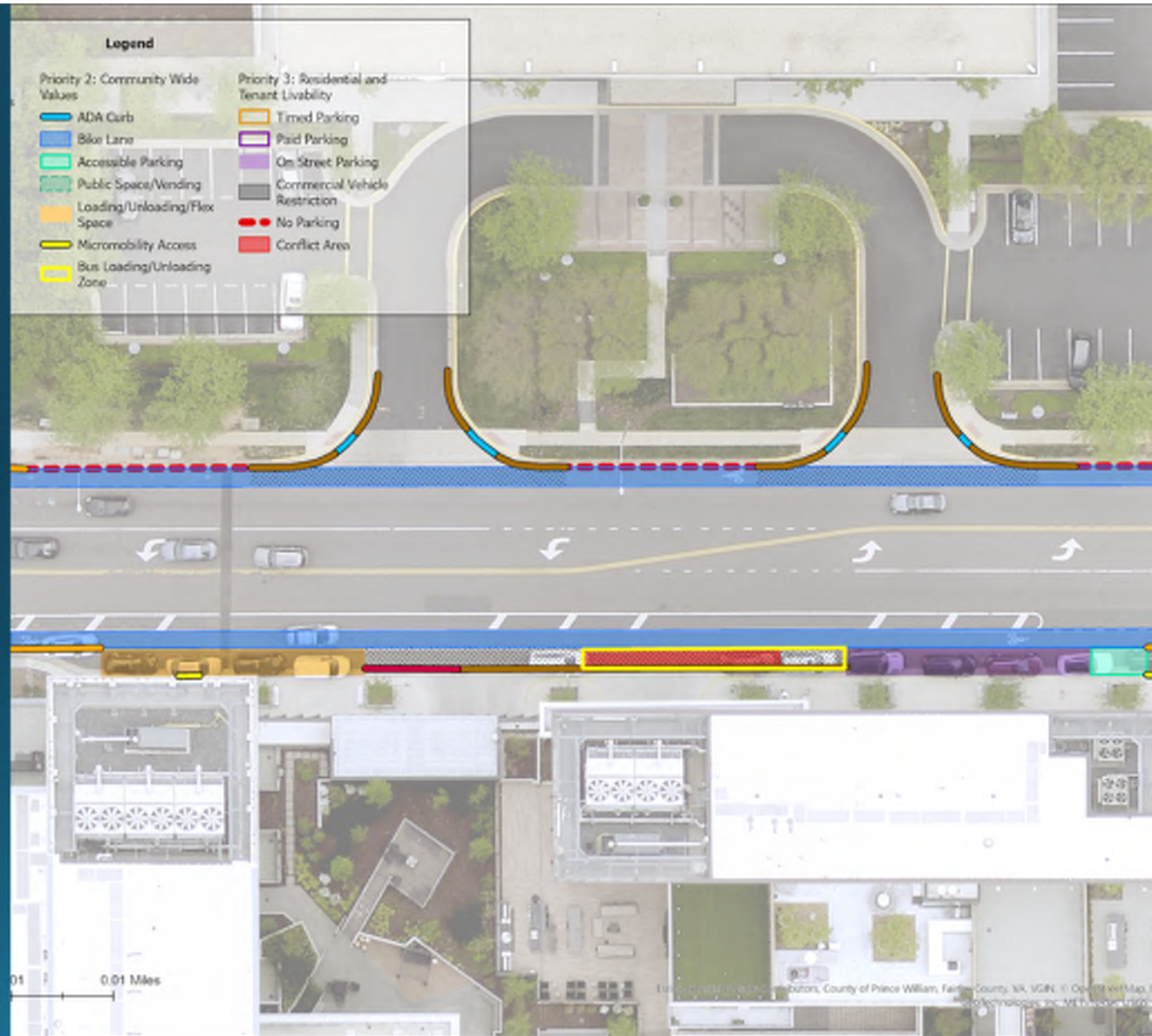


Visualize Safety and Accessibility Requirements

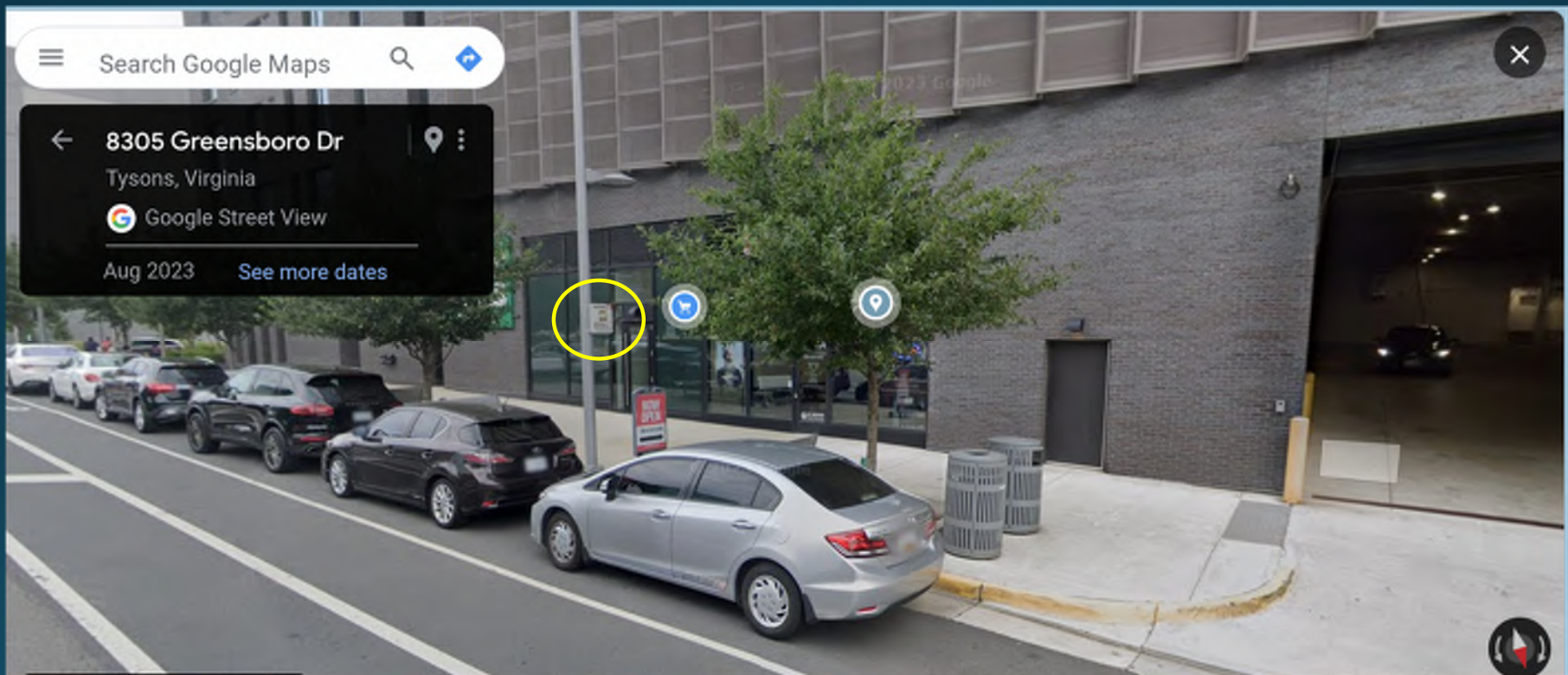


Identify Safety Concerns

- Conflicts between sight distance requirements and obstructions
- Conflicts with regulatory requirements
- Placement of emergency access points
- Transit stop conflicts
- Streetscape design issues



Optimize Safety and Accessibility



Solution:

Applications for Informed Decision-making

- Existing Conditions Safety Analysis
- Land Development Application Review/Site Analysis
- Project Planning Process
- Small Area / Community Planning



Next Steps:

- Plan to implement priorities
- Explore use of technology



NAVIGATION

ASSET VERIFICATION



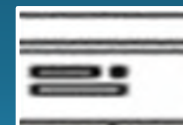
CUSTOMER DRIVEN

CURBSIDE POLICIES



CURBSIDE
MANAGEMENT

EMERGENCY
RESPONSE



PAYMENT

Questions?

Henri Stein McCartney
Fairfax County Department of Transportation
estein@fairfaxcounty.gov
703-877-5816

