Rethinking Mobility Effectiveness at the Curb

1. Then: Measuring Productivity at the Curb
2. Now: Competing Demands
3. How? Improving Mobility at the Curb as Part of a Complete Street

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Then: Measuring Productivity at the Curb
State of the Practice

Void in Guidance

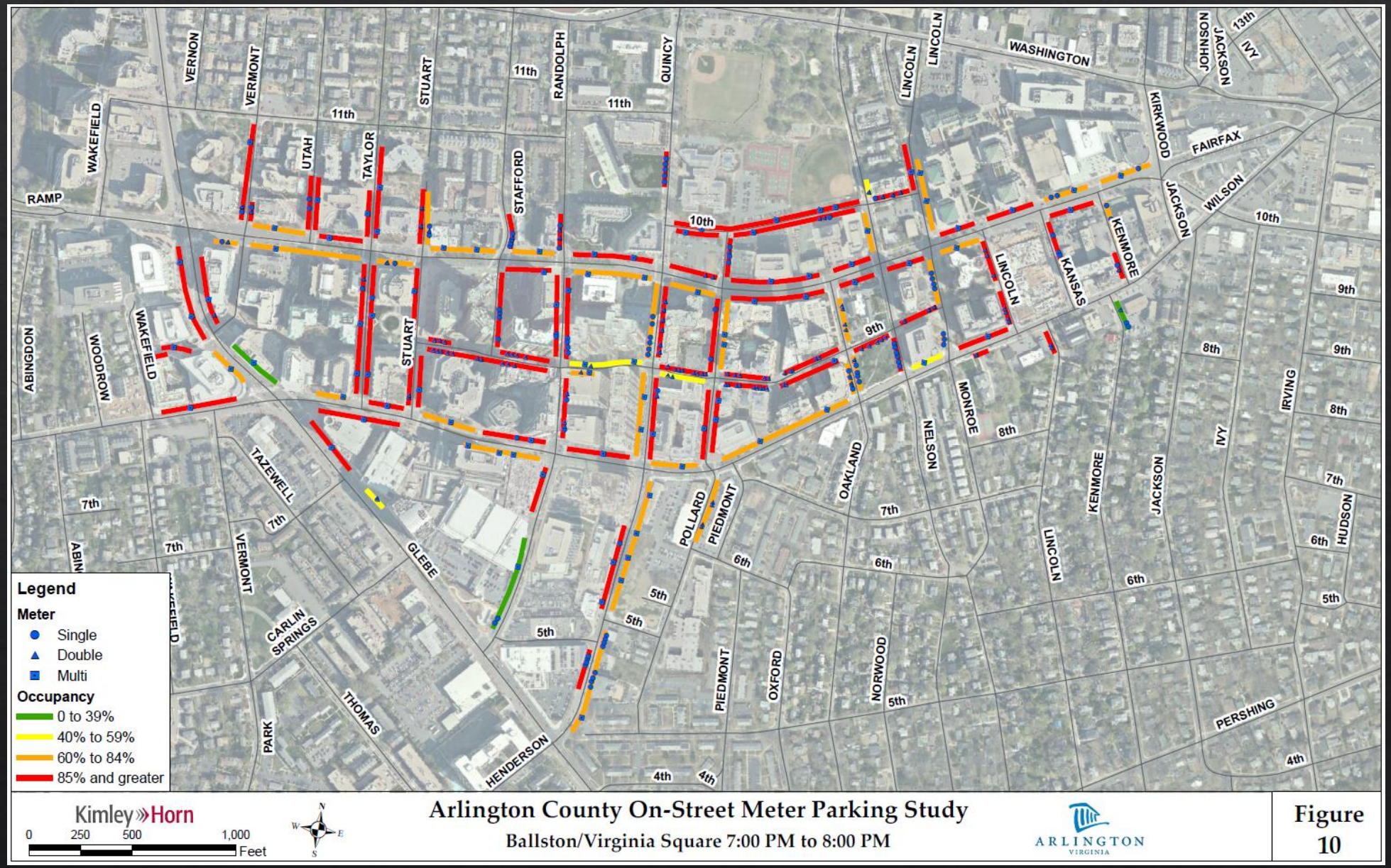
- Evaluating existing conditions
- Reviewing site plan development / redevelopment

Then: Measuring Productivity at the Curb
State of the Practice

What were /are the existing performance measures?

- Parking meter revenue?
- Parking space occupancy?
- Parking turnover?

Then: Curb Inventory & Analysis



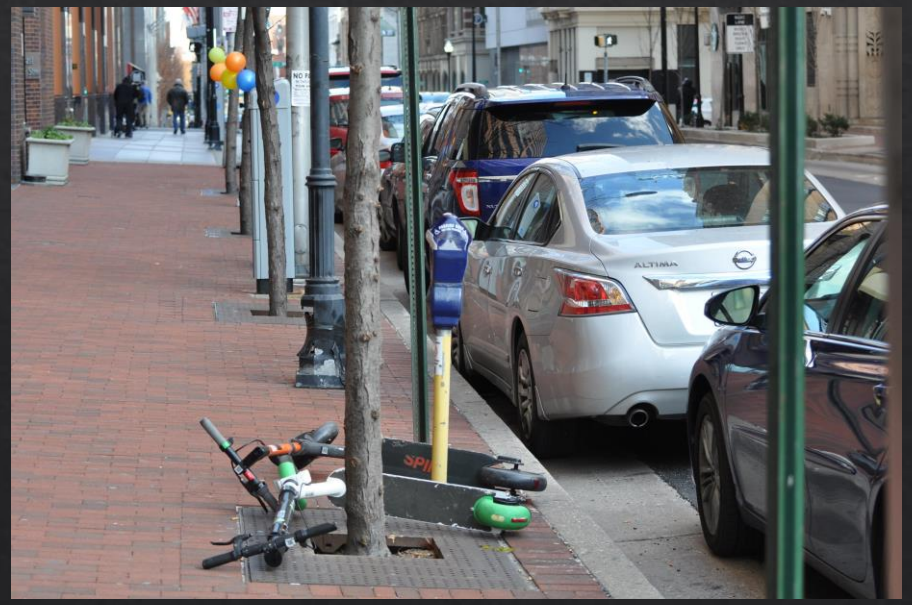
Now (2015+):
Challenges > New Opportunities

Challenges:

- Adapt to new demands and street designs
- Accommodate competing needs

- Lack of comprehensive approach
- Decision-making:

  Death by a 1000 cuts



Now: Setting Priorities

Traditional parking
Accessible spaces
Bus stops / shelters
Uber / TNCs
Emergency access
Clear zones
Fire hydrants
Carsharing
Taxis
Vending trucks
Commercial loading
Bicycle facilities
No curb?

What does NOW look like?

More progressive?

What does NOW look like?

Measuring Mobility at the Curb is Getting Complicated

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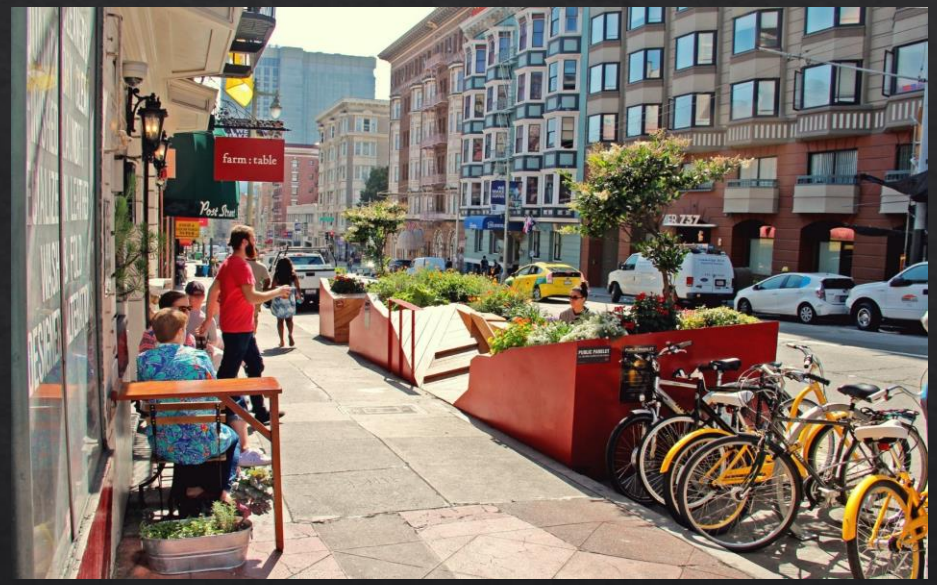
Curbs Can Serve Activity, Commerce, and Movement



Source: NACTO

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How is Performance Measured?

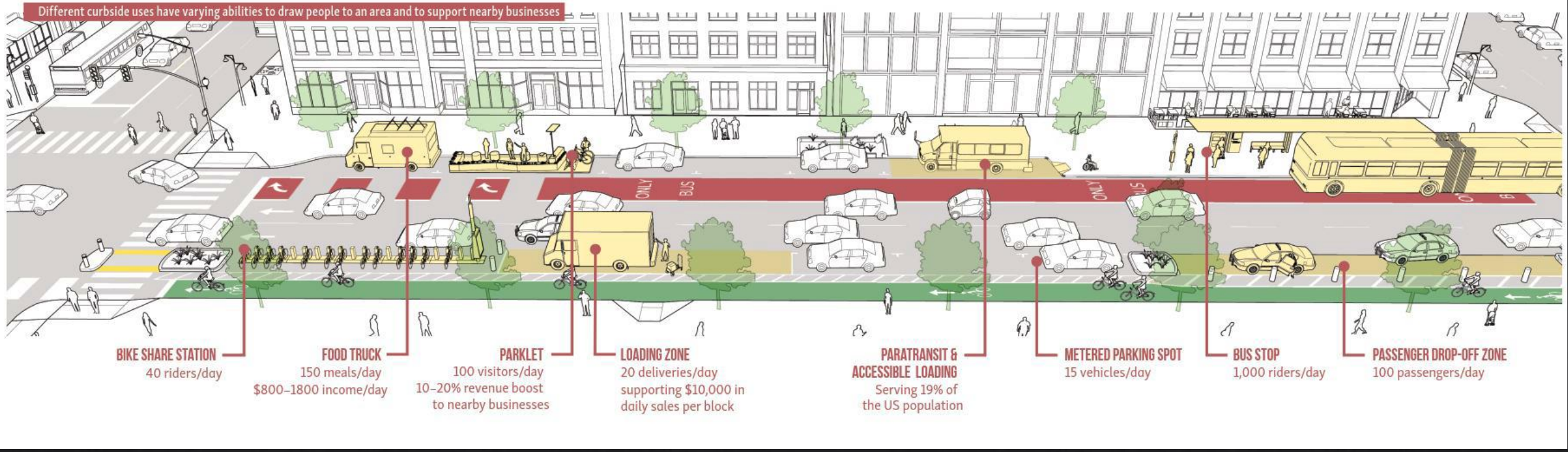
Performance Based Analysis

I. Safety

II. Accessibility

III. Mobility

Understand the Mobility Performance at the Curb



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How: Improving Mobility at the Curb

- Seek Comprehensive & Sector Plan Guidance
- Take a Network / Subarea Approach
- Understand Modal Priorities by Street!
- Reflect the Context
- Manage On and Off-street Resources
- Evaluate Spatial Relationships

How: Baltimore's Draft Complete Streets Manual

CURBSPACE MANAGEMENT

In recent years, managing curbspace has become one of the most challenging portions of building a Complete Street. The default use of the curbspace has traditionally been for a parking lane. However, multiple competing interests are created by:

- The City's new modal hierarchy
- The advent of shared mobility (i.e., dockless bikes/ scooters and ridehail services such as Uber and Lyft)
- Multimodal curb-running travel lanes
- The desire to improve the livability of communities

These competing demands identify the need for a formal process to prioritize this valuable space. Parking vehicles for extended periods of time is no longer considered the best use of the curbspace on many downtown and commercial Street Types. Additionally, measuring the success of the curbspace is no longer determined by parking revenue, but by the ability to move people and complementing the surrounding community.

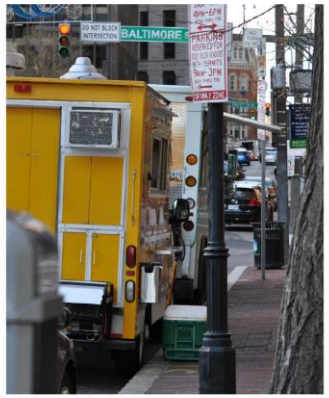
This section provides guidance on establishing a curbspace management process and identifies the roles and responsibilities of the City in defining priorities, designing the space, implementing and enforcing the use, and monitoring the success of the program. Adequate curbspace management in a large city requires a program and often a standalone manual be developed; therefore this section sets preliminary steps to best prioritize curbspace in a study area.

The competition for curbspace includes uses such as:

- Private automobiles
- Accessible parking
- Commercial loading
- Transit
- Taxis
- Food trucks
- Shared mobility
- Ridehailing vehicles
- Bicycles
- Micromobility devices
- Parking corrals for bicycles and micromobility devices
- Carsharing vehicles
- Parklets and cafe seating

The curbspace can be integrated into the community culture, used to expand abutting activities, or used to improve the safety of vulnerable pedestrians. Prioritizing curbspace to accommodate these demands should be accomplished comprehensively, and the results may be quite different depending on the community's needs and Street Type.

New guidance from the Institute of Transportation Engineers *Curbside Management Practitioner's Guide* outlines the steps to understand the community needs and prioritize curbspace. NACTO has also issued guidance targeting transit benefits: *Curb Appeal: Curbside Management Strategies for Improving Transit Reliability.*



Competition for curbspace varies by time of day in commercial areas

Left: ITE's *Curbside Management Practitioner's Guide*; Right: NACTO's *Curb Appeal: Curbside Management Strategies for Improving Transit Reliability.*

This Manual recommends the following steps to prioritize curbspace use in a target study area:

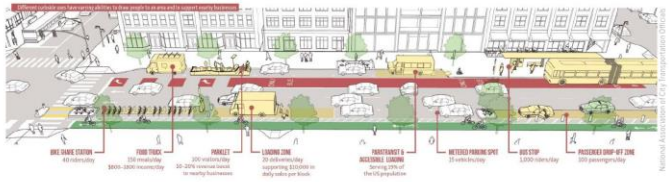
1. Seek comprehensive and sector plan guidance from the Baltimore City Department of Transportation, the Baltimore City Department of Planning, MDOT MTA, and the Baltimore City Fire Department:
   a. Understand land use and desired activities
   b. Identify Street Types in the study area
   c. If designated, overlay the modal priorities of streets in the study area:
      i. Curb running bicycle/micromobility facilities
      ii. Transit streets
      iii. Truck routes, delivery patterns, truck restrictions

      (Refer to Street Design Overview for further guidance on modal priorities)
   d. Review evacuation and emergency management plans
2. Engage community stakeholders:
   a. Gain insight on area and site-specific demands
   b. Explore equity opportunities and economic development
3. Take a network/subarea study approach, understanding the current and future transportation demands throughout the study area:
   a. Collect existing curbspace designation and utilization data
   b. Evaluate spatial relationships to, from and within the study area
4. If not designated by planning documents, consider setting modal priorities by street where appropriate
5. Manage on and off-street parking/docking resources for micromobility and bicycles to meet the area's needs:
   a. On-street along the curb
   b. Off-street in furnishing subzone
   c. Off-street public and private parking
   d. Alleys
6. Set priorities/accommodate needs

The curbspace in many instances acts as the bridge between the pedestrian subzone and the travelway subzone. As such, the curbspace can act as an extension of the furnishing subzone; therefore, the design of the furnishing subzone should be carefully correlated with the needs of the curbspace area, to avoid conflict and provide a safe and accessible connection between the two areas. The needs of the curbspace should also be correlated with that of the furnishing subzone in the analysis. Refer to Furnishing Subzone for further details.

The following section recommends the factors to consider when prioritizing and allocating curbspace. The factors align with this Manual's guiding principles, and should balance the City's technical transportation evaluation with the needs expressed by the community.

Dimensions for the referenced elements may be found in Appendix 1.



Prioritizing curbspace use should address safety and accessibility needs, as well as an understanding of person movement along the curb.

Access for All

Providing fair access to the curb is greatest challenge of allocating curbspace. The competing demands listed above overwhelm limited space in activity centers. The highest priority after safety, as reflected in the modal hierarchy, is for people with disabilities. Below are the competing parking/docking demands:

- Accessible parking spaces
- Transit:
  - stops, shelters and stations
- Passenger vehicle:
  - Ridehailing:
    - passenger loading/unloading zones
    - taxi zones
  - Carsharing parking
  - Time restricted short-term parking
  - Residential permit parking
- Bicycle/micromobility parking
  - Micromobility corrals—Refer to the Micromobility section for further details.
- Loading zones/commercial vehicle access

Enhance the Community

Another priority for curbspace is creating a space that enhances a community. Creative treatments and uses should be considered along the curb, aligning with the Street Type with an understanding of the level of transportation demand for the limited space. This space can expand vibrant social spaces and improve the environmental health (such as with stormwater management) while beautifying the area. It is recommended to consider these treatments as part of a comprehensive Complete Streets design. Below are examples from NACTO's Urban Street Design Guide and Urban Street Stormwater Guide.

- Parklets for extending restaurant patios and sidewalk cafes. Refer to Quick-Build Strategies for further details.
- Provisions for vending trucks
- Green infrastructure to enhance aesthetics as well as environmental health via such elements as planted boulevard strips, streets trees, planter boxes, rain gardens, and bio-swales. Refer to Sustainable Stormwater Management for further details.

Measuring mobility along the curb: transit stops and shelters move the most people per linear foot of curb.

How: Baltimore's Draft Complete Streets Manual

Mobility for People & Goods

The newest curbside management techniques for cities relate to measuring the successful use of curbspace, from a mobility perspective. The key trade-offs relate to (1) keeping traditional time restricted parking; (2) eliminating parking for curb running multimodal facilities; and (3) expanding multimodal and shared mobility docking uses. The new measure of success, after providing safety and disability accessibility accommodations, assesses the movement of person at the curb. Below is an example from NACTO illustrating the quantification of person movement.

Safety

Safety and emergency vehicle access needs to be considered when assigning curbspace. Example components related to safety include:

- 15' buffers on each side of fire hydrants
- Reserved space for fire and rescue access in activity centers
- Parking restrictions setback from intersections and mid-block crossings. Refer to Intersections, Crossings, and Mid-Block Treatments for further details.
- Pedestrian accommodations such as crosswalks, bulb-outs and pedestrian islands

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RESOURCE PAPER
DRAFT MAY 2017

CURB APPEAL:

CURBSIDE MANAGEMENT STRATEGIES FOR IMPROVING TRANSIT RELIABILITY

Cities are rethinking how they use one of their greatest assets. Curbsides are shifting from just a place for stationary storage to a means for increasing mobility for all by assigning value to curb users and proposing a new vision for their management.

Treating the curbside as a parking lane results in slow, unreliable transit. When curbside spaces are unassigned and underpriced, private car storage takes over, pushing truck loading and double-parked cars into the way of transit. Cities should set a new direction for curbside management citywide, shifting from thinking of curbsides as storage space (parking) to thinking about them as a part of the system for moving goods and people.

High-ridership bus lines on vibrant commercial streets are especially impacted by poor curbside management, whether in mixed traffic or dedicated transit lanes. But cities can make significant strides in eliminating these blockages, with benefits far beyond transit reliability. By improving the capacity of each motor vehicle lane, a well-managed curbside makes it easier for cities to reduce the total number of motor vehicle lanes on a street.

Actively deciding how curb space should be used is a key step that cities can take to get buses moving and make streets better for riders.

We have the tools we need for better curbside management. Cities can break out of the cycle of overfull parking, lane blockages by important loading uses, and transit delay—as well as the resistance to change that comes along with oversubscribed parking. Through focused planning, including data collection and outreach, cities have successfully implemented strategies to change the way curbside space is managed, allowing city streets to work better for everyone.

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CURBSIDE MANAGEMENT PRACTITIONERS GUIDE

Micromobility and the Curbside

TOOLE DESIGN

TOOLE DESIGN

TOOLE DESIGN

Measures

- Evaluation
- Enforcement
- Planning
- Active management

TOOLE DESIGN

TOOLE DESIGN

In-street corrals

TOOLE DESIGN

TOOLE DESIGN

TOOLE DESIGN

Boston MicroHubs

TOOLE DESIGN

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