

El-Space Toolkit



DESIGN TRUST
FOR PUBLIC SPACE



El-Space Toolkit

Strategies for Reclaiming Sites Beneath Elevated Transportation Infrastructure

An evolving resource of the
Design Trust for Public Space
in partnership with the NYC
Department of Transportation

Version 1.0, September 2019

designtrust.org

nyc.gov/dot

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Foreword

I am pleased to present the *El-Space Toolkit*, an important resource for transforming space underneath and adjacent to elevated transportation infrastructure – what we call “el-space.” As a companion to the 2015 *Under the Elevated: Reclaiming Space, Connecting Communities* publication, the new *El-Space Toolkit* offers city agencies, community groups, local businesses, developers, and designers a guide to planning, designing and realizing el-space projects.

In 2013, DOT partnered with the Design Trust for Public Space in an effort to change people’s thinking about the vast network of el-space citywide, which for too long has been seen as dark and uninviting space to be hurried through. With jurisdictional, operational and funding issues, these complex sites pose challenges, many of them site-specific. We have tested creative strategies and tactics including lighting, green infrastructure and pedestrian circulation that can improve site conditions and environmental performance.

DOT’s goal for the citywide El-Space initiative is to reconnect communities by allowing them to efficiently and equitably optimize their use of this vast resource that is waiting to be tapped. With our efforts, New York City has joined other forward-thinking cities across the continent and the world that are providing new land use opportunities, improving environmental conditions, and promoting neighborhood access and mobility in el-space.

By sharing lessons learned and showcasing tested methods in the emerging field of el-space planning and design, I am confident the *Toolkit* will serve as a critical resource for all those committed to transforming el-space.

Sincerely,



Polly Trottenberg
Commissioner
New York City Department of Transportation

What is El-Space and Why is it Valuable?

In the late 19th and early to mid 20th century, growth and expansion of cities depended on new systems of transportation, including elevated highways, subway and rail lines and bridges. However these vast networks often divided neighborhoods and negatively impacted communities. Residual space beneath or adjacent to elevated transportation infrastructure, “el-space”, is almost universally described as dark, and oppressive.

Yet, commentators like Thomas Campanella have observed that “...the quality of light beneath elevated tracks is often exquisite. It comes down combed and filtered through the ties and strikes pavement and façades below with dappled light of elmshade. This, and the sense of enclosure created by columns on either side, yields an effect reminiscent of an avenue of mature trees, a kind of sturdy steampunk Elm Street...one of the reasons the city’s remaining el corridors are such vibrant places...”¹

These elusive qualities and rapid urbanization of cities have drawn planners and public officials to pursue new strategies for cities and more equitable use of public space. In recent years, forward-thinking individuals, community groups, and government agencies in cities across the continent and internationally have viewed these sites as valuable untapped assets for their surrounding communities with opportunities to address systemic social, health and safety, environmental, economic challenges and racial inequities.

El-space can reconnect neighborhoods divided by bridges, highways, subways and rail lines to serve multi-functional objectives, as gateways, connectors, corridors or open spaces in neighborhoods:

- Promote neighborhood access, mobility, pedestrian focused lighting
- Improve pedestrian and vehicular safety
- Offer new paths and trails for walking, cycling, and other healthy forms of recreation
- Provide new land resources and foster infrastructure capacity
- Contribute to a city’s stormwater capture goals, resiliency plans, and air quality
- Create or enhance a neighborhood’s identity
- Become a place for local gatherings, exchange, and events, such as markets or retail opportunities

El-space can achieve all of this and more. Yet challenges abound in realizing projects on these complex sites: jurisdictional and land use issues, including intra-agency priorities; security concerns; new funding, operations, and maintenance models; and effective community engagement and development strategies.

What is the El-Space Toolkit?

Since 2013, NYC Department of Transportation (NYC DOT) and the Design Trust for Public Space have partnered on the *Under the Elevated / El-Space* initiative, a multi-phase project to reclaim and regenerate spaces beneath and adjacent to elevated transportation, along with other public agencies, community organizations, and design professionals in New York City. Many other cities have engaged in el-space projects, but no comprehensive guide for how to reimagine these spaces exists. With growing interest in these interstitial spaces on May 17 and 18, 2018, the Design Trust and NYC DOT convened the *El-Space Forum* for city and community leaders, designers, and planners, working in el-space from ten cities—Atlanta, Boston, Chicago, Los Angeles, Mexico City, Miami, New Orleans, New York City, Oakland, and Toronto—to advance the initiative and emerging field of ‘el-space’ planning and design. The Forum proceedings laid the groundwork for the El-Space Toolkit with the intent to disseminate it across the nation and the globe, as a tool that evolves with the field.



¹ Campanella, Thomas J., “The Spatial Ecology of the New York Elevated”, *Under the Elevated: Reclaiming Space, Connecting Communities*, p.19

Public officials, designers from a range of disciplines, architects, landscape architects, planners, engineers, nonprofit leaders, community groups, and developers at the day-long Forum established key values for el-space projects, identified obstacles through project case studies, shared knowledge and experience, and brainstormed innovative strategies for creative, practical, and equitable solutions to benefit urban communities throughout North America and the globe.

Values linked to el-space included: equity, inclusivity, shared ownership, accessibility, accountability, healing, connectivity, and adaptability. Participants also identified ways to enact these values:

- Listen, engage & respect
- Collaborate
- Honor many histories
- Honor place
- Prioritize maintenance
- Grow economic opportunity
- Add value
- Leverage all possibilities
- Think about impacts, consider power dynamics
- Amplify joy, beauty, and wonderment
- Acknowledge prior harms and have empathy
- Allow for extended ambiguity
- Have courage: experiment and push
- Pilot and learn
- Create multi-layered systems
- Respect and support community-driven process
- Build capacity (community < > government)

These insights form the basis of this El-Space Toolkit and the featured strategies herein.

How to Use the El-Space Toolkit

Who is the Toolkit for?

The El-Space Toolkit (Toolkit) is a multi-media resource for designers, community groups, local businesses, developers, and public agencies such as Department of Transportation, Department of City Planning, and Economic Development Corporation to use in the planning, design, and operation of underused spaces beneath or adjacent to elevated transportation infrastructure.

What information and types of el-space projects does it include?

The Toolkit covers the lifecycle of developing and implementing an el-space project through 21 topical case studies from New York City's El-Space initiative and cities across North America —projects featured in the 2018 El Space Forum—highlighting lessons learned to date for this emerging field of practice and exemplary practices and considerations for application at el-space sites in other cities. The Toolkit is not designed as a fixed resource; subsequent versions will incorporate additional projects and information as new lessons are learned from practitioners and policy makers in NYC and around the globe.

Case studies in the Toolkit demonstrate approaches to working in el-space with various typologies from linear pathways to crossings to commercial corridors or market spaces, and highlight the range of new uses of el-space from enhanced infrastructure to destination parks to trails. Some projects demonstrate site-specific approaches to particular communities, while others are public space networks or citywide programs. The case studies include temporary treatments and permanent capital projects, as well as adaptive reuse and reconstruction.

How is the Toolkit organized?

The Toolkit is organized chronologically as a guide for users to learn how to implement el-space projects. Projects may ultimately develop in a nonlinear fashion, given complex jurisdictional and regulatory requirements and significant community engagement processes. For example, the design of a pop-up installation, and its successful operations, may inspire a local government agency to initiate a process for reimagining an el-space site.

Each case study includes “Considerations” for application that underscore key lessons learned, along with participant insights or critical reflections. The “Status” line provides links to current and updated information, and the “Project Budget” line provides a rough range of project hard costs from the time of their design/installation, not accounting for soft costs, such as design, staff or volunteer time, in-kind materials, or pro bono consultant fees.

Section I: Documenting Ei-Space

Understanding Complexity

El-space forms a complex network in the urban fabric of the city that is an omni-present influence on neighborhoods. El-space is an asset, from lively informal community uses to essential storage facilities for municipalities. However, it remains in the background. People often perceive that “there is nothing there” or “el-space is a blank slate.”

El-space is challenging to document and comprehend. Most conventions for mapping and drawing urban systems rely on standard cartographical tools—two-dimensional views or traditional streetscape perspectives. El-space, and elevated highways, subway and rail lines and bridges that shape it, require a dynamic three-dimensional, qualitative and temporal framework. To understand el-space, one needs to not only understand its dimensions, who owns and manages different aspects of the space, but also who currently uses it—day and night, summer and winter; how lighting affects its use, and contrast ratios of day-lighting to the fixture type and location of night lighting; ambient sounds levels; air quality; desire lines of pedestrian traffic; among other things.

Geospatial Mapping El-Space Inventory

Citywide, New York,
NY, U.S.A.

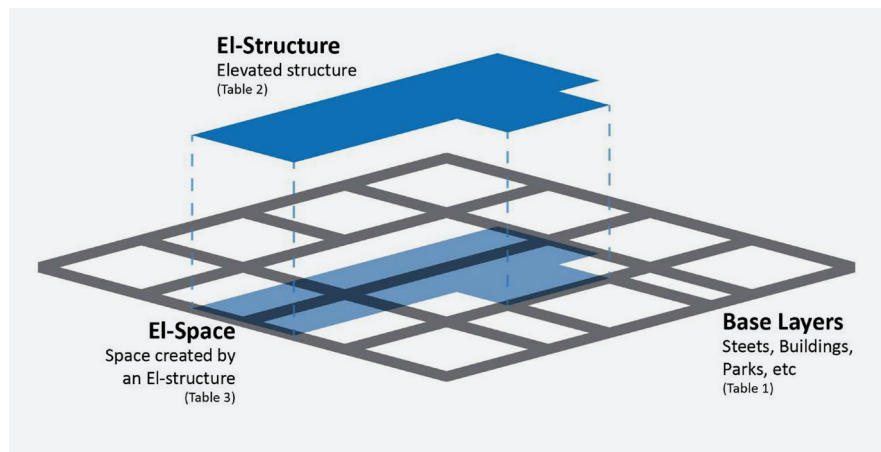
PARTNERS
NYC Department of Transportation, Design
Trust for Public Space, NYC Department of
City Planning

PROJECT TIMELINE
2018 TO 2020

PROJECT BUDGET
\$50,000 TO \$70,000

STATUS
Previewing Beta Version [Video Link](#)

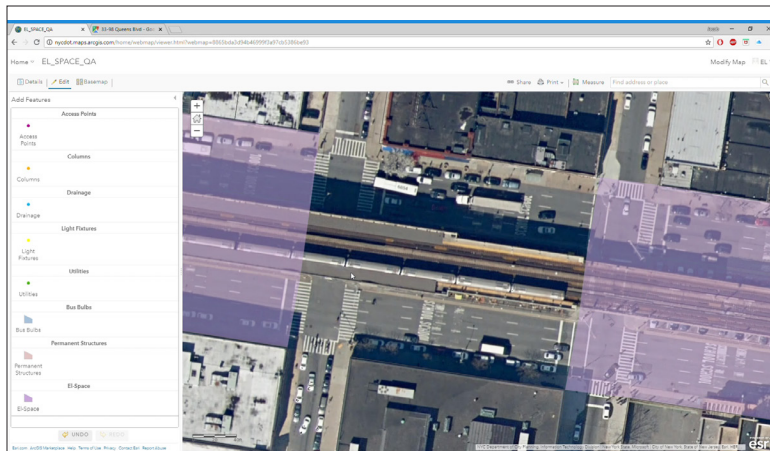
A framework highlighting el-space created by elevated infrastructure, jurisdictions within each space, and current uses (Sam Schwartz Engineering)



In 2018, NYC DOT initiated comprehensively mapping the over 75 million square feet of space beneath and adjacent to elevated transportation infrastructure across New York City and creating the first-ever geospatial database of “el-space.” NYC DOT staff used GIS software and Google Street View to document and geo-locate the dimensions of each space, inclusive of adjacent streetscape or public right-of-way. Through site visits, NYC DOT has been confirming and cataloging the physical elements and assets, including access points and fencing, columns, other permanent structures, bus or train stops, bicycle facilities, drainage, light fixtures, and utilities. Data for future collection includes: noise and light levels, air quality measurements, pedestrian volume, safety data, planted areas, and more.

The resulting database, based on a framework that Sam Schwartz Engineering developed for NYC DOT, identifies which City or State agencies have jurisdiction within each space, and the current uses, such as street, public space, NYC DOT operations, parking, private use, government use, limited access. NYC DOT plans to use this inventory to optimize its internal assets, such as maintenance/storage sites, and catalyze the agency’s El-Space Planning Framework, as well as making the inventory available through the City’s Open Data resource <https://opendata.cityofnewyork.us/>.

A snapshot from the El-Space inventory, showing layers of data collected such as columns, drainage, light fixtures, and utilities (NYC Department of Transportation)



NYC DOT uses iPad Collector for confirming and cataloging physical elements and assets of el-space (NYC Department of Transportation)



- CONSIDERATIONS**
- ➔ For NYC el-space sites, consider using the El-Space Inventory on the City’s Open Data website as a base for your effort, once the information is available
 - ➔ Make sure to tag data entry dates to address the validity of data over time
 - ➔ Identify the social and cultural assets and add them to the map, including local organizations, who develop, program, and maintain el-space

Visual Storytelling Photo Urbanism Fellowship

Chinatown,
Manhattan;
Williamsburg,
Brooklyn; East
Harlem, Manhattan;
and Longwood and
Hunts Point, The
Bronx, New York,
NY, U.S.A.

PARTNERS
Design Trust for Public Space

PROJECT TIMELINE
2013–2014

PROJECT BUDGET
\$10,000–\$15,000

STATUS
<http://www.designtrust.org/programs/2013-photo-urb/>

Salsa dancing at La Placita de la Marqueta underneath the Metro-North rail line in East Harlem (Krisanne Johnson)



Broadway and Flushing Avenue under the elevated JNY subway line in Brooklyn (Krisanne Johnson)



A woman hangs laundry on the roof of her apartment building directly next to the Manhattan Bridge on Monroe Street near Market Street in Chinatown (Krisanne Johnson)



Krisanne Johnson, 2013 Photo Urbanism Fellow paired with Design Trust for Public Space’s *Under the Elevated* project, documented life along elevated infrastructure in New York City to “tell the stories of the people who share these spaces and how the massive physical presence can foster and shape different kinds of social interaction.” Krisanne spent a year exploring and documenting how this massive transit system and the millions of square feet of public space below it influence life in the city. Through her lens, and her publication *Life Along the Elevated* <http://www.designtrust.org/publications/life-along-elevated/> we see how local residents have adopted and embraced these spaces for community use, such as salsa dancing under the Park Avenue viaduct in East Harlem, recognizing the incredible potential that exists to transform the public space under our city’s elevated highways, subway and rail lines and bridges.

Storytelling through photography and other media is an effective means of recording and communicating the qualitative aspects of a place and may be a useful way of documenting community perspectives or illuminating the value of pre-existing informal uses in el-space. This approach is well-suited to sites in neighborhoods experiencing significant demographic changes.

- CONSIDERATIONS**
- Work with photographers or photojournalists that have experience developing relationships with communities and develop a plan for bridging any language barriers
 - Respect their vision for the project and give them ‘artistic license’ to work through their own perspective
 - Make an agreement with the photographer that clarifies roles, responsibilities, and intellectual property concerns

Section II: Planning El-Space

Holistic Planning

El-space does not exist in isolation. It is a key part of urban ecosystems that work together as a whole, both affected by and contributing to health, social, economic, environmental, spatial conditions, and the quality of life of surrounding communities in a variety of ways from access to transit and jobs to exposure to noise and pollution. Planning el-space holistically or as part of neighborhood development uncovers the underlying, root causes of complex challenges, such as exclusionary policies or cultural practices. These comprehensive planning efforts identify assets and systems, ranging from social networks to government initiatives to support community visions for el-space. A multi-layered analysis of relevant open space, transportation, schools, storm water zones, uses, and community partners, among other concerns, illuminates el-space opportunities, such as multimodal nodes that increase the productivity of transit networks, while encouraging healthy activities and incorporating green infrastructure solutions.

Taking into account history, context, multiplicity of uses and operations, three-dimensionality and jurisdictional complexity of el-space with every planning decision is critical to reclaim, design, fund, and operate sites in an equitable and effective way. Whether applied to one single site, a corridor, or citywide, as seen in the following case studies, a holistic approach to planning el-space will optimize conditions and uses to maximize the benefits of improvements for city dwellers and for the city as a whole.

Systemic Approach EI-Space Initiative

Citywide, New York,
NY, U.S.A.

PARTNERS
NYC Department of Transportation, Design
Trust for Public Space

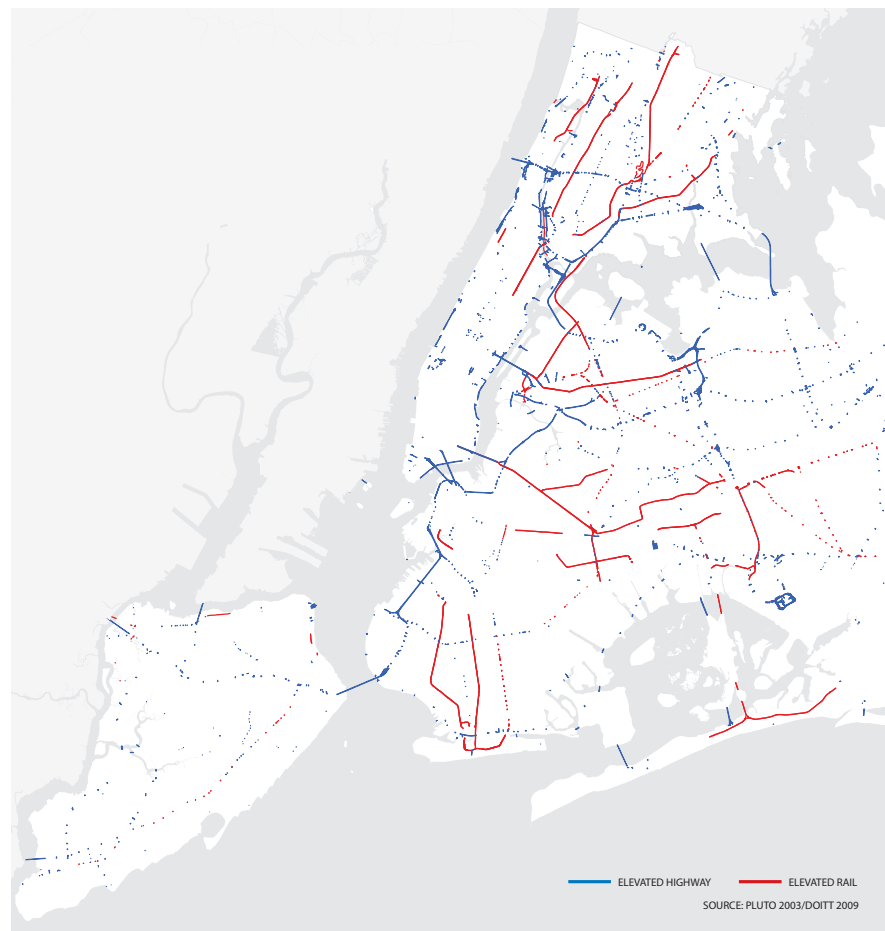
PROJECT TIMELINE
2015–present

PROJECT BUDGET
\$150,000–\$175,000

STATUS

🔗 <https://www1.nyc.gov/html/dot/html/pedestrians/el-space.shtml>

Elevated transportation infrastructure across New York City has created over 75 million square feet of el-space (NYC Department of Transportation & Design Trust for Public Space)



NYC Department of Transportation (NYC DOT) is launching the EI-Space initiative to strategically regenerate its vast network of space beneath and adjacent to elevated transportation infrastructure to improve access, mobility, safety, and connectivity. The effort, and evolving EI-Space Planning Framework, is a comprehensive citywide approach to planning, designing, and operating el-space; its goals are to equitably manage land uses and built assets, foster environmental health, and link neighborhoods to jobs and amenities.

Building on a geo-spatial mapping and citywide inventory of the el-space network, the EI-Space initiative moves beyond a case-by-case, site-specific approach to a systemic, replicable set of practices and

policies for capturing and creating value for the City and communities across the five boroughs. As part of the initiative, NYC DOT is developing this EI-Space Toolkit, as an evolving resource for City agencies, elected officials, practitioners, community groups and other civic stakeholders to effectively develop and execute el-space projects that address complex urban challenges for the benefit of all people.

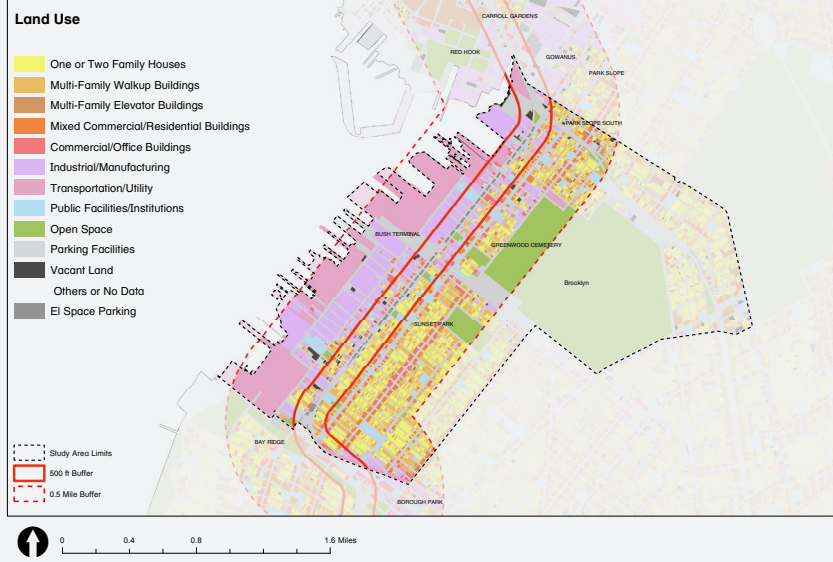
The Toolkit is a set of replicable elements and approaches to spatial planning and design that have been tested across NYC, including: green infrastructure, new lighting, streetscape and parking modifications, tech-friendly elements, furnishings, and concession structures.

CONSIDERATIONS

- Facilitate incremental change by understanding the entirety of urban systems el-space operates within
- Use a system-wide view to identify current inequities and illuminate the spatial, environmental, social, and racial injustices of past planning to reconnect communities and make space that is accessible and beneficial for all
- Analyze the entire el-space network to identify efficiencies and economies of scale while prioritizing the needs and resources of impacted communities
- Support the energies of communities by aligning and supporting existing initiatives in surrounding neighborhoods

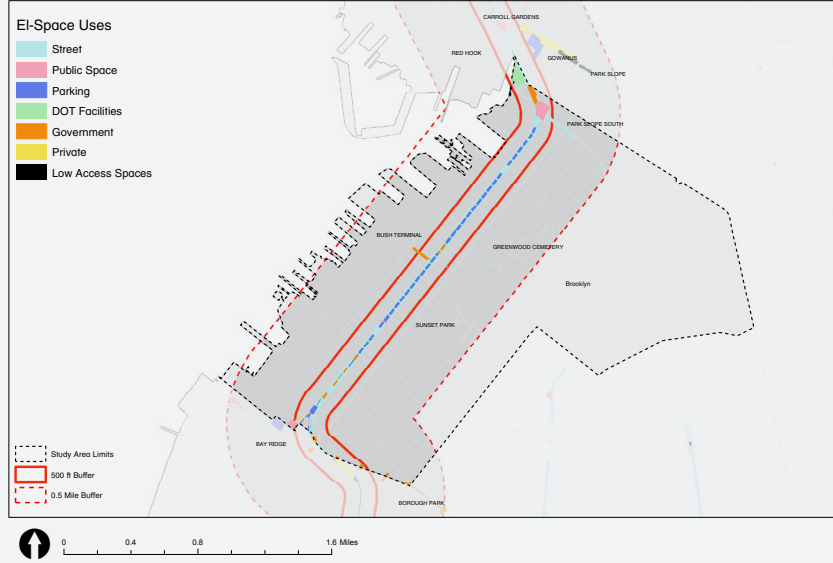
Ei-space data overlaid on to land use information to gain a better understanding of the area surrounding Brooklyn-Queens Expressway (NYC Department of Transportation)

Ei-Space: BQE Analysis



Map showing different uses for ei-spaces along Brooklyn-Queens Expressway (NYC Department of Transportation)

Ei-Space: BQE Analysis



The Sunset Park pilot location shown in relation to other capital and pedestrian safety improvement projects (NYC Department of Transportation)



Racial Justice Claiborne Corridor Cultural Innovation District

Claiborne Avenue,
New Orleans,
Louisiana, U.S.A.

PARTNERS
Ujamaa Economic Development Corporation,
U. S. Economic Development Administration,
The Greater New Orleans Funders Network
– Equitable Development Action Table, New
Orleans Business Alliance, Foundation for
Louisiana, City of New Orleans – Capital
Projects Administration, Department of Public
Works, and Office of Community & Economic
Development, New Orleans Redevelopment
Authority, LADOTD, FHWA

PROJECT TIMELINE
2013–2022

PROJECT BUDGET
\$26 million

STATUS
📍 <http://cidnola.com/>

In 2013, the City of New Orleans launched the Claiborne Cultural Innovation District (CID) project to restore vibrancy to 25 blocks under the elevated I-10 expressway along Claiborne Avenue from Canal St to Elysian Fields Avenue that was once a “black main street.” Claiborne Corridor was a thriving African-American cultural and commercial district with over 300 black-owned businesses and the longest stand of Live Oak trees in North America –serving as a community gathering space until the I-10 expressway was built in late 1960s and hit the community with a sharp economic decline. Even while experiencing the greatest socio-economic disparities in the city, Corridor residents have continued to celebrate their historic music, dance, culinary, and art traditions through programming, parades, and murals under the expressway over the last 50 years, creating what the world knows as New Orleans culture. The CID aims to formally reclaim the space for community commerce and beautification. Ujamaa EDC, founded to construct and operate the CID works closely with residents, those who were able to stay and those who now live in other parts of the city, to identify root causes of economic, social, and health disparities in the area and create opportunities to address those in a reconciliatory manner through culture-based economic development.

The CID will create a community market, exhibition space, green infrastructure and a resource center and will offer youth programming, financial training, and workforce development with pathways to business ownership.

- CONSIDERATIONS**
- **Focus on building trust and consider curating community participation to prioritize people that have been and continue to be disproportionately impacted by historic disinvestment and exclusionary policies and practices**
 - **Leverage the interest of institutional funders in equitable development to realize the community’s vision**
 - **Include anti-displacement measures as part of a holistic planning process that ensures improvements are captured for the benefit of those residents who bore the brunt of disinvestment**

Claiborne Avenue with four rows of oak trees in 1960s before the elevated I-10 expressway (Louisiana Division/ City Archives, New Orleans Public Library)



Claiborne Avenue after the construction of I-10 expressway (NOLA.com | The Times-Picayune archive)



Rendering of Youth City Hall at Claiborne Corridor (Claiborne Corridor Cultural Innovation District Masterplan)



Revenue Generation Infra-Space I: Underground at Ink Block

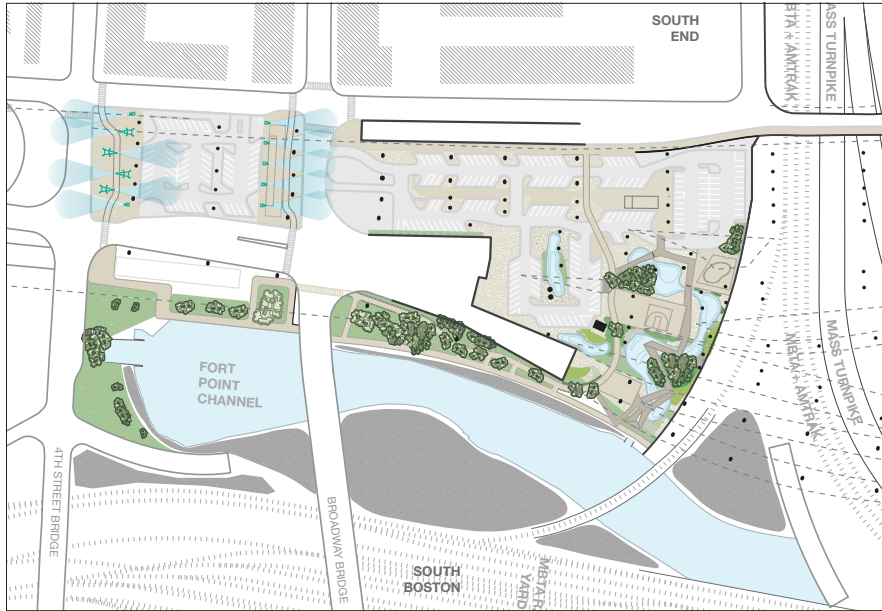
Boston,
Massachusetts,
U.S.A.

PARTNERS
Massachusetts Department of
Transportation, Landing Studio, VHB,
National development

PROJECT TIMELINE
planning and design 2013 to 2015,
construction 2015–2017

PROJECT BUDGET
\$10 million

STATUS
construction was completed in 2017, now in
year three of ten year lease agreement.
📍 <https://undergroundinkblock.com/about-2>



Site plan depicting parking space, stormwater gardens, and pathways at Underground at Ink Block (Landing Studio)



Parking space and murals on retaining walls under the I-93 South East Expressway (Landing Studio)



Walking paths with murals under the I-93 South East Expressway (Landing Studio)

Boston's Infra-Space I, also known as Underground At Ink Block 📍 <http://www.landing-studio.com/infra-space-i>, is a park and parking facility located under the I-93 South East Expressway between Southie and South End that pays for itself over 10 years by revenue generated from commercial parking. Designed by Landing Studio, this 8-acre public space includes walking and cycling paths, a basketball court, stepped seating, performance space, walls with murals, stormwater management bio-swales, and a series of scaffolding structures for lighting and art installations. The pedestrian boardwalks and bike paths at Infra-Space I reconnect neighborhoods previously divided by the highway, and with the 24/7 parking facility and bike storage offers multi-modal connectivity.

Infra-Space I was developed as the first demonstration of the Massachusetts Department of Transportation's state-wide Infra-Space I initiative to activate underutilized spaces under transportation infrastructure.

- CONSIDERATIONS**
- Evaluate the potential of parking facilities along an ei-space to provide multimodal transportation options that may reduce urban congestion
 - Assess the interest of companies that manage parking facilities in the area; execute a long-term lease
 - Explore other state and federal environmental grant opportunities to provide complementary funding

Value Capture The Atlanta BeltLine

Atlanta, Georgia,
U.S.A.

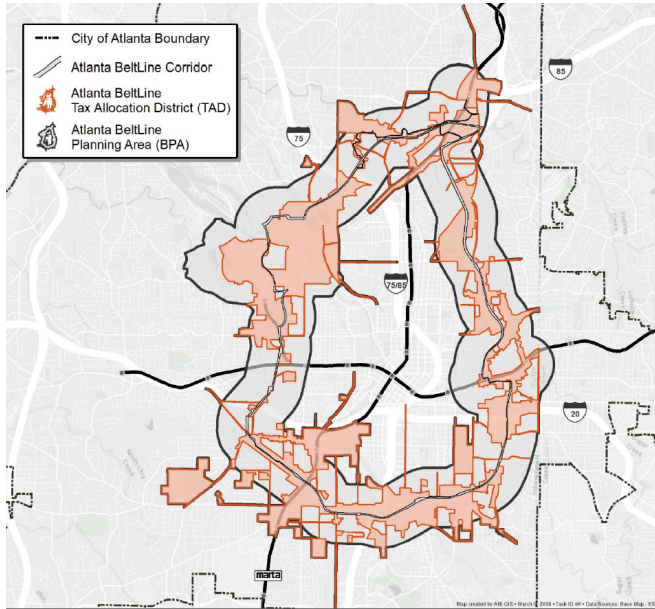
PARTNERS
Atlanta BeltLine Inc., Atlanta BeltLine
Partnership, City of Atlanta

PROJECT TIMELINE
2005–2030

PROJECT BUDGET
\$4.8 billion

STATUS:
📍 <https://beltline.org/progress/planning/tadac/>

The BeltLine Tax Allocation District captures projected increase in property tax revenue to fund the project (Atlanta BeltLine Inc.)



In 2005, the Atlanta BeltLine Partnership was founded and, in 2006, supported the City of Atlanta and Invest Atlanta in forming Atlanta BeltLine, Inc. They launched the Atlanta BeltLine project to transform 22 miles of inactive railways to a loop of parks, trails, and a new streetcar corridor around the city’s core. The BeltLine has been envisioned to one day connect 45 neighborhoods, improve transportation connectivity, and provide 5600 units of affordable housing along the corridor. Five trails and seven parks have been opened to date, totaling 11 miles and 315 acres. Over 1,600 units of affordable housing have been created or preserved within walking distance of the Atlanta BeltLine. Transit studies are ongoing.

A feasibility study, completed in 2004, found that a Tax Allocation District (TAD) could be a viable funding source to cover approximately 70 percent of estimated project costs, without requiring a tax increase. TADs are employed in areas of cities with potential for development that are currently characterized by underinvestment. The Atlanta City Council with Atlanta Public Schools and Fulton County formed the Atlanta BeltLine TAD to fund the project costs from planning and capital improvements, to management and programming. The Atlanta BeltLine TAD captures the projected increase in property tax revenue in the TAD area over 25 years. In addition to TAD, the BeltLine has secured various federal, state, local, public and private funding to date.

- CONSIDERATIONS**
- ➔ **Ensure transparency on the decision-making of TAD funds given that it is not part of the routine municipal budgetary process; form an Advisory Committee or other participatory structure**
 - ➔ **Develop accountability measures to ensure TAD funds, tax-payer dollars that would otherwise fund core services, continue to align with City priorities**
 - ➔ **Plan for economic impacts with equity in mind through tools, such as rent stabilization, anti-displacement measures, and property tax relief**

Lantern Parade at the Atlanta BeltLine (Kevin Brown)



Westside Trail under Ralph David Abernathy (The Sintoses)



Equitable Development I1th Street Bridge Park

District of Columbia,
U.S.A.

PARTNERS
Building Bridges Across the River, D.C. Office of Planning, Douglass Community Land Trust

PROJECT TIMELINE
2015–2023

PROJECT BUDGET
\$57 million Community Investment
\$60 million Infrastructure

STATUS
🔗 <https://bbardc.org/equity/>

The I1th Street Bridge Park (Bridge Park) is a public-private partnership project between the nonprofit Building Bridges Across the River (BBAR) and the D.C. government to transform the old I1th street bridge structure into the city's first elevated park. The Bridge Park spanning the Anacostia River will connect the booming area of Capitol Hill/Navy Yard to the Fairlawn/Anacostia neighborhoods that have long been excluded from the city's economic growth.

Equity has been the center of this project from the beginning given the rapid change and displacement occurring in the nation's capital. In 2015, BBAR—in collaboration with hundred of residents—developed an Equitable Development Plan (EDP) to ensure that the park development will provide opportunities for “all residents regardless of their income and demography”. The EDP outlines strategies for affordable housing, workforce development, and supporting existing and new local small businesses. As recommended by the EDP, the Douglass Community Land Trust was established to preserve, protect, and increase affordable housing options for the residents of Anacostia and Southeast, Washington, D.C. Revised in 2018, the EDP now includes strategies for cultural and social preservation to amplify the narratives and voices of the surrounding communities and in particular, to celebrate the history and culture of nearby African American communities. BBAR has secured over \$57 million to implement the plan's strategies.

The Bridge Park design is based on the community's programming ideas identified in a two-year community planning process. Designed by OMA+OLIN, the 1200-foot Bridge Park will include green space, gathering space, space for arts, environmental education, recreation, cultural amenities, and a cafe.

- CONSIDERATIONS**
- Establish structures and systems to ensure the implementation of equitable development over time, such as evaluation processes 🔗 <https://www.urban.org/sites/default/files/publication/99850/equitable-development-and-urban-park-space-1.pdf>, while allowing for changes as the project progresses
 - Create a network of partners—nonprofits, developers, government agencies—to sustain the work and hold each other accountable to achieving equity goals
 - Set realistic expectations, remembering that economic inequities often result from years of systemic racism 🔗 <https://bridgepark.org/equitytools/>

Rendering showing an aerial view of the I1th Street Bridge Park connecting Capitol Hill/Navy Yards to Fairlawn/Anacostia neighborhoods (OMA+OLIN)



Rendering of I1th Street Bridge Park connecting to Anacostia Riverwalk Trail (OMA+OLIN)



Rendering of a theatre for performances and community events at I1th Street Bridge Park (OMA+OLIN)



Section III: Designing & Realizing E!-Space

Amplifying Impact

El-space presents invaluable opportunities for improving our shared urban space, our quality of life, and our mobility. Designing these sites is challenging: el-space sites are primarily within the public right-of-way under multiple jurisdictions, each with different needs and requirements; sites are typically constrained in at least one dimension; adjacent communities have a range of aspirations and ideas to activate these sites.

Sites beneath or adjacent to elevated highways, subway and rail lines, and bridges demand design strategies that capitalize on the physical and spatial attributes of infrastructure to serve as gateways, corridors, and hubs. They must also use the three-dimensionality of el-space to facilitate its multifunctionality, providing parking and pedestrian paths for mobility, plantings and green infrastructure for environmental health, and people-centered lighting for social and economic benefits. Thoughtful design can enhance the experience of what is often oppressive infrastructure, bringing joy to those most affected by its presence. The following case studies illustrate a variety of designs from light touch temporary pop-ups to experimental technical installations to modular design to site-specific solutions.

Pop-Up, Pilot, Permanent EI-Space Initiative

Citywide, New York,
NY, U.S.A.

PARTNERS
NYC Department of Transportation,
Design Trust for Public Space, Chinatown
Partnership, WHEDco, Industry City,
Rockaway Waterfront Alliance, Rockrose

PROJECT TIMELINE
2014–present

PROJECT BUDGET
Pop-up installation approximately \$20,000
Pilot installation \$85,000–\$350,000

STATUS:
<http://www.designtrust.org/projects/under-elevated-phase-ii/>



People using the space and passersby reading information on the installation under the Manhattan Bridge in Chinatown (Samuel Lohoz)

Pop-up to Pilot to Permanent, from left to right: The “Boogie Down Booth” pop-up installation; The CityEI pilot prototype; Rendering of capital ei-space improvements, including CityEI installation, at Jerome Ave and Burnside Ave (from left to right: Bill Michael Fredericks, Clocchini Design, NYC Department of Transportation)



The "Boogie Down Boogie" installation in the Bronx that included seating, solar-powered lighting, and directional speakers (Bill Michael Fredericks)



NYC Department of Transportation (NYC DOT) and Design Trust for Public Space developed a model, from Pop-Up to Pilot to Permanent, for testing ei-space design, programming, and operational strategies, and progressively scaling up the EI-Space initiative. Starting in 2013, the partners built community interest in the initiative and facilitated new intra-agency working relationships by planning and implementing two pop-up installations, in Chinatown and in the Bronx. In 2015, NYC DOT and Design Trust launched three pilot projects, Sunset Park, Rockaway and Long Island City to test different spatial, technical, and partnership strategies replicable for ei-spaces across the city. The Sunset Park pilot laid the groundwork for a NYC DOT capital project at the site that will extend the curb, improve pedestrian visibility, and expand the center median walkway.

The sequential Pop-Up to Pilot to Permanent approach takes into account the slow pace of infrastructure work, the challenge of working within spaces controlled by many City and State authorities, and the established means of introducing new ideas to the operations of public agencies. The incremental method allows for a cycle of testing and calibration of design strategies to address site-specific conditions, community concerns, and regulatory issues. Each phase has the potential to influence and contribute to changes in relevant public policy. Pop-up and pilot strategies are appropriate for projects that would benefit from building constituency and buy-in along the way, and exploring new design and programming options.

CONSIDERATIONS

- Try the Pop-Up to Pilot to Permanent approach but be prepared for a lengthy, process even if you are working on a one-day pop-up project!
- Collaborate with community-based organizations as a way to deeply engage surrounding communities from the beginning and in various stages of a project
- Engage designers from a range of disciplines to provide visual/spatial/technical skills and knowledge that will amplify the impact of the project; clarify expectations—such as their role in community engagement and documentation

Mobility El-Space Initiative

Citywide, New York,
NY, U.S.A.

PARTNERS
NYC Department of Transportation, Design
Trust for Public Space, Industry City,
Rockaway Waterfront Alliance, Rockrose

PROJECT TIMELINE
2015–present

PROJECT BUDGET
Sunset Park \$345,000
Rockaway \$85,000–\$90,000
Long Island City \$150,000

STATUS
🔗 <http://designtrust.org/news/nyc-transforms-underpasses-lively-public-space>

Parking conditions under the Gowanus Expressway at 36th Street and 3rd Avenue before installation of the Sunset Park pilot (Zoë Piccolo)



NYC Department of Transportation (NYC DOT) is developing and testing design strategies to improve mobility and safety for pedestrians, bicyclists, and subway or bus riders through pilot projects in el-space locations. These sites, especially those near transit stops, can serve as multimodal transportation hubs, offering a sidewalk, bike path, parking space, bike storage, or an illuminated intersection under elevated infrastructure, connected to a broader network.

The Sunset Park el-space pilot in Brooklyn, consists of reconfigured parking areas under the Gowanus Expressway at 3rd Avenue and 36th Street. A center walkway in the middle of the North parking area, developed by Urban Design Fellow Quilian Riano

and the team, creates a convenient and safer passage for pedestrians distinct from vehicular areas.

A “dunescape” planter adjacent to the Beach 60th Street Station in Rockaway, Queens, designed by Green Infrastructure Fellows Tricia Martin and Winston Ely more clearly marks the entrance to the elevated subway and its integrated seating improves pedestrians’ experience. In Long Island City, Queens, gabion planters, a new sidewalk, and the first installation of NYC DOT’s El-Fence designed by Weintraub Diaz provide added value to the streetscape and stormwater management, while maintaining pedestrian flow.

- CONSIDERATIONS**
- **Organize el-space to integrate the needs of all relevant modes of transport, while prioritizing the concerns of pedestrians, such as safety and the shortest route**
 - **Evaluate the tradeoff of preserving or adding parking facilities along an el-space to provide multimodal transportation options that may reduce urban congestion**

Center walkway and modified parking space after installation of the Sunset Park pilot (NYC Department of Transportation)



Gabion planters, new sidewalk, and NYC DOT's E1-Fence at Dutch Kills Street and Jackson Avenue in Long Island City, Queens (NYC Department of Transportation)



Lighting El-Space Initiative

Citywide, New York,
NY, U.S.A.

PARTNERS
NYC Department of Transportation, Design
Trust for Public Space, Industry City

PROJECT TIMELINE
2015–present

PROJECT BUDGET
Sunset Park (lighting & painting) \$100,000

STATUS
📍 <http://designtrust.org/news/nyc-transforms-underpasses-lively-public-space/>

Lighting improvements at the intersection of 36th
Street and 3rd Avenue in Sunset Park, Brooklyn (NYC
Department of Transportation)



The NYC Department of Transportation (NYC DOT) is pursuing el-space lighting strategies and testing prototypes citywide to enhance vertical illumination and volumetric uniformity, as well as improve visibility, perception, and aesthetics in spaces under the elevated that have been primarily designed for vehicular traffic.

The Sunset Park el-space pilot, launched by NYC DOT and Design Trust for Public Space in 2018 in collaboration with Industry City sets a precedent for lighting el-space for people. Lighting Fellow Leni Schwendinger and Arup, with the design team, has modified existing lighting—a mixture of standard DOT street lighting, including underdeck lighting mounted to the highway structure—and introduced new

fixtures to the spatial volume and structural surfaces. First tested at a pop-up event in 2016, the lighting design elements include pendant lights under the highway structure, linear surface lights on the columns and along the edge of the elevated highway, and integrated horticultural lighting for the green infrastructure planters. As part of the pilot, the vertical structural columns are now painted in a more reflective “Corn silk” color to enhance daylight and reflect nighttime illumination.

NYC DOT is addressing el-space lighting in multiple locations with other circumstances citywide. Based upon preliminary studies with Tillet Lighting Design Associates, the agency is working with Arup to develop several prototypes for testing at Livonia

Avenue and Rockaway Boulevard in Brownsville, Brooklyn. The lighting includes vertical fixtures with luminaires providing vertical and volumetric illumination.

- CONSIDERATIONS**
- **Assess and employ perceptual and experiential qualities of el-space lighting, not just lighting levels**
 - **Prioritize the addition of vertical and surface illumination to effectively light spaces for pedestrians**
 - **Employ light-colored, reflective surfaces for better lighting levels day and night**

Lighting improvements at the intersection of 36th Street and 3rd Avenue in Sunset Park, Brooklyn (NYC Department of Transportation)



Rendering of proposed lighting features under the elevated at Livonia Avenue and Rockaway Boulevard in Brooklyn (Arup)



Green Infrastructure El-Space Initiative

Citywide, New York,
NY, U.S.A.

PARTNERS
NYC Department of Transportation, Design
Trust for Public Space, Industry City,
Rockaway Waterfront Alliance, Rockrose

PROJECT TIMELINE
2015–present

PROJECT BUDGET
Sunset Park \$200,000, Rockaway \$35,000,
Long Island City \$35,000-\$40,000

STATUS
📍 <http://designtrust.org/news/nyc-transforms-underpasses-lively-public-space/>



Above grade planters capturing stormwater through a cone downspout in Sunset Park, Brooklyn (NYC Department of Transportation)

The NYC Department of Transportation (NYC DOT) is exploring modular, replicable, above-ground green infrastructure systems to collect runoff from elevated highways, subways and bridge structures, contribute to the City’s stormwater capture goals, and prevent combined-sewer overflow into the city’s waterways. These above-ground planters absorb runoff and filter pollutants or hold and slowly release stormwater in locations where bioswales are not advisable, such as, near column footings.

The Sunset Park, Brooklyn pilot, designed by Green Infrastructure Fellows, Tricia Martin and Winston Ely, with the team, tests a green infrastructure system capable of handling runoff from a 1” storm. Three above-ground planters capture stormwater from the

elevated highway and provide vessels for planting while beautifying the space. New iconic cone downspouts are both educational and sculptural.

In Rockaway, Queens, a “dunescape” planter, designed by Fellows Martin and Ely, captures runoff from the adjacent elevated subway. The artificial dune contained by a steel perimeter, with native plants and seating, mimics natural sand dunes at nearby Rockaway Beach.

In Long Island City, Queens, two gabion planters, designed by NYC DOT and advised by Fellows Martin and Ely, experiment with ways to integrate smaller prefabricated units into streetscape. The galvanized steel

baskets filled with stones filter and slow down stormwater runoff from the highway above.

- CONSIDERATIONS**
- **Design the system to celebrate its context, e.g., distinctive elements of the infrastructure, ecological diversity of the neighborhood**
 - **Assess planter type and size to optimize both stormwater capture and spatial flexibility**
 - **Select durable materials that can withstand el-space site conditions, such as weathering, vehicular collisions or road salt**
 - **Analyze the conditions of the site and maintenance capacity of partners to determine plant selection, or whether plants are even viable**

A "dunescape" planter capturing stormwater from the adjacent elevated subway line in Rockaway, Queens (Rockaway Waterfront Alliance)



Gabion planters at Dutch Kills Street in Long Island City filtering and slowing down stormwater runoff from the highway above (NYC Department of Transportation)



El-Kit (CityEl, El-Box, El-Fence) El-Space Initiative

Citywide, New York, NY, U.S.A.

PARTNERS
NYC Department of Transportation

PROJECT TIMELINE
El-Box 2016–2018, CityEl 2017–2019,
El-Fence 2017–2019

PROJECT BUDGET
El-Box \$20,000, CityEl \$50,000, El-Fence
\$150,000

STATUS:
🔗 <https://www1.nyc.gov/html/dot/html/pedestrians/el-space.shtml>



CityEl prototype with integrated seating and lighting (NYC Department of Transportation)

NYC Department of Transportation (NYC DOT) is prototyping el-space furnishings, including: CityEl, El-Box, and El-Fence, for deployment in el-space citywide to provide a range of benefits from lighting to seating.

CityEl is a furnishing module to enhance bus stops under elevated infrastructure. Designed by Ignacio Ciocchini, the CityEl connects around existing structural columns and provides a combination of seating, lighting and programming amenities. The CityEl is intended to minimize streetscape clutter, increase pedestrian and transit patron comfort and activate el-space. The design builds on the NYC DOT and Design Trust's pop-up installation, the Boogie Down Booth—temporary street furniture wrapped around a column of an elevated train to provide

seating, lighting, and noise-abating music—in the Bronx in collaboration with the Womens' Housing and Economic Development Corporation (WHEDco) and designed by Participatory Design Fellow Chat Travieso with Neil Donnelly.

El-Box is a prototypical 20-foot long shipping container, designed by Ore Design, with graphics designed by Neil Donnelly. The modular interior with access to utilities creates a flexible space for storing, warming and selling pre-prepared food.

El-Fence is a prototypical modular fence creatively marking NYC DOT-managed el-space lots, often used as staging locations. Designed by Weintraub Diaz Landscape Architects, El-Fence offers a

standard set of colorful patterns, as well as an opportunity to install lighting and temporary or permanent art pieces in modular sections. It can be easily adapted.

- CONSIDERATIONS**
- **Design el-space furnishings that are flexible enough to respond to needs of different communities**
 - **Incorporate El-Kit furnishings, or similar furnishings in other cities, into spatial planning for el-space sites; the deployment of standard components is not a substitute for site-specific spatial design**
 - **Explore deploying el-space furnishings both strategically, through government plans, and opportunistically, through open community applications or calls**

EI-Box at Brooklyn Bridge Arches (ORE Design)



EI-Fence with integrated lighting at Dutch Kills Street and Jackson Avenue in Long Island City, Queens (NYC Department of Transportation)



Designing New EI-Space Sixth Street Viaduct & PARC

Los Angeles,
California, U.S.A.

PARTNERS:
Los Angeles Bureau of Engineering, Council
District 14

PROJECT TIMELINE:
2016–2022

PROJECT BUDGET
\$29.3 million

STATUS
📍 <http://www.sixthstreetviaduct.org/>

Rendering of the Arts Plaza under the Viaduct on the west side of the Los Angeles River (Bureau of Engineering, City of Los Angeles and Hargreaves Associates)



Rendering of a soccer field in the East Park under the Viaduct (Bureau of Engineering, City of Los Angeles and Hargreaves Associates)



Rendering of East Park under the viaduct in Boyle Heights neighborhood (Bureau of Engineering, City of Los Angeles and Hargreaves Associates)



The Sixth Street Viaduct Park, Arts and River Connectivity (PARC) project is being led by the of Los Angeles Bureau of Engineering. It will transform approximately 12 acres of land under and adjacent to the new Sixth Street Viaduct that is under construction. The Viaduct & PARC will connect the Boyle Heights and Arts District neighborhoods across the Los Angeles River, and will create a confluence of culture and arts, a connection of diverse neighborhoods, and support a multi-modal active transportation network. The PARC provides access to the River and includes space for recreation, performance, an arts plaza, a cafe, restrooms, a dog park, and recreation staff office space. Utilizing the space under the Viaduct as public open space was fundamental to the original vision.

Designed by Tetra Tech, Hargreaves Associates, and Michael Maltzan Architecture, the PARC is integrated with the infrastructure design to provide a high level of connectivity and efficiency within the design process. It will create an urban destination that builds public open space as part of a multi-modal transportation project. The Viaduct is designed with generous spans that create large areas of open space under the structure. The PARC connects to the bridge and its bike lanes through 5 stairways and 2 ramps, increasing pedestrian and bicycle access to the open space and to the River.

- CONSIDERATIONS**
- **Take advantage of viaduct structures to provide shade and shelter for social, cultural, and recreational uses within adjacent ground level space**
 - **Plan for the operations of the space, including potential partners in the design process and identifying funds to support its maintenance and programming**

Community-Based Design Splash Pad Park

Oakland, California,
U.S.A.

PARTNERS
Splash Pad Neighborhood Forum, Oakland
Department of Public Works

PROJECT TIMELINE
2000 to 2003

PROJECT BUDGET
\$1.2 million

STATUS
🔗 <https://splashpad.org/news/>

Aerial view of Splash Pad Park beneath and adjacent to elevated Highway 580 (Marion Brenner)



Farmer's Market at Splash Pad Park (Katie Standke)



Aerial view of Splash Pad Park at dusk (Marion Brenner)



Splash Pad Park, which opened in 2003 in Oakland, California, beneath and adjacent to elevated Highway 580, serves as home to the largest weekly farmer's market in Oakland. The space, converted from an underused turn lane, includes a wood paved gathering space that is illuminated from below, a water wall that masks noise, and walkways that link users to a nearby commercial corridor. Designed by the landscape architect Walter Hood, the park has evolved from a robust community-driven process.

In the 1990's, a debate emerged in the community over whether a concrete lined pond on the site, built with the highway, should remain in some form or whether the neglected site should be leased for commercial purposes. The Splash Pad Neighborhood Forum (SPNF) formed to preserve the site's use as a park. After SPNF delivered a report to the City, in 2000, it hired Walter Hood of Hood Design Studio to design the park for people in the community to occupy as a flexible space that supports a variety of uses. The firm conducted multiple community meetings utilizing large scale site models to develop various scenarios for the park space. The community also formed an independent traffic study task force that helped advocate for street closure and lane reduction adjacent to the park. As ideas coalesced for the space, temporary farmer markets were held along the vacated street monthly, creating a culture for the space before the park was complete.

- CONSIDERATIONS**
- Organize and advocate for community priorities
 - Prioritize flexibility and durability in spatial and material choices, while connecting design to the culture of the place and its people

Modular Design The Bentway

Toronto, Ontario,
Canada

PARTNERS
City of Toronto, Waterfront Toronto, Judy and Wilmot Matthews, Ken Greenberg Consultants, The Bentway Conservancy, Fort York National Historic Site, and Artscape

PROJECT TIMELINE
2015 to 2018 (Phase I)

PROJECT BUDGET
\$25 million (Phase I)

STATUS
🔗 <http://www.thebentway.ca/about/>

Range of activities and installations at the Bentway
(The Bentway Conservancy)



People ice skating under the Gardiner Expressway
(Sean Galbraith)



Community gathering at the airy space under the
expressway (Nic Lehoux)



The Bentway is a 10-acre evolving public space under Toronto's Gardiner Expressway across the Fort York National Historic Site that connects seven neighborhoods. The design, led by PUBLIC WORK, an urban design and landscape architecture studio, utilizes the existing elevated structure and amplifies its aesthetics. A series of modular spaces in between structural columns, called bents that can function together or each on their own, allow for a range of programming. Concrete bents provide structural support for clamps, cables, power and lighting to enable a range of art installations, performances, and gatherings, and painted a metallic color, they echo striking patterns of light and shade in the 50-foot high space under the expressway.

Opened in 2018, the initial phase of the project includes a 0.5 mile multi-use trail with a winter skating trail, a grand staircase as seating area for an urban theatre, and a series of flexible spaces for theater and musical performances, festivals, exhibitions, and other community activities and events.

- CONSIDERATIONS**
- Amplify joy by integrating the spatial and physical conditions of e-space into design in a beautiful or playful way
 - Take advantage of sheltered space under elevated infrastructure to create winter-friendly public space
 - Explore how to maintain a balance between fixed and adaptable design strategies

Linear Design The Underline

Miami, Florida,
U.S.A.

PARTNERS
Friends of the Underline

PROJECT TIMELINE
2018 to 2020 (Phase I construction)

PROJECT BUDGET
\$16.5 million (Phase I)

STATUS
🔗 theunderline.org

The Underline is multi-phase project that will connect communities and create over 120 acres of open space (Friends of The Underline)



The Underline, currently in Phase I construction, reimagines the 10-mile space beneath Miami's Metrorail from Brickell to Dadeland into a 120-acre park, urban trail and public art destination. The corridor, with widths from 70 to 130 feet, provides ample space for new recreational and alternative transportation uses and is well connected to transit and adjacent communities. The linear design of The Underline, by James Corner Field Operations, considers its relationship to neighborhoods, local institutions, parks, canals, and the Miami River.

When complete, The Underline will create a multimodal corridor that connects a 10-mile portion of the above-ground heavy rail with pedestrian and bike trails that encourage residents to walk, bike, and take mass transit. The public space will also support the natural ecology of the area, establishing a green corridor populated with native plants.

Friends of The Underline, the non-profit developing the park, is also creating guidelines for transit and trail-oriented development along The Underline and making commitments to improve the safety conditions and connectivity of intersections connected trail segments.

- CONSIDERATIONS**
- Include existing transportation infrastructure and anticipate development plans in the scope and program of your linear el-space design
 - Contribute to the natural ecology adjacent neighborhoods by dedicating space to native plants along the length of linear el-space sites
 - Activate underused spaces below el-spaces with community cultural and health and wellness programming

Existing conditions of the Brickell Backyard Oolite Room (©2019, James Corner Field Operations, courtesy, Friends of The Underline)



Rendering of proposed design for the Brickell Oolite Room with a gathering space and four butterfly gardens showcasing the existing rock outcrop (©2019, James Corner Field Operations, courtesy, Friends of The Underline)



Section IV: Operating E1-Space

Beyond Maintenance

El-space projects call for an approach to the operation of public space that goes beyond maintenance and security concerns. Competing demands for these often underused spaces, combined with concentrated environmental, health, social, and economic issues along elevated transportation infrastructure, require community-minded, innovative, and financially sustainable models. El-space offers an opportunity to prototype new ways of managing public space, ranging from education-centered stewardship to culturally responsive programming.

Typically el-space is either managed by a state or local agency, or through a public-private partnership that must address what partners consider a fair distribution of responsibilities and also the experience of its users. The following case studies offer value-added approaches that deepen or expand the impact of mission-driven community partners, provide funding for ongoing operations, or foster community ownership of the space.

Environmental Stewardship Rockaway El-Space Pilot

Rockaway, Queens,
NY, U.S.A.

PARTNERS
NYC Department of Transportation, Design Trust for Public Space, Rockaway Waterfront Alliance

PROJECT TIMELINE
2016–2020

PROJECT BUDGET
\$85,000–\$90,000

STATUS
Renewing stewardship agreement
📍 www.rwalliance.org



Planting day with RWA's Shore Corps program (Design Trust for Public Space)



Youth in RWA's Shore Corps program planting the dune (Rockaway Waterfront Alliance)

In 2018, NYC Department of Transportation (NYC DOT) and Design Trust for Public Space installed a “dunescape” planter adjacent to the Beach 60th Street Station in collaboration with the Rockaway Waterfront Alliance (RWA). The green infrastructure system includes a stormwater planter with native plantings, a modified downspout from the adjacent station and integrated seating. NYC DOT partnered with RWA based upon their prior advocacy for changes to the el-space. To maximize the impact of the installation in the community, NYC DOT and Design Trust worked with RWA to develop a partnership model for environmental stewardship, aligned to their mission, versus basic maintenance. NYC DOT provided funds to RWA to steward the planter and RWA leveraged this with resources from their existing programs.

The planter has served as a demonstration project for youth in RWA's Shore Corps program, who planted the dune, and youth in their Living Classroom program, as well as the larger community through Stewardship Saturdays program. Participants observe and monitor the planter to learn about green infrastructure and resilient design, including sewer systems and outflow impacts on Jamaica Bay.

- CONSIDERATIONS**
- **Connect operations and maintenance of el-space to existing programs of community organizations for a win-win**
 - **Provide financial support to offset the hard and soft costs of partnering community organizations**
 - **Engage youth to connect the next generation to the future of public space**

Incubator El-Box

South Street
Seaport, Manhattan,
NY, U.S.A.

PARTNERS
NYC Department of Transportation, Old
Seaport Alliance

PROJECT TIMELINE
2017–2019

PROJECT BUDGET
\$35,000

STATUS

📍 <https://www1.nyc.gov/html/dot/html/pedestrians/el-space.shtml>

El-Box located under the south side of the Brooklyn Bridge in Lower Manhattan (NYC Department of Transportation)



Local business offering drinks to passersby at El-Box (NYC Department of Transportation)



NYC DOT's El-Box was first located directly under the south side of the Brooklyn Bridge in Lower Manhattan. NYC DOT partnered with the Old Seaport Alliance (OSA) to operate the 20-by-8-foot El-Box as a fee-free concession where local entrepreneurs associated with restaurants in the area experimented with selling their food and drinks to workers and passersby. The overarching partnership with OSA allowed NYC DOT to support the development of small businesses through a rotating 29-day concession for each vendor, with minimal legal and insurance requirements.

The Old Seaport Alliance helped select and manage the vendors and assess the effort's success. They also maintained planters, tables, and chairs.

- CONSIDERATIONS**
- **Develop a partnership with a nonprofit capable of providing insurance and organizing vendors and entrepreneurs to support emerging small business**
 - **Ensure your partner has relevant experience, given that regulations on vending, business, and public space activation vary widely from city to city**

Sponsorship CityEI

The Bronx (proposed); NY, U.S.A.

PARTNERS
NYC Department of Transportation

PROJECT TIMELINE
2017–present

PROJECT BUDGET
\$90,000

STATUS
🔗 <https://www1.nyc.gov/html/dot/html/pedestrians/el-space.shtml>

Left: First CityEI built prototype (NYC Department of Transportation)



Right: Rendering of CityEI with integrated seating, lighting, and central panels that can be used as space for sponsorship branding, wayfinding, or public art (Ciocchini Design)



As part of NYC DOT’s CityEI, a set of modular furnishing elements designed to connect around columns typically found underneath elevated infrastructure, the agency is exploring a sponsorship model. The central panel of each module can be used as space for sponsorship branding, wayfinding, or public art.

NYC DOT’s goals for the sponsorship model are to provide the agency with maintenance funds for making el-space improvements across the city, including under-resourced areas, where improvements to el-space may be more challenging to realize.

The CityEI can be easily incorporated into capital projects within el-space citywide, as opportunities arise.

- CONSIDERATIONS**
- Incorporate a mechanism to allow sponsorship funds in “hot” markets to support improvements in under resourced neighborhoods
 - Balance community interests with commercial interests through free, subsidized or discounted placements of community based art or public service messaging

CityEI pilot installation at St. George, Staten Island (NYC Department of Transportation)



Concessions Bajo Puentes

Mexico City, Mexico

PARTNERS
Department of Housing and Urban
Development (SEDUVI)

PROJECT TIMELINE
2009-2018

PROJECT BUDGET
-

STATUS:

🔗 <https://aep.cdmx.gob.mx/programas/programa/proyecto-de-recuperacion-de-bajo-puentes>

The Bajo Puentes program created new public spaces under the highways in Mexico City through lease agreements or concessions with franchises (Autoridad del Espacio Público de la Ciudad de México)

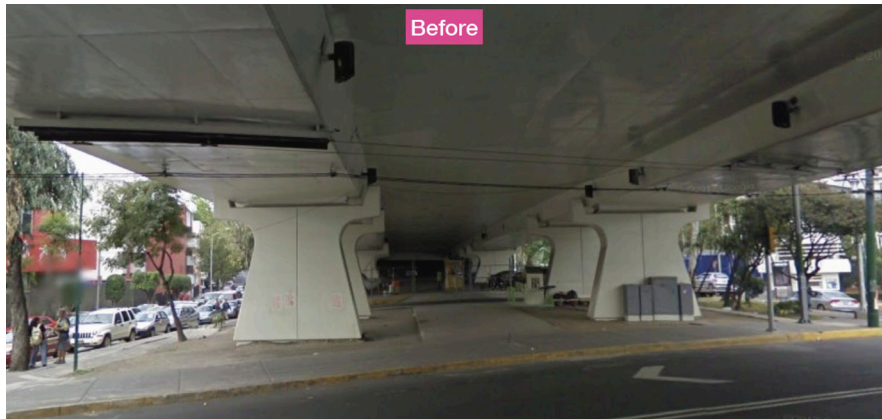


Before



After

New public space and retail spaces under an elevated highway in Mexico City (Autoridad del Espacio Público de la Ciudad de México)



Before



After

The Bajo Puentes or “Under Bridges” program is creating new spaces under the highways in Mexico City. The focus of the effort is to create new public spaces, such as playgrounds and exercise areas, planted areas, and plaza-like picnic areas with tables. The program requires that 50 percent of Bajo Puentes sites be utilized for public space uses. 30 percent of sites may be used for commercial uses and 20 percent for parking, both to support the program.

To date, four spaces, with a total area of 24,000 square meters have been improved as part of the program to accommodate new uses. Of these, one skate park has been built and three retail spaces have opened. The program enters into lease agreements or concessions with franchises, of which leasing fees contribute to the program.

- CONSIDERATIONS**
- ➔ Execute concession agreements for the operation of commercial uses in the space to support the creation of new public space
 - ➔ Identify where retail or other commercial uses would add value and where public space is needed
 - ➔ Incorporate a mechanism to balance commercial and public interests

Community Programming The 606

Chicago, IL, U.S.A.

PARTNERS
Trust for Public Land, Chicago Park District, City of Chicago, Friends of the Bloomingdale Trail

PROJECT TIMELINE
2003–2015

PROJECT BUDGET
\$95 million (\$50 million, Congestion Mitigation and Air Quality (CMAQ); \$40 million, Private; \$5 million, County, City of Chicago, & Chicago Park District)

STATUS
🔗 <https://www.the606.org/visit/events/>

Segundo Ruiz Belvis Cultural Center festival on Humboldt Boulevard (The Trust for Public Land/Adam Alexander)



People with costumes walking through an underpass (The Trust for Public Land/Adam Alexander)



Opened in 2015, The 606 has transformed nearly three miles of unused rail line, including numerous underpasses into public space for the people of Chicago to enjoy. The 606 connected four neighborhoods previously separated by the infrastructure.

The Trust for Public Land (TPL) serves as The 606's lead private partner, managing community engagement and outreach in partnership with the Chicago Park District, including programming, as well as fundraising, long-term park planning, and communications. TPL has intentionally developed programs for The 606 that connect with the cultures and identities of adjacent communities, developing festivals, art, programs, and partnerships with local community organizations: 🔗 <https://youtu.be/82szWVDsoEw>. Their goal with the engagement and programming, and its frequency, is to foster community ownership of the space and ensure that The 606 is a welcoming space for all.

The Trust for Public Land is a national organization that creates parks and protects land for people, ensuring healthy, livable communities for generations to come.

- CONSIDERATIONS**
- Develop programming with, not just for, adjacent communities
 - Structure engagement and programming partnerships to connect to the strengths of community organizations, without burdening them
 - Organize a range of programs that target particular users or potential users and that occur at varying times of day and night

Illumination Hour with Opera-Matic and hand-made "fireflies" on Humboldt Boulevard (The Trust for Public Land/Adam Alexander)



Credits and Acknowledgments

BACKGROUND: EL-SPACE INITIATIVE

In 2013, Design Trust for Public Space initiated *Under the Elevated: Reclaiming Space, Connecting Communities* in partnership with NYC Department of Transportation (NYC DOT). The project expanded on the Design Trust's pivotal *Reclaiming the High Line* feasibility study with Friends of the High Line. The study convinced City officials that the best use of the decommissioned elevated rail line was as a park with transfer of development rights. Design Trust foresaw the immense potential for not only the rail deck, but also spaces under elevated rail or highways and the street level.

Design Trust and NYC DOT released the *Under the Elevated* publication, with design, programming, and policy recommendations to transform the underutilized space beneath New York City's elevated highways, subway and rail lines, and bridges,

into neighborhood assets. Based on the pop-up/pilot/permanent approach, the report proposed that NYC DOT test spatial, technical, and partnership strategies through pop-up installations, pilot projects and establish an *El-Space* Program.

In 2015, Design Trust and NYC DOT began a second phase, *El-Space* to implement pilot projects with community collaborators, and to develop the agency-led *El-Space* initiative. The work has prompted intra- and inter-agency collaborations and facilitated partnerships with nonprofit organizations and developers. The el-space pilots in Sunset Park, Brooklyn with Industry City; Rockaway, Queens with the Rockaway Waterfront Alliance; and Long Island City, Queens with Rockrose Inc., tested strategies, methods and designs for safer crossings and walkways, capturing

storm water, cleaning the air and engaging local partners. Pedestrian and parking improvements, green infrastructure systems, and new lighting were tested in el-space under elevated highways, subways and bridges. Concurrently, NYC DOT initiated a pioneering geo-spatial inventory of the city's el-space network, pursued additional lighting demonstrations, developed el-space components and furnishings, and established models for concessions, maintenance and legal agreements.

As a result of this work, NYC DOT will continue to develop the El-Space initiative—including the *El-Space Toolkit*—a comprehensive citywide approach to planning, designing, and regenerating the space beneath and adjacent to elevated transportation infrastructure to effectively execute el-space projects for the benefit of all people.

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