

LACUNA

Digital Infrastructure
Code is the
New Concrete



Between limited budgets, a built environment that has not scaled with population growth, and private companies' introduction of new technologies and modes, today's transportation ecosystem is more complex, and more challenging to govern, than ever before.

Cities' role as stewards of the public right-of-way is becoming increasingly complex—particularly as they face challenges like social inequity and climate change. More concrete, signage, and other conventional means of policy deployment are less and less effective, especially as each new mode is more tech-driven than the last and autonomy looms on the horizon. Misalignment between regulators and commercial mobility providers (such as a lack of data sharing for cities to gain visibility, management and governance) contribute to growing inefficiency for the city and increasingly negative outcomes for residents: gridlock, sidewalk clutter, poor air quality, and inequitable access.



CODE IS THE NEW CONCRETE

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In order to keep pace with the changing landscape, and to work in partnership with private operators, cities need the data, code, and connectivity to fundamentally shift their work from retroactive rule-making to near-real-time visibility and proactive management for healthy governance.

An investment in digital infrastructure complements the investment in physical infrastructure, acting as a buttress for the city's desired outcomes. For example, a system that enables demand-based pricing for loading zones ensures the city gets the most out of a curb space they already maintain. Moreover, that single investment in digital infrastructure can work for every existing and

future curb in the city. In other words, a dollar spent on physical infrastructure yields a dollar's worth of return, but a dollar spent on digital infrastructure can yield infinite returns—especially when that dollar integrates existing municipal systems and future technologies.

Today, with unprecedented federal funding focused on urban infrastructure, it's time to think of the digital realm as equally critical to the physical realm.

The pandemic illustrated the speed at which circumstances can change—and how purely physical investments cannot adequately provide cities with the ability to respond in kind. A well-crafted digital infrastructure strategy can chart a course to measurable improvements in safety, efficiency, environmental stewardship, social equity, and city budgets. To help those strategies come to fruition, the smartest cities are beginning to feature digital infrastructure projects in grant applications.

We at Lacuna are deeply immersed in the complexities of the transportation ecosystem, the unique challenges of government work, and the technology best suited to bridge the two. Our products, built with open source components for interoperability, can build a more environmentally sustainable, socially equitable, economically efficient public right-of-way—one data point at a time, one policy at a time, one city at a time.

KEY INGREDIENTS

The following are a few key ingredients for a Digital Infrastructure system:



MULTI-MODALITY

Siloed systems in isolation further segment a city, rather than connect it. The right integrations and platforms can give cities a single view of all commercial activity sharing the public right-of-way. Near-real-time visibility into the availability and usage of vehicles, curbs, and other assets provides operational flexibility and powers dynamic decision-making for everyday management.



OPEN SOURCE TECHNOLOGY

To retain the freedom of choice for their digital tools, now and in the future, cities need to embrace open specifications and standardized APIs. "As a service" platforms provide ongoing improvements and maintenance without operational or financial surprises—and enable the city to own its data, while simultaneously ensuring the data it receives matches the insights needed to achieve its goals.



SCALABILITY

Digital infrastructure scales to match cities' needs today, tomorrow, and into the future: for day-to-day governance, staff can respond to issues better and faster using near-real-time data; when cities own their data, they can harness expanded insights for longer-term planning; and, relatively easily, digital infrastructure can integrate new uses, new users, and new modes—including those not yet invented.



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