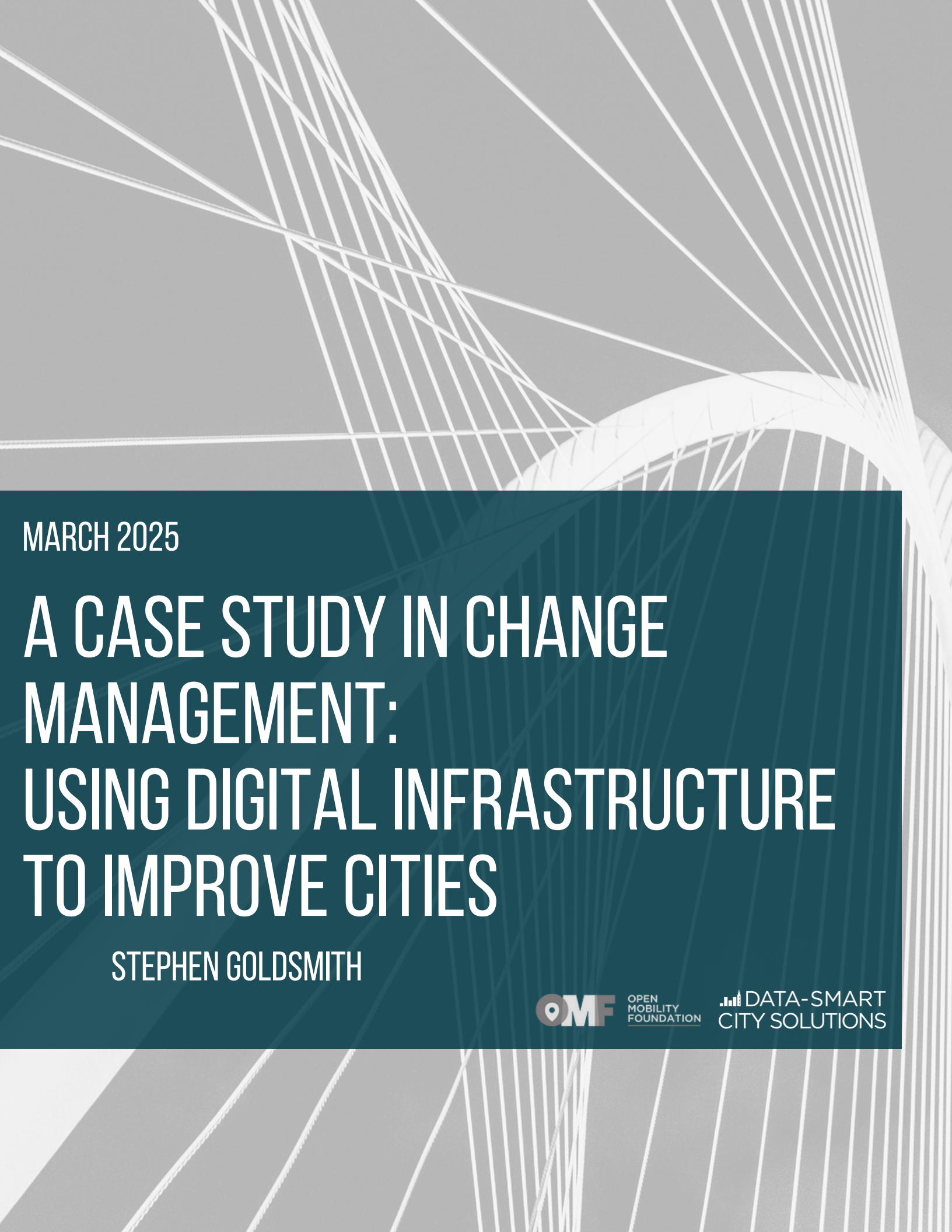


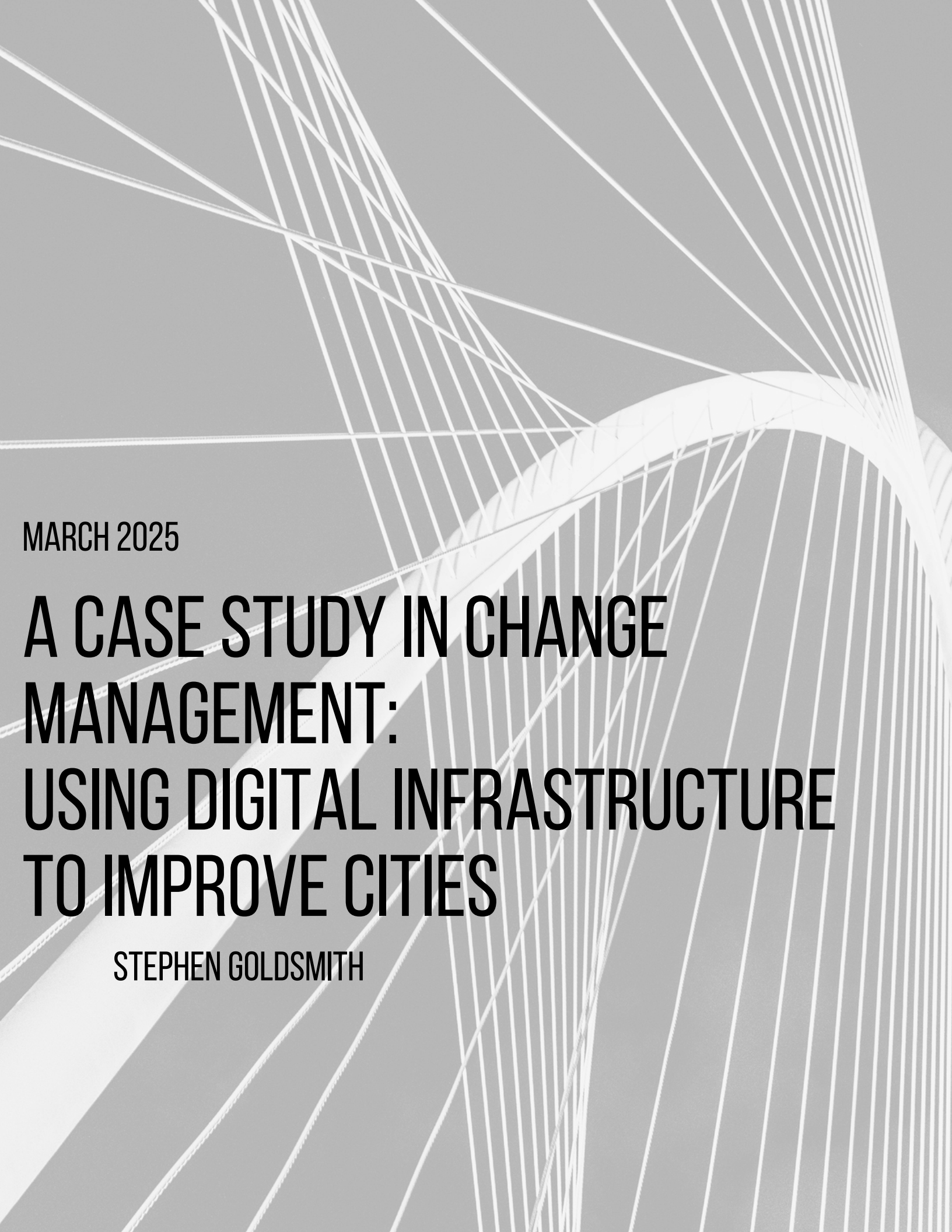
MARCH 2025

A CASE STUDY IN CHANGE MANAGEMENT: USING DIGITAL INFRASTRUCTURE TO IMPROVE CITIES

STEPHEN GOLDSMITH

OMF OPEN MOBILITY FOUNDATION

DATA-SMART CITY SOLUTIONS



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About the Author

Stephen Goldsmith is the Derek Bok Professor of the Practice of Urban Policy at Harvard Kennedy School and director of Data-Smart City Solutions at the Bloomberg Center for Cities at Harvard University. He previously served as Deputy Mayor of New York and Mayor of Indianapolis, where he earned a reputation as one of the country's leaders in public-private partnerships, competition, and privatization. Goldsmith was also the chief domestic policy advisor to the George W. Bush campaign in 2000, the Chair of the Corporation for National and Community Service, and the district attorney for Marion County, Indiana, from 1979 to 1990. He has written The Power of Social Innovation, Governing by Network: the New Shape of the Public Sector; Putting Faith in Neighborhoods: Making Cities Work through Grassroots Citizenship; The Twenty-First Century City: Resurrecting Urban America, The Responsive City: Engaging Communities Through Data-Smart Governance; A New City O/ S: The Power of Open, Collaborative, and Distributed Governance; and Collaborative Cities: Mapping Solutions to Wicked Problems. His most recent book Growing Fairly: How to Build Opportunity and Equity in Workforce Development, was released in February 2022.

About Data-Smart City Solutions

Data-Smart City Solutions at the Bloomberg Center for Cities at Harvard University is working to catalyze the adoption of data projects on the local government level by serving as a central resource for city leaders. We highlight best practices, top innovators, and promising case studies while also connecting leading industry, academic, and government officials. Our research focuses on the intersection of government and data and explores innovations in open data, predictive analytics, and civic engagement technology. We seek to discover and preemptively address civic problems by integrating cross-agency data with community data.

About the SMART Curb Collaborative

The Open Mobility Foundation's SMART Curb Collaborative is a group of cities united in tackling challenges in curb management, reducing congestion, enhancing livability, and improving safety and equity on city streets. Each of these public agencies is a recipient of USDOT's Strengthening Mobility and Revolutionizing Transportation (SMART) grant program, which provides funding to build data and technology capacity across the US.

Members of the SMART Curb Collaborative include: City of Boston, City of Buffalo, City of Los Angeles, Miami-Dade County, City of Minneapolis, City of Philadelphia, City of Portland, City of San Francisco, City of San José, and the City of Seattle

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An influential observer of urban life, Jane Jacobs argued that sidewalks play an essential role in cities as places for social interaction, allowing diverse residents to mix around varying activities safely. City planners have ignored this famous observation for decades. They began segregating city uses—office here, residential there, industrial somewhere else. Yet cities are dynamic. Combining new technology and service models puts new pressure on sidewalks and curb space. These included the proliferation of deliveries, changes in parking technology, digital kiosks, and the growth of ride-sharing, bike and scooter sharing, and outdoor cafes. In addition, traditional uses such as lighting, signage, and planting still needed space. The variety and intensity of uses changed sidewalks into in-demand real estate.

These shifts came quickly, and cities were not well-equipped to deal with them. Procedures left over from an earlier age didn't recognize the scale of change or the need to regulate and manage with much more fluidity. Few areas generate as many complaints as parking. When I proposed wholesale changes in parking placement and rates, the pushback was furious from motorists, retailers, office and apartment owners, and the City Council. To inject some data and reframe the issue, I asked a few city workers to count, daily, how long cars occupied the same spots (turnover was valued) and to count out-of-city license plates. Their survey showed that over half of the motorists subsidized with the below-market rates did not live in the city. The results helped us convince retailers that underpriced parking with no duration limits incented too many all-day parkers who prevented easy access for customers.

Today, several cities are trying to innovate around how they handle the changing demands on their sidewalks and curbs. To accelerate solutions driven by new technologies, the USDOT launched its Strengthening Mobility and Revolutionizing Transportation (SMART) grant program to spark change in the face of established policies and changing demand. Over 30 cities received funding to show how smart traffic signals and grids, sensor-based infrastructure, delivery logistics, and integration could improve communities. This paper draws on the challenges faced by SMART grant recipients, a group of whom my team and I have been working with as part of a collaboration managed by the Open Mobility Foundation (OMF), a nonprofit group dedicated to easing the path to change through collaboration and common technology standards.

The initiative has sparked new thinking in cities but also faces implementation challenges. For city governments, the curb today is a complex place where multiple departments share jurisdiction amid competing needs of residents, businesses, and many other stakeholders. The curb is more than a concrete slab. It's a critical test of a city's ability to execute change management. As Art Pearce, Deputy Director of Planning, Projects, and Programs for the Portland Bureau of Transportation, noted in an insightful presentation at DOT in 2024, "the process of guiding change to fruition—and helping people transition to the new—faces a range of external and internal challenges and confronts bureaucratic obstacles and cultural challenges."

While the SMART funding gave cities financial freedom to experiment, rallying support for transformative approaches faced several hurdles. Some of the most critical early work undertaken by the cities was limited to internal issues like data maintenance, internal coordination, and technical protocols. The federal funding comes in conditional stages, starting with planning before implementation, which can make building momentum difficult. Gaining buy-in from city employees is challenging. And even with grant funding coming in, broad change often pressures existing budgets, as adopting new infrastructure requires investments in technology and training that may not be readily available.

This paper presents six components of successful change management that can help cities advance their goals at the curb, regardless of whether they received grant funds. Coupled with the leadership and vision of program managers and senior city officials, following these

principles can help cities produce safer and better-utilized curbs and sidewalks that meet the competing needs of today's users.

1. Clarify and Visualize the Vision

SMART city leaders should start with a powerful narrative that generates as much support across groups as possible. That vision needs to lift the public toward a larger goal: residents and businesses see community benefits from the changes while mitigating opponents' concerns. OMF, in its Curb User Engagement Guidance, captures several high-level community outcomes that city leaders can focus on when telling the story of what they aim to achieve at the curb, including:

- Reduced traffic congestion
- Enhanced safety
- Improved accessibility and equity
- Improved utilization of street space
- Enhanced livability

The narrative best sells the desired results, not the change that makes it happen. For example, while higher parking rates may be the policy change a city makes, the larger vision needs to be about producing more parking-space turnover in congested areas, which helps retailers create revenue that can be used for various purposes, from sidewalk beautification to transit support or traffic safety projects. This list of benefits needs to be visualized and mapped against stakeholders' interests, painting a picture of a more efficient, safer, and vibrant urban environment.

Even when SMART enables a relatively modest first step, the narrative must tell a larger story. Sarah Abroff, San Jose Project Lead and Transportation Specialist, explained that although her city's SMART initiative begins with digital mapping of the curb and sidewalk to study current uses, that tactical step needs to be communicated as part of something bigger: achieving "our ambitious climate and safety goals."

Portland's Pearce emphasized that another purpose of language is to influence broader market changes, such as the logistics industry adapting to zero-emission zones. Behavior changes require announcing bold intentions to generate public and private sector discussions.

Officials need clear communication and public education strategies to help the public adapt to new norms. Michael Lawrence Evans, Boston's Director of the Office of Emerging Technology, said, "Our language needs to get to the pieces together that support well-being, whether in terms of clean air and public health or providing a path to the store or work. So that's the other long-term goal of designing these spaces, which is to encourage our residents to walk and bike more. It would also reduce greenhouse gas emissions from less car use." This level of communication will help ensure that more residents understand the benefits and are prepared for the changes ahead.

2. Map and Appeal to the Stakeholder Ecosystem

Engaging diverse stakeholders, from large logistics companies to small local businesses, is necessary to generate ideas, mitigate resistance, and encourage the smooth adoption of new policies. That enables city leaders to differentiate their messages. Drivers, for example, may care most about easier parking, while pedestrians may care most about safety. The engagement effort should involve more than trying to sway these constituent groups. It also needs to include a process to incorporate their insights. OMF, in its Curb User Engagement Guidance, focuses on

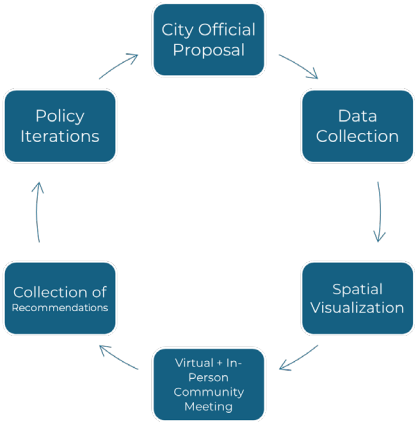
how management decisions can improve the livability and character of neighborhoods and recommends that "by engaging with residents, local businesses, and community groups, cities can ensure that curb management initiatives reflect local needs and priorities, fostering a sense of community ownership and pride in the urban environment."

Addressing disparate views should begin with ecosystem mapping to identify the most affected constituencies and their interests. Such a map could, in part, look as follows.

Constituencies	Interests
Residents and Pedestrians	Enhancing safety, accessibility, and aesthetics.
Local Businesses/Retailers/Restaurants	Easier delivery and customer access.
Environmental and Public Health Advocates	Cleaner air, better health and educational outcomes.
Public Transit Riders	Faster trips, prioritizing bus lanes, ride-sharing drop-offs.
Neighborhood Leaders	More livable and useable main streets; more funding for parking.
Motorists	Easier parking, better apps.
Delivery Drivers	Quicker loading and unloading.
Bikers and Bike Advocates	Safety, separate lanes, signage.
Disability Advocates	Greater accessibility, marked and enforced zones and custom infrastructure.

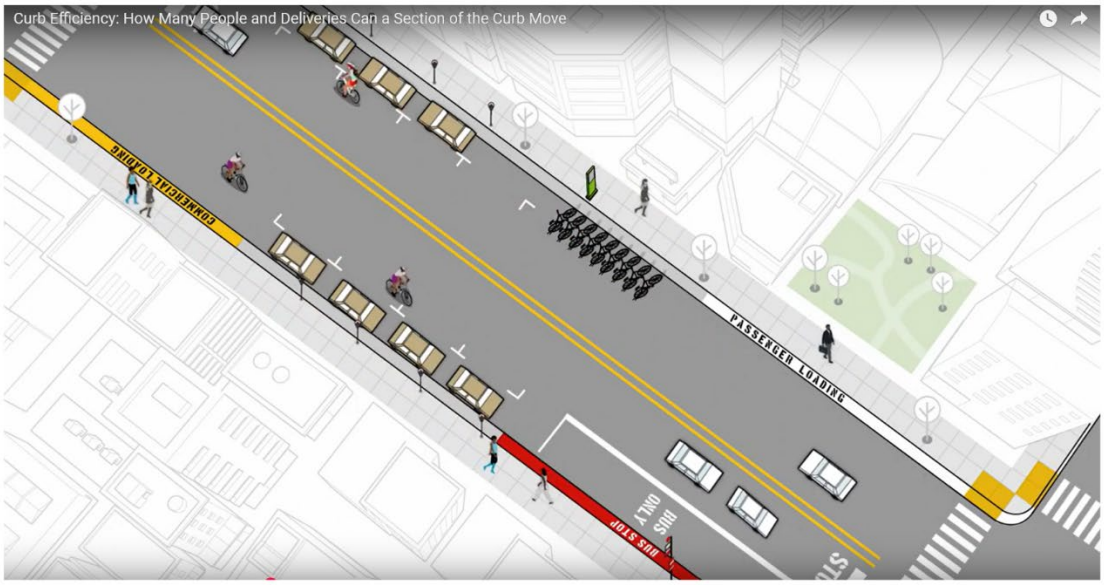
Abroff observed that "bicyclists know curb issues. They are like ambassadors. They know precisely a spot where something always happens. Whether it is a street vendor on a corner that blocks a bike lane, or we cannot collect trash because there is nowhere to put trash cans except in the bike lane." Other stakeholders bring valuable insights, as well.

Some experts portray the change process as a linear progression through successive stages. Instead, the process should be circular, as outreach animates stakeholders whose suggestions improve planning and design.



City employees involved in outreach should have a short set of talking points for consistency of message but tailored to the organization involved and include a structured way to capture and share feedback. The vision animating change must be translated into a course of action with achievable and believable goals.

Boston's Director of Parking and Curbside Management, Amelia Capone, emphasized the virtuous circle of sound, data-informed communication. "I hope to support the transformation of our business processes by measuring and communicating our impact in a way that shapes the narrative about our current and future usage.



Curb Efficiency: How Many People and Deliveries Can a Section of the Curb Move
Source: San Francisco Municipal Transportation Agency, https://www.youtube.com/watch?v=_jH_FNQEWO0

Officials should communicate using data visualizations. As my co-author Kate Markin Coleman and I mentioned in Collaborative Cities, "maps tell stories about places and the people who live there. The value of maps lies partly in the conversations they generate when partners use maps to negotiate the definition of need, risk, response, and impact."[1] Mapped data helps beneficiaries of change more clearly understand why they need to be supportive. For example, Seattle has been a national leader with its curb management project, utilizing curb data specification and visualizations to depict opportunities and problems.[2] The visualizations also demonstrate the power of digital integration as multiple cities and vendors join in solutions. The Seattle and San Francisco analysis and graphic models are powered by vendor Populus, which converts existing data from ESRI ArcGIS and combines it with new data to demonstrate potential.

In Boston, communications with residents include feedback loops, access to open data, and even tools developed to digitize and visualize curbside regulations. All of which helps residents understand why decisions are being made. Capone advised, "Building trust externally includes acknowledging and communicating our constraints—there is not enough parking on our curbs for every family to own multiple cars. Sharing the data demonstrates that. And then it's listening to different users, documenting and sharing what we know about their needs, and then making incremental steps to get there."

The communication strategy requires transparency, feedback mechanisms, education campaigns, and advisory panels of respected city leaders. The process of communicating the narrative requires messages and messengers tailored to the needs of specific stakeholders. Cities must incorporate micro-influencers who typically engage directly with niche communities, building trust and fostering two-way communication. Their followers see them as relatable and authentic, making their recommendations and content more persuasive than mass media.

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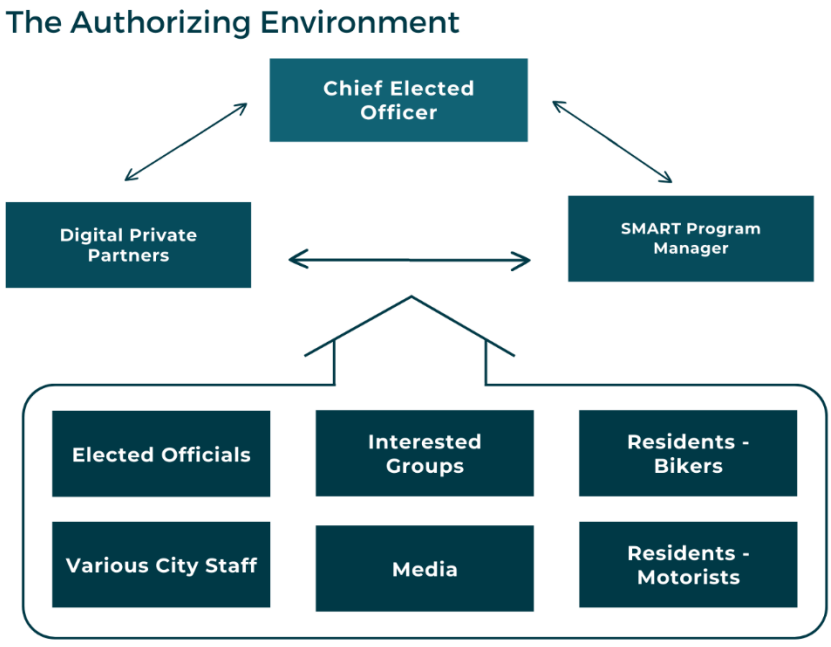
[1] Kate Markin Coleman and Stephen Goldsmith, "Collaborative Cities: Mapping Solutions to Wicked Problems." Esri Press, January 11, 2022.
[2] City of Seattle, "Flex Zone/Curb Use Priorities in Seattle." https://www.seattle.gov/transportation/projects-and-programs/programs/parking-program/parking-regulations/flex-zonecurb-use-priorities-in-seattle

3. Align Internal Interests and Authority

Integration is critical inside City Hall as well. In New York City, more than a half dozen different agencies and departments touched the curb and sidewalk, including Transportation for bikes and street kiosks, Sanitation for waste locations, MTA for subway entrances and some bus stops, Taxi and Limousine Commission for rideshares and cabs, Planning for the amount of green space and parking for new developments and Parks as it relates to tree planting. A city committed to modernizing curb and sidewalk use must ensure that a senior official in the mayor's office provides leadership and/or chairs a coordinating council that oversees all curb and sidewalk management activities across different departments, ensuring cohesive policies and practices.

Addressing the internal stakeholders also brings complexity as administrators wrestle with a confusing and often inconsistent “authorizing environment” filled with complexity. The concept below from Harvard Professor Mark Moore depicts the challenges as mobility administrators seek authority for change. Each depicted group has a defined set of interests, and communications must be authentic but tailored to secure a mandate for change from as many people as possible.



Change expert Rosabeth Moss Kanter of the Harvard Business School points to the necessity of an "idea champion" to lead internal transformation. In her opinion, an idea champion is a highly respected individual who builds momentum and commitment to change, often taking personal risks in the process. One city told us how the absence of such a person forced program managers to conduct complex and time-consuming negotiations with different agency directors who had inconsistent views of curb usage. Change requires a champion and staff across various departments willing to alter their habits and ways of thinking for the curb projects to succeed.

4. Create Technical Inter-Operability

SMART will produce value by integrating data from multiple places and serving as a platform with standard API requirements. The platform will encourage private vendors to innovate, especially if those API, intellectual property, and data privacy rules are shared across cities. For this reason, OMF mobility and curb standards must be adopted broadly by cities to enable providers and users alike to benefit from services integrated at scale. The amount of available data continues to explode from IoT sensors, anonymized cell phones, information submitted by regulated companies like taxis and Ubers, and information provided by corporate partners, such as those involved in parking payments and enforcement.

These sources can help residents make more informed choices about their transportation decisions. Data sharing will also help mobility officials make other vital decisions, such as moving toward dynamic pricing. None of this can be accomplished without a platform for interoperability.

OMF Pillars

- Requiring the use of the Curb Data Specification (CDS) which helps cities and companies pilot and scale dynamic curb zones.
- Promoting data privacy and security ensures that mobility data collected by cities and providers is managed responsibly.
- Promoting public-private collaboration among cities, technology providers, and mobility companies to create more efficient, equitable, and innovative transportation.

Successful change also requires technology that applies a user-oriented approach. Boston appointed a senior data product manager to ensure the team builds technology that is aligned with users' needs. As Capone said, “We avoid building systems that ultimately serve just an individual group or internal users by coordinating with partners to develop and adopt new technology. Each department works with a data lead who reports to the city’s CIO.” However, for city officials and residents to fully benefit, that aspiration also requires business process reengineering that produces a simplified user experience and easier access to information.

Substantial training will also be required to support the envisioned change. Employees and contractors need to increase collaboration and data literacy. Generative artificial intelligence (GenAI) should help both sides more easily understand and visualize data. Similarly, cities should train a broader group of officials and community groups to use digital mapping so they can better understand issues at the neighborhood level. Collaboration requires skills (both soft and technical) in facilitating change. Interoperability, with clear protocols for data shared across cities, allows multiple private companies to build networked solutions. For example, INRIX in several cities will ingest data into a shared platform, which will support curb management as it incorporates parking data, such as that from Passport, CurbIQ, and Umojo, and will provide traffic management capabilities as well. A change message needs to make vivid this multi-party benefit of interoperability. The same combined data that helps a motorist find parking and a delivery truck find the right spot for a drop-off will assist the city in pricing the curb and building vibrant civic spaces.

5. Provide Policy and Regulatory Support

To achieve their purpose, SMART grants will also benefit from changes to the regulatory regime governing parking, payments, and many other policies that come into play at the curb. Ordinances tend to be inflexible and time-consuming to change. However, doing so can set the stage by demonstrating a commitment to the goals of new, dynamic management of the curb. Areas for legislative changes related to SMART could include the following:

- Zoning Adjustments: Re-evaluate zoning laws to accommodate changing transportation needs. Rationalize zoning regulations for multifunctional spaces according to time-of-day usage patterns and emergent needs, such as pop-up outdoor dining.
- Usage Rates: Delegate to the executive branch the right to set usage fees, including parking rates, within parameters that recognize the dynamic nature of sidewalks, mobility, and related uses.
- Incentives and Penalties: Implement policies encouraging preferred uses, such as discounts for electric vehicles and subsidies for one use, like public transit, derived from funds generated from another, like parking. Improvement districts that retain neighborhood groups are part of the benefits of reinvesting in more livable sidewalk areas.
- Flexible Permitting Systems: Create adaptable permitting systems for smoother transitions between curb uses, especially for shared or overlapping spaces.

Regulatory changes, of course, connect with the community engagement strategy above. Proposals require community education and input. Capone said, "It's an opportunity to bring that data back to policy and planners, to use the constituent experience, the driver experience, to inform improved regulations going forward." Feedback must occur early in the legislative process and not merely through publishing a proposed ordinance. I remember when NYC first passed an ordinance requiring bike parking, making it widely applicable across various locations, uses, and places. Although the legislation accomplished much good, it was too little in some areas, too burdensome in others, and inflexible. When I asked one small parking operator why he had not suggested changes to the promulgated rule, he replied that it seemed futile. Outreach to interested stakeholders around proposed legislation needs to be extensive and organized.

6. Utilize Pilot Programs and Phased Implementation to Build Support

Change requires continuous improvement, regular assessment with transparent metrics, and communication about impact. The SMART grants were in two stages, one for planning and the other if the city qualified for implementation. One reason the SMART grant two-stage process presents difficulty is that it delays crucial outcomes such as enhancing public safety or increasing foot traffic in business districts, which would foster cooperation among departments. Portland has been realistic upfront about this issue, saying their definition of success is to launch a minimum viable product that begins to change the behaviors or activities of people in the ecosystem, starting with large shippers. The goal is to build momentum for change. Pearce said, "We are using curb regulation changes to influence the logistics market industry in making progress toward zero-emission delivery. Our project is minimal geographically, but we are sending a signal to the industry."

Portland has experience with this approach. In 2011, it set out to change people's behavior regarding recycling and composting. After conducting a two-year pilot project, the city introduced a mandatory project, "every other week garbage," in which pickup, except for food and yard trimmings, takes place biweekly.[3] Public acceptance grew dramatically after two months. A pilot project can change behaviors and induce collaboration when adequately connected to the end goal.

[3] City of Portland, "Every-other-week garbage collection explained." https://www.portland.gov/bps/garbage-recycling/about-garbage-and-recycling/every-other-week-garbage-collection

Conclusion

In thriving communities, curbs and sidewalks play critical roles. And the more successful the area, the more demand there is for space. This work with OMF began well before the SMART grants, but those grants accelerated demonstrations of the power of public-private partnerships and evolving technologies. A new administration in Washington brought new leadership to USDOT. However, the need for integrated digital systems to optimize curb space is not partisan. Policymakers and politicians can argue about transportation preferences. But all sides should be able to agree that modernizing the management of these valuable spaces will bring insight, economic activity and a better quality of life.

Donald Shoup, author of *The High Cost of Free Parking,* said, "Free parking isn't free." He argued that parking costs are passed on to consumers, taxpayers, and the public. Current policies make it more difficult for drivers to find parking and delivery space, force expenses that users of space should pay onto taxpayers, and hamper the development of optimum policies. City leaders should argue for change by actively engaging stakeholders, regardless of whether federal dollars support these uses. The cities featured here, OMF, its consulting partner Cityfi, and their associated public-private partners can offer many lessons learned and insights to cities. However, only if officials, joined by commercial interests and community leaders, produce a convincing narrative about the need for change and a set of policies to deliver benefits to residents.