

PILOT PROJECT GUIDE

July 2021 - Curb Management Working Group

OVERVIEW

The OMF's Curb Data Specification (CDS) has been created by the public Working Group, the steering committee, and the OMF community. CDS provides a mechanism for expressing static and dynamic regulations, measuring activity at the curb, and providing access and utilization for curb managers and users.

In order for CDS to be successful, commercial use curb zone pilot programs that require use of CDS need to be implemented. These pilot programs can be led by city agencies, in close collaboration with commercial curb users and technology companies. Testing CDS under real-world conditions will drive improvements of the specification for all users of CDS. This guide will help organizations structure a successful commercial curb zone pilot program by providing a list of key questions and recommendations that should be addressed during each phase of the pilot program's development.

PROJECT PHASES

Considerations and questions when setting up and running pilot programs.

Goal Setting and Planning

What are you trying to achieve and how do you plan to achieve it? The steps below are a basic outline for structuring your curb pilot program goals and how you plan to achieve those goals. For concrete examples of how CDS can benefit your curb pilot program, please reference this [CDS Use Cases Page](#).

1. **Agency/City Requirements**

- a. Understand and outline your City's/Agency's internal process for a pilot program including vendor selection process

- b. Identify any seasonal, legal, regulatory, or other unique challenges that need to be considered.
 - i. Are there data privacy regulations that your municipality has in place? Cameras, sensors and event data storage may have legal implications. It is highly encouraged to consult with your legal department before developing your project plan.

2. **Goal Definition**

- a. Describe the curb management problem(s) that you are trying to solve and how to measure success
 - i. **City Example:** In Seattle DOT's *Neighborhood Sensor Project*, one of the problem's attempted to be solved was: Could SDOT optimize commercial goods and services delivery access by utilizing roadbed sensors to track real-time occupancy?
 - 1. Measures of Success:
 - a. Can reliable and accurate tracking of vehicle presence at load zones be achieved?
 - b. Is data able to be disseminated to 3rd parties with limited processing?
 - c. Can dashboards and reporting interfaces be provided to review real-time and historic occupancy data?
- b. Define your goals and desired outcomes
 - i. Identify your short-term goals
 - ii. Identify your long-term goals

3. **Internal Pitch**

- a. Identify the needed resources for the program within your agency
- b. Identify any challenges related to resources and technical support
 - i. A successful curb management pilot project typically involves any combination of signage, paint, IT support, coordination with enforcement officers, and public outreach specialists. It can often be

challenging to identify all of the required resources but it is a crucial step towards a successful pitch.

- c. Identify other teams/departments that this program may help. One of the goals of CDS is that it will benefit other divisions or programs within city governments such as enforcement, permitting, public transportation, etc.
- d. Highlight the benefits of the program
- e. Explain how the program will align with broader organizational goals (transportation, economic, or environmental)
- f. Explain how testing CDS within your project will help expedite the development of a national curb data standard which will improve data processing and integration of future curb management workflows
- g. Timing of the Pilot
 - i. Explain why implementing the Pilot now is beneficial versus implementing it at a later stage (advantages and disadvantages)
 - ii. Explain how you are now better prepared to start a Pilot than ever before. Focus on the time and resources you have at your disposal if applicable

4. **Funding**

- a. Identify internal funding sources
- b. Identify any potential external funding sources

Potential funding sources:

- 1. MPO funding with flexible state dollars
- 2. Federal grants are hard for operational services/procurement rules, foundation grants are more flexible
- 3. New/existing metering and pricing parking districts and using revenues
 - a. **City Example:** The San Diego Association of Governments (SANDAG) *Pacific Beach Neighborhood Electric Vehicle Microtransit Pilot*, is expected to launch in the spring of 2022. This project will be funded through a combination of SANDAG regional planning funds combined

with revenue generated from a newly created priced parking district adjacent to a new light rail station. The project will include a curb data collection effort at the virtual transit stops and will also involve curb digitization to ensure accurate digital records are maintained.

4. Bundled with existing vendor agreements
5. Enforcement revenue in some locations
6. Revenue positive pilots with vendors (fee splits, per event)

5. **Stakeholders**

- a. Identify any internal stakeholders with decision making authority
 - i. Department of Transportation or equivalent body
 - ii. City Council or equivalent body of other agencies
 - iii. Finance Department
 - iv. IT Department
 - v. Public Works
- b. Identify any internal stakeholders that are considered influencers on the decision
- c. Identify any external stakeholders that have an advisory role or can influence the decision or have approval power. Examples are:
 - i. Business associations
 - ii. Downtown partnership
 - iii. Parking Board
 - iv. Arena owners
 - v. Convention center / cultural facilities
 - vi. Neighborhood associations (may be interested in facilitating deliveries to their residences)
- d. Identify whether there is an opportunity for collaboration with other agencies
- e. Identify whether there is an opportunity for collaboration with private sector and service providers

- i. Research different types of service providers that provide technologies or services that best align with your project goals and desired outcomes
- ii. Consult local curb users and businesses to see if there is an opportunity for these companies to participate in your project. If your project is looking to improve curb access and reduce congestion, they may be more likely to participate and possibly share data.

6. **Develop a Project Plan**

- a. Secure commitment of resources
- b. Understand what data you need to collect to achieve your pilot program goals
 - i. If you are measuring activity at the curb, there may be many different data sources required to answer your pilot's questions. A good resource for understanding what data you might need for your pilot can be found at the University of Washington's Urban Freight Lab's Urban Good's Delivery Toolkit [here](#).
 - ii. Is a digital curb inventory required? If your agency does not have a curb inventory, there are several ways to collect one. The Institute of Transportation Engineers (ITE) recently released a [free Curbside Management Tool](#) which gives professionals with GIS experience the tools to collect data, conduct analysis, and provide curb treatment recommendations. Another option would be to contract the services of a company like [Coord](#) who can utilize their surveying tools to seamlessly collect your curbside asset data and turn it into a digital inventory.
- c. Define a clear timeline and ensure that it is sufficient to establish whether the pilot program is successful or not
- d. Establish evaluation measures that are transparent to your stakeholders

7. **Develop a Communication Plan**

- a. Establish your target audiences (internal and external) and plan accordingly
- b. Establish your communication methods and plan accordingly
 - i. If you are creating new curbside zones that will restrict access for certain curb users, it is highly encouraged to engage with public outreach specialists to reduce non-compliant parking throughout the duration of your pilot program.
- c. Make it clear that it is a pilot program

8. **Develop a Preliminary Post pilot program plan**

- a. Make a plan for what you will do when the pilot program is over

Implementation

After establishing your project goals and planning out how to achieve those goals, it is now time to turn your plans into action. The steps below outline how you can implement a curb zone pilot program that utilizes CDS as the primary data format.

1. **Execute Vendor/Consultant Selection Process if Needed**

- a. Depending on your program needs identified in the planning phase, procuring service providers or a consultant may be a necessity.

■ **Private Example:** *Coord Smart Zones* for a packaged pilot project

- 1. A curb pilot project that can be implemented by private company Coord and partner cities was developed to test smart zone technology at commercial load zones by allowing drivers to book and pay for their space via an APP. This program can be funded by revenue split or transaction fees.
- 2. By partnering with Coord or other service vendors, cities can leverage Coord's technical expertise to run APIs which generate CDS compliant data on the City's behalf. This type of partnership can be beneficial for cities wishing to pilot a project but may not have the available internal resources or technical

expertise

- b. There may be several options available for a public agency such as RFP's, RFEI's, direct selection's, etc. It is recommended that you consult with your agency's contract office for the best options available.

2. Establish CDS as your agency's data standard

- a. Include CDS by name in your permit language and RFPs. See our [Policy Language Guidance](#) document for sample language.
- b. Identify curb users who would consume curb regulation data
- c. Map data to be collected from commercial curb users or sensors
- d. Make plan to provide curb regulation data in CDS -- working from existing datasets or creating new ones
- e. You can still store your curb asset data internally in whatever format or GIS system you are using - just have a plan to convert that to CDS for the pilot
- f. If entering into agreements with curb users, specify and link to CDS in your program rules as a requirement for participation.
- g. It's possible to use CDS alongside other existing methods of describing and tracking curb regulations and usage.
- h. Identify anything else that you need to try to improve CDS

3. Evaluate what your sources of CDS data are

- a. What are the motivations or benefits for companies to provide or use CDS data?
- b. What is the business case for providing data? And, what are the mechanisms to report back on those benefits?

4. Monitor progress on a regular basis

5. Be flexible and adjust plan if needed to re-align with goals

6. Provide on-going feedback to OMF Working Group

- a. How is CDS being implemented and if there are any challenges or recommendations for improvements?

7. Keep a line of communication with all stakeholders

8. Collect feedback

9. Maintain lessons learned list for post pilot program use

- a. **City Example:** Santa Monica LA Clean Tech Incubator, *Zero Emission Delivery (ZEDZ) Pilot Program*. The pilot is designed to test various last mile delivery technologies and supporting infrastructure, including electric vehicle loading zones.
 - Ideas for Post Pilot Program: Using this pilot as a proof of concept test, Santa Monica would like to explore how the tools developed during the pilot can be utilized in the future to shift from voluntary participation to mandatory curb management policy.

Evaluation and Outcomes

After the completion of your curb zone pilot program, it is important to evaluate and summarize your findings. The steps below provide a basic outline for how you can evaluate your program.

- 1. Evaluate any data that was collected during the pilot program**
 - a. Use the events and metrics data you collected to evaluate your successes, failures, and learnings
- 2. Create reports and summaries highlighting the successes and the challenges**
 - a. Did your curb pilot meet your expectations?
 - b. How could the pilot have been improved?
- 3. Determine whether your collected data, reports, and summaries are aligned with your established goals and outcomes**
 - a. Was the CDS able to meet your project specific requirements?
- 4. Develop a storyline of the pilot program that reflects the ways it benefited each stakeholder group throughout the pilot program**

- a. How did this program benefit residents, curb users, city planners, or parking managers?

5. Develop a post Pilot proposal that capitalizes on the learned lessons and experiences of the pilot program

- a. How would you do the program again, and what would you change or do differently to improve the program?
- b. Did your pilot give you information you needed to roll it out to more locations or make it permanent?

TECHNICAL IMPLEMENTATION

CDS is not just a data storage for your curb inventory and policies, it's a data exchange format, and needs translation layers to and from your operational systems.

Note: This section is a starting point and will be completed later as we get real world implementation experience that can be documented to help others.

Curbs API

1. Need to create a method of taking curb data from internal systems and getting it into a CDS-capable publishing format and API platform for public and commercial use. This could be hosted on your open data website, public ArcGIS server, GeoServices, third party company service, etc.
2. Optional real-time status features can be added.
3. Could create a visualization tool or map based on Curbs data to help users understand your zones.
4. Could create a tool to create and edit curb zone, area, and space geometry and policy for CDS, if this data is not stored and pulled from an internal database.
5. See [code examples](#) in CDS.

Events API

1. Need an external, authenticated API that can capture events coming from sensors and company data feeds after being translated into the CDS Events API format.
2. Store data collected in an internal database for real-time enforcement and historic analysis, and future use in CDS Metrics.
3. If event data is received later, it could be bulk added directly to your Events database without a need to use an API.
4. Could create a data visualization tool or map combining Events with Curbs locations.
5. See [code examples](#) in CDS.

Metrics API

1. Need to write a data processor that converts individual Events data into Metrics Sessions to serve up to approved parties.
2. Can use session data to calculate Metrics Aggregates like turnover, occupancy, and dwell time, all using CDS methodology.
3. Could visualize data using standard analysis software, or visualize over time and space using locations from Curbs on standard mapping software.
4. See [code examples](#) in CDS.

REQUIRED KEY PLAYERS

Your pilot work is contingent on having the right mix of public and private partners willing to work collaboratively and participate in mutually beneficial curb use outcomes. Look for partners who can host pilot curb data projects, contribute their knowledge and needs, and participate in OMF Member volunteer leadership roles.

- **Cities:** cities and their authorized partners providing curb management or data analysis services on behalf of cities need to have programs that meet our scope, work with us to help develop a way to publish info, and are interested in measuring how curbs are used.
- **Curb users:** commercial partners to use the curb area data from cities and potentially send usage event data back.
- **Technology companies:** partnering with cities and curb users to build tools to publish regulations, create/ingest event data, analyze utilization

SHOWCASE

Showcase of curb projects in cities and other organizations that have been successful and how they did it.

Coord - Smart Zones

- Smart Zones: commercial loading space that drivers book + pay for via app
- Funded via revenue split or transaction fees -- no cash outlay needed
- Use CDS for integrations/public data: solves "chicken or egg" problem
- Coord runs APIs and generates CDS-compliant data on city's behalf

SANDAG - Pacific Beach NEV Microtransit Pilot

- Collaborating with City of San Diego to launch NEV microtransit pilot spring 2022
- Pilot funded via SANDAG and revenues from priced parking district being established summer 2021
- Curb digitization and use of CDS desired - partner(s) needed
- Open to brainstorming last mile delivery component

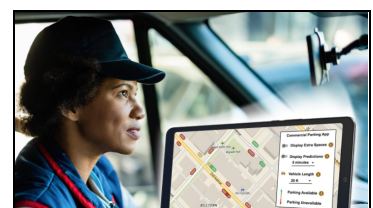


Santa Monica - LA Clean Tech Incubator, Zero Emission Delivery Zone

- Testing various zero emission delivery technologies and supporting infrastructure
- Partnership with Automotus -- Installing Automotus cameras at 12-15 EV only loading zones
- Exploring how tools could be utilized in the future to shift from voluntary participation to codified curb management policy
- Challenges have included:
 - Infrastructure capacity
 - Data security/privacy
 - Engagement with service providers



Seattle - Neighborhood Sensor Project



- US DOE Office of Energy Efficiency and Renewable Energy funded
- Fybr/Lacuna sensors installed in 40 commercial, passenger zones
- Using data to understand the urban freight system
 - Do our policies work? What data is useful for freight companies?
- Existing contract ends in December 2021, looking to extend sensor operations for another year and incorporate CDS
- Limited contract flexibility makes any adjustments challenging

San Jose - Curb Pilot

- Zero cost to City
- City along with vendor will identify the pilot zone/area where spaces would be reserved for commercial use
- Vendor will secure installation of cameras/sensors for the pilot zone/area
- Vendor will assume any costs related to installation of equipment and use of any space where the equipment will be mounted if not a City property as well as the cost of any required signage
- Vendor will outreach to local and national vendors interested in reserving a parking space in pilot zone/area and provide them the ability to reserve space through an App or the Web
- Vendor and City will agree on a revenue sharing model
- Vendor will provide the City all related data and will create and generate related reports

Los Angeles - Curb Management Pilots

- Pilot 1 (Data Collection):
 - Vendor will test different curbside data collection methods in 3 land use contexts in the city.
 - Collecting in different land use contexts will help the agency understand the cost and accuracy of the different methods.
 - Pilot will offer insights on the potential ROI on each data production method and inform future decisions related to scaling solutions to build the agency's digital infrastructure system.
- Pilot 2 (Curb Monitoring):

- Vendor will install cameras at strategic locations to measure and analyze curbside activities in two communities where demands for curb space tend to outpace space availability.
- Collection will ensure appropriate data protection and privacy protocols.
- Pilot aims to enable the agency to access real-time curb data, better understand multimodal curb demands, and help design a digital curb management system that is interoperable with MDS.
- Pilot 3 (ZE Delivery Zones):
 - Install, enforce, and evaluate new commercial loading zones for the exclusive use of ZE delivery vehicles in high density and high curbside demand locations that are disproportionately burdened by air pollution.
 - Engage delivery companies early and often in all phases of the pilot.
 - Install cameras to monitor compliance and usage, and to inform the evaluation.
 - Develop a plan to upscale the program.

PROVIDING FEEDBACK

As your pilot project progresses, there are immediate opportunities to provide your feedback in our online working documents, specification, and discussion areas, and to-be-scheduled times for presenting your success and challenges to the Curb Working Group via the Steering Committee or CDS mailing list.

HOW TO GET INVOLVED

If you are a city, company, or individual who is interested in this effort and would like to learn more about how to get involved, please [visit the OMF website](#). The Curb Management Working Group is public and open to both OMF members and individual contributors. To participate, you can:

- Read and understand our [Scope of Work](#) document
- Review the [Curb Management Working Group](#) wiki
- Follow progress and chime in on our [Curb Data Specification](#) (CDS) repository
- Join [bi-weekly meetings](#) to discuss issues and hear from other contributors
- Get announcements from the [Curb Management mailing list](#)
- Leave feedback on the [technical draft](#) document
- Start a pilot project and bring back your learnings

If you have any questions about how to get involved, [contact us](#) on the OMF website.

