



Principles for Universal Curbside Language & Standards

SMART CITIES COLLABORATIVE | 2020



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Cover photo: "Flatbush Ave and 4th Ave Bike Lanes," photo by the New York City Department of Transportation and licensed under Creative Commons.

Introduction

Demands on the curb have skyrocketed in the last decade, while the amount of curb space has largely remained the same. Due to increased congestion, commerce delivery, use of streets for people rather than vehicles (like parklets, plazas, and outdoor dining), and access to technologically-advanced mobility options (like shared bikes, scooters, and app-based ride-hailing), the curb has evolved into a scarce and sought-after resource. Curbs are no longer simply for the long-term, low-cost or “free” storage of personal vehicles.¹ It is now key to the movement of goods, movement of people, and more.

Competing demands on the curb

Demand Type	Movement of goods	Movement of people	Storage	Short-term parking	Loading zones	Other
Examples	Loading zones for freight, commerce delivery	Transit (bus lanes, bus stops, waiting zones), pedestrians, bicyclists, scooter riders	Bike share, scooter share, mobility hubs, cargo storage	Short and longer term parking	Paratransit, transportation network companies (Lyft, Uber)	Trees, planters, tactical urbanism, farmer's markets, snow removal, construction

Graphic based on a presentation from Cityfi.

While the curb is one of a city's most valuable assets, it is often not strategically leveraged or utilized. **The COVID-19 pandemic has only made the importance of the curb more apparent as an exponential amount of curb space has been needed for safe recreation, retail, restaurants, and more.** 2020 has made clear that curb space is crucial to economic viability, environmental sustainability, and the health of communities.

What is curbside management?

Curbside management is the collection of operating concepts, techniques, and practices that enable a municipality, or any entity to effectively allocate the use and determine the value of its curbs and other high-demand areas.²

¹ There is no such thing as “free parking.” When parking is free to the driver it is because the cost is being covered by taxpayers, consumers, investors, workers, and residents. Learn more at <http://shoup.bol.ucla.edu/Chapter1.pdf>.

² <https://www.parking-mobility.org/2019/05/06/curbside-management-managing-access-to-a-valuable-resource/>

WHY IS A UNIVERSAL CURBSIDE LANGUAGE & STANDARDS NEEDED?

The curb is public space and a public asset, and as such it should be utilized to the greatest benefit of the public. It is the responsibility of local governments to prioritize who can use the limited amount of curb space, for what and when. Because of the many demands on the curb, without regulating and prioritizing access, our curbs cannot reflect or respond to the rapidly changing needs of the city and its users. Moreover, without applying an equity lens to prioritization of curbspace, certain users (such as people who do not own, cannot afford, or are unable to drive cars) will continue to be left behind as they do not benefit from “free” parking.

Although many local governments have or are in the process of creating curbside management policies and programs, **there is no uniform way that local governments define the curb and its users.**

The lack of universal curbside language and standards (UCLS) creates a number of issues for everyone, most notably local governments, regional and state governments, and private companies.

- It is difficult for **local governments** to effectively set policy, regulate the curb, and communicate rules with their existing curb users, including private delivery, freight, and app-based ride-hailing companies.
- It limits the ability of **local governments** to support each other in curbside management as peers and learn from best practices.
- It makes it difficult for **local governments** to proactively work with private technology and mobility companies, as it allows those companies to take advantage of local governments’ “disorganized nature” and pit them against each other to their benefit. For example, “City X is doing this, why aren’t you?” or “City X does not require us to do this, so why are you?”
- It creates challenges for **local governments** that wish to prepare for future vehicle types, like connected vehicles or automated vehicles’ navigation systems. The absence of a UCLS gives power to the companies that are pursuing this technology to set the rules, rather than local governments making the policy to guide what these technologies are allowed to do.
- It becomes incredibly challenging, if not impossible for **local governments** to work with external partners, including the academic research community, to conduct comparative, regional, statewide or national analysis.
- It complicates **private technology and mobility companies’** ability to develop tools that can be used across multiple cities to support the management of the curb.
- It limits the ability of **regional entities and state governments** to coordinate with local governments and set regional curbside policy goals.
- It limits the usefulness of curb data. Without a standard, data collected at the curb in one city will not speak to data collected at the curb in another city, consequently limiting the ability of **local governments** and **private-sector companies** to communicate about the curb and make data-informed decisions about how to manage the curb.

A national standard to define the curb and its users would be helpful for local governments to “talk the same language” and share lessons learned, while allowing local governments the ability to maintain localized policies for how they manage the curb. For instance, access to and management of the curb in

one city will look differently in the central business district (CBD) versus a single family home neighborhood. And what that city prioritizes in the CBD might be different than what another city prioritizes in their CBD.

Universal Curbside Language and Standards (UCLS) will enable local governments to leverage a standardized, nationally-based guideline, to create a customized curbside management strategy for their city, that equitably and strategically manages the demand on the curb and serves all curb users.

- Local governments, private entities, and curb users could rely on a set of curb terminology, curb users, customer types, and data sharing standards that are recognized nationally.
- Local governments could create localized policies that are equitable, strategically manage curb demand, and serve all curb users
- Local governments could proactively set policy and plan programming in line with their goals and in the interest of the public good, instead of reacting to private sector actions.
- Local governments could allocate curb space that prioritizes access and demand based on clear, equitable criteria.
- Local governments could better determine how to price the curb and generate revenue from non-metered spaces in their own cities based on other cities' experiences.
- Local governments could improve quality of life by reducing confusion among curb users. With a clear curbside management strategy, local governments can improve safety for right-of-way users and reduce congestion by limiting instances of drivers blocking sidewalks, bike lanes, bus lanes, and vehicle lanes, to find cheap or “free” parking.

THE RACE TO CREATE A UNIVERSAL CURBSIDE LANGUAGE & STANDARDS

Currently, there is not any UCLS for the curb, but there are a number of private and public entities working to develop UCLS.³ This document was shaped by participants of the 2020 Smart Cities Collaborative, a program of Transportation for America, to advise and inform the private and public entities working to develop UCLS to ensure that their final product is usable and useful to policymakers in local governments.

³ Appendix A on page 9 includes a list of existing or future universal curbside language or standards efforts.

Five principles to inform a universal curbside language & standards

Cities will not find UCLS useful if it simply reacts to the technology products and services on the market. Public and private entities must proactively design these standards with city ownership and the public good top of mind. The curb is a valuable resource to local governments and an essential part of delivering goods, services, and equitable access to jobs and necessities like groceries, banks, and retail. The curb can also be a valuable lever for generating revenue for the city, collecting data about movement within the city, and managing congestion in the city. Increasingly, the asphalt next to the curb is being utilized for active and public transportation as cities redesign their streets to combat climate change. Any attempt to develop UCLS needs to serve the public's best interest, and consequently local governments who are the stewards and operators of the curb.

To be truly successful, universal curb language and standards will incorporate the following principles:

1. **LOCAL PUBLIC AGENCIES SET THE POLICY:** Local public agencies who manage the curb must lead and set the policy of the universal curb language.
2. **EQUITABLE:** The curb must serve all users, especially the most vulnerable right-of-way users and disadvantaged community members.
3. **OPEN & PUBLICLY OWNED DATA:** Curb data must be transparent, legible, owned by public agencies, and collected and shared in a secure manner that protects personally identifiable information.
4. **EASILY TRANSFERABLE:** The universal language must be applicable to communities of all sizes and capacities.
5. **CLEARLY COMMUNICATED:** Internal and external curb stakeholders must understand, through a UCLS, the changing nature and value of the curb, as well as the short and long-term benefits of more proactive curbside management

PRINCIPLE 1 | LOCAL PUBLIC AGENCIES SET THE POLICY

A successful UCLS would be one that is shaped by the public agencies who manage the curb.

Curbs within the public right-of-way are funded and regulated entirely with public funding and should serve community needs. For that reason alone, local public agencies—who are in charge of the curb—are best suited to lead this effort.

While input and data from private companies—especially freight operators—is important, creating a language and standards that caters primarily to the needs of any one stakeholder would be a disservice to all users, especially the most vulnerable.

Some prior efforts to create universal language focused on making it possible for tool developers to provide products to curb managers; however, as these standards were developed without an understanding of all demands on and users of the curbs, these standards will not be useful to the curb manager or the tool developer. Moreover, curbside management is a relatively new concept, and as such,

tool developers working in curb space are constantly emerging, changing, and shuttering. Allowing their current interests to shape a universal language could be detrimental to ensuring that the curb serves the public and that the standards last long-term.

Instead of allowing tool developers to lead the development of universal standards, a better approach is to have local public agencies in charge. Those very developers can then more efficiently tailor their products and services to the curbside priorities and policies of the public agencies and communities that they serve.

PRINCIPLE 2 | EQUITABLE

Equity must be embedded within any UCLS so that local governments can prioritize their most vulnerable right-of-way users and disadvantaged community members.

The curb is a public good and needs to be managed with the public interest front of mind. Due to the many conflicting and increasing demands on the curb, more and more local governments are shifting and reallocating curb space from being a free resource that serves few (primarily through personal car storage) to a resource that serves everyone—*especially* those who deserve better and more affordable access to curbs. This includes people with disabilities, people using transit; those walking, biking, or rolling; low-income people; people of color, especially Black and Brown people; and those not connected to the digital network.

To ensure the curb is accessible and inclusive of all languages, a UCLS should include a standardized set of symbols or characters that local public agencies can use—along with relevant language translations— to help communicate regulations at the curb. This would reduce confusion that stems from long-winded signage and would improve accessibility for non-English language curb users.

The design of a UCLS is an opportunity to ensure that the curb is an equitable and accessible community resource.

PRINCIPLE 3 | OPEN & PUBLICLY OWNED DATA

Any UCLS needs to be developed with an open data approach where public agencies own the data and data is collected and shared in a secure and transparent manner that protects personally identifiable information.⁴

Open data provides transparency and ensures data can be freely used, re-used and redistributed by anyone. Public agencies—or non-profits or academic institutions—need to be the stewards of any and all curbside data. Depending on city and state regulations or limited city capacity, the public agency may need to contract a company to aggregate or manage the data or may choose to set up a multi-jurisdictional data clearinghouse. Regardless of who is managing the data, the standard should

⁴ <https://opendatahandbook.org/guide/en/what-is-open-data/>

protect personally identifiable information and the only data that should be collected should be data that is relevant to curbside management.

Local governments and metropolitan planning organizations (MPOs) lack curb performance metrics necessary to better decision-making. A UCLS can fill this gap with a set of corresponding basic metrics that can provide public agencies with a starting point for considering full societal cost-benefit, such as the short and long-term equity impacts, environmental impacts, and access to jobs and services. Below is a list of suggested basic metrics to track:

- Motorized and non-motorized occupancy/turnover rates;
- Utilization by non-motorized travelers, such as transit delay, foot traffic, and non-motorized safety data;
- Utilization data—including where vehicles stop, at what times, and for how long— for goods delivery, pick up/drop off, and medium/long term parking;
- For retail corridors, business sales (or tax receipts) at the block or multi-block level;
- Meter revenue to identify high revenue spots (e.g., often food trucks);
- Types and location of key curb facilities including off-street parking facilities, loading docks, and alleys;
- Types and location of businesses, as the type of business influences the delivery needs;
- Vehicle types (single occupancy vehicles, delivery vehicles, cargo bikes, app-based ride-hail vehicles, etc.) by time of day along the curbside; and
- Transit management data, like transit routes and stops.

PRINCIPLE 4 | EASILY TRANSFERABLE

To be truly universal, the language and standards must be easily accessible, understandable, and transferable to communities of all sizes, land uses and street typologies, and densities.

To ensure mass buy-in, the UCLS should be scalable and customizable based on a jurisdiction's resources, tools, and capabilities. For example, a local government should be able to simply provide their curb regulations as an application programming interface (API) and connect to its paid parking, occupancy tracking, and/or real-time monetization software. It should interact with existing local government systems like geographic information system (GIS) databases, as well as a wide variety of softwares, including asset management software. The standard itself should also be accessible and hosted on a free use platform like GitHub.

PRINCIPLE 5 | CLEARLY COMMUNICATED

There was a considerable shift in how the curb has been used in the last decade, and in the last two years in particular due to rapid changes like the growth in e-commerce. This presents a unique opportunity for local governments, as the stewards of the curb, to rethink how to internally and externally communicate the value and importance of the curb and the benefit of a UCLS.

Internal and external curb stakeholders must understand—through a UCLS—the changing nature and value of the curb, as well as the short and long-term benefits of more proactive curbside management.

- **Internal stakeholders** include non-technical local, regional, state, and federal policymakers who set policy and manage most of our systems, as well as people that work on the curb, like engineers, planners, administrators, and operations professionals.
- **External stakeholders** include residents, business owners, and other groups like non-profit organizations and advocacy groups.

A unified narrative associated with the universal language and standards is crucial. It must be framed early, so that local governments can be proactive in leveraging one of their most valuable assets, and communicate more effectively with their peers and private sector providers.

Conclusion

As public space and a public asset, curbs should be utilized to the greatest benefit of the public. It is the responsibility of local governments to prioritize who can use the limited amount of curb space, for what and when. The current lack of universal curbside language and standards (UCLS) makes it difficult to do that.

There are a number of private and public entities working to develop UCLS. This document is intended to advise and inform the private and public entities working to develop UCLS to ensure that their final product is usable to local governments.

An effective UCLS will allow local governments to leverage a standardized, nationally-based guideline to create a customized curbside management strategy for their city that equitably and strategically manages the demand on the curb and serves all curb users.

To be truly successful, the development of a UCLS needs to be led and shaped by local public agencies who manage the curb. It will ensure that the curb serves all users, especially the most vulnerable right-of-way users and disadvantaged community members. It will set parameters to ensure curb data is transparent, legible, owned by public agencies, and collected and shared in a secure manner that protects personally identifiable information. It will be truly universal by being applicable and accessible to communities of all sizes and capacities. Finally, internal and external curb stakeholders will understand—through a UCLS—the changing nature and value of the curb, as well as the short and long-term benefits of more proactive curbside management.

Appendix A | Existing or future universal curbside language or standards

Existing curbside language or standards efforts:

1. Alliance for Parking Data Standards' (APDS) [Standard Version 2.1](#)
2. Shared Streets' [CurbLR](#)
3. Coord's [Open Curb Assets Data Specification](#)
4. Inrix's [Road Rules](#)
5. IBI Group's [CurbIQ](#)
6. David Wasserman's [Shared ROW work](#)
7. New Urban Mobility Alliance's (NUMO's) [Redefining Vehicles and Streets](#) and [Periodic Table of Mobility](#). NUMO is working on a second version of its Periodic Table of Mobility which has a component of curb allocations depending on the type of vehicle and use.
8. Fiware's [Transportation Harmonized Data Models](#)

Current or future universal curbside language or standards efforts:

1. [Open Mobility Foundation](#) - Curb Working Group
2. [NCHRP 20-102\(26\)](#)
3. [US DOT Work Zone Data Exchange](#)
4. [Streetmix](#) (Considering integrating ROW metrics onto the platform.)
5. [Kurb.io](#) (Tangential effort but good user interface.)