City of Bellevue

Transportation Commission Study Session

DATE: October 13, 2022

TO: Chair Stash and Members of the Transportation Commission

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SUBJECT: Curb Management Plan – Curb Typology & Pricing Details

DIRECTION REQUESTED

	Action
X	**Discussion**/Direction
X	**Information**

Discussion: An important component of the Curb Management Plan is the development of a curb use prioritization framework that can provide broad guidance to usage priorities block-by-block within the project study area. The framework will be underpinned by a Curb Typology, which will describe the existing condition and future intent of curb spaces based on city policies, plans, visions, adjacent land use patterns, and other resources. The Curb Typology can also be considered a major aspect of the supply-side element to curb management. This memo describes the framework supporting the curb prioritization framework, illustrates the existing Curb Typology, and introduces curb types. At future Transportation Commission meetings, a refined Typology map will be presented.

This memo also provides additional assumptions and cost analyses for curb pricing approaches.

INFORMATION

Throughout 2022, City staff and the Nelson\Nygaard consulting team have researched best practices for assessing curb supply and developing a curb use prioritization framework. In summer 2022, the project team conducted numerous workshops with a variety of city staff to establish the staff-recommended Curb Typology approach.

Curb Supply & Curb Typology

"Curbonomics" Recap

Previous meeting materials have covered the concept of supply and demand for curb space. As discussed, curb pricing approaches are best practice for managing curbside demand and allow for the reflection of value that curb spaces provide within cities. Meanwhile, curb supply approaches allow the quantifiable reflection of curbside assets on any given block face.

Curb demands reflect changing behaviors across the mobility and placemaking realms and have evolved significantly in the previous decade. Curb supply is typically constrained and perpetually finite, with only small changes occurring as cities evolve. Creating a framework for tracking the existing and future curb supply will help Bellevue keep up with change, and will provide clear guidance and flexibility in decision making.

Curb Supply: Intent of Prioritization Framework

The Curb Management Plan seeks to, among other things, determine how curb spaces along public frontages should be designed, operated, and maintained over time. In order to make decisions that are rooted within the planning context of Bellevue, a prioritization framework should be established that will help to communicate visions of each block face within the study area.

A long-range, planning-based approach for curb usage is consistent with existing Comprehensive Plan guidance. In the Land Use section of the Comprehensive Plan, challenges and opportunities are identified in terms of integrating land use and transportation. The Comprehensive Plan states:

> *"**Integration of Land Use and Transportation**. Integrated land use and transportation planning is about choice. Integrating housing and employment with a range of transportation options makes it easier to get around. Having shopping and recreation nearby encourages walking and biking, reducing congestion on the streets and supporting vibrant and healthy communities. Higher densities and a mix of uses encourage walking and transit use. Understanding future land uses also helps the city design and build transportation facilities that continue to work as the city grows."*

The curbside environment can help promote a range of transportation options while enhancing the livability and vibrancy of the neighborhood that it exists within. However, not all curb spaces are intended to facilitate consistent uses. Some curbs exist on major streets meant to carry high levels of traffic volume, while other curbs exist on smaller streets meant to connect people to destinations or establish a stronger sense of place within the right-of-way. It is important to acknowledge context and vision for future development of curb spaces so that land use and transportation facilities can be better integrated, and so that transportation facilities are designed as intended by long-range references. Transportation right-of-way is

inherently public space that primarily serves a wide range of functions for mobility uses, with some locations enhancing the built environment further with non-transportation activation and placemaking uses. Ultimately, right-of-way should aid in the enhancement of both mobility functions and ensuring integration with land use goals and long-range plans that Bellevue has established over the course of time.

Purpose of Curb Typology

The Curb Typology is the foundational prioritization framework to help ground curb-related decision making. At its core, the Typology can be used for a variety of use cases. The Typology will:

- Assist city staff in addressing project-by-project questions, including development review, capital project designs, and operational decisions
- Serve as a resource and reference for non-city audiences, such as developers, retailers, and mobility providers
- Articulate the future vision, goals, and priorities for each block face within the study area (Performance Management Area #1 as defined in the Mobility Implementation Plan)

The Curb Typology as drafted will help establish more guidance on the condition of curb spaces, while being flexible enough to respond to alterations in travel behavior, land use patterns, and other evolutions within the city.

Draft Typology Principles

To ensure alignment with the overarching goals of the Curb Management Plan and approaches taken with the establishment of demand management and curb pricing concepts, principles for the Curb Typology have been created for Transportation Commission review.

1) The Curb Typology should aid in advancing city goals.
2) The Curb Typology should reference adopted policies and modal plans to inform future curb intent.
3) The Curb Typology should include key performance indicators (KPIs) to track curb changes over time.
4) The Curb Typology should remain flexible and respond to land use and transportation changes.

Curb Types

The project team worked throughout 2022 to craft and refine the Curb Typology approach and determine “Curb Types” per block. When reviewed holistically, these curb types help describe the majority of conditions seen within the public roadway system.

The project team created four (4) major curb types for the Typology:

- **Type M curb: Movement**
    - Type M curbs reflect a "movement" function and priority for the curb. Movement functionality includes curbside general purpose lanes, bike lanes, bus only lanes, and other movement functions.
    - The primary goal of a Type M curb is to facilitate travel along the curbside environment.
- **Type A curb: Access**
    - Type A curbs reflect an "access" function and priority for the curb. Access functionality includes passenger pick-up and drop-off, parcel delivery loading, transit stops, and other shorter-term (less than 30 minutes) uses of the curb.
    - The primary goal of a Type A curb is to facilitate short-term and dynamic permeability between the street environment and the sidewalk environment along the curbside.
- **Type P curb: Place**
    - Type P curbs reflect a "place" function and priority for the curb. Place functionality includes on-street dining, parklets, pedestrian malls, enhanced streetscaping, and other similar facilities.
    - The primary goal of a Type P curb is to create a strong sense of place and destination within the public right-of-way.
- **Type S curb: Storage**
    - Type S curbs reflect a "storage" function and priority for the curb. Storage functionality includes on-street parking, transit layover, taxi and rideshare (i.e. Uber, Lyft) queuing, bikeshare & micromobility stations, and other longer-term (more than 30 minutes) uses of the curb.
    - The primary goal of a Type S curb is to provide necessary storage functions for mobility purposes that are not considered access or movement functions along the curbside environment.

In addition to these main curb types, the project team has established curb subtypes which are more reflective of specific behavior along the curb. These subtypes are nested within each major curb type for clarity. Photo examples of each curb type and subtype are shown in Table 1.

- Type M curb
    - ***Mv curb****: Movement of vehicles (i.e. travel lanes, turn pockets)*
    - ***Mt curb****: Movement of transit (i.e. bus lanes, BAT lanes)*
    - ***Mb curb****: Movement of bicycles (i.e. bike lanes)*
- Type S curb
    - ***Sv curb****: Storage of vehicles (i.e. on-street parking)*
    - ***St curb****: Storage of transit (i.e. bus layover zones)*

Table 1: Photo examples of Curb Types & Subtypes

Type M curb ***(Mv subtype)*** **Bellevue, WA** **116th Avenue NE**	
Type M curb ***(Mb subtype)*** **Bellevue, WA** **108th Avenue NE**	
Type M curb ***(Mt subtype)*** **Bellevue, WA** **108th Avenue NE**	
Type S curb ***(Sv subtype)*** **Bellevue, WA** **111th Avenue NE**	

Type S curb
(St subtype)
King County, WA

Type A curb
Bellevue
106th Avenue NE

Type P curb
Bellevue, WA
Main Street
(seasonal)

Approach to creating the existing Curb Typology

The project team reviewed international best practices and recent projects from other agencies – including examples from Atlanta GA, Auckland NZ, and others – to help formulate the curb use prioritization framework. Evaluating curb intentionality and classifying future curb types

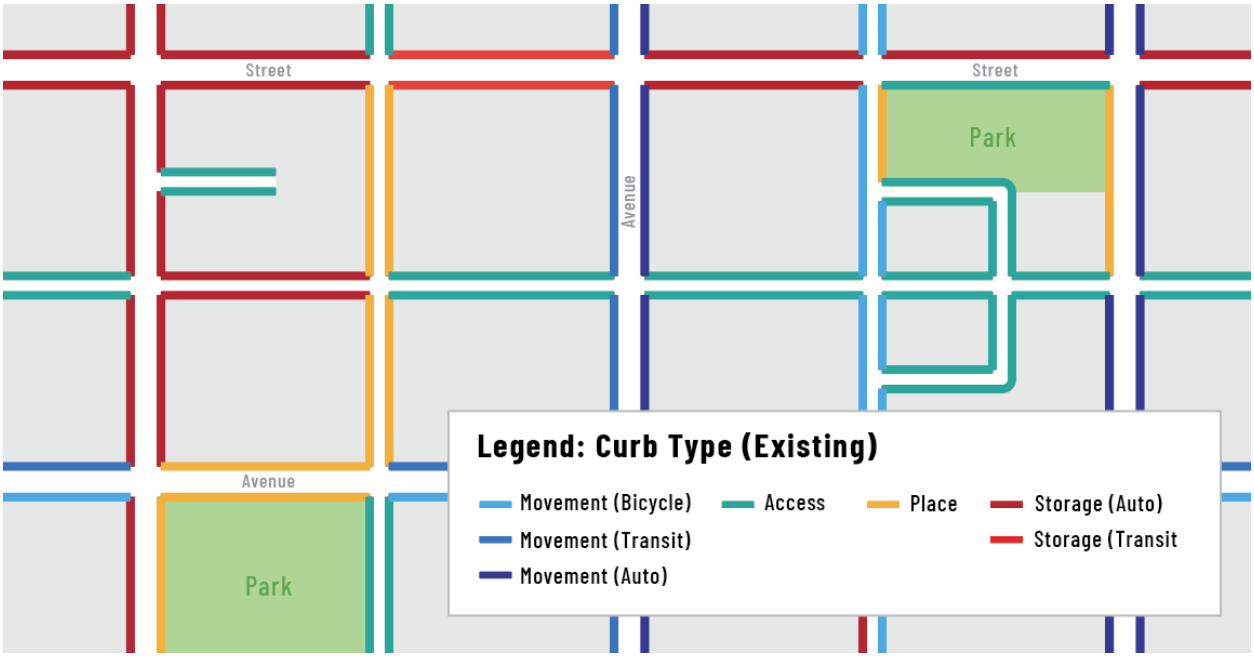
expands on the notion of roadway classification, where roadway designations ranging from arterials to local streets mimic characteristics and respective intention of certain corridors.

The existing Curb Typology has been drafted following the outlined approach:

1) **Check existing infrastructure:** Conduct a thorough review of pre-existing conditions to determine the existing behavior of each block face. Denote modal usages on each respective block based on present day conditions.
2) **Check existing curbside regulations:** Non-movement functions of the curbside will include a variety of storage, access, and place functions. The existing curb type will be determined based on an observation of curb regulations and guidance that manifest each respective block face. Note: some block faces may have existing conditions which reflect different curb uses (i.e. on-street parking on one end of a block and a travel lane on another end of a block). In this event, primary and secondary curb types per block will be recorded based on review of space allocated along block face.
3) **Check existing adjacencies:** Where uses are unclear or irregular, evaluate the adjacent land use to determine an existing curb type. Factors that can contribute to this approach may include public spaces, transit facilities, land use functions, retail concentrations, seating areas, and other similar functions.
4) **Determine existing Curb Type**: Illustrate the primary curb type per block in map form.

Using this method, the existing Curb Typology map is being created. The map will highlight the function of each block face within the study area. An illustrative conceptual example of the existing Curb Typology map is shown in Figure 1 below. A more comprehensive map that shows detail in Bellevue will be shown during the Transportation Commission meeting presentation.

Figure 1: Example of Existing Curb Typology Map



Approach to creating the future Curb Typology

The project team is crafting the future Curb Typology based on previously adopted plans, policies, zoning, and land use patterns within the study area. The future Curb Typology is intended to reflect the long-range vision for each curb face.

In Bellevue, a myriad of modal plans, Council-approved policy documents, and streetscape designations point to the establishment of certain outcomes along various roadways in the Urban Core neighborhoods. For example, the Downtown Subarea Plan identifies priorities for a variety of streets in downtown. Policy language indicates streets which have auto priority, transit priority, and pedestrian priority designations. Other mobility-focused documents, like the Mobility Implementation Plan, Transit Master Plan, and Pedestrian & Bicycle Transportation Plan, provide broad direction to develop specific infrastructure on numerous corridors around Bellevue. Additionally, long-range planning documents like the BelRed Streetscape Plan are already embedded within the city's Transportation Design Manual and provide cross sections and approaches to developing the burgeoning neighborhood street grid. Many plans have project concepts or mode-specific performance targets which are inherently correlated to the curbside environment. The future Curb Typology will seek to reflect all planning documents in a tangible way, providing clear direction and basis for decision-making during project review and design.

Where mode-based plans and policies are unclear, other references will be used to determine the future curb type, such as observed curbside behavior trends, adjacent zoning, land use patterns, and city code language.

Ultimately, the Curb Typology will reflect both the existing usage and the future intention of each block. Generally speaking, the Curb Typology is not a direct reflection of measured linear space allocated for any given usage; rather, it illustrates and communicates a broad understanding of the intention of each curb face based on existing conditions.

The project team will present the future Curb Typology and supporting documentation at the next Transportation Commission meeting.

Final outcome for Curb Typology

The Curb Typology will illustrate both existing conditions and future intent of block faces on public streets in the study area. When complete, some curb faces will likely show different curb types when comparing existing and future conditions. For example, one curb face may have an existing condition as a "Type S" (Storage) curb, whereas future intent calls for the curb face to be a "Type A" (Access) curb. Over time, decisions can be made to design this block face to include more access-related functions. KPIs can be established to track progress of the Typology on a predetermined basis.

Curb Demand & Pricing Assumptions

Curb program costs and revenues

Since the July 13 Commission meeting, the project team has refined cost assumptions for launching and operating a dedicated curb program for the city. This curb program includes curb pricing concepts and strategies outlined in materials shown during the June 22 and July 13 Transportation Commission meetings. Pricing principles established by the Transportation Commission will help guide the implementation of any future curb program.

For this exercise, a high-level range of costs and revenues were developed to illustrate each component within a curb program. Order of magnitude prices were determined based on nationwide guidance and estimated material costs. Each section shows average cost and revenue assumptions per line item. Elements include:

- Estimated upstart one-time fees to implement the curb management program
- Estimated annual operating costs
- Estimated annual revenues

As previously described, revenues generated from a curb pricing program would result in more robust curbside enforcement practices, improved data collection, updated permit processes for managing private uses of the curbside, additional signage, and staff costs to manage the program. Based on the high-level average cost and revenue assumptions, a curb program could be net-positive between the third and fourth year of the program. Revenues received in a net-positive scenario could then be used to invest back into the community and streetscape environment.

Planning-level cost and revenue assumptions are shown in Attachment A.

NEXT STEPS

The project team will gather Commission comments to refine the prioritization framework, principles, and Curb Typology existing conditions. At the next Commission meeting on November 10, the project team will present a refined existing Curb Typology as well as the future Curb Typology based on the approach outlined in this memo. The project team will also gather comments regarding pricing program assumptions.

Please feel free to contact myself prior to the meeting if you have questions about the agenda materials.