

Unlocking Value From Public Assets

Leveraging Private-Sector Expertise to Generate New Public Benefits



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Foreword

Infrastructure policy in the United States is at a critical juncture. Our historic underinvestment in infrastructure is well-documented, but the solutions to define a way forward remain unclear.

RBC Capital Markets, a global bank engaged in infrastructure finance in multiple countries, is pleased to sponsor *Unlocking Value from Public Assets: Leveraging Private-Sector Expertise to Generate New Public Benefits*. This report, authored by HR&A Advisors, shines a light on a different way of thinking about infrastructure investment. Our goal is to encourage government and public institutions, including higher education, to ambitiously seek new ideas and policy changes that will foster inventive approaches to enhancing infrastructure and, ultimately, generate a broad range of public benefits.

This latest report is part of a trilogy intended to shape the U.S. policy discussion on how to finance infrastructure upgrades and make forward-looking investments that respond to emerging challenges and technologies. The first report in our series, *Caution Ahead – Overdue Investments for New York’s Aging Infrastructure*, published in 2014, documents the substantial investment necessary to update New York City’s infrastructure. The second report, *The Role of Design-Build Procurement*, released in 2015, details a common-sense approach to delivering infrastructure using a more efficient method of procurement.

Unlocking Value from Public Assets focuses on another area of opportunity: how government and public institutions can create new value from assets by leveraging private-sector expertise. The report uses five case studies to demonstrate how private-sector expertise – when applied to public assets – can generate a range of diverse benefits, including new cost savings and revenue sources, as well as service delivery improvements. These case studies serve as the basis for a set of proposed best practices the public sector can employ to identify creative opportunities, refine potential concepts, and implement a successful partnership.

Anchoring the report is a powerful case study on LinkNYC, which documents how vision and new technology is converting outdated payphone sites around New York City into 21st century assets that create public benefits including free, high-quality Wi-Fi and new revenue for the City.

Tackling underinvestment in U.S. infrastructure will ultimately require new funding sources, including taxes. However, the first duty of policy makers is to do more with existing resources. Transforming public assets in new and previously unavailable ways, in concert with the private sector, represents one meaningful way to achieve this objective.

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EXECUTIVE SUMMARY

In cities and states across the country, public-sector entities are harnessing new ideas and technologies to transform their assets for broad public benefits. Today, on any given block in New York City, the same spot where a payphone once stood, is a digital “Link” kiosk. Here, a worker can charge her phone, a visitor can look up directions, and a resident can register to vote. Along select highways in Oregon, Georgia, and other states, previously underutilized right-of-ways are now home to solar panels positioned to help illuminate roadways and power local electricity grids. In Boston, a paratransit rider is no longer limited to public van services. Now, she can use on-demand transportation providers such as Uber or Lyft to travel throughout the city at lower costs for the local authority. ►

Balance sheets for government and public institutions, including universities and other large not-for-profit entities, often include a multitude of assets. Certain assets such as emergency vehicles and schools remain critical to the public sector's mission of improving quality of life and expanding economic opportunity. However, as technology advances and public preferences evolve, other public-sector assets, including payphone networks and older transportation systems, are becoming outdated, nonessential, or extraneous.

While the public sector's asset portfolio has grown and evolved, the private market continues to generate new ideas, improve delivery methods, and develop specialized expertise. Recent partnerships demonstrate how the public and private sectors are working together to transform non-core, outdated, or underused public assets. For example, the City of New York and private consortium CityBridge are delivering free public Wi-Fi on payphone sites, while the Ohio State University and a consortium of ENGIE and Axium have collaborated to fund campus-wide energy infrastructure upgrades and energy conservation measures. These partnerships enhance services, create new revenue sources, and remove future uncertainty regarding operations, maintenance, and funding.

Franchise agreements, long-term leases, and even disposition strategies have long been deployed to formalize partnerships that seek to transform assets and improve service delivery. These efforts are typically limited to capital-intensive infrastructure projects. In part, this limited use of partnerships for capital projects is the result of ongoing perceptions that private sector collaboration is risky and potentially counterproductive. However, the typical projects of the past do not represent the full range of possibilities for collaboration. Government and public-sector institutions in many cases do not have a comprehensive catalog of their assets, which often prevents the public and private sectors from identifying new opportunities to unlock value.

Drawing from national case studies, this report serves as a roadmap of best practices for diverse audiences within government, public institutions, and the private sector that seek to harness innovative ideas and transform these assets for the twenty-first century. This report demonstrates the broad range of monetary and non-monetary benefits that can be generated from public assets.

The cases highlight strategies to use private-sector expertise to unlock value from assets and strengthen the public sector's ability to generate public benefits. Each case study represents a different type of public asset and partnership structure. When the case studies are reviewed collectively, they create a distinct set of best practices for unlocking new value from underutilized, extraneous, or antiquated public assets.

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twenty-first century.**



This report features **five case studies** of public-private collaboration that have successfully harnessed private-sector expertise and ideas to uncover value from public assets. The case studies represent a variety of “public” actors and collaboration models that are used to generate a diverse set of public benefits.

LinkNYC: New York City and CityBridge are transforming outdated payphones into 7,500 “Links,” communication hubs that provide free Wi-Fi, phone calls, USB charging, access to City services, and maps, among other features. The collaboration improves critical digital connectivity, increases quality of operations, and provides a predictable revenue source.

Ohio State University (OSU) Comprehensive Energy Management Plan: OSU and Ohio State Energy Partners (OSEP) are modernizing OSU’s energy facilities to meet new sustainability objectives. OSEP is generating \$1.2 billion in upfront contribution to support OSU’s endowment, which will support OSU’s core academic and research missions.

Massachusetts Bay Transportation Authority (MBTA) On-Demand Paratransit Program: A pilot contract between the MBTA, Uber, and Lyft is supplementing existing paratransit services with private, on-demand transportation options via Uber and Lyft. The pilot program provides paratransit riders with improved service, while lowering cost per ride to the MBTA.

Oregon Department of Transportation (ODOT) Solar Highway Program: A power-purchase agreement between ODOT and Portland General Electric has transformed previously unused right-of-ways into “solar highways” that produce cost savings to the state and feed into the energy grid.

University Center of Chicago (UCC): The UCC’s current owner and operator, the Educational Advancement Fund (EAF), pursued a disposition strategy to a private housing operator. By transferring ownership and operations of the UCC, the institutions involved in the EAF—Columbia College, DePaul University, and Roosevelt University—will receive an upfront payment that allows them to focus staff and financial resources on core academic objectives while retaining quality housing.

Best Practices

These five case studies reveal **10 best practices** for uncovering value from public assets. While the specific approach may differ from case to case, the steps provide a shared framework to move from a clever idea to a sustained value generator for the public at large.

IDENTIFY THE OPPORTUNITY

To start, public entities must inventory and evaluate its assets against core mission and seek out private-sector ideas that best harness future conditions.

1. KNOW YOUR MISSION: Public entities with a clear understanding of their core mission and objectives are best equipped to analyze the performance of their diverse asset portfolios and identify opportunities for unlocking value. Asking, “*what is our mission?*” or “*what objectives does our organization strive to achieve?*” produces answers that can serve as powerful benchmarks to assess asset performance.

2. INVENTORY AND EVALUATE ASSETS: A comprehensive review of the public sector’s portfolio is a critical prerequisite to identifying opportunities to uncover value. By first asking, “*what assets does the public sector own or control?*”, public-sector institutions can understand the range of assets within their control and potential value-generation opportunities. In addition to physical assets, public-sector entities must also examine those services associated with these assets.

Governments and public institutions must also evaluate their assets and associated services, and often consider, “*how well do the assets we own support our core mission?*” For some public entities, this process requires distinguishing between core and non-mission-critical assets. These answers identify potential opportunities to work with the private sector to generate value under new ownership and management structures.

3. PURSUE CREATIVE THINKING: The public sector must continually respond to external market dynamics, including emerging technologies and shifting public expectations. To optimize the value generated by their assets, public-sector entities should ask, “*are there opportunities to innovate?*”, and “*are there new ways of improving assets or generating new value to support the public sector’s mission?*” Public-sector entities should create channels to connect with private-sector innovation and evolving technology, and respond to changing markets to meet new user demands. Often, public-sector entities pursue creative thinking under the guidance of visionary leaders who are willing to take risks.

4. LEVERAGE WINDOWS OF OPPORTUNITY: Political and financial windows of opportunity are often critical catalysts to move from opportunity to action. Across all case studies, public-sector entities reached an inflection point, spurred by a change in leadership, a financial timeline or contract terms, that enabled them to transform non-core assets to support their mission.

REFINE THE CONCEPT

Once the public sector has identified an opportunity to apply private-sector expertise to non-core assets, they must refine the project concept to ensure that it appropriately balances risk and reward.

5. BUILD SUPPORT: Few public assets are governed by a single department or agency. Successful transformative projects require intra- or inter-governmental cooperation. An ongoing commitment to build internal support is often spearheaded by a staffer with the institutional knowledge, political will, and unique vision to serve as a project champion. By answering the questions, “*how can the public sector build consensus for the project?*”, “*what are the anticipated areas of disagreement?*”, and “*how can the public sector address them?*”, the public sector can identify the strategies needed to build support.

6. TEST AND ITERATE: Testing and refining the concept is critical to the successful transformation of a publicly-owned, non-core asset. For governments, testing often takes the form of pilot programs or demonstration projects, which provide flexibility to work out issues prior to full implementation, and give stakeholders a chance to provide feedback. Pilots also provide the public sector with the opportunity to test assumptions regarding the financial feasibility of a project and answer questions.

7. OPTIMIZE BENEFITS: The project should produce a range of benefits over the duration of the public-private agreement. While new revenue or cost savings are often initial drivers for public and private collaboration, non-monetary benefits, such as service improvements, are critical to ensuring that the project continues to meet public objectives.

IMPLEMENT THE PROJECT

Agreements must align expectations and incentivize performance between the public and private sectors.

8. ALIGN EXPECTATIONS: An agreement between the public and private sectors requires the transfer of certain responsibilities between the parties. Setting clear expectations about roles and responsibilities is critical to managing risk. Public entities must ask, “*what elements of the project should the public sector continue to own and/or manage?*”, and “*how can the project agreement ensure that all parties adhere to designated roles and responsibilities?*”.

9. STANDARDIZE PERFORMANCE: The performance standards embedded within a partnership or agreement structure further ensure that private sector partners uphold the public sector’s overall mission and expectations. Across the case studies, government and public institutions benefited from clear standards for quality and performance, responding to the guiding question, “*what are the terms and standards that will ensure the ownership and management of the assets supports the public mission?*”.

Many times, public and private collaborations represent the first time the parties have worked together. As with any new idea or relationship, the project might face challenges, or even failures. Government and public institutions can structure performance standards to allow for small failures or course-corrections to mitigate risks for both parties. Partners must balance flexibility to take risks with their responsibility to public constituents and investors.

10. ARTICULATE BENEFITS: Public entities often grapple with public relations challenges and can benefit from sharing and showing the story of their successes. Communicating the benefits of transforming an asset helps garner support and set the stage for other efforts. Effective communication also enables best practices to spread from institution to institution and city to city.



BACKGROUND

Motivated by their core mission, government and public institutions have historically built and maintained public assets to provide critical public goods, such as roads, education, or water. With the strength of the United States municipal bond market, public entities can access lower costs of capital compared to the private sector to support large investments. States finance an estimated one-third of infrastructure spending via bonds, with the difference covered by federal grants, user and entry fees and general fund taxes. Peer countries including Australia, Canada, and the United Kingdom have less robust municipal debt markets, and therefore rely more heavily on private equity and public-private financing mechanisms to construct and maintain public assets. Today, state and local governments in the United States own 90 percent of non-defense public infrastructure and pay to operate and maintain 75 percent of these public assets.

Challenges

Increasingly, public-sector budgets are largely strained.

Even as assets age and require significant capital maintenance, other obligations, including employee pensions and education, take financial and political priority over longer-term investments. Declines in funding at all levels of government, coupled with the public sector's political and economic vulnerability, further limits the capacity of governments and public institutions to construct and sustainably maintain their diverse assets.

AGING ASSETS

Many public assets built after World War II, including energy distribution systems, ports, and transportation networks, were built to operate for an assumed 50-year life cycle. Fast forward to 2017 and the vast majority of mid-twentieth century public assets have not been replaced. Transit, parks, solid waste, aviation, bridges, dams, drinking water, energy, and roadway infrastructure represent public assets experiencing notable declines or stilted investment progress. As a result, governments and public-sector institutions face significant and rising demands to fund maintenance and provide critical services.

EVOLVING ASSET DEMANDS

Today, federal, state, and local governments, as well as public-sector institutions such as universities, need to invest in, and maintain, new assets to address pressing public concerns, such as climate change. At the same time, the public sector must keep pace with structural shifts in the economy. The ability to make forward-looking investments not only affects how well public-sector entities can serve their current constituents, but also the degree to which they are prepared for future challenges.

For example, communities that are vulnerable to the impacts of rising sea levels and more frequent extreme weather events need to make investments in resilient infrastructure. Without forward-looking strategies, communities risk increasing costs and infrastructure needs. The American Society of Civil Engineers (ASCE) found that "between 2003 and 2012, weather-related outages, coupled with aging infrastructure... cost the U.S. economy an inflation-adjusted annual average of \$18 to \$33 billion." Climate-resilient investments are not only critical to maintaining current levels of public services, but also for attracting and retaining residents and business.

Public assets must also keep pace with rapidly changing technological advancements. Where payphones were once at the forefront of connecting people, today, governments recognize that public Wi-Fi and broadband technologies are integral to economic and social connectivity. Investments in Wi-Fi, on-demand web applications, and other emerging technologies are key to keeping pace with public-sector demands and positioning the public sector to remain competitive.

FUNDING AND POLITICAL CONSTRAINTS

Despite reports of failing U.S. public assets, spending on infrastructure has declined. This trend is anticipated to continue as government officials face political pressures to reduce debt and refrain from raising taxes. As of 2012, U.S. infrastructure spending as a percentage of GDP was 2.4 percent, half of spending levels in the mid-1900s, and government spending on public infrastructure systems was estimated to cover only 55 percent of needed maintenance and upgrades.

Federal funding for owned and operated assets, as well as grants to states and localities, has been on the decline. In the past decade, federal grant funding for public infrastructure has decreased most notably in the transportation sector, where the Highway Trust Fund faces a current balance of \$1 billion in funding to distribute (down from \$45 billion). Assuming current budgetary trends continue, federal investment in public assets is likely to continue declining over the next decade. The growing gap between infrastructure needs and spending has set the stage for a new emphasis on public-private collaboration. At the state and local levels, the ability to make investments in public assets has become further constrained by growing liabilities associated with employee healthcare and pension plans. The Congressional Budget Office finds that the ratio of state and municipal assets to liabilities is at its lowest in 20 years.

The growing gap between infrastructure needs and spending has set the stage for a new emphasis on public-private collaboration.

The public sector increasingly confronts strong constituent demands to reduce spending, shrink annual deficits, and reduce debt obligations. These pressures have increased significantly since the Great Recession. As many officials are hesitant to raise taxes to reduce debt, public-sector investments are channeled toward shorter-term “wins.” For voters and representatives alike, issues related to direct public benefits like healthcare tend to garner political priority over long-term asset investments.

Opportunities

The public sector faces a constant challenge to track

and maintain existing assets and invest in new public infrastructure. While aging and evolving assets can present a cost burden to the public sector, creative approaches can generate new revenue, cost savings, and public benefits. Bureaucratic and regulatory hurdles, as well as financial and political challenges, are motivating some public-sector entities to seek big ideas, particularly for those assets that are outdated or less central to their core mission. Uncovering new value often relies on close collaboration with private-sector entities that can apply specialized expertise and efficiencies to asset-related projects.

A transformative approach to unlocking value from public assets goes beyond traditional public-private partnerships and their associated legal models. Successful collaborations are not a guarantee. In all forms of partnership, the public and private sectors must balance risk and reward, as well as the types of benefits produced. Where the private sector is more likely to seek revenue generation and access to new markets, the public sector seeks service improvements and improved economic competitiveness. In approaching a project, the public and private sectors must think holistically about the range of benefits and mechanisms to optimize revenue and non-monetary benefits.

REVENUE GENERATION

In the context of rising maintenance demands and decreasing infrastructure budgets, revenue generation is as critical as ever to the long-term sustainability of public assets. Certain assets have long generated revenue for both public and private entities via rental payments or user fees (e.g., toll roads), but innovative collaborations are unlocking new revenue streams and cost-saving approaches.

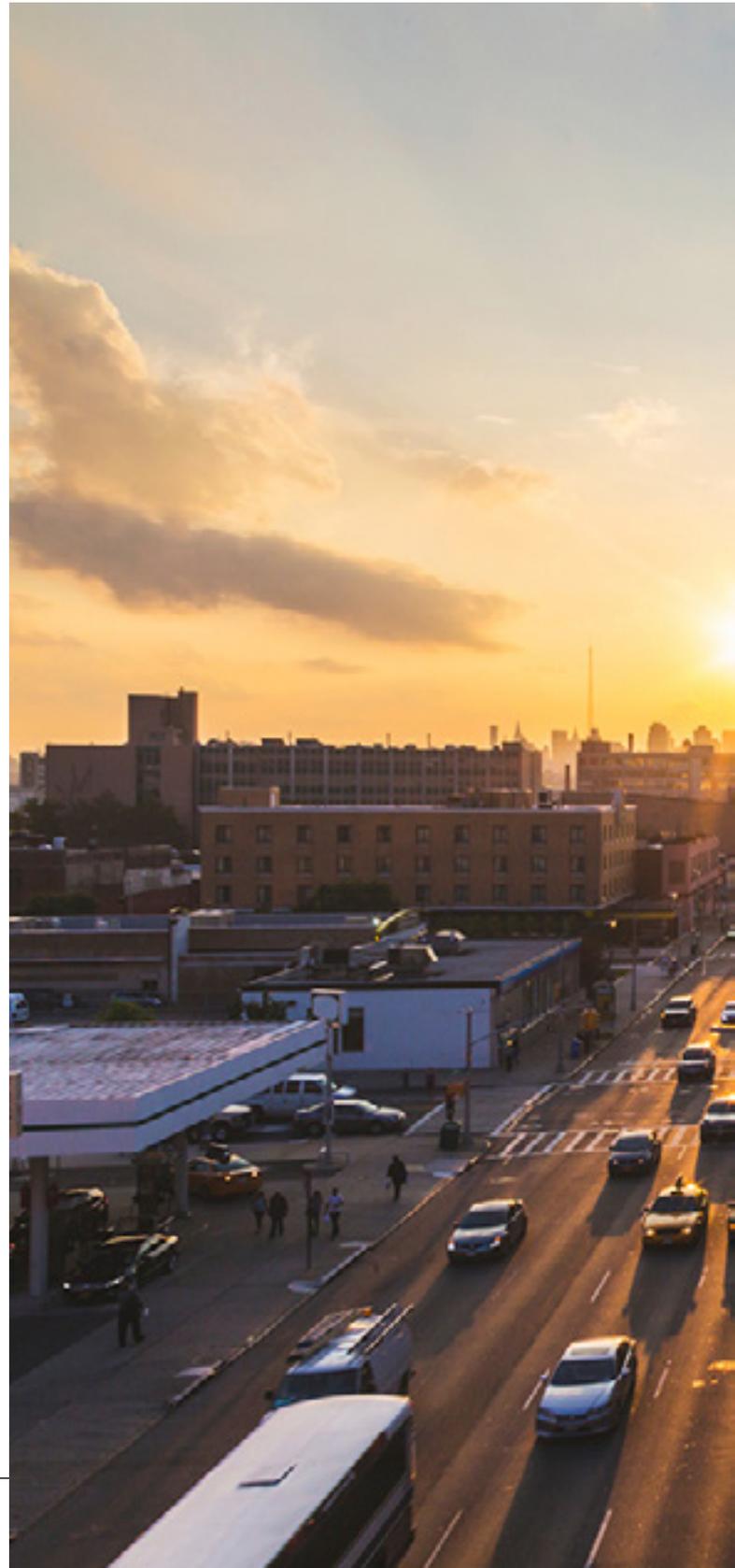
**The public and private sectors
must think holistically about the
range of benefits.**

NON-MONETARY BENEFITS

Alongside revenue generation and cost savings, successful collaborations with the private sector can produce a wide range of non-monetary benefits. By drawing upon the specialized expertise of the private sector and establishing agreements that have clear performance standards, the public sector can improve public benefits. These improvements in truth often translate into direct service enhancements for end users.

Private-sector approaches to public assets can also enable public-sector institutions to flexibly shift resources and staff toward core institutional priorities. For example, universities have long owned and maintained assets outside the purview of research and academics. Involving the private sector in the operations and maintenance of assets such as energy utilities and off-campus student housing can allow universities to focus on their core mission of education.

Private-sector firms with experience testing and applying emerging technologies, including sustainable energy systems or high-tech Wi-Fi, can help the public sector integrate features that better evolve with changes in the environment and the market. These initiatives can establish governments and institutions as forward-looking leaders among their peers. While the public sector benefits from innovative ideas, the private sector's entry into the public market provides opportunities to test emerging concepts.



BACKGROUND





CASE STUDIES

Public-private collaboration can successfully unlock value from outdated, underutilized, or extraneous public assets. Collectively, these five case studies reveal a series of best practices to identify an opportunity, refine the concept, and implement a partnership that creates multiple benefits while minimizing risks and potential roadblocks. The five cases were chosen because they involve a diverse set of public actors, employ a range of formal collaboration models, and apply big ideas from diverse markets.

LinkNYC, LinkNYC is transforming outdated payphones across New York City into 7,500 communication hubs that provide free, public Wi-Fi, phone calls, USB charging and digital access to maps, and other features. Funded through advertising, this new communication network provides critical digital amenities across the city, while managed by the private consortium CityBridge.

Ohio State Comprehensive Energy Management Plan, Through the Comprehensive Energy Management Plan, Ohio State University is leveraging existing energy assets to generate \$1.2 billion in upfront investments for the University's endowment and sustainability initiatives. Ohio State Energy Partners will operate and maintain energy utilities for OSU's Columbus campus, while driving toward University-wide energy efficiency goals and development objectives.

MBTA On-Demand Paratransit Program, The Massachusetts Bay Transportation Authority is re-envisioning paratransit services by supplementing publicly-owned vehicles with private, on-demand Uber and Lyft. The On-Demand Paratransit pilot program provides disabled residents with greater transportation choices, while lowering costs per ride to the MBTA.

Oregon Department of Transportation Solar Highway Program, The Oregon Department of Transportation established Oregon as a national leader in sustainability by working with private utility and equity partners to transform previously unused right-of-ways into solar highways that produce cost savings and new energy.

University Center of Chicago, The Educational Advancement Fund—a non-profit representing Columbia College, DePaul University, and Roosevelt University—has employed an innovative disposition strategy for the University Center of Chicago that will redirect university resources toward core academic objectives, while retaining high quality student housing options in Downtown Chicago.

BETA

LinkNYC

Hello,
world!

#linknyc | www.link.nyc





CASE STUDIES

LINKNYC

LinkNYC is transforming outdated payphones across New York City into 7,500 communication hubs that provide free, public Wi-Fi, phone calls, USB charging and digital access to maps, and other features. Funded through advertising, this new communication network provides critical digital amenities across the city, and is managed by the private consortium CityBridge. ▶

The partnership between the City of New York and CityBridge has reinvented the public telecommunications network.

By the numbers

\$15.9 million

Data usage savings by Link Wi-Fi users to-date

\$17.5 million

Annual minimum guarantee to the City

Reinventing the payphone

New York City is home to over 8.5 million residents and over 4 million workers across its five boroughs. Close to 60 million people visit the city each year. The city is a hub of finance, technology, education, health, and professional services. For New York to continue to be a world-class city, it must keep pace with emerging technologies and ensure equitable access to new advancements. LinkNYC enables New York City to harness innovative private-sector technologies to transform outdated public assets and produce benefits for public and private partners.

In 2001, the City of New York's Department of Information Technology and Telecommunications (DoITT) held approximately 80 franchise agreements with private firms to operate and maintain 32,000 payphones throughout the city. Large private firms, such as Titan, Telebeam, Verizon, and Van Wagner, operated a significant share of the payphones. In exchange, the firms collected 10 percent of coin revenue generated from phone calls and 26 percent of advertising revenue, with the exception of building line payphones that produced a flat fee. The franchise agreements permitted advertising on many curbside payphones in mixed-use, commercial or industrial areas.

As cellphone use began to rise, the number of active payphones decreased, falling to 8,200 by the 2010s. Coin revenue also declined. Since franchise agreements did not require firms to pay an annual minimum guarantee to the City, the firms had limited incentive to maintain the payphones, especially those that did not generate advertising revenue. Decreasing revenue and growing concerns that payphones were not the best use of the city's streetscape caused some in the public and City administration to request for the removal of the payphone network.

As payphones still provided DoITT with up to \$20 million in annual revenue, the department was intent on exploring ways to modernize payphones and preserve the revenue stream. Throughout the 2000s, DoITT pursued mechanisms to

modernize the system and leverage the payphone network's prime, street-level locations to generate additional revenue and continue to provide public communication services. An early, short-lived internet hotspot pilot led by Verizon did not make the case for system-wide overhauls. However, it did demonstrate to both the City and private partners that it was possible to convert elements of the payphone to provide new digital services.

In 2010, amid a legal settlement with one of its franchisees, DoITT chose to pursue a four-year renewal term for its payphone contracts, rather than longer-term agreements. DoITT entered this four-year window with the expectation that the City would use the period to formalize and execute on a strategy to modernize the payphone system. Guided by its mission to provide quality technology services, the results of past pilots, and a growing demand

for public Wi-Fi, DoITT identified a series of criteria for the payphone of the future. It needed to:

- **Generate higher, more predictable revenues**
- **Reduce the footprint of the payphones**
- **Improve technology access, including phone charging and free Wi-Fi**
- **Maintain a high quality of service**

From 2010 to mid-2012, DoITT engaged representatives of all agencies governing the New York streetscape, including from the Departments of City Planning (DCP) and Transportation (DOT), to reach internal agreement on the parameters of a re-envisioned payphone system. DOT was an early partner, having spearheaded a similarly transformative project in the early 2000s. Its Street Furniture initiative leveraged bus stops



REINVENTING THE PAYPHONE

The Reinvent Payphones design challenge culminated with Design Demo Day in March 2013, where an interdisciplinary panel of non-City experts judged over 120 entries and selected six winning concepts that upheld the following criteria:

CONNECTIVITY:

Ability to connect New Yorkers and enable communication, including safety and emergency purposes;

CREATIVITY:

Originality, innovation and quality of idea;

FUNCTIONALITY:

Flexibility, versatility, scalability;

VISUAL DESIGN:

Including visual appeal and user experience accessibility and sustainability; and,

COMMUNITY IMPACT:

Support of local residents, businesses and cultural institutions.

and newsstands to generate new advertising revenue and helped lay the groundwork for changes to the payphone network. For other agencies, the new payphone approach raised concerns. For DCP, a major concern was the physical envelope of the payphone structure and siting. The payphones occupied a significant portion of the sidewalk and posed an issue for business owners by blocking commercial storefronts.

In July 2012, as interagency efforts continued, DoITT announced the first of several initiatives to design concepts for transforming the payphone network. Partnering with Titan and

Van Wagner, DoITT announced the launch of a pilot to bring public Wi-Fi to payphone structures in Manhattan, Brooklyn, and Queens. Later in the year, City 24/7 launched a pilot to install touchscreens with wayfinding capabilities on payphone sites near Union Square.

These pilots coincided with a Request for Information (RFI) asking public and private stakeholders to comment on the future of the payphone. The resulting concepts, produced by franchisees and community boards, among other respondents, did not advance beyond existing models for Wi-Fi and touchscreens. DoITT knew that the RFI process and small

TIMELINE

2010

Coin revenue from payphones has declined. DoITT renews franchise agreements for four-year terms and begins conversations with DCP, DOT, and other agencies to determine ways to modernize payphones.



2013

The Reinvent Payphones design challenge culminates with a Design Demo Day. Six winners are selected from over 120 entries.

1999

The City of New York grants 100+ franchises to telecommunications firms to operate and maintain 32,000 payphones throughout the five boroughs.



2012

The City releases a Request for Information on the future of the New York City payphone system. At the same time, pilots launch to test public Wi-Fi and touchscreen capabilities on select payphone sites.

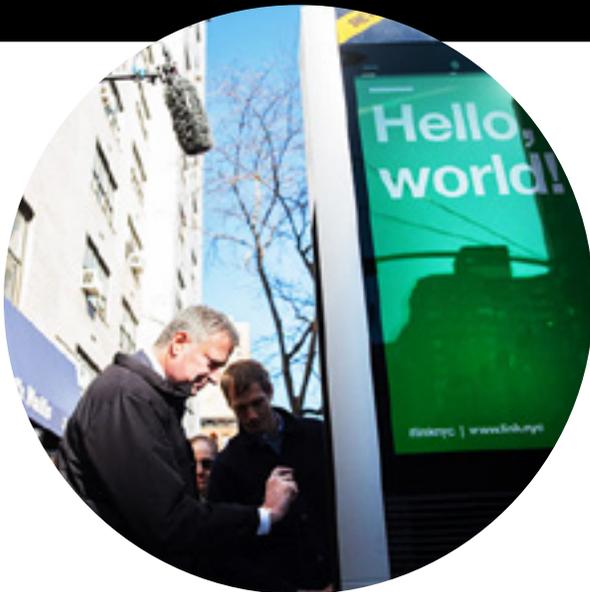
CASE STUDIES

pilot projects alone would not be enough to test ideas fully and build support among agencies and the public.

Following the RFI, DoITT decided to host a more visionary competition to generate new, innovative ideas. The department engaged private start-ups, as well as citywide educational institutions, to participate in a design challenge called "Reinvent Payphones." From December 2012 to March 2013, the City asked for submissions that: addressed communications and community needs; built on the fiber, power, and phone line connections; and aesthetically integrated with the streetscape.

The design challenge not only provided DoITT with concepts to develop a Request for Proposals (RFP), but also helped build support from other City agencies and the public. After seeing a variety of design concepts that showed a taller design with a smaller sidewalk footprint, the Department of City Planning agreed to greater height allowances for new payphone structures in exchange for a decreased footprint on the sidewalk.

The design challenge also signaled to current franchisees to develop new approaches to contract with the City. As a majority franchisee, Titan was particularly invested in



2016
500 Links
are installed
across New
York City sites.



2014
Mayor Bill de Blasio is inaugurated and begins to advocate for closing the digital divide and creating digital equity across the city. DoITT releases a Request for Proposals and CityBridge submits the winning proposal: LinkNYC. CityBridge signs a twelve-year agreement with the City to install up to 7,500 Links on payphone sites.



2017
LinkNYC reaches 1 million Wi-Fi subscribers and, by May, reports saving users \$15.9 million in data usage fees from logging into the Wi-Fi system.

creating a concept that would generate revenue from the existing payphone network and meet the City's goals. In partnership with Control Group, a user experience design and technology firm, Titan developed "NYC I/O: The Responsive City" concept. Titan and Control Group's concept, which tied for the Community Impact Award, was developed through significant community outreach focused on access to city services and desired digital assets. Their proposed phonebooth re-design displayed digital ads on the outside and provided individualized wayfinding and city service information on the inside. The NYC I/O kiosk also integrated software that adapted ads to user trends.

Following the design challenge, DoITT moved forward in drafting a flexible RFP, but was unable to gain the full approval and buy-in of city agencies governing the City's streetscape. Without full inter-agency support, DoITT faced the possibility that the project would stall or require the lengthy Uniform Land Use Review Procedure ("ULURP").

It was not until the beginning of January 2014, and the start of the de Blasio administration, that the payphone overhaul gained traction. The multi-year effort for a new communications network aligned with the new mayor's goals of advancing digital equity throughout the five boroughs and strengthening New York City as a leader in urban technology and innovation.

With strong support from the new administration, DoITT released a RFP in April 2014. This RFP called for payphone proposals that, at a minimum, provided 24/7 free public Wi-Fi and domestic call services. New digital communication structures were also encouraged to incorporate charging stations, touchscreens, and solar energy. In addition, the City required that proposals "provide for the installation, operation, and maintenance of up to 10,000 public communication points... funded primarily through the sale of digital advertising." In return, the City received a guaranteed minimum annual revenue stream of at least \$17.5 million.

By July 2014, the City received seven RFP responses. Titan and Control Group (who later merged into Intersection) partnered with telecom hardware firm Qualcomm and design and manufacturing company CoMark (now CIVIQ Smartscales), to produce the winning concept: LinkNYC. The four firms, which applied under the consortium CityBridge,

proposed to install LinkNYC kiosks (Links) across the five boroughs and create the largest free public Wi-Fi network worldwide.

Implementing LinkNYC

The LinkNYC project has re-envisioned New York City's

existing telecommunications network and public-private franchise structure. In December 2014, CityBridge signed a twelve-year franchise agreement with a three-year renewal option to install up to 7,500 Links. Among their key features, individual Links offer public Wi-Fi; a tablet for free domestic calling; digital access to city services and maps; a 911 emergency button; an USB charging port; and HD digital displays for public service announcements, community messaging and advertising. In addition, Links are ADA-compliant and, with their narrow design, provide additional sidewalk space compared to the old phone booths.

Per the franchise agreement in place, CityBridge covers 100 percent of capital and maintenance costs for LinkNYC and is responsible for replacing payphones and installing Links throughout the city. When possible, DoITT alerts CityBridge of relevant DOT or other City-led capital projects to align streetscape construction projects with Link installations. For maintenance, CityBridge provides upkeep for the physical structures and surrounding sidewalks, including two visits per week to check Link functionality. CityBridge must also update Link software to ensure high-quality Wi-Fi access and data security no later than the 6th and 10th years of the contract.

Of the planned 7,500 Links, 6,000 will support digital media, leveraging revenue from digital advertising to pay for future installations and operations. The franchise agreement specifies that the City will receive the greater of a base \$17.5 million minimum annual guarantee or 50 percent of LinkNYC revenues. In addition, five percent of the advertising content is

dedicated for City use to communicate community and civic messages. The first contract year, 2015 provided the City with at least \$20 million, a significant increase from the City's \$17.5 million payphone revenues in 2014.

Additionally, the partnership between the City of New York and CityBridge has generated significant public benefits for New York residents, employees, and visitors. LinkNYC establishes New York as an urban center at the forefront of adaptive and user-friendly technology. In a survey of residents in qualified boroughs conducted after the Link rollout, 93 percent of respondents expressed support for LinkNYC, and 90 percent agreed with its business model to pay for operations and maintenance by generating advertising revenues. As part of their community messaging features, Links display information regarding upcoming elections and community board meetings. As of May 2017, Link users had saved \$15.9 million in data usage by logging into LinkNYC Wi-Fi. In addition, CityBridge reports that the LinkNYC program has produced 350 direct full-time jobs and \$128.9 million in economic output for the City since opening.

While LinkNYC has received support, implementing a transformative new technology for the first time has created technical and political challenges. CityBridge and DoITT have been working together to manage challenges, including longer than anticipated installation times. Links can be installed in pre-approved locations on existing payphone sites within commercial or manufacturing zoning districts. Below-ground conditions have been difficult for CityBridge to identify in advance of installation. In addition, there are time lags for siting and installation in desired Link locations that did not previously house payphones. These issues have been particularly prominent in Brooklyn and Queens, and Staten Island, where Verizon manages the conduit system and requires request-for-access prior to installation.

LinkNYC has also been stalled due to legal and political issues involving telecommunications franchisees Verizon and Telebeam. In December 2014, former telecommunications franchisee, Telebeam, sued the City for entering into an exclusive franchise agreement with CityBridge for LinkNYC. The charge was dismissed, but resulted in the delayed construction and rollout of Links. An unrelated six-week Verizon worker strike in 2016 also stalled Link installation, as CityBridge relied on coordination with Verizon fiber connections.

CityBridge and DoITT have confronted additional unanticipated challenges. In an effort to keep to the prescribed schedule, CityBridge began installing Links without finalizing how the tablets would function. This advance deployment uncovered potential unintended implementation considerations, such as users browsing the internet on the Link tablet for extended periods of time. Ultimately, the City and CityBridge developed curated web applications to resolve the issue.

As LinkNYC expands throughout the city, CityBridge and DoITT coordinate regularly and employ lessons learned from early in the project to inform future installations and programming. Both partners also rely on user research and community engagement efforts to respond to new and evolving challenges.

LinkNYC was the product of over a decade of incremental testing of new technologies.



OSU COMPREHENSIVE ENERGY MANAGEMENT PLAN

Through its Comprehensive Energy Management Plan, Ohio State University (OSU) is leveraging existing energy assets to generate investments for the University's endowment and sustainability initiatives, including over \$1 billion in upfront contributions. Private consortium Ohio State Energy Partners will operate and maintain energy utilities for OSU's Columbus campus, while driving toward University-wide energy efficiency goals and development objectives. ▶

This collaboration will upgrade energy utilities to align with sustainability goals, generate new revenue sources, and infuse OSU's endowment with funding for mission-critical academic and research objectives.

By the numbers

\$1.015 billion

In upfront contributions for OSU's endowment

With five campuses and over 63,000 students,

Ohio State University ranks among the five largest higher education institutions in the United States. OSU-Columbus, the system's flagship campus, is comprised of 485 buildings located on 1,592 acres and supports over 100,000 students, employees, and visitors on a daily basis.

In 2012, OSU executed its first large-scale public private partnership with the firms QIC and LAZ for the management of university parking. The University executed a 50-year concession on its parking system and received \$483 million in an upfront payment. These monies were invested in the University's endowment fund, with earnings benefiting teaching, research, and scholarship initiatives. Since then OSU has pursued a strategy to monetize non-core assets, including real estate, parking, and utilities. In particular, OSU wants to engage private-sector partners to grow the University endowment and pursue strategic initiatives associated with large, up-front costs. One such asset that has received administrative attention is the University's large-scale energy infrastructure and utility network.

In February 2015, OSU released a Request for Qualifications (RFQ) to gauge the interest of energy and equity firms in operating and maintaining utilities on its flagship Columbus campus. For the RFQ, interested firms were encouraged to respond to four main objectives:

Operation and Maintenance of Utility System:

Operate electric, steam, gas, heating, cooling systems, and associated assets, and expand utility infrastructure, as needed, to align with campus growth and development.

Energy Supply:

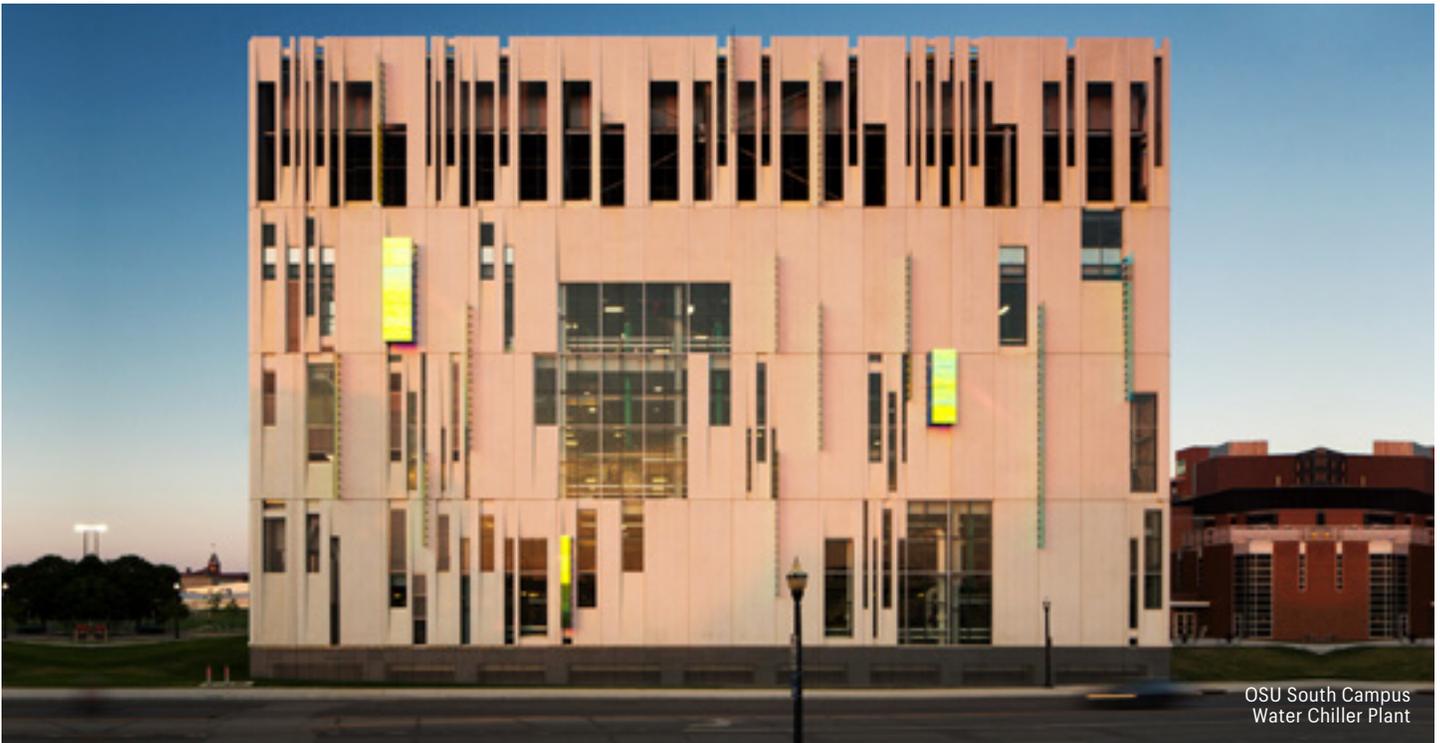
Supply the campus with required energy, including the operations and maintenance of electricity and natural gas contracts.

Implementation of Energy Savings Goals:

Meet OSU's energy saving goals and implement energy conservation measures.

Development of Affinity Relationships:

Establish a reciprocal relationship with OSU, whereby students, faculty and outside stakeholders would benefit from new research and collaborations.



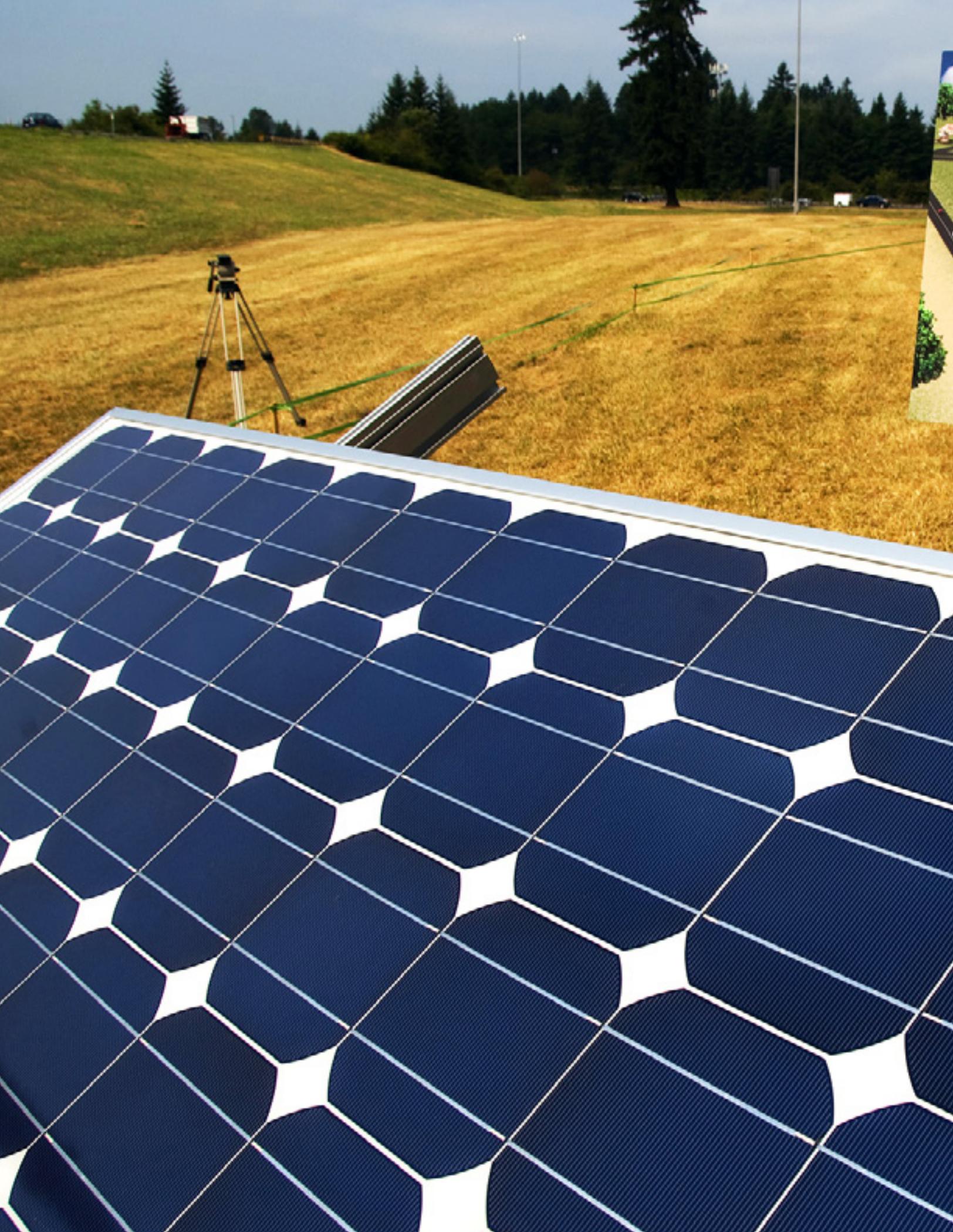
OSU South Campus
Water Chiller Plant

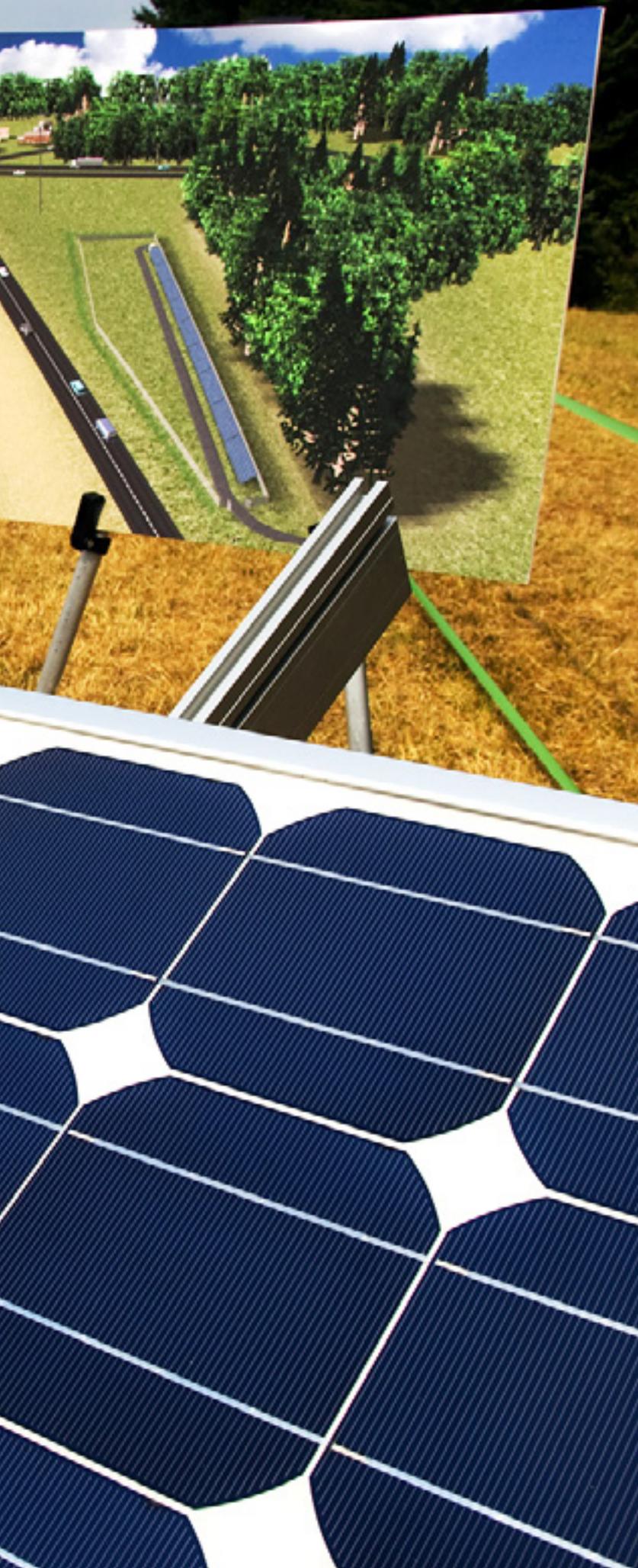
In April 2017, OSU selected Ohio State Energy Partners (“OSEP”) to implement a Comprehensive Energy Management Plan on the Columbus campus (the final agreement is still in the negotiations process as of Summer 2017). OSEP is comprised of two private firms: ENGIE North America, an energy firm specializing in operations and facility management, and Axiom Infrastructure, an equity firm focused on renewable energy investments. While the plan starts with the Columbus campus, it could lead to an opportunity for OSEP to implement similar asset-related efforts within the larger University system.

Core to OSEP’s successful proposal was its commitment to provide a significant upfront payment of \$1.015 billion for the University’s endowment and additional funds of \$150 million to create research facilities. Specifically, OSEP has agreed to build a \$50 million, 600,000 square-foot Energy Advancement and Innovation Center that will also function as ENGIE’s twelfth global research and development office. The center will provide new, collaborative lab and office spaces for OSU students, staff, and ENGIE employees, with the goal of commercializing OSU research and technology.

OSU plans to execute a 50-year lease agreement with OSEP for operations and maintenance of energy facilities and assets on OSU’s Columbus campus. OSU believes that the lease term “aligns the partner with [OSU’s] long-term interests and maximizes the value of a partnership for the University.” For the duration of the agreement, OSU will buy energy from OSEP as well as pay OSEP an annual fixed fee of \$45 million, increasing with inflation each year, and an annual operating fee of \$9.2 million, adjusted based on actual operations and maintenance costs. In addition, OSU will pay OSEP a variable fee related to approved capital investments, a portion of which will support energy conservation measures and drive toward a contractually required 25 percent increase in energy efficiency over ten years.

OSU and OSEP’s collaboration has uncovered additional value from the University’s complex and aging energy infrastructure system. Not only will this collaboration upgrade energy utilities to align with sustainability goals, but it will also produce new revenue sources that infuse OSU’s endowment with funding for mission-critical academic and research objectives.





SOLAR HIGHWAY PROGRAM

The Oregon Department of Transportation established Oregon as a national leader in sustainability by working with private utility and equity partners to transform previously unused right-of-ways into solar highways that produce cost savings to the State and feed into the private energy grid. ▶

By the numbers

8,000

Square feet of solar panels along Interstates 205 and 5

30%

Of the interchange's illumination is now provided by the Solar Highway array



Building on Oregon's longstanding reputation as an environmentally friendly state, in the early 2000s, Oregon's Department of Transportation (ODOT) jumpstarted a planning process to use publicly owned land for renewable energy production. Inspired by solar highway initiatives in Germany, ODOT staff began to explore the potential for the department to leverage right-of-ways for clean energy initiatives. The department aimed to use right-of-ways to host solar panels and other photovoltaic technologies that could feed into an energy grid. In 2007, the Project Director of ODOT's Innovative Partnerships and Alternative Funding Office (IPAFO) approached department leadership with a concept to create solar highways in the state.

At the time, ODOT did not have the needed capital funds, and provisions governing the Oregon State Highway Fund prevented the department from applying monies toward renewable energy projects. To move the project forward, the IPAFO pursued private funding and financing mechanisms that would support a program. The funding sources included the relatively new 30 percent State Business Energy Tax Credit and the 50 percent Federal Investment Tax Credit. Both programs are for private companies that made capital investments in renewable energy. Not long after ODOT began to market the project to the private sector, Portland General Electric ("PGE"), which supplied energy utilities to the State, expressed interest in collaborating with the department on a right-of-way solar array that would feed into their established utility network.

In 2008, PGE and ODOT agreed to collaborate on a right-of-way "Solar Highway," but legal and regulatory barriers remained before the project could officially begin. To take full advantage of the available tax credits, PGE partnered with a tax equity investor, US Bank, creating SunWay, LLC, a limited liability corporation to finance and govern the project. On the public side, ODOT coordinated with diverse agency partners to ensure that the project, a first of its kind in the state and the country, met regulatory standards related to siting, funding, public health, and safety.

Using a contract model established for wind energy in the Midwest, ODOT executed a Solar Power Purchase Agreement with Sunway. The agreement authorized PGE to construct, operate, and maintain a \$1.3 million, 8,000 square-foot solar array on the right-of-way bordering the interchange of Interstates 205 and 5. The interchange location was chosen both for its ideal sun exposure and heavy traffic flow (150,000 vehicles per day). The location was key for ODOT's goal of publicizing the initiative to public stakeholders. Importantly, the Solar Power Purchase Agreement adhered to state law, which required that a private contract uphold the department's mission. The solar array would provide energy to illuminate the interchange, and PGE would charge the state a net meter rate, which accounts for excess solar energy produced during the day. Today, the solar array provides ODOT with 125,000 annual kilowatt hours, "producing 30 percent of energy needed to light the interchange" each year.

In addition to choosing a project location with high public exposure, ODOT worked to educate the public about solar technology and assuage early concerns about safety and health. To generate additional public support for the project, ODOT structured the agreement with SunWay to use a values-based process for engineering and other contractors. In addition to meeting fee requirements, contractors had to meet values-based criteria, including quality wages, sustainable practices, and a safe workplace. In this way, from the solicitation process to the outcome, ODOT and PGE would support larger public objectives.

Today, building off the success of the 2008 demonstration project, ODOT continues to plan for and implement solar highways. In 2012, construction finished on the Baldock Solar Highway project, located at the Baldock rest area off of Interstate 5. For this project, PGE collaborated with Bank of America to fund the \$10 million solar array. The Baldock Solar Station feeds into PGE's electricity grid; however, unlike the demonstration project, ODOT receives a small site license fee from PGE as well as renewable energy certificates, instead of net meter utility rates. Both the 2008 demonstration project and ODOT's subsequent solar energy efforts have established Oregon as a national leader in sustainable technology. From 2009 to 2010, ODOT received congressional funding to expand its solar highway program.



EMERGING APPROACHES: THE GEORGIA RAY

The Ray is an 18-mile stretch of highway along I-85 in Georgia where the Georgia Department of Transportation, the Ray C. Anderson Foundation, and numerous energy and tech companies have partnered to test environmentally friendly infrastructure systems. Once completed, the highway will have leveraged existing right-of-ways and rest stops under the ownership and management of the GDOT to pilot the following new assets:

- **Solar-Paved Highways** incorporate photovoltaic technologies into the road's surface area and generate electricity when not blocked by vehicles.
- **Solar Barriers** aim to reduce highway noise while generating solar energy.
- **Right-of-Way Solar** follows Oregon's Solar Highways model by using a right-of-way in Troup County, GA to host solar arrays.
- **Tire Safety Check Stations** located at the West Point Visitor Information Center allow vehicles to drive over tire inflation monitors embedded in the roadway. Drivers receive text messages to let them know if they should inflate their tires, reducing potential accidents and wear and tear on the highways.





UNIVERSITY CENTER OF CHICAGO

Three university partners employed an innovative disposition strategy for the University Center of Chicago that will redirect university resources toward core academic objectives, while retaining high-quality student housing options in the Chicago Loop. ▶

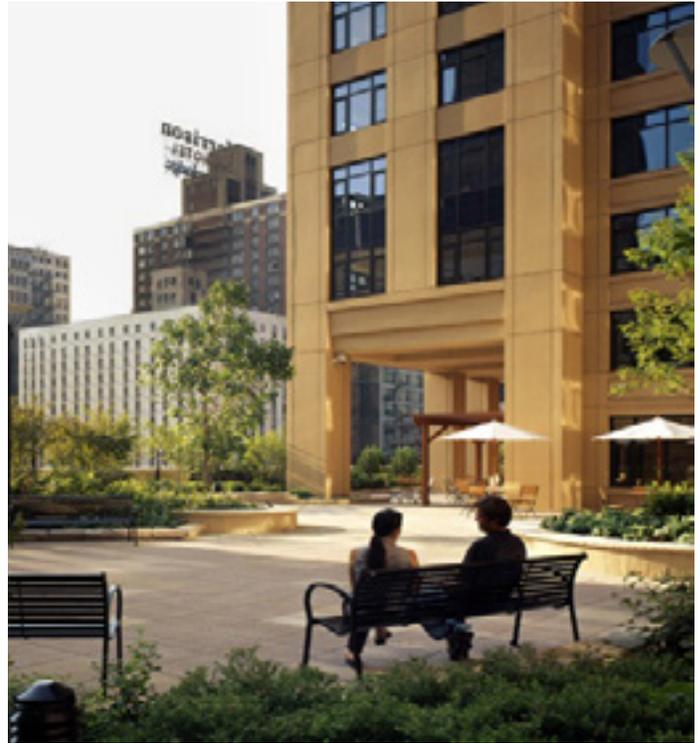
By the numbers

1,600+

Students served each year

3 University Partners

Shifting staff and finances toward educational objectives



The University Center of Chicago (UCC) is an 18-story, 1,720-bed student housing facility in Chicago. The first of its kind in the country, the UCC housing facility was constructed to provide student housing for nearby educational institutions. In the mid-1990s, DePaul University in Chicago experienced new growth in its downtown campus, but the surrounding Loop neighborhood lacked an adequate housing stock for students. At the time, the City of Chicago was eager to spur redevelopment in the area and began conversations with DePaul about the potential redevelopment of a vacant city-owned site to fill the student housing need.

The City envisioned a large redevelopment project, but DePaul could not make the upfront investment nor bear the future financial risks. Nearby Columbia College and Roosevelt University were approached to partner in creating a joint student housing facility. DePaul, Columbia, and Roosevelt entered into a ten-year Community Development Agreement with the City to redevelop 525 South State Street into the UCC. The City would provide the land at no cost, while the three institutions, under the umbrella of the Educational Advancement Fund (EAF), would pay for the construction and ongoing operations.

Construction began in 2002, and the facility opened in 2004, offering dorm- and apartment-style spaces for an estimated 1,600 students and an additional 40 resident advisors. As part of the Community Development Agreement, 30,000 square feet of ground floor retail was built to serve the students and the larger neighborhood population. By 2005, retail tenants included MB Financial Bank, Panera Bread & Company, a bookstore, 7/11, and Cold Stone Creamery.

In the summer of 2016, the EAF was approaching a call date on the bonds they had used to finance the University Center of Chicago. Although the EAF received net revenue streams from the UCC endeavor, the upcoming opportunity to refinance led the consortium to consider whether they needed to own and operate the facility directly, or whether collaboration with the private sector could alleviate direct oversight, while still maintaining quality of service.

When DePaul, Columbia, and Roosevelt began working with the City of Chicago to build the UCC in the late 1990s, the private student housing market was small and the universities formed the EAF to guide long-term management and operations of the facility. By 2016, when the EAF was considering the future of the UCC facility, a robust student housing market with specialty operators existed in Chicago's downtown Loop neighborhoods and had grown into a national industry. The maturity of the student housing market indicated that the private sector could potentially own and operate UCC without sacrificing the quality of service or core objectives of the facility. The EAF partnered with RBC Capital Markets to consider a disposition strategy and options for privatizing the assets.

The collaboration between EAF and its pending private-sector partner aims to ensure sustainability in the UCC's high quality student housing operations.

Throughout 2016, the EAF solicited private-sector partners to assume ownership and maintenance of the UCC. The EAF's commitment to continued operations of the UCC as a high-quality and culturally unique student housing facility guided their key criteria for evaluating offers. The transaction would:

- **Extract equity for University partners without losing the facility as available housing stock, maintaining the UCC as a student dormitory with limits on rate increases;**
- **Engage a private-sector partner with experience in the student housing market and the ability to maintain or improve upon the UCC's current service quality; and,**
- **Incorporate a degree of university oversight via the ongoing involvement of a Resident Life Advisory, or similar committee.**

In the winter of 2016, one year from when UCC's university partners identified a disposition opportunity, the EAF received a letter of intent. The sale of the UCC is anticipated to be finalized by the end of 2017. The collaboration between EAF and its pending private-sector partner aims to ensure sustainability in the UCC's high-quality student housing operations, applying innovations and efficiencies from the private sector. According to EAF staff, the current transaction will also provide revenue benefits to universities—via the proceeds of sale—and the private-sector owner—via rents. In addition, the agreement will enable DePaul, Columbia, and Roosevelt to shift both staff and financial resources toward their core educational missions.





MBTA ON-DEMAND PARATRANSIT PILOT

The Massachusetts Bay Transportation Authority (MBTA) is re-envisioning paratransit services by supplementing publicly-owned vehicles with private, on-demand Uber and Lyft transit options. The On-Demand Paratransit Pilot Program provides residents with greater transportation choices, while lowering costs per ride to the MBTA. ▶

By the numbers

20,000+

Paratransit pilot rides
October 2016 — May 2017

\$26

Average per-ride saving to the
MBTA for paratransit riders



For decades, the MBTA has provided paratransit services to residents in the Greater Boston Area. In 1977, paratransit served a 12 square-mile area in parts of Boston, Cambridge, and Brookline. Today, the MBTA serves 60 cities and towns. “The RIDE” paratransit service functions as the MBTA’s primary mechanism for complying with the Americans with Disabilities Act (ADA) requirement of providing door-to-door transit services to residents and visitors who are unable to use fixed-route transit options. In fiscal year 2014, the RIDE served 1.8 million paratransit customers, including escorting personal care assistants and companions.

MBTA staff and disability advocates decided to explore options for applying on-demand and ride-sharing transit technologies to improve public paratransit service.

In 2015, operational and financial challenges led the MBTA to inventory its services and pursue alternative and supplementary mechanisms for delivering transit services. Facing an overall \$240 million operating deficit, The RIDE—one of the authority’s most complex and costly services—rose to the forefront as a potential asset type for examination and change. Owned by the MBTA and operated by private contractors, The RIDE charges paratransit users a one-way fixed-fee of \$3.15 to \$5.25 and costs an additional average of \$35 per ride for the MBTA. This per ride cost to the MBTA does not include fixed fees the MBTA pays to private van contractors. Including the fixed fee, the traditional The RIDE vans cost an average of \$59 per ride.

In addition to cost concerns, the MBTA was aware that service quality, while far above that required by law, could be improved. To receive the lowest rate, paratransit riders must book a reservation one to seven days in advance during office hours. In addition, The RIDE service area is divided into ADA-required and premium areas.



Facing cost and quality challenges, the MBTA looked to public and private stakeholders for solutions. In 2015, a taskforce of MBTA staff and disability advocates decided to explore options for applying on-demand and ride-sharing transit technologies to improve public paratransit service.

In 2016, the MBTA released a RFP for an on-demand, subsidized paratransit provider to supplement The RIDE van service. Specifically, the MBTA called for a Collaborative Agreement with a private-sector partner that would:

- **Reduce response time to book rides;**
- **Decrease per-ride costs to the MBTA;**
- **Offer hours of operation similar to fixed route transit; and,**
- **Increase access to jobs, education, and social activities.**

The RFP further specified that, while respondents did not need to offer full ADA-compliant services, a portion of their vehicle fleet should allow for wheelchair access. In this way, the program would free up The RIDE vans for ADA-compliant trips, but also offer diverse on-demand options.

Following submissions from several firms, Uber and Lyft were selected to work with the MBTA to launch the On-Demand Paratransit Pilot Program, offering the first on-demand paratransit service of its kind in the United States. The one-year pilot program is examining whether on-demand paratransit can provide better quality service, while reducing operating costs for the MBTA.

Uber and Lyft utilize a sign-up process and their existing mobile apps to allow eligible The RIDE customers access to subsidized pilot trips. For all eligible trips, customers pay the first \$1 to \$2 of the trip, the MBTA pays the next \$13, and the customer pays the remainder of the trip cost. Similar to existing Uber and Lyft applications, paratransit customers are provided with ride choices. The Uber paratransit app offers UberPool for ride sharing, UberX for personal cars, and WAV Taxi for wheelchair accessible taxis.

The MBTA implemented the pilot in phases, allowing for program modifications to address service issues. The on-demand pilot began in October 2016 with a testing period. The MBTA met with partners Uber and Lyft on a weekly basis to examine user feedback, ride data, and costs for a limited rider population of 400 users. In March 2017, the MBTA expanded the program to all The RIDE users and service areas after finding cost savings to the MBTA and increased customer satisfaction. In addition, the MBTA modified the number of rides per month available to users based on feedback and program analysis.

The partnership is seen as a success thus far, reducing costs and offering high-quality services. Since launching in October 2016, Uber and Lyft have completed approximately 20,000 paratransit rides through the pilot program. The pilot has reduced costs from \$35 to approximately \$9 per ride. According to Uber, the MBTA pilot has also provided an opportunity to align on-demand technology with public transportation services, a longstanding goal within the company.





BEST PRACTICES

A review of successful case studies surfaces a series of best practices for unlocking new value from public assets. While these best practices occurred in a variety of sequences, in every case they followed a three-phase approach: identify the opportunity, refine the concept, and implement the project. The best practices enumerated in the following section do not apply uniformly to all potential public and private sector collaborations. Relevant case studies are highlighted to show the context in which these practices can succeed.

Identify the Opportunity

In this first phase, a public-sector entity must engage in the preparation necessary to identify transformation projects. Internally, entities should examine their organizational mission, inventory their assets, and evaluate asset performance against the core mission and objectives. Furthermore, the public sector must seek out private-sector ideas to best harness market developments, while leveraging political, financial, and regulatory windows of opportunity. The following best practices set the stage for the public and private sectors to refine a concept for a given project.

1. KNOW YOUR MISSION

Government and public institutional entities that have a clear understanding of their core mission and objectives are best equipped to analyze the performance of their diverse asset portfolios and identify opportunities for uncovering value from assets. Asking, “*what is our mission?*” or “*what objectives does our organization strive to achieve?*” produces answers that can serve as powerful benchmarks to assess performance. A clear understanding of mission

A comprehensive inventory of public assets is a critical prerequisite to identifying opportunities to create new value.

and key objectives can also help government and public institutions determine what level of control they are comfortable giving to the private sector in exchange for other benefits.

In the 1990s, the staff at the Department of Information Technology & Telecommunications (DoITT) in New York City recognized that payphone usage and associated revenue was on the decline. DoITT staff used their mission—providing New York City government, residents, and visitors with access to quality technology services—as a critical reference point for setting standards and guiding interagency deliberations around the future of the payphone system. Guided by its mission, DoITT set a vision for a new, communication system that expanded access to public Wi-Fi, while continuing to generate revenue to support the agency’s day-to-day work.

For many public entities, a clear mission is already in place prior to evaluating asset performance. For others, the process of transforming an asset necessitates a discussion of mission. To the extent possible, government and public institutions should strive to have proactive conversations about their core mission and determine how to measure success.

2. INVENTORY AND EVALUATE ASSETS

Budgetary constraints, demands for a new service, or complaints regarding asset performance (e.g., deteriorating roadways or electricity outages due to outdated infrastructure) often spur conversations about the value of public-sector assets. In some cases, the complaint or constraint leads directly to a specific asset in need of improvement. In other cases, the public sector confronts overall funding limitations, but specific assets do not come to the fore as part of the solution.

A comprehensive inventory of public assets is a critical prerequisite to identifying opportunities to create new value. By first asking, “*what assets does the public sector own and/or control?*” and conducting an inventory, the public sector can identify value-generating opportunities. In addition to physical assets, public-sector entities must further examine services associated with assets. In California, State Treasurer John Chiang has launched an initiative to take stock of the full range of assets controlled by the State, arguing that an inventory will “serve as a guide to better manage [the State’s] future, thoughtfully establish a priority list, and avoid blind approval of more debt for new projects.”

For the private sector, a public asset inventory can provide the opportunity to identify potential collaborations and unlock benefits for all participants. The public sector can leverage an asset inventory to evaluate asset performance against mission. Government and public institutions seeking to create new value need to consider, “*which assets support our core mission?*” For some public-sector entities, this question necessitates a baseline review of which assets directly relate to institutional objectives.

At OSU, administrators identified parking lots and energy facilities as two asset groups that did not require direct management to uphold the University’s goals of providing high-quality education and research. By shifting the management of parking and energy utility operations to the private sector, OSU secured both an influx of capital for the University’s endowment and greater control over future expenses. The funding from the energy and parking collaborations was earmarked to support the institution’s core educational objectives, including support for scholarships, research facilities, and new academic programs.

Asset performance can also be assessed in terms of how well an asset supports future objectives or anticipated needs. OSU’s agreement with ENGIE and Axium to operate the University’s energy utilities supports newly mandated sustainability goals by requiring private partners to make investments in the utility network and reduce energy consumption in the long term. In this case and others, “non-core assets” were leveraged to better uphold the entities’ core missions.

3. PURSUE CREATIVE THINKING

Assets cannot be evaluated in a vacuum and public-sector entities must consider external market dynamics and shifting public expectations to identify opportunities that uncover additional value. The rapid pace of technological advancement across all sectors has significant impacts on how public assets are perceived, used, and evaluated. New demand for a public asset or the obsolescence of existing public services informs how public-sector entities approach the question, “*are there new ways of improving assets or generating value to support the public sector’s mission?*”

In the late 1990s, scarce student housing development and few specialty student housing operators in the market motivated DePaul University, Columbia College, and Roosevelt University to partner in developing and operating the University Center of Chicago, a student housing complex in Chicago’s Loop. When time came for university partners to refinance their investment in the University Center of Chicago (UCC) in 2016, the private student housing market had changed. New private housing providers and operators were providing quality student housing for schools across the country. After meeting with student housing providers, the university consortium determined that they could maintain quality housing by pursuing a disposition strategy for the UCC facility. The collaboration enables the participating universities to reduce financial and staff resources dedicated to the UCC’s operations and shift those resources towards the three institutions’ core educational objectives.

In the Greater Boston area, the Massachusetts Bay Transportation Authority (MBTA) pursued an On-Demand Paratransit Pilot Program after acknowledging that new mobile ride sharing technologies had transformed the transportation market and changed rider expectations. For years, the MBTA contracted with private van services that required people with disabilities make reservations one to seven days in advance of their trip. The On-Demand Paratransit Program, which supplements existing transportation services, allows paratransit riders to use Uber and Lyft. In just eight months of the pilot, paratransit residents have booked over 20,000 rides. In both cases, and in other examples reviewed, the emergence of new markets, innovative technologies, and changing user demands led to private-sector partnerships that apply new technologies and efficiencies to public assets and their associated services.

The public sector should not wait until new ideas come to their door. Government and public institutions must keep abreast of emerging technologies and be proactive in seeking out innovative approaches for public assets. Often, public-sector entities pursue creative thinking under the guidance of visionary leaders who are willing to take risks and leverage new and disruptive technologies. DoITT, hosted a design challenge to reinvent the payphone to create a channel for educating the department and other City agencies on technologies and enhance communication services throughout the city. Visionary leaders within the public and private sectors developed an inclusive process by encouraging community members to provide input on the technologies proposed to transform payphones.

4. LEVERAGE WINDOWS OF OPPORTUNITY

Across all case studies, public-sector entities reached an inflection point where a decision could be made to generate value from public assets by directly engaging the private sector. A confluence of political and financial windows of opportunity, combined with a strong understanding of mission, asset performance, and private-sector innovation, enabled the public sector to take the next step in transforming assets.

Though the window of opportunity will differ for every project, government and public institutions should make sure they have the foundational understanding of mission, asset performance, and market context needed to act when windows of opportunity arise. Additionally, public entities should strategically anticipate windows of opportunity, such as agreement terms and changes in administration.

Political Opportunities

Even when public-sector entities evaluate and identify methods for uncovering revenue and other benefits, the path forward can be contingent on larger political dynamics. In some cases, it takes a political mandate or visionary leader to catalyze change. Invested stakeholders must be ready to seize that opportunity.

In New York City, the LinkNYC program was made possible through nearly a decade of incremental efforts within DoITT and a mayoral political mandate to advance equity and expand access to technology. Throughout the Bloomberg administration, the staff at DoITT enacted a series of small pilot programs with telecommunications partners, and created a

competition to identify methods for transforming payphones into twenty-first century communications hubs. The de Blasio administration brought a new political mandate to ensure equitable access to technology across the city. Within the first four months of his administration, Mayor de Blasio lent his support to DoITT's project to create the largest public Wi-Fi network in the country via the existing payphone network.

Financial and Regulatory Opportunities

Government and other public institutions execute numerous asset-related contracts that lock them into specific timelines and financing structures. At the same time, the public sector is also largely dependent on funding made available through federal, state, and local policies. A review of case studies showed that the public sector often leverages contract deadlines, refinancing opportunities, and the availability of new public funding as a catalyst.

In Chicago, the three universities used an upcoming call on bonds to re-evaluate their involvement in managing student housing. Rather than refinance the building, the EAF decided to pursue a sale of the UCC, allowing the three partners to redirect money and staff resources to education. Similarly, New York City's DoITT saw an upcoming renewal of payphone franchise agreements as an opportunity to pursue innovative testing of new technologies. Instead of entering into a new set of long-term agreements with telecommunications and advertising partners, DoITT pursued a short-term franchise agreement between 2010-2014 with the explicit intention of using that window of time to develop a new approach to managing and operating payphones. In Oregon, the state's Department of Transportation leveraged federal clean energy tax credits to jumpstart conversations on transforming underused right-of-ways into energy producing solar highways with private energy firms. These highways would house solar panels and other clean energy technology to support local energy grids.

The public sector must keep abreast of emerging technologies and be proactive in seeking out innovative approaches.

Refine the Concept

Once the public sector has identified an opportunity, there is a critical refinement period to ensure that projects meet expectations. Building interagency support, testing the concept, and mitigating private-sector failure all position public and private partners to implement the partnership.

5. BUILD SUPPORT

Few public assets are governed by one department or agency. As a result, most transformative projects require intra- or inter-governmental cooperation to achieve success. Public entities across case studies employed a variety of strategies to build support. In several cases, an internal project champion with the vision and foresight required to lead an organization through a politically challenging process was critical. In other cases, the public sector organized formal decision-making bodies to build consensus, or found creative, flexible ways to test ideas and alleviate concerns. By answering the questions, *“how can we build consensus for the project among other public entities and key stakeholders?”*, and *“what are the anticipated areas of disagreement and how can we address them?”*, the public sector can identify the strategies needed to build support.

Project champions, typically staffers who were highly involved in the conception of the project and who were present through project execution, were critical to getting several projects off the ground. Allison Hamilton, ODOT Project Director of the Innovative Partnerships and Alternative Funding Office, served as a champion for the Oregon Solar Highway. In 2007, after researching European models for renewable energy production, Hamilton, who had worked for ODOT since the mid-1980s, was inspired to pursue a solar initiative that leveraged the department’s right-of-way assets. Hamilton garnered support within her own department, as well as the governor’s office and Congress, to propel the project toward implementation, even when funding challenges arose.

Methods for building consensus will vary depending on stakeholder involvement in each project. Supporting project

champions and creating channels for public feedback will ensure that public entities have strong support as they develop and implement an agreement.

6. TEST AND ITERATE

The public sector rarely transitions from identifying a value-generating asset opportunity to instituting a private-sector program or agreement without a period of testing. This period of refining the concept often takes the form of pilot programs or demonstration projects, which provide agencies with the flexibility to work out issues prior to full implementation and for voter feedback. Pilots also provide the public sector with the opportunity to test assumptions regarding the financial feasibility of a project and answer questions (e.g., *“will the asset generate anticipated revenues and public benefits?”*).

In the cases of LinkNYC and the MBTA On-Demand Paratransit Pilot Program, provisions during the rollout of both programs required that public and private partners consistently coordinate on performance and make necessary revisions on a weekly basis. The MBTA holds weekly meetings with Uber and Lyft to assess user data and make corrections to the pilot program software. While the MBTA’s institutionalized coordination with Uber and Lyft has helped to mitigate short-term failures associated with the pilot, the authority’s decision to consistently diversify its paratransit services mitigates the longer-term risks of committing to a single solution. In addition to using ridesharing technologies like Uber and Lyft, the MBTA maintains The RIDE van service and invests in a subsidized taxi service.

7. OPTIMIZE BENEFITS

National case studies demonstrate how public asset projects can maximize the range and types of benefits. While new revenue or cost savings are often initial drivers, the generation of non-monetary benefits is also critical to ensuring that a public asset project continues to meet public objectives. During this phase, government and public institutions seek to determine the full breadth and depth of benefits before further finalizing a project approach.

In the years preceding the LinkNYC rollout, DoITT worked alongside other agencies and the mayor’s office to ensure that the program would optimize benefits for everyone. DoITT and private partner CityBridge developed Link functions, including free, public Wi-Fi and tablet apps for City services, to close the digital divide and advance equity goals. Digital

advertisements on select Links, and their associated revenue streams, allowed the City to pursue these digital equity goals at no cost. Multiple agencies governing the City's streetscape further negotiated the specifications of Link's physical structure to ensure that Links would not create the same maintenance and aesthetic issues as payphones. As a result, new revenue sources for Link construction and maintenance were paired with digital equity and streetscape benefits.

Implement the Project

At this phase, the specifics of the partnership structure and communication plan should position the project for success. Agreements must incentivize performance and align expectations between the public and private sectors, while including mechanisms for engaging the public.

8. ALIGN EXPECTATIONS

To ensure that the desired outcomes are achieved, and in most cases surpassed, the public and private sectors need to understand their responsibilities within the agreement and recognize how they are aligned with the overall project objective. Public entities must ask, *"what elements of the project should the public sector continue to own and/or manage?"*, and *"how can the project agreement ensure that all parties adhere to designated roles and responsibilities?"*

For the UCC disposition strategy, the EAF is transferring ownership and control of the student housing facility in Chicago's Loop neighborhood to a specialized student housing provider. However, as part of the agreement currently being finalized, the EAF and its educational partners—DePaul University, Columbia College, and Roosevelt University—will maintain some oversight over the building's operations to ensure that rents are affordable and the overall culture of the building continues to serve students.

In structuring its collaboration with ENGIE and Axium, OSU has similarly balanced the roles and responsibilities of

Agreements must incentivize performance and align expectations between the public and private sectors.

public and private partners to ensure that university objectives are upheld. While OSU is transferring the management of its energy utilities to OSEP, which includes ENGIE and Axium, the public-private agreement includes provisions that ensure OSU maintain oversight into the types of capital investments made to the energy system. In the long term, OSU wants to reduce energy consumption across its campuses.

9. STANDARDIZE PERFORMANCE

As mission-driven organizations, government and public institutions have an obligation to ensure that any agreement to transform an asset supports overall public objectives. Across the case studies, government and public-sector institutions need to ask, *"what are the partnership standards that will ensure the project supports our mission?"*

For the LinkNYC program, the City of New York required CityBridge to not only construct Links that meet current high-tech standards, but also conduct regular maintenance and upgrades to ensure that Links align with changing technology standards and future communication needs. This provision, along with a minimum annual guarantee of revenue for the City, was critical to embedding performance standards that ensure quality service and a sustainable funding stream for the public sector. The agreement structure was informed by the City's prior franchise agreements with telecommunications partners, where payphone service and quality declined due to poor maintenance and revenue was unpredictable.

The public sector can support its mission in a myriad of ways. The transformation of the asset could result in a reallocation of staff time, generation of new revenue, and/or an improvement in service. To ensure that the partnership is generating the intended benefits, the public sector needs

to set measurable standards for assessing performance. By structuring incentives and standards that align both public and private objectives, the project can be a win for both sides.

Many times, public and private collaborations represent the first time either party has worked with the other. With any new idea or relationship, there is the potential for the project to face challenges, or even failures. As part of performance standards, government and public institutions can structure agreements to allow for course corrections early on. These agreement elements enable all partners to balance flexibility to take risks with their responsibility to deliver on public objectives. Standardizing performance and flexibility within an agreement is critical when refining a concept and implementing a project.

10. ARTICULATE BENEFITS

Governments benefit from communicating the value they uncover through collaboration with the private sector. Making sure all parties understand the benefits of transforming an asset helps to set the stage for other efforts to transform public assets and create public buy-in. Articulating the benefits also enables best practices to spread from institution to institution and city to city.

When creating the “Solar Highway,” ODOT identified the location of their first pilot project in part based on its sun exposure, but also on its heavy traffic flow. ODOT knew that getting the public to see the pilot project would help to build support for the initiative and enable continued expansion. ODOT has also dedicated significant time to sharing the story of the “Solar Highway” in various local and national media outlets and by publishing materials, including a handbook for other public entities interested in launching similar projects.

In several cases, particularly those related to innovative new technology like LinkNYC and the Solar Highway project, making the project visible has been critical, especially during the initial project development phase. For DoITT, the “Reinvent Payphones” challenge garnered public interest and spurred media coverage. For ODOT, choosing a site with high visibility and engaging in proactive public outreach built interest in the project, which supported subsequent growth.

Looking Ahead

Identifying new approaches for leveraging assets to

create multiple benefits is as critical as ever. Public assets are aging and evolving without the necessary funding for maintenance or forward-looking investments. Meanwhile, with less funding, government must continue to address the core needs of communities and tackle new challenges, including climate change impacts, shifting market demands, and increasing inequality. As the demands on the public sector rise, government and public institutions should evaluate their asset portfolios to identify opportunities to unlock value.

Public sector leaders at all levels of government can begin by establishing a common understanding of their assets. Only with a comprehensive inventory can the public sector determine which assets are optimally supporting core mission and which could be reimaged to generate more value. Government and public-sector institutions must also share their asset inventory with the private sector. Via design competitions, pilots, and other collaborative vehicles, the public sector can invite the private sector to develop new and creative thinking for existing public assets. At the same time, the public sector should support internal champions who are able to meld big ideas with institutional knowledge of the political and regulatory context.

Having identified an opportunity to create new value from public assets, the process of developing an agreement requires each party to clearly articulate its definition of value, measures of success, and expectations for partners. The private sector can be a strong collaborator when it recognizes that the public sector seeks a range of monetary and non-monetary benefits that support core public objectives. The public sector can collaborate more effectively when it provides the private sector with access to new markets, opportunities to test a product, and potential to make a profit. When structured successfully, partnerships benefit everyone. Transformative partnerships generate new revenue streams, improve service quality, and increase competitiveness for cities and states.

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