



Four Steps Towards Mobility Integration for Public Agencies

- Policy Brief -

Introduction: Why Integrate?

The Same Old Challenges Are Accelerating

The problems are familiar to transit planners and agencies: our transportation institutions are siloed. Transportation dollars follow construction industry and political priorities, most often rewarding the expedient movement of vehicles over people. We cannot build our way out of congestion. Investment funds at the federal level favor fixed capital and fixed-route trips. Land use and transportation are not integrated, sprawl abounds, and regions have few, under-resourced tools at their disposal to promote the integrated land use and investment levels that would help expand transportation options.

Agencies are evolving to make transportation systems and the communities they serve safer, healthier, and more resilient. Transportation entities must continue to use all of the conventional tools in their toolkit to make the transportation network system safe, frequent, and reliable. While the challenges are accelerating, it is more important than ever that the system is supported by robust funding, the physical design of communities, and forward-thinking leadership.

New Mobility Introduces Opportunity and Complexity

New technologies promise new means for people to get around faster, cheaper, and more conveniently. Bikeshare has given way to dockless bikes, scooters have cropped up nearly overnight alongside emergent forms of carshare, microtransit, and integration technologies offering promise to improve convenience for every mode of travel. Whether it is improving transit performance in lower density

communities, mitigating congestion, or helping people reach the first or last mile of their destinations, these options can expand access for those who cannot or do not want to use a private vehicle, if they are deployed appropriately.

More private companies have entered the marketplace, compelling public agencies to react to ensure that new services serve the public good. The vertical integration of new mobility companies creates unanticipated pressures on political institutions (e.g., Transportation Network Companies (TNCs) and micromobility providers' efforts to pass state laws disallowing local regulation and taxation), and has the potential to miss public interest needs. Unless transit agencies or other public agencies give customers what they want, mobility integration may well be done by private entities without a mandate for equity and openness.

We are in the midst of a strong “learning and adapting” phase for public agencies and private entities to bring these threads together. Public agency policy is not currently designed for today's rapidly evolving mobility landscape. Agency employees are not trained to address customer expectations for rapid response. Procurement regulations and labor environments have not caught up with new types of service offerings. Beyond separate jurisdictions, agencies differ in their priorities, tools at their disposal, and institutional strengths and weaknesses for taking advantage of and regulating new mobility offerings.

Optimizing Options

Integrating mobility means making the best use of existing assets, and incorporating new ones, to maximize communities' access to opportunities across a regional network. A strong transit system is the backbone for regional mobility and the foundation upon which to cultivate a network of options to help people get where they need to go. Outputs of mobility integration may include:

- Adding transit coverage and frequency, improving reliability
- Piloting projects to fill “gaps” in coverage and solve challenges not well addressed by fixed-route service
- Procuring, licensing, and permitting private mobility services to support regional mobility goals
- Providing capital infrastructure to serve the use and coordination of modes and improve the experience of riders
- Coordinating operations and communications between transit, right-of-way owners, and private companies
- Coordinating open and interoperable platforms that enable customers to “look, book, and pay” for their journeys in one place
- Measuring, testing, and enhancing the mobility network

Through a combination of approaches, the whole can become greater than the sum of its parts. Advanced methods of integration found in some cities in Europe include integrated mobility hubs that allow customers to access a suite of modal options in one physical location, and Mobility as a Service (MaaS), which relies on a digital platform to aid end-to-end trip planning, booking, ticketing, and payment across all public and private modes of transportation. Moving towards a seamless customer experience in all aspects reflects an end goal of mobility integration, but in any stage the point remains to improve peoples' access to opportunity. The agency highlights within this brief spotlight how a few domestic agencies have made strides towards mobility integration.

Ensuring Access for All

With transportation as the number one source of carbon emissions in the United States, we must take advantage of every tool and opportunity at our disposal to move toward sustainable shared mobility. New modes and technologies pose new options for people to get where they need to go with a lower carbon footprint. New mobility options must be woven into a network with conventional transit in a way that offers seamless use and maximizes access for transportation-disadvantaged populations. Access is an equity imperative and decarbonization is a climate imperative. Transit is the backbone of a multimodal system, and modal integration will strengthen that backbone.

Recommendations

Public agencies have many pathways to activate the integration and expansion of modes. While more research is needed to understand emerging strategies and develop unified approaches, the tenets and examples below highlight instrumental steps for doing so. Agencies must set concrete goals, work across sectors where those goals intersect, employ the right talent structures for innovation, and use their leverage for the public good.



01

Establish an integrated set of mobility goals and desired outcomes that increase access to options

Agencies should state specific outcomes they hope to achieve, identify pathways to get there, and establish ways to measure the impacts and provide useful feedback. Agencies have long set goals, defined objectives, and developed project evaluation measures. The growth of new mobility raises an opportunity for them to redefine their mission less around individual modes and more on connecting people to opportunities.

Clear goals not only allow an agency to better steward public funds, but also make it easier for private sector partners to understand the value that they can add in helping the agency to achieve them. Agencies should pursue partnerships and approaches in collaboration with other entities that can help advance their goals wherever possible. Piloting new projects and programs, learning from those pilots, and iterating new strategies falls within these efforts.

Model Frameworks

Concrete and Mode-Agnostic Goals: While agencies typically list broad goals followed by more specific objectives, the City of Pittsburgh's Department of Mobility and Infrastructure, highlighted below, notably established a set of goals that are specific, and largely measurable:

- No one dies or is seriously injured traveling on city streets
- Every household in Pittsburgh can access fresh fruits and vegetables within 20 minutes' travel of home, without the requirement of a private vehicle
- All trips less than one mile are easily and enjoyably achieved by non-vehicle travel
- Streets and intersections can be intuitively navigated by an adolescent
- The combined cost of transportation, housing and energy does not exceed 45 percent of household income for any income group

Forward-Thinking Tactics: In Chicago, a taskforce released a [Roadmap for the Future of Transportation and Mobility](#). While that plan's goals are broad, they flow into over fifty concrete actions the city can take to address existing challenges and pioneer "an innovative vision for the future." They include the following:

- Establish a chief mobility officer for the city
- Establish frameworks for mobility pilot project evaluation
- Require developers to incorporate impacts of Vehicle Miles Traveled (VMT) and mode share projections in traffic impact studies
- Pursue state enabling legislation to permit the city and transit agency to enforce bus lane traffic and parking infractions using cameras
- Empanel an automated vehicle working group

Data-Driven Measurement TriMet has long made extensive use of Intelligent Transportation Systems (ITS) data to optimize performance. TriMet worked with Google to develop the GTFS (General Transit Feed Specification), now the worldwide standard for transit apps, which it uses for system improvement. In 2019, the agency launched a beta version of a multimodal trip planner with transit, walking, biking, ridesharing, and bikesharing all in one place, which the agency will be able to use to compare ridership across different modes.

Highlight:

Pittsburgh, PA

The City of Pittsburgh's Department of Mobility and Infrastructure began with a "bikelash." The City of Pittsburgh's Planning Department had worked intensely to gain community buy-in for a bike lane project, but the design ultimately implemented by the Department of Public Works had made some significant changes. The response from advocates and leadership sparked action.

Local leaders already understood that the region was actually growing for the first time in two generations and the mobility landscape was changing. The USDOT Smart City Challenge highlighted the tensions between traditional public and new private interests in the mobility space, and between the future of mobility and a legacy of maintenance needs. The Mayor decided to build something new.

After a year of internal deliberation and design, the City Council amended the city code so that the new department could stand on its own. Among other changes, it defined mobility as a use of the right-of-way similar to use by utility companies, granting the new Department of Mobility and Infrastructure additional authority to best manage the use of the limited right-of-way. The Department now dedicates the equivalent of 1.5 staff spread across several positions to mobility management, and it is growing. They're working towards further integrating bikeshare and other micromobility—Pittsburgh was the first city in the country where a transit pass allows holders a free fifteen-minute ride on bikeshare.

The team is guided by the department's strong set of goals, which inform how the city uses its leverage and identifies potential solutions. These can range from hard touches, like fines, to softer approaches, like the Mayor's ability to take the conversation to the public. The city is further bolstered by a culture shift in the region's transit agency beyond on-time performance to thinking about how to effectively move people. With their goals more closely aligned, the city and transit agency have more common cause to build upon.



02

Break down silos

Collaboration is critical for regions to tackle their issues with building mobility networks. In transportation governance, transit agencies, cities, metropolitan planning organizations (MPOs), and councils of government (COGs) each have different purposes, serve different jurisdictions, and possess different regulatory structures. The new mobility industry hosts an ever-changing landscape of private sector actors. There can be roles for other private sector agents, NGOs, the philanthropic sector, economic development agencies, the real-estate industry, and more. Each have different purposes, and different tools they can bring to the table. All must work together towards shared goals, and understand leverages and limitations when incentives differ. Across modal, jurisdictional, and regulatory differences, stakeholder alignment is both a large lift and a critical necessity. As agencies look towards fare and service integration, careful alignment of stakeholders becomes even more necessary.

Models for Collaboration

Seed-Funding Innovation: The Sacramento Area Council of Governments (SACOG) hosts Civic Lab, highlighted below, which brings together public and private interests to solve regional challenges.

Interdepartmental Consolidation: In Miami-Dade, the public works and transit departments were [consolidated](#) into one [transportation department](#) to improve coordination.

Convening Stakeholders: The [Texas Statewide Innovation Alliance](#) brings together public agencies, research institutions, and industry partners to work together on smart city solutions. Focused on building Texas as a leader in autonomous vehicles, the group leverages collective resources, and shares best practices across projects.

Coordinating Strategy: Regional transportation stakeholders in Denver agreed to develop a coordinated strategy to enable more accessible and effective transportation mobility choices. The [Mobility Choice Blueprint](#) outlines tactical actions for city, regional, and state transportation agencies and the private sector to expand mobility choices in the region through system optimization, shared modes, data security and sharing, mobility electrification, preparation for autonomous vehicles, and establishing new funding. The Blueprint lists which agency is responsible for which action.



Highlight:

Sacramento, CA

The Sacramento Area Council of Governments developed Civic Labs in 2018, forming cross-disciplinary teams to tackle challenging issues related to transportation and land use. In its inaugural year, the program united regional teams with local experts, national leaders, decisionmakers, and innovators through intensive workshops and training to explore how “disruptive technologies” could be used to improve the region’s transportation system, and to pilot innovative solutions in smart mobility.

Upon early success of the program, the SACOG board of directors allocated \$1 million in funding for projects that also drew a \$1 million match from the private sector. The Sacramento Transportation Authority awarded \$400,000 for a project to integrate electric shuttles into an historically underrepresented area not currently served by transit. Civic Labs also supported projects to establish autonomous shuttles, wayfinding, mobility hubs, on-demand microtransit, rural mobility, pooled rideshare, and carpool parking.

SACOG’s work with Civic Labs points to a unique role that MPOs (and state DOTs) can play as mobility enablers. As regional entities, they can convene the public and private sectors around specific issues and support local pilot projects. They can also leverage data, standards, policies, and technical assistance to encourage mobility integration.

The new mobility industry hosts an ever-changing landscape of private sector actors. All must work together towards shared goals, and understand leverages and limitations when incentives differ.

03

Create new structures for innovation

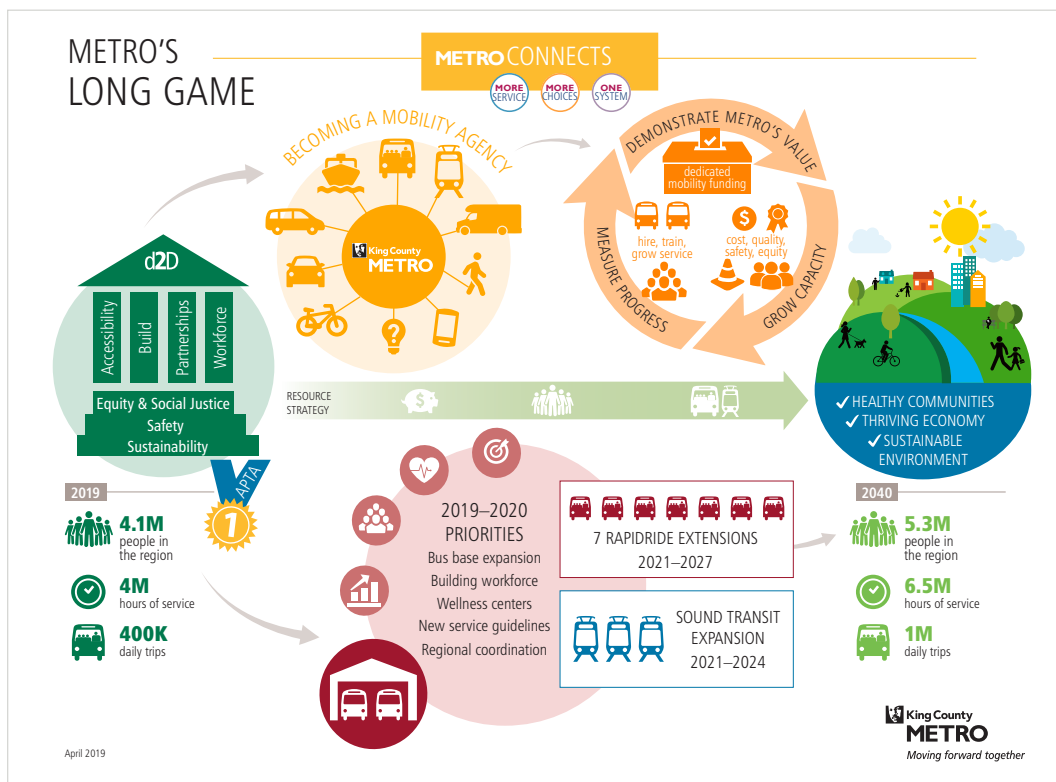
Many agencies are still working to align their staff with public priorities for seamless destination access. As new mobility options change the talent landscape, there is an even greater need for agencies to have tech-literate policy and planning staff who can stay abreast of the changing landscape.

Agencies must work to be attractive places for talented individuals, to make use of their university resources, and to create new roles dedicated to integrating services, collaborating with partners, and tapping new mobility innovations and technologies for the public interest. In all instances buy-in from political leadership is instrumental, and public agencies must lead regional collaboration and innovation to ensure that public values are honored.

Model Structures

Regional: King County, Washington, highlighted below, has an [Innovative Mobility Program](#) to explore approaches such as shared mobility, Mobility-as-a-Service, automated vehicles, and smart cities. Three dedicated staff plus a senior policy strategist lead the program, alongside additional support within the agency and from partners. Among its programs:

- Designating parking for carpools and free-floating carshare
- Piloting on-demand shuttle service to and from transit hubs
- Testing the use of Transportation Network Company (TNC) services as first/last mile solutions to access transit



Multi-Faceted: Following the Shared-Use Mobility Center’s release of a Shared Mobility Action Plan for the Twin Cities, Metro Transit created a new position for a Shared Mobility Program Manager. Minneapolis and Saint Paul have yearlong smart cities fellows through [Fuse Corps](#). The McKnight Foundation seeded these positions and has committed funding to [a consortium of regional stakeholders](#) to see the plan through implementation, underscoring the important role philanthropy can play in advancing regional progress.

City-Led: The City of Detroit created an Office of Mobility Innovation with a chief of mobility innovation and several staff to integrate mobility technologies and services to make getting around Detroit easier, safer, and faster. The city partnered with the [Detroit Mobility Lab](#), an entity dedicated to helping Detroit grow as a “mobility ecosystem” that is developing an educational institute for professionals and tradespeople in fields relevant to the future of mobility, including artificial intelligence, robotics, and cybersecurity.

Highlight:

King County, WA

King County Metro has long set its goals beyond ridership; its leadership asserts that mobility is a human right. It aims to make transit easy to use and available to all, accelerate the development of transit infrastructure, expand its partnerships, and build a motivated and high-performing workforce. Instrumental is King County Metro’s stated goal to evolve from a transit agency to a mobility agency. Its strategies include traditional mechanisms such as improving its transit network and mix of services. Its aims include:

- Improve the quality and cost-effectiveness of flexible-route and demand-response services
- Adopt open and interoperable systems to enable customers to seamlessly plan, pay, and transfer along their multimodal journeys
- Develop regulations, incentives, and subsidies to ensure that both public and private mobility services are safe and provide equitable access for disadvantaged populations
- Transform its workforce so that employees benefit from the higher-skill and higher-wage opportunities created by mobility transformation

The agency restructured internally, has high-level buy-in from leadership, and is developing new partnerships, conducting market assessments, and conducting pilot projects. The agency strengthened connections between its transit network and biking, vanpools and transit, carpool incentives, carshares in park-and-rides, and piloted on-demand service to transit. Metro leadership cites their willing partners and the effective engagement of everyone’s resources as key to their success.

04

Identify regulatory options and leverage

Agencies should explore the opportunities at their disposal to cultivate, procure, permit, and regulate mobility services and supportive infrastructure. Government agencies have useful resources to offer:

- Political leadership and champions
- Access to publicly-owned space (e.g., streets, sidewalks, parking)
- Access to new market segments (e.g., defined through government social programs)
- Grants, fee waivers, and tax breaks to meet funding gaps
- Regulatory relief
- Winner-take-all licensing or exclusive permitting
- Real-world situations to test new technologies or services
- Platforms or opportunities for publicity and marketing

Agencies must get creative with deploying these resources to not only manage new mobility services, but leverage them to strengthen the multimodal system. For example, while many cities tax TNCs, far fewer actually allocate the revenue to transit. Likewise, the allocation of subsidies for services can be a powerful tool to shape the integration of services and their equitable distribution.

Model Structures

Data Sharing: Data requirements are standard in shared active transportation. The City of Los Angeles' DOT has emerged as a national leader on data standards through its work to develop the Mobility Data Specification (MDS), described below.

Service Regulation: Cities and regions must understand the leverage they have to permit services to operate within their jurisdictions, with an awareness that these vary between jurisdictions. This leverage can allow them to assess fees and establish permit regulations.

- New York City has raised the bar for how TNCs like Uber and Lyft can operate –it [capped the number of vehicles](#) allowed, [compelled higher wages](#), and [set performance targets](#) for accessible vehicles.
- When electric scooters were introduced in [Denver](#), leaders focused their goals on creating a micromobility program to complement the transit network. Operators are required to make vehicles continuously available at light rail stations and bus stops.
- One way - or point-to-point - carsharing was adopted early in [Washington DC](#). In return for allowing vehicles free rein to park in both permit parking and meter zones, the providers must pay an annual permit fee. DC also has an equity policy that grants parking at fixed rail transit stations provided that all wards within the city are served.

Right-of-Way Management: Just as dedicated right-of-way strengthens transit, regions can leverage curb space to their advantage.

- San Francisco is just beginning a comprehensive curbside management strategy, as was

recommended in its Emerging [Mobility Evaluation Report](#). The region has a head start with its existing [demand responsive parking](#) program which balances parking availability by adjusting meter and garage pricing to match demand, and a [color curb system](#) which differentiates between passenger loading/unloading, commercial loading/unloading, short term parking, no parking, and parking for people with disabilities.

- In Chattanooga, Tennessee, the city owns [several parking assets](#) outside its business district and provides frequent shuttles to its downtown. This allows the agency to accrue parking revenue and keep congestion out of its urban core, while freeing up land for other development.

Procurement: While designed to protect against abuse, procurement regulations can hamper innovation. Private sector actors may be easier to access through conversation and collaboration before the issuance of a detailed RFP. An RFP might require outcomes rather than specific processes to allow flexibility in bidders providing the desired service.

- LA Metro's Office of Extraordinary Innovation has an [Unsolicited Proposal Policy](#) that lays out the agency's broad goals for private sector providers to offer creative solutions. RFIs are a growing approach as agencies learn that the private sector is more responsive to requests of an open nature.
- The Commonwealth of Massachusetts [exempted](#) the Massachusetts Bay Transit Authority from some procurement requirements so that it could pursue new public private partnerships, including a partnership with TNC companies Lyft, Uber, and Curb to [enhance ADA paratransit service](#).

Transportation Demand Management (TDM): The State of Washington's [Commute Trip Reduction Act](#) has long been considered a gold standard for TDM. In areas experiencing the greatest automobile-related air pollution and traffic congestion, it requires employers with more than 100 employees to develop TDM plans and local governments to adopt and implement commute trip reduction plans.

MOD Learning Center

The Shared Use Mobility Center maintains a catalogue of many more Mobility on Demand practices including learning modules, case studies, regional profiles, briefs, and multimedia in its [Learning Center](#).



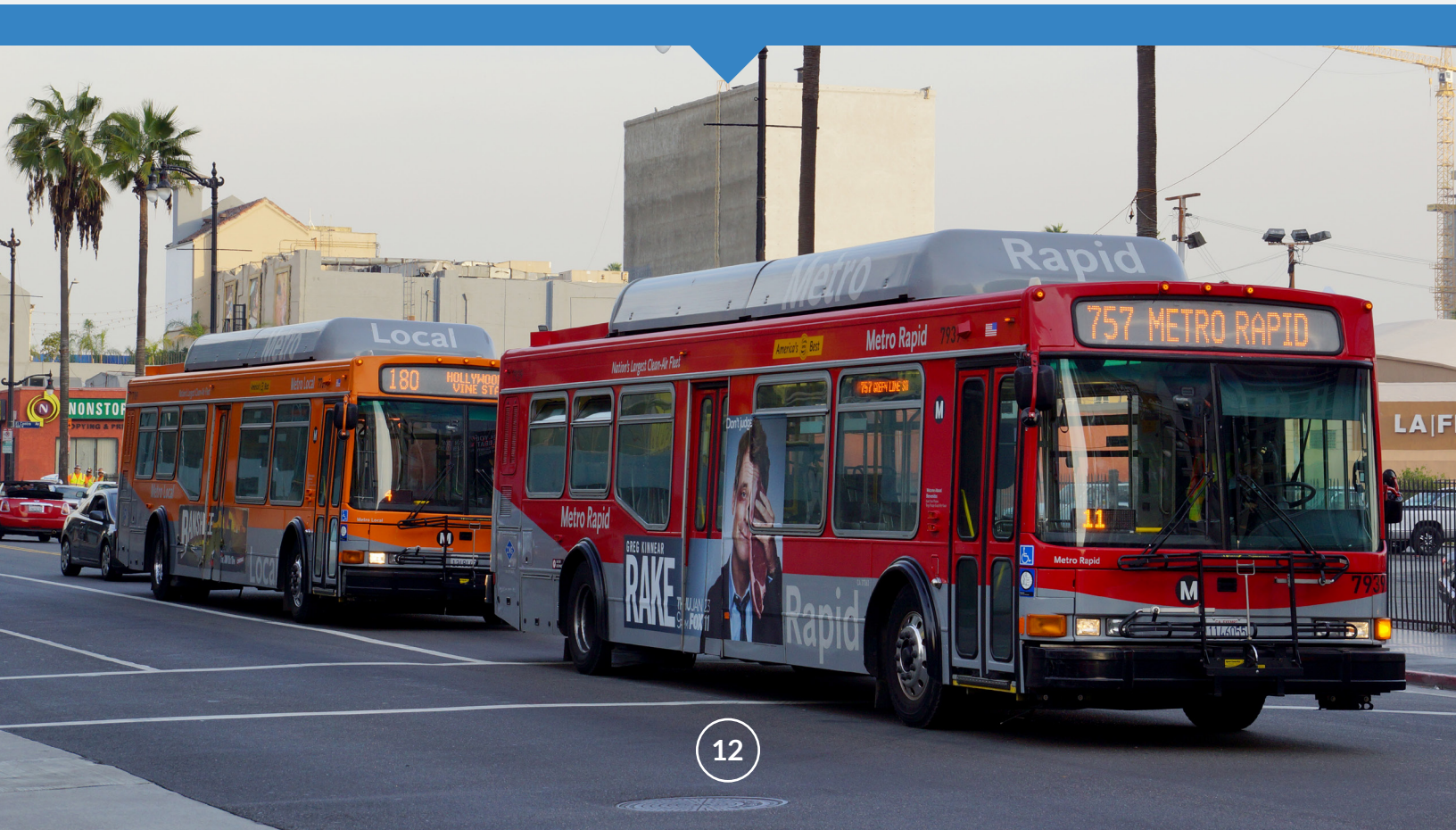
Highlight:

Los Angeles, CA

Cities have long requested and received data from micromobility providers for planning purposes. The growth of micromobility led the Los Angeles Department of Transportation (LA DOT) to recognize that access to its right-of-way was a powerful lever that it could use to raise the bar for the information those companies could provide.

LA DOT developed the Mobility Data Specification (MDS) to manage shared mobility providers, such as scooters and dockless bikes. The Application Programming Interface (API) transmits anonymous information about vehicles and trips from a mobility company to the city, such as trip routes, vehicle locations and status. This provides useful information for planning purposes, such as ensuring low-income residents have access to dockless vehicles, and enforcement purposes, such as warning a micromobility provider if a vehicle is parked illegally.

While MDS was developed in response to micromobility, in the long term the system is intended to help cities also manage ridehailing, car-sharing, and even autonomous vehicles and drones. The open specification is hosted in a public open source web repository and is available for use and modification by any party interested in contributing to the standard's evolution. Other cities have adopted MDS or are developing their own custom APIs.



Conclusion:

Expediting Evolution through Policy and Collaboration

While persisting with current tools at their disposal, agencies must innovate as change accelerates. Although more research is needed to understand new approaches and the most effective deployment of mobility integrations, the four steps identified here present necessary starting points for agencies to pilot new projects and programs that integrate modes.

Agencies must set clear goals; collaborate and redefine governance structures to break down silos; get the right talent structures for innovation in place; and understand, employ, and implement all regulatory and governance tools at their disposal. Through persistent and innovative efforts, agencies can move towards a new role as mobility integrators, better equipped to help people get where they want to go, however they want to get there.

Agencies have much work ahead to make transit as good as possible, affordable, and with access for the unbanked and people with disabilities. Amidst scarce resources and desperately needed maintenance, agencies must remain engaged advocates for funding at the state and federal levels, and for appropriate policy reforms that will enhance their ability to effectively steward public dollars. Working together for mobility integration, we can strengthen our current assets while strengthening a multimodal network for all.

Acknowledgements

The Shared Use Mobility Center appreciates the support of Toyota Motor North America | Social Innovation in providing funding for a workshop and this policy brief. Our thanks to the participants in the workshop, where individuals from the public, private, and non-profit sectors engaged in a robust discussion of what mobility integration means from different perspectives, steps to get there, and challenges. Katherine Kortum from the Transportation Research Board moderated the discussion. We are grateful for the participation of these individuals:

Rob Antoniak, Valley Metro	Trey Ingram, Toyota
Tom Bamonte, NCTOG	Lauren Isaac, EasyMile
Calli Cenizal, Lyft	Katherine Kortum, TRB
Robin Chase, Zipcar	Tom Kotarac, Civic Committee
Jaycie Chitwood, Toyota	Valerie Lefler, Feonix Rising
Regina Clewlow, Populus	David Leopold, UI Labs
Carlos Cruz-Casas, Miami-Dade Cty	Tina Morch-Pierre, DART
Matt Daus, Windels Marx	Hendrik Opstelten, USDOT
Danielle Elkins, City of Minneapolis	Chris Pangilinan, Uber
Sharon Feigon, SUMC	Ellen Partridge, SUMC
Carolyn Flowers, InfraStrategies	Corinne Ralph, LADOT
Andrei Greenawalt, Via	Dianne Schwager, TRB
Art Guzzetti, APTA	Russ Stark, City of Saint Paul
Jonathan Hall, U of Toronto	Bill Trumbull, CTA
Monica Hernandez, SACOG	Audrey Wennink, MPC

This policy brief was authored by Erin Evenhouse (SUMC Program Manager) with direction from Ellen Partridge (SUMC Policy and Strategy Director) and Sharon Feigon (SUMC Executive Director). It was edited by Leslie Gray and designed by Derek Berardi.

© 2019 Shared-Use Mobility Center. All Rights Reserved.

