INTERNATIONAL INSPIRATION

IDEAS FOR NATURE NEAR TRANSIT AROUND THE WORLD

nature NEAR TRANSIT

A reference booklet stewarded by

ELEVATED Chicago
CONNECTING PEOPLE, BUILDING EQUITY

CNT

We Build Agency

nature NEAR TRANSIT

Nature Near Transit (NNT) is a collection of projects managed by Elevated Chicago, Center for Neighborhood Technology (CNT) and We Build Agency, funded by the Walder Foundation. These projects demonstrate the benefits that nature-based solutions (NBS) and locally created art can have near transit. Nature-based solutions use or mimic natural processes, often in tandem with other systems, and create additional environmental, social and economic benefits, from reducing urban flooding to improving health and well-being for people and all life within urban ecosystems. Located near select Chicago transit hubs, NNT installations are small-scale green infrastructure projects that demonstrate and showcase the benefits of nature-based solutions and local art for placekeeping, flood reduction, beautification and many other societal and environmental aims.

©2024 Elevated Chicago



contents

Introduction 2

CASE STUDY 1 Hoopla Garden 3

CASE STUDY 2 Parque Lineal Ferrocarril de Cuernavaca 11

CASE STUDY 3 Tibaldi Train Stop 19

Introduction

Nature-Based Solutions Near Transit

The following three case studies document the impact of locating tailored natural infrastructure within a half-mile of public transportation. These examples demonstrate the potential of designing green solutions that are collectively contextualized and informed by the landscape, project goals, and the priorities and considerations of the community. Green projects with these components are an evolving approach to sustainable and equitable community development, and they are especially crucial as climate change impacts increase in intensity and frequency.

IN OUR REVIEW OF THE CASE STUDY PROJECTS, WE IDENTIFIED THE FOLLOWING OUTCOMES AND IMPACTS:

OUTCOMES

- Accessibility
- Climate activism
- Collaboration
- Community-building
- Community identity
- Livability
- Revitalization
- Pedestrian mobility
- Traffic control

ART & CULTURE IMPACTS

- Community gathering spaces
- Hands-on ecological interaction / learning
- History preservation
- Play / sports

ENVIRONMENTAL IMPACTS

- Air quality
- Biodiversity
- Forestry / gardens
- Preservation
- Reduction in urban heat island effect
- Solar power
- Stormwater management
- Water conservation
- Waste management / composting

HEALTH IMPACTS

- Belonging
- Mental well-being
- Physical well-being
- Reduced heat stress

Implementing nature-based solutions can improve the quality of life within cities, enhance public transportation and enrich community livability. The pursuit of this work must center equity and intentionally bring government, neighborhood groups and other stakeholders together in the planning process.

nature
NEAR TRANSIT

Hoopla Garden

CASE STUDY 1

Hoopla Garden, London, Borough of Lambeth





photo credit: The Edible Bus Stop®

"By taking responsibility for our forgotten public spaces, **we can collectively improve** upon the experience of inner city living.

— Will Sandy, former Creative Director, The Edible Bus Stop

CASE STUDY 1: Hoopla Garden, London, Borough of Lambeth

More than 300 languages are spoken in London, making it one of the most multicultural and linguistically diverse cities in the world.



Map of London, showing Lambeth as the outlined section with the West Norwood neighborhood identified with a star.

INTRODUCTION

Hoopla Garden

The Hoopla Garden (also called the Native Edibles and Wildflower Community Garden), is made up of a series of circular raised garden beds built up around concrete bollards. Opened in 2014 in the West Norwood neighborhood on London's south side, Hoopla Garden is the second project completed by The Edible Bus Stop® design studio, whose stated mission is to promote "social cohesion, a sense of belonging, well-being… biodiversity, and the awareness of it through… meaningful yet playful design." By incorporating the bollards, this green installation retained the existing infrastructure while still giving the space a fresh look.

Infrastructure & Features

The new design for the space increased the planting area while incorporating many of the existing bollards. The Edible Bus Stop describes the garden as being inspired by the game of quoits (or hoopla); the bollards are the pegs, and the round concrete rings around the pegs are the "hoops," which provide a series of varying sized planters and seating areas.

Hoopla Garden was planted along strips of permeable pavement, which yields more stormwater management. The plantings are predominantly native or wild edible and ornamental plants — fruit bushes, nut and fruit trees, and wildflowers — that create an urban orchard and haven for pollinators. The Garden serves as a safety barrier between pedestrians and the heavy car traffic on West Norwood Road, and a meeting place for local school kids.

Proximity to Public Transit

Hoopla Garden sits on publicly owned land. It is located next to Stop H on the high-frequency 322 bus route. Natural infrastructure projects implemented near public transit benefit from increased project visibility.

Stakeholders

- Lambeth Housing
- Royal Botanic Gardens, Kew, Grow Wild
- Station to Station
- South London Botanical Institute residents

The Hoopla Garden project aims to showcase how food grows, and inspire visitors to and neighbors of the site themselves to become growers.

Hoopla Garden had a number of funders, including the local government, the Outer London Fund, the Royal Botanic Gardens, and Incredible Edible Lambeth's Love Your Roots.



photo credits: The Edible Bus Stop®

nature NEAR TRANSIT

CASE STUDY 1: Hoopla Garden, London

Summary–In Brief

Hoopla Garden was designed to address this lack of natural space while organizing South Londoners to uplift their neighborhood. The garden is situated along diagonal strips of permeable pavement and is comprised of both ornamental and edible plants. All community members can access the edible plants. The project aims to showcase how food grows, and inspire visitors and neighbors of the site to become growers.

Location London

Neighborhood West Norwood, Borough of Lambeth

Attributes Single site, public space

Scale 15 beds, up to 23 feet wide (the length of 46 Chicago-style hot dogs)

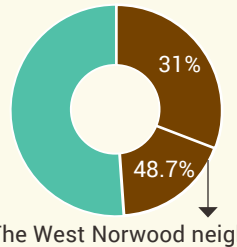
More Context, By the Numbers

Borough of Lambeth in London | **London, England**

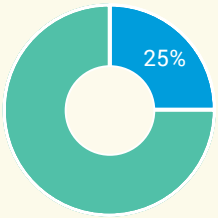
Population (2016)



Percent "deprived"* population (2021)



(The West Norwood neighborhood where the Hoopla Garden is has a "deprived" rate of 48.7%)



Ethnicity

Borough of Lambeth is 40% white, 18% other white, 11% Black African, 8% Black Caribbean, 5% Black other, 7% Asian, 8% mixed, 3% other

Over 57% of **London's** population is white British, white Irish, or other white

**"Deprived" in this context describes UK residents who lack certain material necessities, such as a job, income, decent home or education. nt "deprived"* population (2021)*

SUMMARY

CASE STUDY 1: Hoopla Garden, London

Community Considerations & Priorities

The majority of residents in West Norwood struggle to access nature — 91 percent of the houses on Norwood Road, the neighborhood's main road, lack natural space.

Inspired by a gardening project they did in 2011 near a bus stop in Stockwell, The Edible Bus Stop asked for something similar in West Norwood. To ensure a community-centered approach to the design and implementation, the South London Botanical Institute (SLBI) was "keen to work with community groups of all kinds, with the aim of sharing knowledge about plants and inspiring action on climate change."

Community members prioritized the preservation and maintenance of green space and having a space for public use. They identified the plot near the 322 bus stop because they were already tending flower beds nearby. The project founders and funders had additional goals that included:

- fostering a sense of belonging
- sparking grassroots activism
- creating a space where neighbors could converse and exchange skills
- supporting physical and mental well-being
- mitigating climate change
- promoting relaxation, biodiversity, wildlife habitat and improved air quality

Community Engagement Process

2012 The Edible Bus Stop **set up at West Norwood Feast, a monthly volunteer-powered street market festival**, and asked attendees for opinions on project locations, natural infrastructure type and volunteer interest. After many conversations, The Edible Bus Stop gained approval to redesign the plot next to the 322 bus Stop H.

2014 Once garden beds were constructed, local government, volunteers and residents came together for **a community garden work day**. For the next few years, a crew of 10-15 active volunteers gathered monthly to maintain the garden.

2016 For **a spring refresh**, The Edible Bus Stop and other local community members cleared and tidied the garden beds to make way for new edible and ornamental plantings, sowing a variety of pollinator-friendly plants.

2019 In partnership with civilian climate change movement Extinction Rebellion, The Edible Bus Stop **planted a crab apple "protest tree."** In its reporting of the planting event, website Brixton Buzz cited that the trees are viewed as "living rebels of nature standing proudly amongst us.

2021 For this spring refresh, SLBI engaged about 10 **volunteers from Elmgreen School**, the local secondary school, to tidy the garden beds. In the summer, another 10 or so volunteers installed new plants.

2022 The SLBI **led a fall refresh** with Elmgreen School.



photo credit: The Edible Bus Stop®



photo credit: The Edible Bus Stop®

Project Outcomes

✔ Collaboration & community-building
✔ Hands-on interaction with nature
✔ Community ownership
✔ Climate activism

The Hoopla Garden has lived up to its name, providing multiple benefits to a range of community stakeholders and spurring similar investments in the West Norwood neighborhood.



photo credit: Incredible Edible Lambeth.org

Environmental Outcomes

A once gray space next to a West Norwood bus stop became a playful and community-centered green space with edible and ornamental plants, stormwater management and enhanced walkability in the surrounding area. The Garden has amassed various edible crops, trees and wildflowers that support urban biodiversity and house pollinators. Unfortunately, many of the newer plants did not survive the subsequent hot and dry seasons (London experienced record high temperatures in the summer of 2022.)

Community Outcomes

Local residents continue to appreciate Hoopla Garden, citing it as a key local strength. In 2016 survey data, respondents noted that Hoopla Garden is a “positive space and project” but occasionally has a “scruffy but still tidy appeal.” The Garden does not have a paid maintenance partner, but given the community’s investment in the project, volunteers eventually “green up and cheer up the area,” just as they did for the flower beds that predated the Hoopla Garden installation. In 2022, SLBI organized a group of school children and community volunteers to place eight garden beds of pollinator-friendly plants across the street from the Hoopla Garden.

Looking Ahead

After Hoopla Garden, there were other Edible Bus Stop projects, including a community garden strip next to the Crystal Palace bus station. Moving forward and longer-term, The Edible Bus Stop wants to expand community gardening to more bus stop locations and throughout the United Kingdom rail network.

POSTSCRIPT *The list of project stakeholders may not be comprehensive.*

Discussion Questions

- Compared to top-down efforts, how do bottom-up or grassroots efforts meet community needs before, during and after project installation?
- Why is it important to engage a wide variety of age groups throughout natural infrastructure projects?
- What are the potential outcomes of working around rather than against existing physical elements (in this case, concrete bollards that prevent parking)?

"What we want to do is encourage the greening of grey, and in the process, get communities to come together, galvanize, and actually create landmarks of pride and get to know each other. And grow strawberries."

Mak Gilchrist, Founder, Creative Director & Executive Producer, Edible Bus Stop®

CHICAGO CONNECTION



photo credit: Block Club Chicago

Albany Park

- dense commercial corridor
- nearby schools
- bus routes

Albany Park is Chicago's most linguistically diverse neighborhood. A possible analogous location is the bus stop just outside of the Kimball Brown Line "L" where commuters transfer to the 81 Lawrence and 82 Kimball/Homan buses. The train station sits at the southwest corner of the intersection, and there is no greenery or seating, leaving those waiting for the bus without protection from the elements..

Like the London site, this bus stop is located along a dense commercial strip in a neighborhood with similar economic diversity and a significant immigrant presence. It is also a block away from Theodore Roosevelt High School, and many students likely commute using the Lawrence bus.

Hoopla Garden

Center community members during all stages of the project process, from initial conception through the ongoing maintenance.

Allow **residents to decide** the locations for the natural infrastructure projects.

Consult community members in an ongoing and iterative way to understand the desires and goals for the site as expressed by the users of the site.

Install **plants that are native to the area**, as they will more reliably establish themselves in the ground and are likely to be lower maintenance over time.

Engage residents in conversations beyond the natural infrastructure project— **find out what the community priorities are**, and explore ways for the natural infrastructure to further or benefit from those other priorities.

Highlight the community benefits of the natural infrastructure project to secure lasting and impactful community support.

Use social media and other creative avenues to recruit community volunteers for workdays and ongoing maintenance.

Design around local landmarks rather than completely removing them (even if they aren't perceived as landmarks by outsiders to the community, and especially if the community is fond of the landmark).

Partner with social movements to plug into greater narratives and systems-change thinking.

Acknowledgements

Sarah Webley, Education and Outreach Coordinator, South London Botanical Institute

Mak Gilchrist, Founder, Creative Director, and Executive Producer, The Edible Bus Stop®

Funded by the Walder Foundation

For more information, contact Elevated Chicago at info@ElevatedChicago.org

Sources

Brixton Buzz,Extinction Rebellion planting 'Protest Trees' in West Norwood, 2019

Borough of Lambeth, Demography Factshet, 2017

Commonplace Analysis, Visioning West Norwood and Tulse Hill, 2016

Crystal Palace Transition Town, Edible Bus Station

GLAINTELLIGENCE, 2016-based Ethnic Group Population Projections, 2017

Incredible Edible Lambeth, The Kerb Garden - Edible Bus Stop

Marshalls PLC, The Edible Bust Stop - Changing the World in Tiny Steps, 2018

Matt Collins and Roo Lewis, My Tiny Flower Garden: Beautiful blooms in surprisingly small spaces, 2017

Mayor of London, Grow Back Greener Fund, 2020

Mayor of London, London Datascore, 2021/22

South London Botanical Institute, Communities

Station to Station, Greening

Station to Station, Twitter post, 2021

That's Not My Age, The Edible Bus Stop Grows Up, 2013

The Edible Bus Stop, Facebook Reel, "London Live TV came down and filmed us at our West Norwood 'Hoopla' garden and at The Crystal Palace Edible Bus Station. Here's the piece as aired on 1st September", 2016

The Edible Bus Stop®, The Hoopla Garden, ©2022

The Edible Bus Stop®, About Us

Thurlow Park News, Edible Bus Stop, 2014

West Norwood Feast, © 2022 https://westnorwoodfeast.com/

West Norwood News, Hoopla Garden, 2014

West Norwood News, Never Mind the Bollards, 2014

nature NEAR TRANSIT

Parque Lineal Ferrocarril de Cuernavaca

Cuernavaca Railway Linear Park

CASE STUDY 2:

Mexico City, Mexico





© Arturo Arrieta

"... an urban forest to address a lack of **water** and **nature** ... generating a sense of community spirit, ownership and empowerment."

CASE STUDY 2: Mexico City

Mexico City is one of the oldest cities in the Americas. This vibrant capital city is shaped by Indigenous culture and European colonization, built on the ruins of the Aztec empire and dotted with colonial architecture and art.



Map of Mexico, showing Mexico City identified with a star.

Parque Lineal Ferrocarril de Cuernavaca

—is a linear park installed along an active railway that runs through some of Mexico City's most densely developed neighborhoods. The park was designed to include natural features that help manage stormwater, reduce water scarcity, enhance urban forestry, create a sense of community and connect different neighborhoods through investment in biking and walking infrastructure.

This rails-to-trails project was the top finalist among 130 different proposals submitted to a city initiative for how to best use the space. Parts of the park were opened to the public in 2017, with some remaining elements (namely residential) still in development as of 2022.

Infrastructure & Features

- An urban forest with small- and medium-sized trees that will eventually support a self-sustaining ecosystem once they've reached maturity
- A diversity of green features including plants, rain gardens, rainwater collection towers, water injection into the soil to recharge the groundwater table, solar panels and compost production
- Three sports fields, two skate parks, playgrounds, wide pedestrian walkways, bike lanes, 24 benches and 119 lamps
- Bike lanes that enhance connectivity throughout the city used by thousands of residents; the more than 37-mile long **Cuernavaca Railroad Bikeway** begins at the tail end of Parque Lineal Ferrocarril de Cuernavaca

Proximity to Public Transit

Given its expanse, the park touches several public transit options. Depending on the location, users might find themselves a few blocks away from the Metro San Joaquin train station, one block away from the Popotla train station, or less than a half-mile from the Colegio Militar train station. There are also several bus stops (which are most concentrated in the yet-to-be-developed sections).

Stakeholders

- Government of Mexico City
  - Delegation from the Borough of Miguel Hidalgo (Delegación Miguel Hidalgo)
  - Agency of Resilience (Agencia de Resiliencia)
  - Secretary of Housing and Urban Development (Secretaría de Desarrollo Urbano y Vivienda)
- Colegio de Arquitectos de la Ciudad de México (local university)
- Gaeta-Springall Arquitectos

Architecture firm Gaeta-Springall Arquitectos won first place in the international competition to design the linear park.

A professional organization of architects called Sociedad de Arquitectos Mexicanos at Mexico City's College of Architects was later involved in the development strategy.

The park itself was commissioned by the Mexico City government and its subunits, who have a role throughout the entire project. Delegación Miguel Hidalgo is the administrative department for the area. The Secretaría de Desarrollo Urbano y Vivienda (SEDUVI) is responsible for all things urban policy in the city, including reactivating disused areas and recovery of public spaces.



photo credit: Arturo Arrieta

photo credit: Glocal Design Magazine. © Arturo Arrieta, Bruno Gaeta. 2020.

Sistemas de Actuación por Cooperación-Granadas (SAC-G) has an overall role to carry out projects that create positive impacts for the urban environment. Lastly, the Agency of Resiliency focuses on the long-term vision for sustainable development, social well-being and common interest.

The multi-neighborhood and multi-jurisdictional development of the park is the result of a strategy developed by Sistemas de Actuación por Cooperación (SAC), which allowed the coordination between different authorities, utilities and government institutions, including secretaries of the environment, public security, mobility, communications, transportations, railroad, federal electricity commission and oil companies.

Location Mexico City, Mexico

Neighborhood Alcaldía Miguel Hidalgo

Attributes Multisite, multipurpose, public space

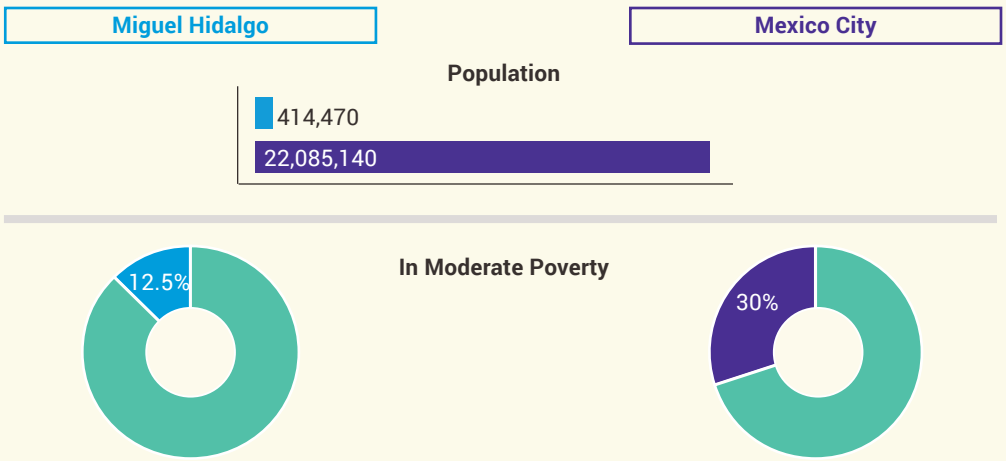
Scale 2.8 miles (about five times longer than Navy Pier)

Summary—In Brief

The Parque Lineal Ferrocarril de Cuernavaca was conceived as an urban forest to address a lack of water and nature by providing space for water collection and vegetation along with other benefits. Situated along a rail line, the park crosses and connects multiple neighborhoods and increases mobility and accessibility through bikeways and walkways that lead to transit stops. It improves safety and security on and around the park, and improves air quality, reduces noise and provides vegetation in densely developed parts of the city. Beyond environmental benefits, the park's public plazas and other gathering spaces aim to generate a sense of community spirit, ownership and empowerment for residents and regular visitors to the area.

More Context, By the Numbers

Parque Lineal Ferrocarril de Cuernavaca interweaves 22 neighborhoods throughout the district of Miguel Hidalgo, impacting around 40,000 residents.



SUMMARY

Community Considerations & Priorities

Parque Lineal Ferrocarril de Cuernavaca and its adjacent railway run through various neighborhoods, including some of Mexico City's lowest- and highest-income neighborhoods, such as affluent Polanco, and Granada, a historically industrialized area with modest-income households. The city government underwent an effort to transform Granada into "Nuevo Polanco" (a name not accepted by its residents) by converting formerly industrial lots into high-end retail, which led to increasing housing costs as the area attracted affluent residents and foreigners, housing costs increased.

The linear park is part of the revitalization process driven by the city government; it is also the only public green space in an area where land privatization is growing. The railway along the park still operates because it is utilized by a few corporations, such as Modelo (the largest exporter of beer in the world). The continued operation of the railway limits the space available for the park, preventing it from becoming a fully established green space that would otherwise provide more substantial water collection and infiltration opportunities. And the government subsidizes water use for corporations like Modelo even as Mexico City deals with water scarcity.

Government initiatives often must make tradeoffs between many interests, where local grassroots projects may have more freedom to address local needs directly without compromise.



photo credit: Gaeta-Springall Arquitectos

Community Engagement Process

Although this project is top-down in style, Bernardo Farril, director of urban planning and development, Alcaldía Miguel Hidalgo, Mexico City, says that the government understands the necessity to uplift the dignity of lower-income neighborhoods, recognizing that folks in these neighborhoods lack public services and may see the park as a place that serves tourists and the well-off.

Acknowledging that the most beneficial outcomes will come from residents themselves, the city government created a management plan grounded in public participation that engaged residents in the earliest stages of planning, provided opportunities for active participation at all stages of the project, and included the greatest number and diversity of participants possible. The plan endeavored to create programs with residents to ensure the continuous use of the park, and prevent deterioration and abandonment. The proposed community engagement techniques included:

- signage
- flyers
- newsletters
- brochures
- newspapers
- open meetings
- resident workshops
- conferences
- special events
- media relations

Residents who participated were volunteers and would not be compensated.The government planned to organize tours and interviews with residents to gain local knowledge and understand how the space was used prior to the park design and installation, to show and discuss the proposed changes, and to understand areas of concern. In some neighborhoods, the greatest concerns included park safety and violence prevention, while the health of trees and the park ecosystem were the top concerns for other neighborhoods. Given the differing priorities, the city used "political operators" to reach agreements among neighborhoods. Leveraging these "political operator" relationships to negotiate different aspects of the project weakened collaboration, led to less diverse community involvement, and affected engagement transparency.

The plan sought to provide multiple ways for participants to contribute their ideas and comment on a consistent basis utilizing the most accessible methods available. While the presented plan and public participation goals represent an inclusive process where residents are highly involved in creation, the extent to which the community engagement plan was activated and realized is unclear, and it's possible that many ideas may not have been carried forth.



photo credit: Arturo Arrieta

The city staff interviewed for this case study suggest that, while not preferred, using political operators was necessary because of their power and influence in many of the communities that the park passes through. They also acknowledge that the park project is not one where they were able to maximize community involvement. The most involved residents were seen as "activists" who advocate for their own interests rather than represent a cohesive community voice, which was common in wealthier neighborhoods. Interestingly, though, city staff found that the long-time residents in lower- and moderate-income neighborhoods were more organized and unified in their grievances and aspirations for future investment, which suggests promise for potential and ongoing engagement efforts.



photo credit: Gobierno de la Ciudad de México

Project Outcomes

✔ **Revitilization**
✔ **Community-building**
✔ **Community identity**

The linear park opened in 2017 and has three sections: a commercial district, a sustainability corridor and a residential area. The commercial district and sustainability corridor are complete; as of 2022, the residential area is in progress..

Environmental Outcomes

The park addresses the need for more green space and improved water management in Mexico City. It also provides better water infiltration, which helps reduce urban flooding (a significant concern on the eastern side of the park). Trees have improved air quality, reduced noise pollution, and provided vegetation in densely developed parts of the city.

Community Outcomes

The linear park transformed an unsafe and unmonitored area into a revitalized public space that is more secure, active and inclusive. Although the project was initially met with resistance (some wealthier residents opposed the park going through their neighborhoods due to increased foot traffic), pointed engagement and participation shifted community support and fostered a sense of pride and belonging. The park now connects cyclists and pedestrians across neighborhoods and provides spaces for residents to congregate and hold their own cultural events and activities.

Looking Ahead

The project implementers intend to continue development based on community direction. It is important to note that the linear park does run the risk of increasing property values and causing displacement of long-time, lower-income residents. However, with proper affordability preservation policies, the city can support both resident retention and wealth-building through home ownership. A Miguel Hidalgo borough representative said, "There are ways to develop land and keep the original person there… we're trying to give more power to the locals to prevent the normal urban renewal ways that will happen."

"We want to find the development direction of the project from an open vision, starting from the participation of the crowd, to establish a medium- and long-term development project."

Gaeta-Springall Arquitectos

Discussion Questions

- What are the advantages and disadvantages of a rails-to-trails project near an active rail line?
- How can communities with different socioeconomic standings better organize across different priorities?
- How do government-led environmental efforts support community needs? How do these efforts impede community needs?

POSTSCRIPT *Some information about the planning and implementation of this major infrastructure project was unable to be found, including:*

- *A breakdown of land ownership and whether land acquisition was needed to implement the project*
- *Project funding (beyond the funds committed to the project from the Mexico City government)*
- *Plans for ongoing project maintenance and operations*
- *Policies or practices to protect lower-income residents from property value increases that could result in displacement*

CHICAGO CONNECTION



photo credit: Aimee Levitt/Eater Chicago

Back of the Yards

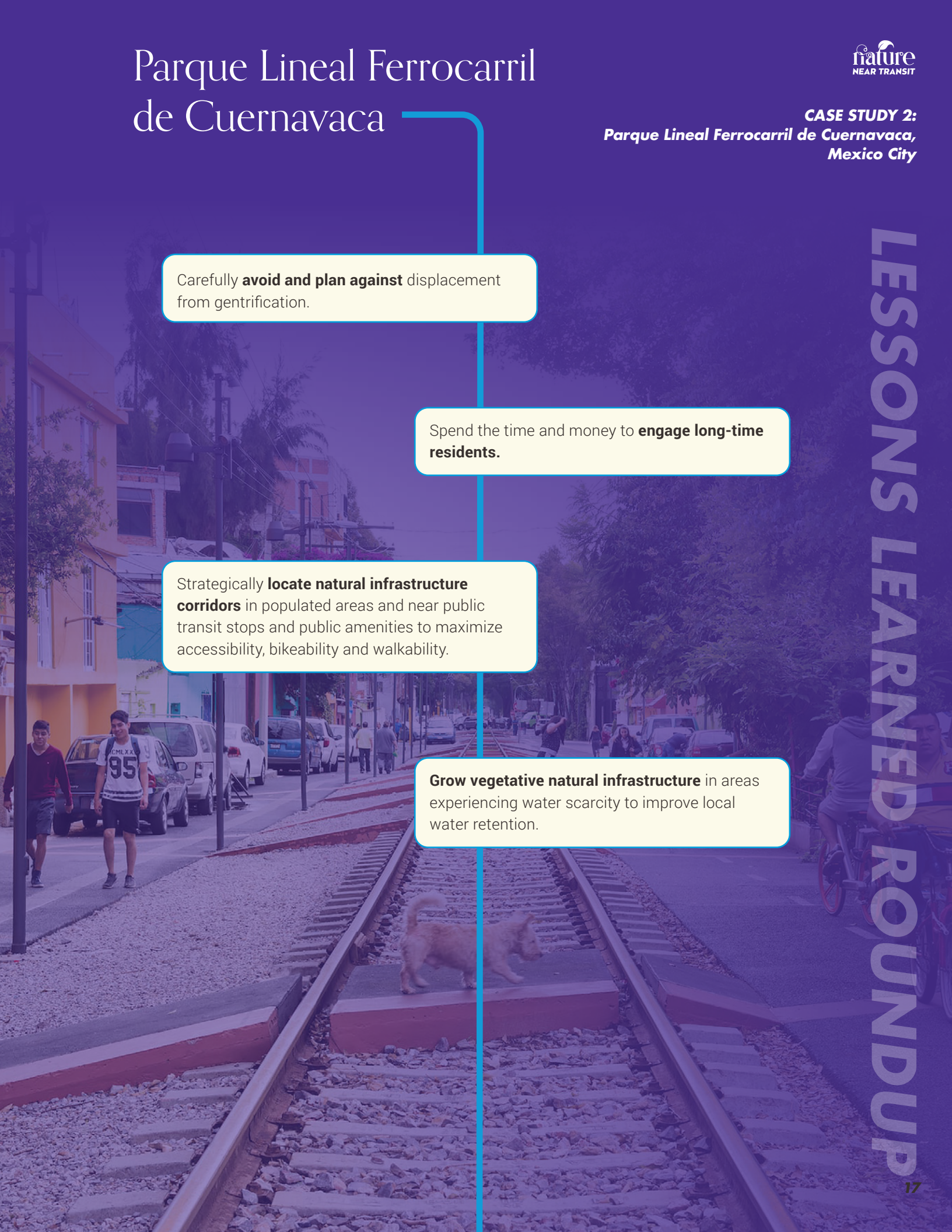
- disused/underused rail line
- low- or moderate-cost market

Back of the Yards mirrors the working-class and industrial profile of Granada. The neighborhood lacks rail transit entirely, so a new walking/cycling connection could provide alternative transportation options.

Following the popularity of **The 606,** the City of Chicago has sought to build more rails-to-trails projects. In early 2022, the Chicago Department of Transportation (CDOT) released several locations for potential conversion projects. Among the list was the 49th Street viaduct, which CDOT flagged as a "potential project" for a bike trail **(#3 on this map)**. The primary difference is that the Back of the Yards tracks would be elevated, whereas Parque Lineal Ferrocarril de Cuernavaca is grade-level.

We must acknowledge that projects like these have the potential to increase displacement pressures and contribute to gentrification. These types of projects must be intentional in authentic community engagement efforts that center legacy residents and stakeholders in the development and decision-making.

Parque Lineal Ferrocarril de Cuernavaca



Carefully **avoid and plan against** displacement from gentrification.

Spend the time and money to **engage long-time residents.**

Strategically **locate natural infrastructure corridors** in populated areas and near public transit stops and public amenities to maximize accessibility, bikeability and walkability.

Grow vegetative natural infrastructure in areas experiencing water scarcity to improve local water retention.

LESSONS LEARNED ROUNDUP

Acknowledgements

Bernardo Farril, Director of Urban Planning and Development, Alcaldía Miguel Hidalgo, Mexico City

Funded by the Walder Foundation

For more information, contact Elevated Chicago at info@ElevatedChicago.org

Sources

Aguayo, A, The Nuevo Polanco Urban Project in Mexico City. Perspectives on Global Development and Technology, 14(6), 646–661, 2015

Arrieta, A., & Gaeta, B. (2020, September), Espacio público, gente y ciudad: Parque Lineal Ferrocarril de Cuernavaca, Glocal Design Magazine, 2020

Ciclovía Ciudad de México Parque Lineal FC a Cuernavaca Plan de manejo (pp. 1–73), Gobierno de la Ciudad de México

Colegio de Arquitectos de La Ciudad de México, Quienes Somos

Farha, L & Gertten, F., La gentrificación no está detrás de la crisis de la viviendo en México, La financiarización sí, The Washington Post, 2022

Gaeta, J., & Springall, L. (2016). Urban Forest-Cuernavaca Railroad. Gaeta Springall Arquitectos, 2016

Gaeta, J., & Springall, L., Parque Lineal Ferrocarril de Cuernavaca. Biennal Internacional de Paisatge Barcelona, 2018

Gaeta Springall Arquitectos, Oficina

Gaeta Springall Arquitectos, Parque Lineal Ferrocarril de Cuernavaca, Landuum

Gobierno de La Ciudad de México, Agencia de Resiliencia

Gobierno de México, Ciudad de México, Data México, 2017

Gobierno de La Ciudad de México, Inaugura GCDMX parque lineal Ferrocarril de Cuernavaca en beneficio de 40 mil personas, 2017

Gobierno de la Cuidad de Mexico, Mercado Granada

Gobierno de La Ciudad de México, Metro San Joaquín

Gobierno de la Cuidad de Mexico, Parque Lineal Ferrocarril de Cuernavaca

Gobierno de La Ciudad de México, Sistemas de Actuación pr Cooperación

Khan, G., Top 10 Things to do in Mexico City, National Geographic, 2016

Mooool, Linear Park Ferrocarril de Cuernavaca by Gaeta Springall Arquitectos, 2017

MXCity, Todo lo que hay saber sobre la vanguardista Colonia Granada

Nguyen, T., Mexico City and the pitfalls of becoming a remote work destination, Vox, 2022

Planur-e, Parque Lineal Ferrocarril de Cuernavaca

Santibañez, D., Parque Lineal Ferrocarril de Cuernavaca / Gaeta-Springall arquitectos, Arch Daily, 2017

Tudela Rivadeneyra, E., Parque Lineal Ferrocarril de Cuernavaca, un Espacio para la Integración Ambiental y Social, Capitel, 2019

Urbanisten, Parque Lineal Ferrocarril de Cuernavaca, 2016

Velasquez, T., Mapping gentrification in Mexico City using open data, Medium, 2022

Tibaldi Train Stop

CASE STUDY 3:
Milan, Italy





© commons.wikimedia.org

... aims to build a **sense of community** identity by creating an attractive station that improves conditions for its users.

CASE STUDY 3: Milan

Milan is Italy's second most populous city, its most multicultural city, its leading financial center, and its most prosperous manufacturing and commercial hub. Located in the north, at the nexus of multiple transportation routes, Milan is well linked to the rest of Europe.



Map of Italy, showing Milano identified with a star.

INTRODUCTION

Tibaldi Train Stop

The Tibaldi Train Stop project is part of the CLEVER Cities initiative, a program funded by the European Union that uses nature-based solutions "to address urban challenges and promote social inclusion in cities across Europe, South America and China." The effort aims to build a sense of community identity by creating an attractive station that improves conditions for its users. The natural infrastructure intervention also hopes to confront human health challenges (such as health impacts from noise and air pollution), improve social cohesion and a sense of belonging, and increase safety and economic development.

The project began in 2019. The train station was opened on December 5, 2022, and the natural infrastructure interventions are set to be completed November 2023.

Infrastructure & Features

The effort to integrate natural infrastructure in the Tibaldi Train Stop project is driven by goals to improve social, economic and health outcomes. The investment in natural solutions is aimed at bringing a new sense of identity to the space where riders and residents can hold events, relax, socialize and feel safe.

The Tibaldi Train Stop project is the first train station in Italy that combats heat, and integrates natural infrastructure to enhance stormwater management and biodiversity. The green features capture stormwater runoff and reduce the air temperature, cooling the area during hot summer months. Among the features is a vertical green wall with reinforced soil that balances the ecosystem and strengthens biodiversity, and a "waiting room" that provides a livable public and gathering space for transit riders and creates a natural noise barrier.

Additionally, through resident participation in the community engagement process, the following features were introduced:

- bicycle rack
- engraved table with a chessboard
- a ping pong table
- neighborhood bulletin board

Proximity to Public Transit

The Tibaldi Train Stop is located along the S9 railway, which runs along the south and east sides of Milan and connects with many lines that go downtown. CLEVER Cities forecasts that the new Metro Line 4 (under construction) of the Milano Metro Network will get 14,400 users a day, and about 700 (5 percent) of them will use the Tibaldi station.

The nature-based interventions are meant to be enjoyed by both public transit users and residents of the surrounding neighborhood.

Stakeholders

- Municipality of Milan
- environmental NGOs
- citizens
- professional associations (gardening and natural infrastructure)
- tourists
- residents

Stakeholders were involved throughout the design process. Local residents were engaged for the noise barriers test and commuters were engaged for the train stop design. As a lead organization, CLEVER Cities entered an agreement with Italy's train company to finance the development and ongoing maintenance of the station.



photo credit: FS Italiane. CLEVER Milano

Summary–In Brief

The Tibaldi station is situated near the intersection of the Morivione and Tibaldi neighborhoods of Milan. The project is in the south of Milan, an area that is undergoing a reinvestment process, with earmarked funding coming to improve public infrastructure. This investment is welcome, as the area has historically received fewer funds than wealthier central Milan.

The area will provide spaces to play and cultivate plants, promoting greater social cohesion and access to green space. The nature-based infrastructure is meant to promote community well-being by reducing pollution and increasing shade. Other environmental quality improvements include rainwater management and increased biodiversity. The intervention also intends to promote balanced and sustainable development along the railway with the goal of improving economic and housing development prospects.

Both neighborhoods have a moderate cost of housing compared to other neighborhoods in the city.

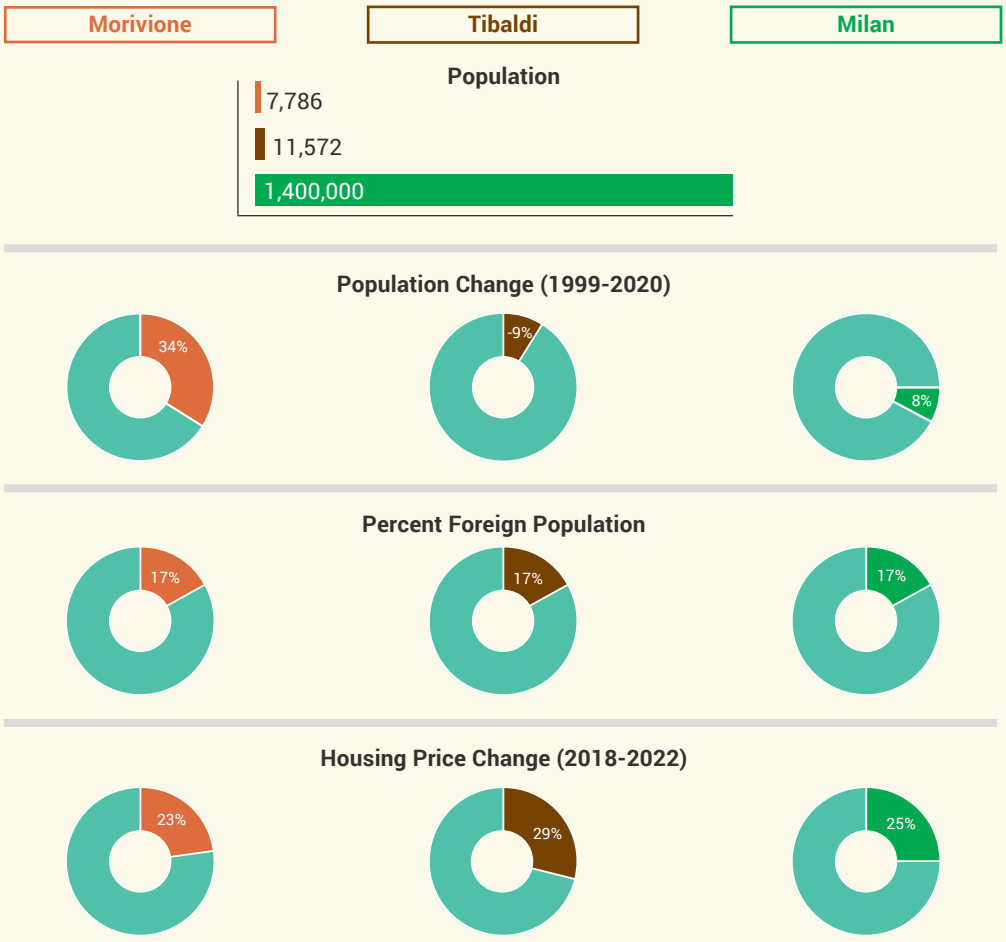
Location Tibaldi Train Station

Neighborhood Morivione, Municipio 5

Attributes Single site

Scale 107,636.2 square feet (stretching almost as long as a Chicago city block)

More Context, By the Numbers



Community Considerations & Priorities

Milan mayor Giuseppe "Beppe" Sala is an advocate for green transportation solutions and a leader in C40, "a taskforce of mayors from cities around the world formed in May [2020] to coordinate efforts to support a low-carbon, sustainable recovery from the pandemic." Public support aligns with these political priorities. In a 2020 resident survey, 99 percent of respondents indicated that greenery (green areas, trees, flower beds, etc.) was either "very important" (88 percent) or "important" (11 percent). Additionally, around 90 percent of respondents said they thought urban green areas had a positive effect on citizen health and welfare, recreational/cultural/educational activities, people's relationship with nature, social cohesion, biodiversity, air and noise pollution, thermal comfort and neighborhood aesthetics.

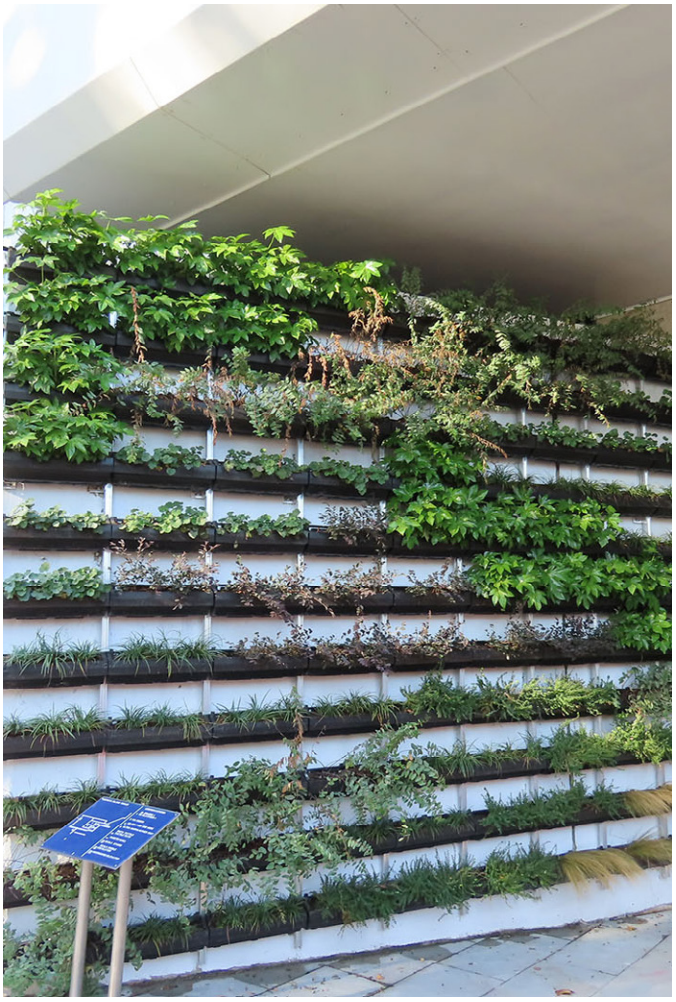


photo credit:blog.urbanfile.org

Community Engagement Process

2012-2019 During the design and implementation phases, UIP **kicked off the community engagement process with surveys, focus groups and a public consultation**. CLEVER Cities Milano reached out to residents through its mailing list and social media, and issued a survey to ask for volunteer interest in future maintenance work. The railway company set up an office at the project construction site where people could ask questions and learn more about the project.

The surveys focused on residents of the surrounding neighborhood and those who regularly visit, and asking for preferences on design, building materials, tree species, other vegetation and other project features.

After survey and focus group feedback, CLEVER Cities Milano held **technical workshops with experts** on scientific and engineering matters and participatory workshops on project focus, scope, brainstorming and design. Participants were not compensated.

2020-2023 In-person engagements were greatly impacted by the COVID-19 pandemic, requiring project leads to shift to online methods of engagement. Given this more limited engagement, local teams relied on surveys to reach local stakeholders. **Monitoring and development of the train station** began in May 2021 and is planned to continue through 2023. UIP expects ongoing maintenance support from resident stakeholders who expressed interest in earlier surveys



photo credit: FS Italiane. CLEVER Milano

Project Outcomes

✔ **Community identity**
✔ **Collaboration**
✔ **Livability**

Engaging with a larger initiative such as the CLEVER Cities initiative likely provided resources and support to communities that might not otherwise have been able to tackle a multi-year, multi-stakeholder community-centric design project. Some specific lessons learned from the CLEVER Cities model include:



photo credit: FS Italiane. CLEVER Milano

- Easily tailored guidelines for community members and other stakeholders.
- Support and reliable models for how organizations and agencies in positions of power can persist through city, country or global disruptions (such as the COVID-19 pandemic).
- Guidance on how to provide support to communities and community-based organizations (generally, and also in the context of a particular project).

This project progressed through the pandemic likely due to the stable support from the CLEVER Cities initiative.

Environmental Outcomes

While there is upside in the anticipated stormwater, biodiversity, and air and noise quality benefits, the building design, the timing of the procurement process, and construction and railroad safety concerns create some constraints for creation, implementation, and monitoring. Green gentrification is also a concern, so the project organizers plan to evaluate the potential for an increase in building and property values associated with the natural infrastructure established at the train stop.

Community Outcomes

The project has been successful in engaging a large number of residents who are continuously involved in the project. The engagement efforts relied significantly on surveys due to the effects of the pandemic, yet CLEVER Cities promotes a more robust community engagement process — now that societies are adjusting to more frequent in-person interactions, it would be advantageous to reactivate engagement beyond surveys, such as events that might involve a wider swath of the community. Also, given the survey data, greater efforts could be made to connect with younger residents and families.

Looking Ahead

For project updates and development, see **@CLEVER_ Milano** on Twitter and the **CLEVER Milano website** where you can sign up for their **newsletter** and visit the **project webpage**.





photo credit: la Repubblica

photo credit: CLEVER Milano. Ambienteitalia

Discussion Questions

- How might the ongoing COVID-19 pandemic affect community engagement efforts?
- How was community participation fostered? Other than surveys, what means were used to gather community input?
- What is the benefit of having natural infrastructure that serves multiple purposes (consider the potential benefits of the Tibaldi train station: beautification, stormwater management, air quality, urban heat management, etc.)?

CHICAGO CONNECTION



Kedzie stop, Green Line. photo credit: Chicago Transit Authority

East Garfield Park

- commuter rail line with stations
- vacant land surrounding the line
- historic lack of investment

The California and Kedzie stops along the Green Line both have vacant land in their immediate surroundings. The Lake Street corridor is frequently used by cars and heavy trucks, which makes it somewhat unfriendly to pedestrians walking to and from the Green Line.

Each rail station also facilitates transfers to numerous North/South bus routes, such as the 94 and the 52. In 2019, the California and Kedzie stop had daily weekday ridership of 1,048 and 1,256, respectively.

Tibaldi Train Stop

Expand outreach efforts by **collaborating with groups who are active in the community** and have existing relationships with community members.

Engage community members in **conversations about what is important to them** (for example, how they use/move through spaces, or what investments/assets they would like to see in their neighborhood and community).

Connect natural infrastructure projects to priorities and preferences using accessible language.

Involve community participants from the early phases of the design process and into project implementation, development and monitoring.

Ask community members for their preferences when choosing the types of plants, materials, furniture and other design elements.

Plan for hybrid (i.e., virtual and in-person) approaches in community engagement planning.

Acknowledgements

Emilia Barone, Project Manager, CLEVER Cities Milano & Municipality of Milan Department of Urban Regeneration

Chiara Desiderio, Municipality of Milan

Funded by the Walder Foundation

For more information, contact Elevated Chicago at info@ElevatedChicago.org

Sources

AGGIORNAMENTO (15/12): Nuovo sondaggio per contribuire a progettare lo spazio che verrà realizzato di fronte alla nuova stazione Tibaldi (il sondaggio rimarrà ora aperto fino a fine anno), CLEVER Milano, 2022

ATM Milano, Metro Network Map

Azienda Transporti Milanesi (ATM), Rete metropolitana di Milano

Barberis et al., Dealing with Urban Diversity, The case of Milan, 2017

Cantergiani, C., et al., Co-Creation Plan and Co-Design of Solutions in CALs (No. 2), CLEVER Cities, 2019

Cantergiani, C., et al., UIP Launch (No. WP2). CLEVER Cities, 2018

CLEVER Cities, Guidance on Co-Creating NBS

CLEVER Milano, CLEVER Cities Milano Newsletter n.8, 2022

CLEVER Milano, Continuano i lavori a Tibaldi, 2022

CLEVER Milano, Il percorso di monitoraggio sociale di CLEVER Cities Milano: indagine sulla relazione dei cittadini con la natura e impatto delle NBS sulla coesione sociale, PARTE 1, Il Percorso Di Monitoraggio Sociale, 2021

CLEVER Milano, Importanza del verde urbano e benefici percepiti da parte dei cittadini: i risultati del nostro monitoraggio sociale, Il Percoso Di Monitoraggio Sociale, 2021

CLEVER Milano, Inaugurata la nuova fermata di Milano Tibaldi

CLEVER Milano, La Fermata Tibaldi, dettagli del progetto e planimetrie

CLEVER Milano, La Fermata Tibaldi, nuova centralità verde

CLEVER Milano, Risultati del sondaggio per contribuire a progettare lo spazio che verrà realizzato di fronte alla nuova stazione Tibaldi – ecco le vostre preferenze, 2021

Comune di Milano, Municipio 5

Comune di Milano, Milano e i suoi quartieri anno 2020

Giuffrida, A., I won't make the same mistakes again: Milan mayor on his green Covid recovery plan, The Guardian, 2021

immobiliare, Housing Demographics

Lecco, A., & Foot, J., Milan, In Britannica, 2022

Mahmoud, I., & Morello, E., Co-Creation Pathway as a catalyst for implementing Nature-based Solution in Urban Regeneration Strategies Learning from CLEVER Cities framework and Milano as test-bed, Urbanistica Informazioni, 204–210

Morello, E., & Mahmoud, I., CLEVER Cities guidance on co-creating nature-based solutions (No. WP1), CLEVER Cities, 2018

Pantaleo, N., Applying K-Means Clustering on Milan's Neighborhoods, LinkedIn

Oblique.AI, Milanografica: A portrait of Milan in Data