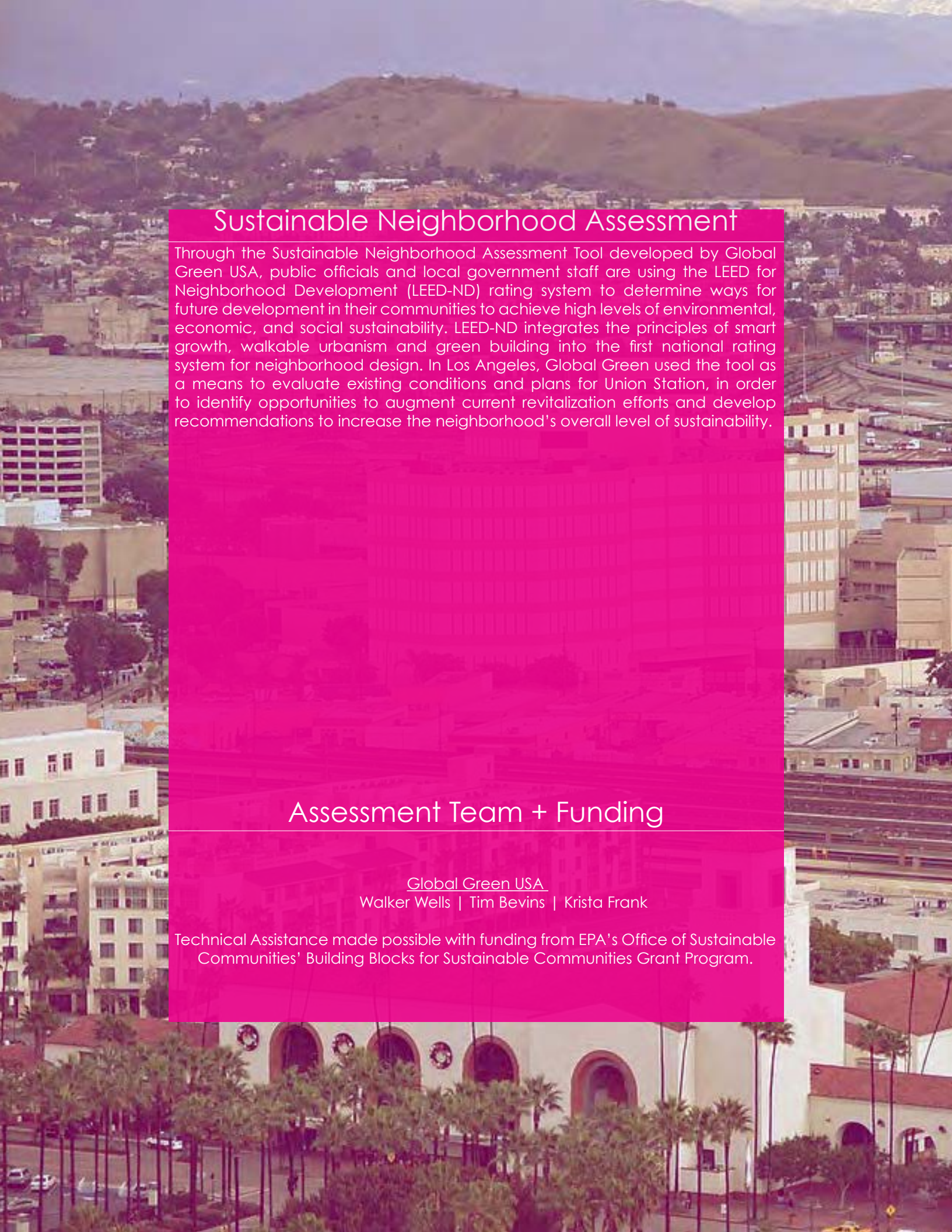
Los Angeles Union Station, CA
Sustainable Neighborhood Assessment

April 22 - 23, 2014

GLOBAL GREEN USA®



Sustainable Neighborhood Assessment

Through the Sustainable Neighborhood Assessment Tool developed by Global Green USA, public officials and local government staff are using the LEED for Neighborhood Development (LEED-ND) rating system to determine ways for future development in their communities to achieve high levels of environmental, economic, and social sustainability. LEED-ND integrates the principles of smart growth, walkable urbanism and green building into the first national rating system for neighborhood design. In Los Angeles, Global Green used the tool as a means to evaluate existing conditions and plans for Union Station, in order to identify opportunities to augment current revitalization efforts and develop recommendations to increase the neighborhood's overall level of sustainability.

Assessment Team + Funding

Global Green USA
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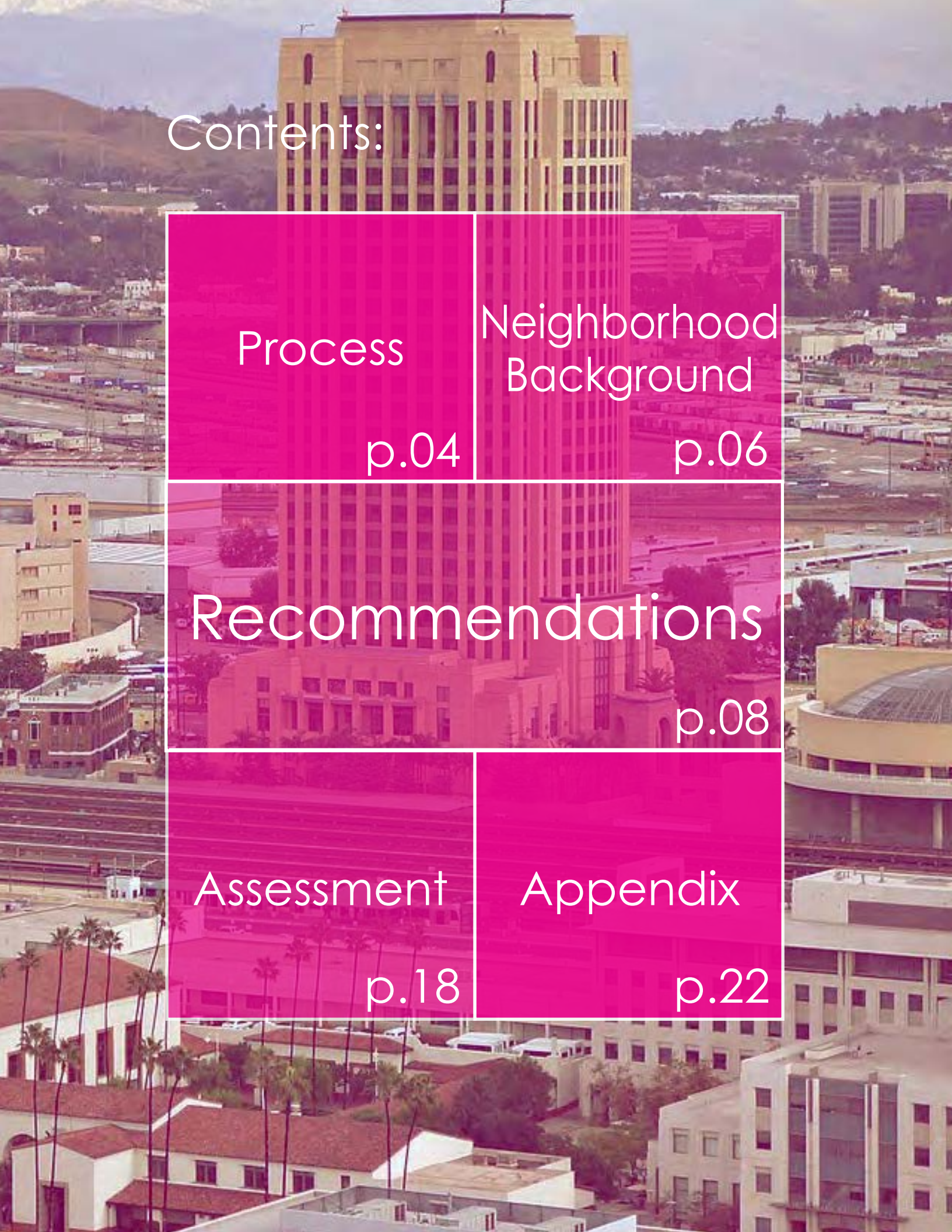

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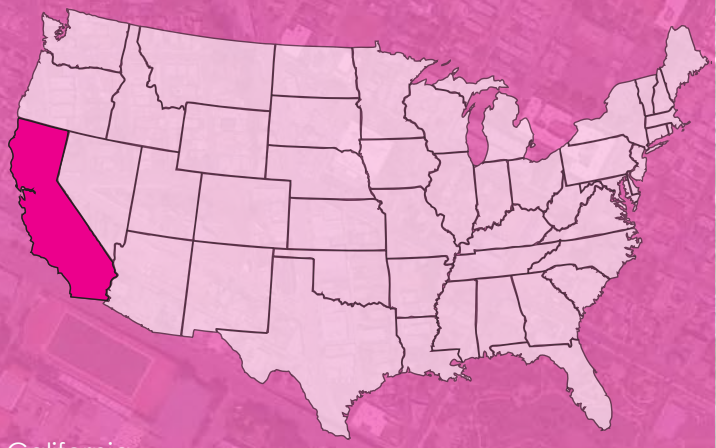
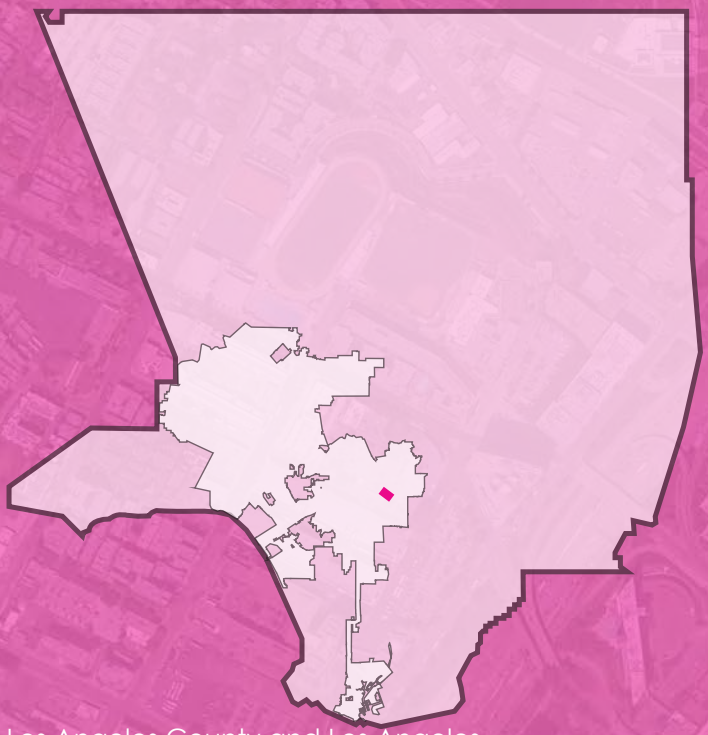
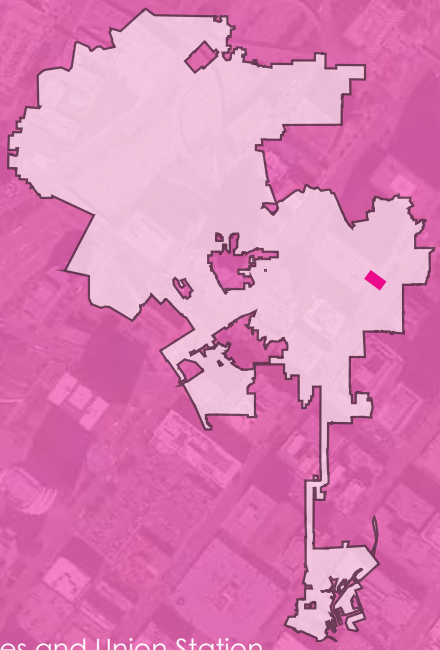


California



Los Angeles County and Los Angeles



Los Angeles and Union Station

110 Freeway

101 Freeway

Ces

Union Station

Study Area

Sustainable Neighborhood Assessment Process

The goal of the Sustainable Neighborhood Assessment process is to identify issues and places where focused policy or planning changes can promote sustainable urban development over the short and long term. The objective is to improve the neighborhood's day-to-day sustainability and increase its resilience during future weather events. To define these focus areas, Global Green USA utilizes the Sustainable Neighborhood Assessment Tool, which is based on the LEED for Neighborhood Development (ND) criteria.

Prior to visiting the assessment area, the team conducted a review of existing planning documents, code requirements, maps, and stakeholder priorities. An initial assessment was then completed, with the credits in each of the three LEED-ND categories (Smart Location & Linkages, Neighborhood Pattern & Design, and Green Infrastructure & Building) marked as "achieved," "not achieved," "unknown," or "not applicable." Each credit is further ranked for the degree that it correlates to regional or local policy priorities, regulatory support, technical feasibility, market support, and stakeholder input.

This initial assessment serves as the point of departure for the Global Green team's multi-day site visit and evaluation. During the visit, the team walks each block of the target neighborhood, photographs examples of positive qualities and areas for improvement, and conducts a series of meetings with targeted stakeholders, city staff, and representatives of relevant public agencies. Throughout the process, a preliminary LEED-ND checklist is edited and refined to incorporate the team's visual observations and the contextual issues raised by stakeholders. The final checklist for Union Station can be found on pages 18-21.

This assessment process then enables the team to identify a series of recommendations based on LEED-ND credits to augment and increase the neighborhood's sustainability. Recommendations also cover policy, planning, and development changes which aim to realize a more resilient and sustainable future for Union Station. Some recommendations can be implemented fairly quickly, while others will require policy or regulatory change and long-term collaboration among public agencies, local institutions, and private sector partners, as well as multiple sources of funding.

Neighborhood Assets

1.

3.


2.


4.

1. Regional transit access 2. Nearby cultural resources 3. Multi-modal transportation integration
4. Historic architecture

Neighborhood Background

Los Angeles Union Station (Union Station), is the transportation hub and headquarters for Los Angeles County Metropolitan Transportation Authority (Metro), the county-wide bus and rail operator for Los Angeles and surrounding cities. The 47 acre parcel occupies an entire block in downtown Los Angeles and includes the historic passenger terminal building, rail yards and platforms. The Union Station property is located in northeast Downtown, which falls under the City's Alameda District Specific Plan, is bound by Cesar Chavez Avenue to the north, the 101 Freeway to the south, Vignes Street to the east, and Alameda Street to the west. 70 foot wide Alameda Street serves as a major thoroughfare for much of eastern downtown. The station serves as a national and regional transit hub and as a local connector, linking bus, subway and rail networks. The Station is surrounded by historic landmarks, the Los Angeles River and several diverse, distinctive neighborhoods including Little Tokyo, Chinatown and Civic Center. Currently, however, Union Station remains largely removed from its surroundings. For the purposes of this assessment, Global Green expanded the study area to include the neighborhoods surrounding the station to the north, south and west, and to the River. The study area is bound by Alpine / Vignes to the north, 1st Street to the south, Hill Street to the east and the LA River to the west.

Metro purchased the property in 2011 and is currently in the final planning stages of a programmatic optimization of Union Station paired with major renovations (Union Station Master Plan; USMP). The impetus for these updates is propelled by 3 key components: 1) Union Station has seen a sharp increase in ridership, a trend that is expected to continue for decades, 2) Metro has demonstrated interest in developing higher-intensity mixed-use residential on the property to spur and support the transit uses on site and 3) Union Station will serve as the Los Angeles terminus for High Speed Rail. These updates include accessibility and programmatic improvements to the historic station and its forecourt, a more pedestrian-friendly streetscape on the surrounding blocks, a new passenger concourse spanning the entire property, a reconfigured bus plaza, residential, commercial and hotel structures, and the addition of several "run-through tracks" intended to address a bottleneck issue that currently slows rail service. Though the exact configuration of the High Speed Rail tracks and their integration with Union Station remains to be developed, Metro is undertaking these improvements with an eye for ease of integration when the system is ready.

While this vision for the Union Station property makes significant progress toward higher levels of service and passenger comfort, Union Station's success as a regional center remains stymied by its lack of connection to surrounding communities. Some of the most challenging obstacles to improved local connectivity include the wide arterials bordering the station, freeway ramps surrounding the site, large curb cuts for a 3,000 space underground parking structure, a largely industrial surrounding urban form to the east and south that does not contribute to a welcoming environment for pedestrians, a critical lack of pedestrian and bicyclist amenities such as street trees and bike lanes, and lack of access to the river (despite its proximity). The recommendations discussed in this document seek to capitalize on the USMP effort to help Union Station become a vibrant civic space for Los Angeles.

Neighborhood Challenges

1. High-volume corridors limit pedestrian access 2. River access restricted by rail lines 3. Many large sidewalk intrusions to accommodate parking options 4. Challenging pedestrian conditions 5. Union Station is surrounded by challenging infrastructure and vacant parcels

Recommendation Approach and Strategy

Metro's improvements to Union Station's built form and programmatic efficiency represent significant progress toward the creation of a regional transportation hub that also serves as an indispensable civic landmark and asset. In order to achieve this vision, it is critical that Metro take advantage of the USMP as an opportunity to serve as a catalyst for future development in the area, address long-standing connectivity issues with the station's surroundings, improve connections to and the health of the river, and ensure that the highest level of green building techniques are employed.

The recommendations presented over the following pages were developed through careful study of regional and local planning documents, city staff and stakeholder interviews and a thorough on-the-ground analysis of community characteristics. Each of the resulting recommendations have been informed by best practices as identified by LEED-ND and have been produced with specific attention given to long-term sustainability and resilience.

Four key overarching themes guide the specific recommendations: 1) Alameda Specific Plan Update, 2) Neighborhood Connectivity, 3) River Connections and 4) Environmental Design and Construction. **The Alameda Specific Plan Update** recommendation seeks to expand the boundaries of the plan to include surrounding neighborhoods and revisit land use needs and designations in the area around Union Station that is poised for dramatic transformation. As the character of north east Downtown shifts, it is critical that the opportunity is taken now to establish a regulatory framework to accommodate growth that will enhance Union Station and support increased ridership. **Neighborhood Connectivity** highlights the fact that for Metro to achieve its vision of Union Station as a vital neighborhood asset, significant efforts must be made to improve surrounding walking and cycling conditions. As pedestrian and cyclist facilities improve, Union Station's local relevance can improve as it becomes an easily-accessible neighborhood center. **River Connections** recognizes the river as a underutilized asset in the community with great potential to introduce passive and active recreational opportunities into a park-poor area of the city. **Environmental Design and Construction** capitalizes on the improvements to Union Station and its surrounding buildings to improve the environmental performance of individual structures, and combine infrastructural systems to achieve superior efficiency.

1 Update and Expand Alameda Specific Plan

2 Neighborhood Connectivity

3 River Connections

4 Environmental Design + Construction

Recommendation 1

Update and Expand Alameda Specific Plan

The Alameda Specific Plan, adopted in 1996, establishes regulatory controls for Union Station. The Plan's boundaries, defined by Vignes Street to the north and west, the 101 Freeway to the south, and Alameda Street to the East, are constrained as the Plan was intended to only govern a proposed office space cluster in the area immediately surrounding Union Station. In the years since the Plan was adopted, however, Downtown LA has experienced a dramatic increase in residents and demand for neighborhood amenities. These two shifts have rendered the boundaries, vision, and influence of the Alameda Specific Plan largely out of step with this new reality, yielding difficult integration between Union Station and its surrounding neighborhoods. In light of this transformation, and in order for Union Station to truly operate as an easily accessed and fully integrated community fixture with multiple uses, the City should expand the Plan's boundaries, re-assess land use and zoning for the industrial areas to the east and south, determine community needs, and establish a new vision for the area's future.

LEED-ND's Neighborhood Pattern and Design (NPD) credit category aims to encourage compact, connected, and complete communities through a variety of urban design strategies. By expanding the boundaries of the Plan and re-examining its vision for the area, Union Station can be better connected to its surrounding neighborhoods. Land use changes can concurrently result in development in these areas that supports transit ridership. *NPD credits 9 and 10 - Access to Civic and Public Spaces and Access to Recreation Facilities* highlight the importance of opportunities for passive and active interaction amongst residents. Current efforts to revitalize the LA River, led by the Mayor's Office, should be capitalized upon by Metro to connect Union Station passengers and visitors to this underutilized natural asset. *Credit 3, Mixed-Use Neighborhood Centers* encourages the development of sites with land-use designations that enable residents to complete many of their daily errands (groceries, dry cleaning, child care) within a 1/4 mile walk of residences. Any update to the Plan should enable a diverse mixture of uses throughout and surrounding Union Station property.

Action Items

1. **Update Boundaries:** Work with the City of Los Angeles to extend the boundaries of the Alameda Specific Plan north to the boundary of the Cornfields Arroyo-Seco Plan, east to the LA River and south to 1st Street.

2. **Revisit Land Uses:** As the composition and character of Downtown Los Angeles continues to transform. Particular attention should be given to developing new land use designations for the areas east and south of Union Station so that the Station is increasingly connected to its surroundings to help it become a key community asset in the neighborhood for residents, visitors and travelers.

3. **Neighborhood Amenities:** In conjunction with continued demand for housing in the area, there is a commensurate need for neighborhood amenities such as grocery stores, retail, parks and schools. Plans for the development of the parcels surrounding Union Station should incorporate these community needs to solidify Union Station's role in the neighborhood.

Expanding the purview of the Alameda Specific Plan to include surrounding blocks would allow for broader community cohesion and facilitate development decisions.

Recommendation 2

Neighborhood Connectivity

Despite Union Station's role as the central hub for Los Angeles County's transportation network and its adjacency to the Civic Center, Chinatown, Little Tokyo, the Arts District, Boyle Heights, and other important downtown nodes, the station largely operates as an island unto itself. This isolation is the cumulative result of historic decisions intended to facilitate vehicular movement, which has come at the cost of walkability and ease of access for pedestrians. The Union Station property itself is comprised of one block over 1,000 feet long on both axis with many large driveway entrances, and large surface parking lots facing the street. Compounding this situation, Union Station is framed by wide, high-volume streets complete with freeway on and off ramps that present a formidable barrier to cross. Cycling facilities are similarly insufficient as there are no class I or II lanes east of Main St. Downtown. This critical lack of infrastructure contributes to the dearth of connectivity to nearby neighborhoods such as Boyle Heights to the East and discourages cyclists from incorporating Union Station's facilities and services into their commuting patterns.

As described throughout this document, one of the guiding principles of LEED-ND is to foster communities that cater to pedestrians and cyclists, thus enabling people to commute, recreate and complete errands without reliance on private automobiles. *Neighborhood Pattern and Design (NPD) prerequisites 1, 2 and 3 work in concert to support this vision by requiring Walkable Streets, Compact Development and Connected and Open Communities*. Applying this framework to Union Station reveals opportunities to improve conditions by reducing sidewalk interruptions, and ensuring that new developments on Metro property frame their surrounding streets and exploring the introduction of new streets to reduce Union Station's mega-block effect. To support and reinforce the benefits of these improved pedestrian accommodations, specific effort should be made to attract quality retail and services such as a grocery store so that residents can complete some of their daily tasks on foot. As highlighted in *Smart Location and Linkage (SLL) credit 4, Bicycle Network and Storage*, any improvements or introductions of new cycling facilities near Union Station must be complimented by an adequate number of bicycle storage spaces - both secured, enclosed spaces for residential buildings as well as plentiful options for retail establishments.

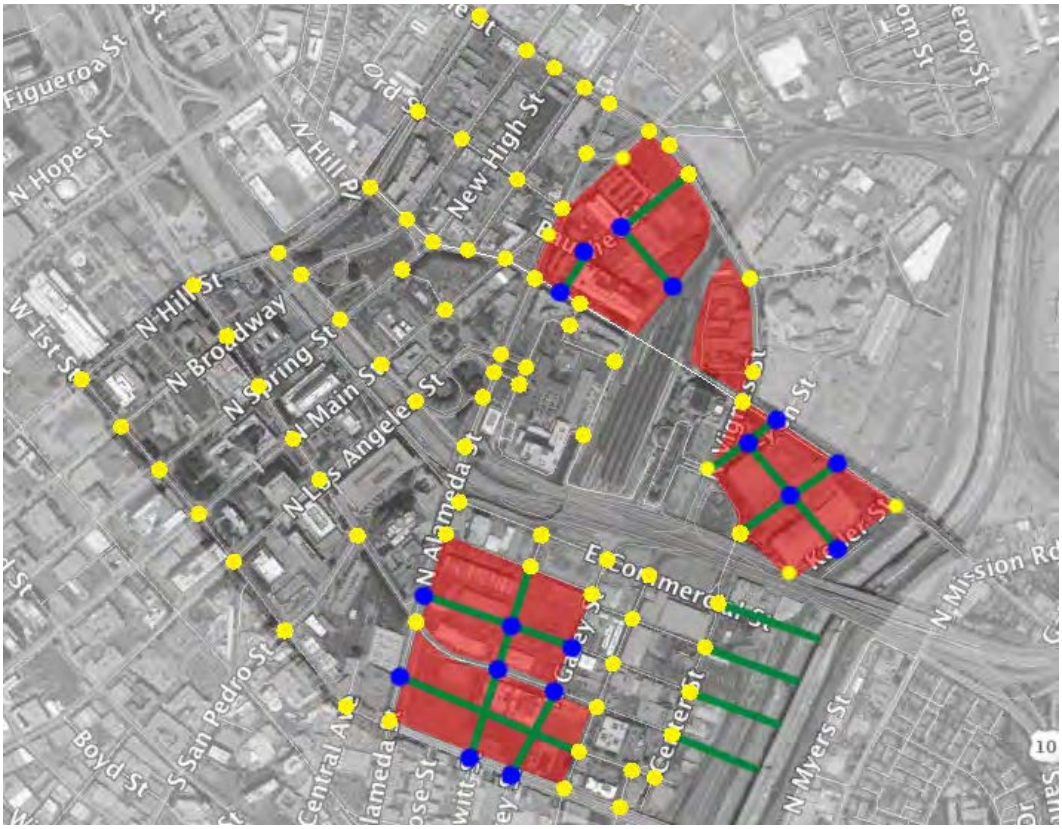
(l) Frequent curb cuts and large garage entrances present conflict points between automobiles and pedestrians and discourage walking (r) A cycle track with buffer in New York City

Action Items

1. **Pedestrian Accommodations**: Upgrade walkability features in and around Union Station to provide connections to surrounding communities and foster an environment of inclusion and safety for pedestrians. Key considerations include raised "table top" crossings on Alameda and Vignes, reducing the amount of driveways and service entrance around Union Station and ensuring that new developments on Metro property are designed to frame public spaces and contribute to a welcoming pedestrian environment.

2. **Cycling Facilities**: Introduce cycling accommodations in the area immediately surrounding Union Station and connect this new network to Downtown's existing cycling Infrastructure. Particular attention should be given to the introduction of high-quality cycling infrastructure for North / South and East / West travel around Union Station. Though situated Alameda and Cesar Chavez are both subject to significant bus and vehicular traffic and have constrained rights of way, and as such do not lend themselves well to introducing bicycle lanes. Given this, Los Angeles street should be investigated for its appropriateness for North / South travel and Alpine to facilitate East / West travel. Further, Metro should require all new developments on their property to provided secure, enclosed storage for residential buildings and an adequate number of public bicycle parking options for retail.

3. **Block Sizes and Connections**: Many of the blocks immediately surrounding Union Station are very large and present challenges to neighborhood connectivity and linkages, particularly for pedestrians and cyclists. Metro should work with the City to introduce new intersections as blocks are redeveloped to improve walkability and facilitate movement throughout the neighborhood.



The introduction of new intersections surrounding Union Station could improve connectivity between neighborhoods and facilitate cycling and walking in the area

Recommendation 3

River Connections

As it runs through downtown, the Los Angeles River is currently encased in a 250 foot wide channelized concrete embankment intended to mitigate flood risks. In addition to this channelization, the river, which runs a 1/4 mile east of Union Station, is framed by rail rights-of-way along both of its banks and has no public access points near the Station. Recent planning, engineering and design efforts have begun to reimagine the River's role in Los Angeles, particularly downtown, and Metro is uniquely poised to capitalize on these efforts by fostering connections between Union Station and the River while providing opportunities to improve the health of the River ecosystem. As High Speed Rail examines the Piper Tech campus as a possible location as it looks to interface with Union Station, Metro should continue its efforts to use this catalytic project as a means to provide river access from Union Station. Any efforts to improve access between Union Station and the River also allows for the introduction of Low Impact Development stormwater management systems to slow, retain and clean runoff prior to it entering the River. In addition to these improvements in health, function and accessibility, including the River as part of the USMP would contribute to the creation of a new development character in the areas east and south of the Station Property.

All three of LEED-ND's credit categories address many of the conditions described above. Smart Location and Linkage (SLL) prerequisites require conservation of existing water bodies and siting new development outside of floodplains. SLL credits 7 and 8 Site Design for Water Body Conservation and Restoration of Water Bodies encourage proactive stewardship and management of these natural assets. While Union Station is already built and downtown is fully developed, this category can guide restoration efforts for this nearby water body. Neighborhood Pattern and Design (NPD) credits 9 and 10, Access to Civic and Public Spaces and Access to Recreation Facilities both align with new visions for the River as a public amenity and a space for passive and active recreation. Finally, Green Infrastructure and Building (GIB) credit 8, Stormwater Management, requires developments to retain on-site the rainfall from an 80% storm event. Due to its size and proximity to the River, including stormwater capture, reuse and infiltration strategies at Union Station and surrounding developments would directly impact the River's health and should be explored in depth.

The Los Angeles River as it passes by Union Station

Action Items

1. **Connectivity**: Explore pedestrian linkages between the east side of Union Station to the Los Angeles River. Though the river is out of USMP's jurisdiction, Metro remains influential and should leverage this weight when nearby parcels are redeveloped and High Speed Rail facilities are built to ensure access is provided. Temple and Jackson street present options to provide access under or over the existing rail lines.

2. **Low Impact Development**: Many stormwater management opportunities are found on Metro property and its immediate vicinity. In addition to integrating stormwater capture and reuse systems into Union Station, streets surrounding the station and leading to the River should be outfitted with bioswales and permeable pavers where possible to reduce runoff loads on the river.

3. **Open Space**: Recent development pressures compounded by Union Station's position in a part of Downtown lacking significant civic and open space underscores the River's potential to be a neighborhood asset for both passive and active recreation. Metro should strive to include innovative stormwater management and native planting strategies on all development projects. Efforts to provide connections between Union Station and the River should be made within the framework of not just offering access, but also programming and open space to meet the needs of the growing number of residents and workers.

Despite its proximity, the Los Angeles River is effectively inaccessible near and around Union Station

Recommendation 4

Environmental Design and Engineering

Downtown Los Angeles is in the midst of a significant transformation with many recently built and planned residential, commercial and civic structures. As part of this evolution of Downtown, Union Station presents a unique opportunity to be a standard-barer for institutional green building techniques and in turn, spur similar building techniques elsewhere downtown. Because the USMP addresses both the historic station and adjacent structures on the property, Metro's commitment to energy and water efficiency in and around the Station can have large-scale beneficial impacts on local and regional environmental conditions.

LEED-ND's Green Infrastructure and Building (GIB) category presents several options for improvement in infrastructural and building efficiency in and around Union Station. GIB per-requisite 1, Certified Green Buildings, requires at least one and rewards multiple green buildings on site. In addition to ensuring that improvements to Union Station are made with such considerations at the forefront, Metro should also ensure that any new structures on the Union Station property are built to similar standards by requiring LEED certification. GIB prerequisite 2, Minimum Building Energy Efficiency and GIB prerequisite 3, Minimum Building Water Efficiency both set standards for substantive reductions over baseline conditions that should be incorporated into Union Station's updated facilities. Particular attention should be given to requiring new construction to be pre-wired for rooftop solar panels and pre-plumbed for recycled water systems. Due to Union Station's size and primary function, Metro should consider the implementation of district scale renewable energy production as well as heating and cooling systems throughout the property, an approach encouraged by GIB credit 11, On-Site Renewable Energy Production and credit 12, District Heating and Cooling. Finally, as encouraged by GIB credit 8, Stormwater Management, Union Station's large footprint and proximity to the LA River present an opportunity to retain and reuse stormwater, reducing runoff loads on the River.

4

Action Items

1. **Buildings**: Metro should require all new developments on site to be built to LEED green building standards in addition to requiring all new commercial and residential structures to meet minimum building water and energy efficiency standards beyond what is required by California Title 24, Part 6 and CalGreen.

2. **Energy and Water**: Metro should require all new structures and major improvements to include pre-wiring for rooftop solar and pre-plumbed for recycled water systems.

3. **Infrastructure**: Explore the installation of a stormwater system capable of capturing rainfall from the 80th percentile or greater storm and the reuse of this water throughout the facility. Consider the installation and distribution of district-scale renewable energy production for heating and cooling loads.

Union Station's Historic terminal building presents an opportunity to integrate green building retrofits with historic preservation

Sustainability Assessment

The Sustainable Neighborhood Assessment tool includes an annotated LEED-ND checklist created by Global Green. It is a key component of the process used to document and compare the assessment area against the LEED-ND prerequisites and credits. Each credit within the three credit categories (Smart Location & Linkage, Neighborhood Pattern & Design, and Green Infrastructure & Building) is marked as "achieved," "not achieved," "unknown," or "not applicable" under baseline conditions. Additional analysis has been done based on local planning policy, regulatory support, technical feasibility, market support and stakeholder input. The preliminary checklist analysis was edited after site visits, stakeholder meetings, and conversations with city staff. This information was then translated into an overall assessment of sustainable neighborhood performance.

Based on the in-field assessment, planning document review, various stakeholder meetings, the Global Green team estimated which LEED-ND credits were "Likely," "Possible with Effort," "Unlikely" to be achieved, or "Not Applicable," considering existing conditions, technical feasibility, policy readiness, financial burden, and applicability to neighborhood conditions. The bar graph summary identifies the overall level of sustainable neighborhood performance for Union Station. Many credits fall into the "Likely" category, and of the remaining credits, a significant percentage fall within the "Possible with Effort" category, which shows the large potential for improving the sustainability of the neighborhood, specifically by pursuing the high-priority recommendations described in this report.

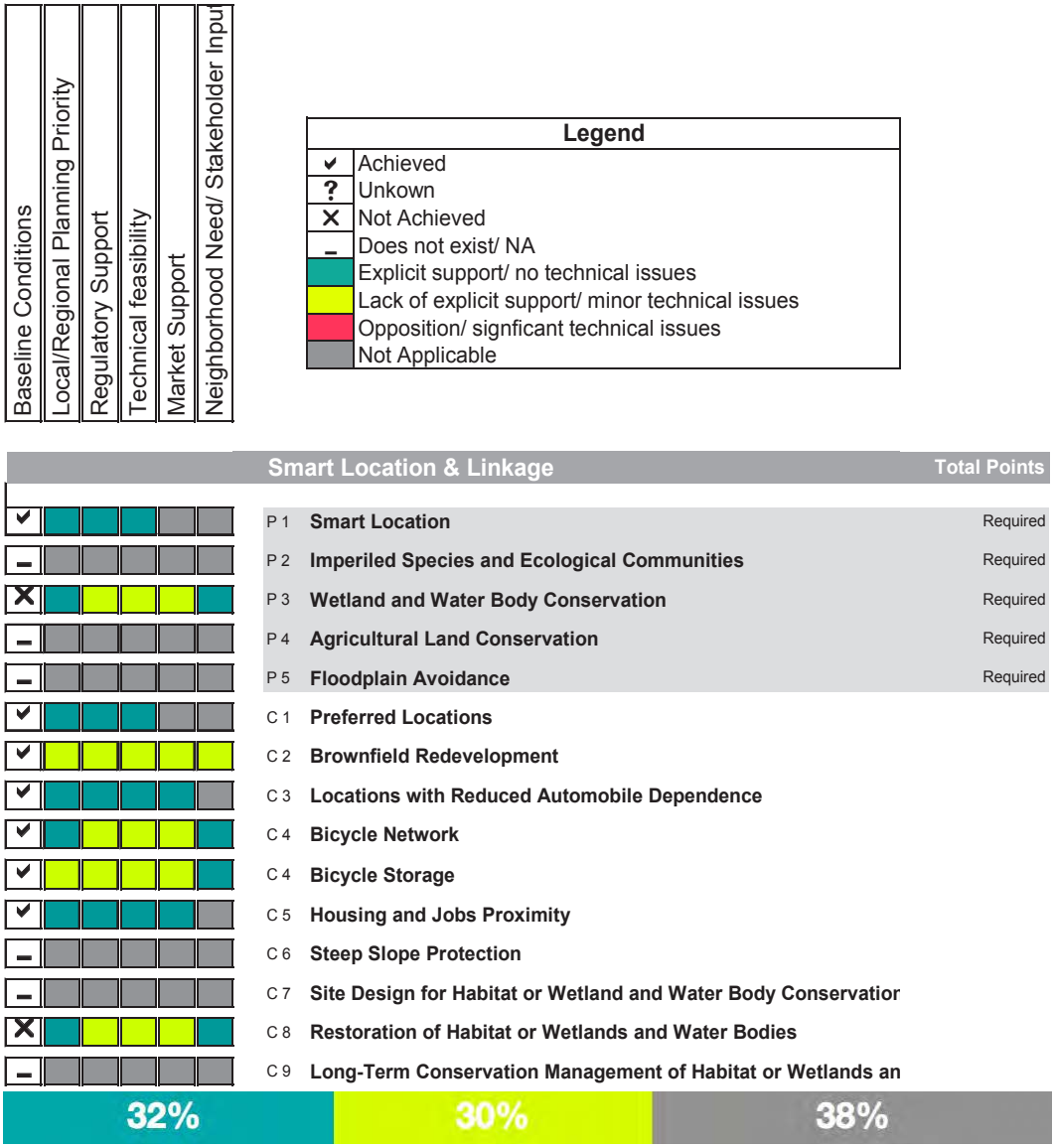
The summary table below shows the numeric values extrapolated from the percentage of credits identified as "Achievable" below. The recommendations listed in the previous pages are largely a response to LEED-ND criteria which achieving was identified as "Possible with Effort" by the assessment team. While these values do not correlate exactly to specific LEED-ND points, they provide an estimate of the neighborhood's potential level of future achievement. It should be noted that this is a rough measure of performance and not an exact representation of the neighborhood's level of possible certification. It should also be noted that all the prerequisites need to be achieved if certification will be pursued. While recognizing these constraints, the categories generated through the assessment serve as a useful metric for estimating formal LEED-ND certification. Given the presumption that all those designated as "Achievable" would be met, providing a baseline point tally of 36, and those listed as "Possible with Effort", are aggressively pursued and achieved, affording an additional 39 points, the analysis shows that Union Station would likely earn a rating of gold from the USGBC.

	Total	Achievable with Current Conditions	Possible with Effort
Smart Location And Linkage	27	9	8
Neighborhood Pattern and Design	44	21	15
Green Building and Infrastructure	29	6	15
	100	**36**	**39**

LEED-ND Certification Thresholds:

Certified: 40-49 Gold: 60-79 Silver: 50-59 Platinum: 80+

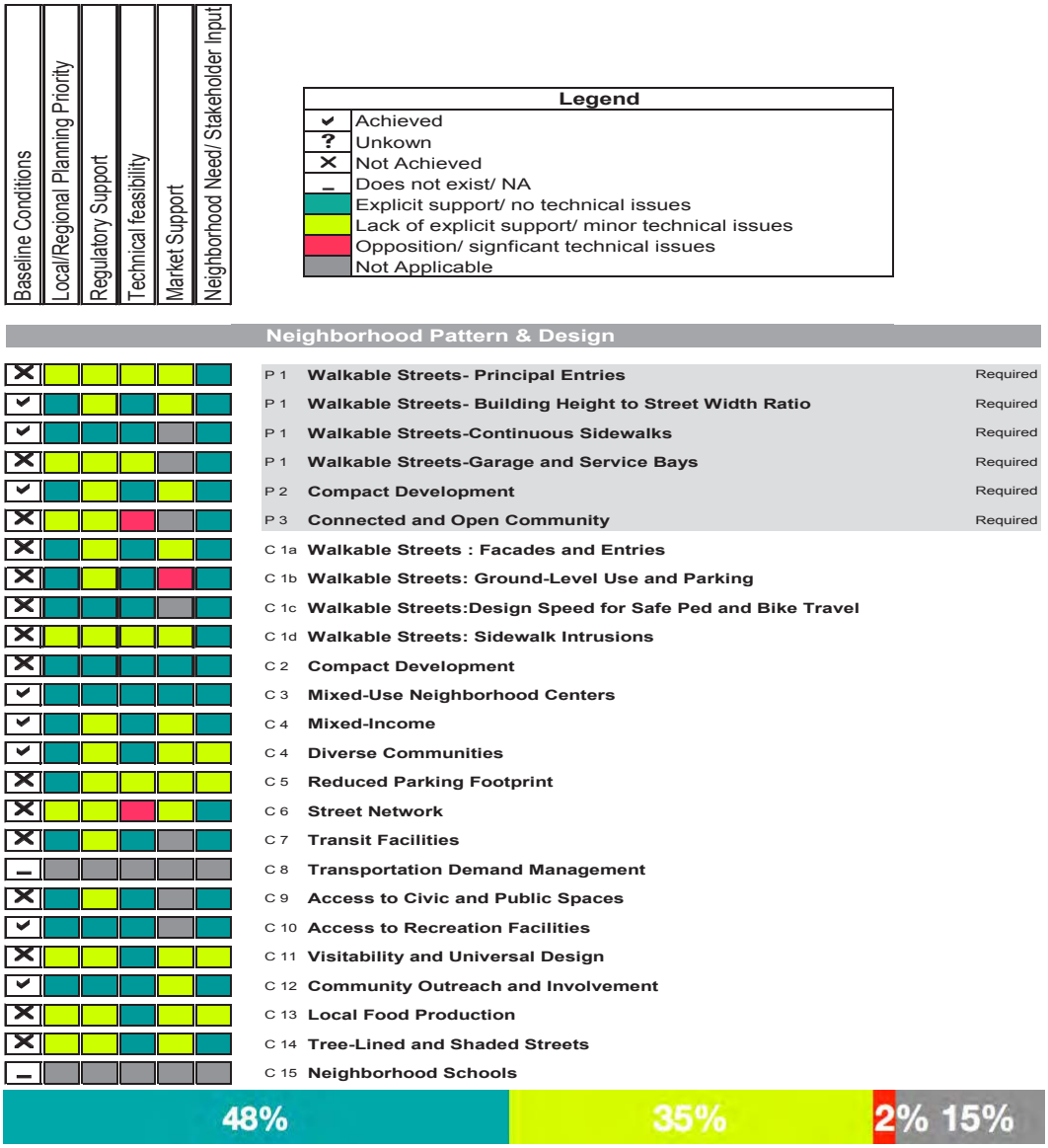
Sustainability Assessment



Smart Location and Linkage

Smart Location and Linkage focuses primarily on existing site conditions to ensure that developments are not located in floodplains, on steep slopes or cause damage to ecological communities or local water bodies. Union Station's location in the highly urbanized core of Downtown Los Angeles combined with its primary function as a transportation system hub means that new development will not impact sensitive habitats and transit access is outstanding.

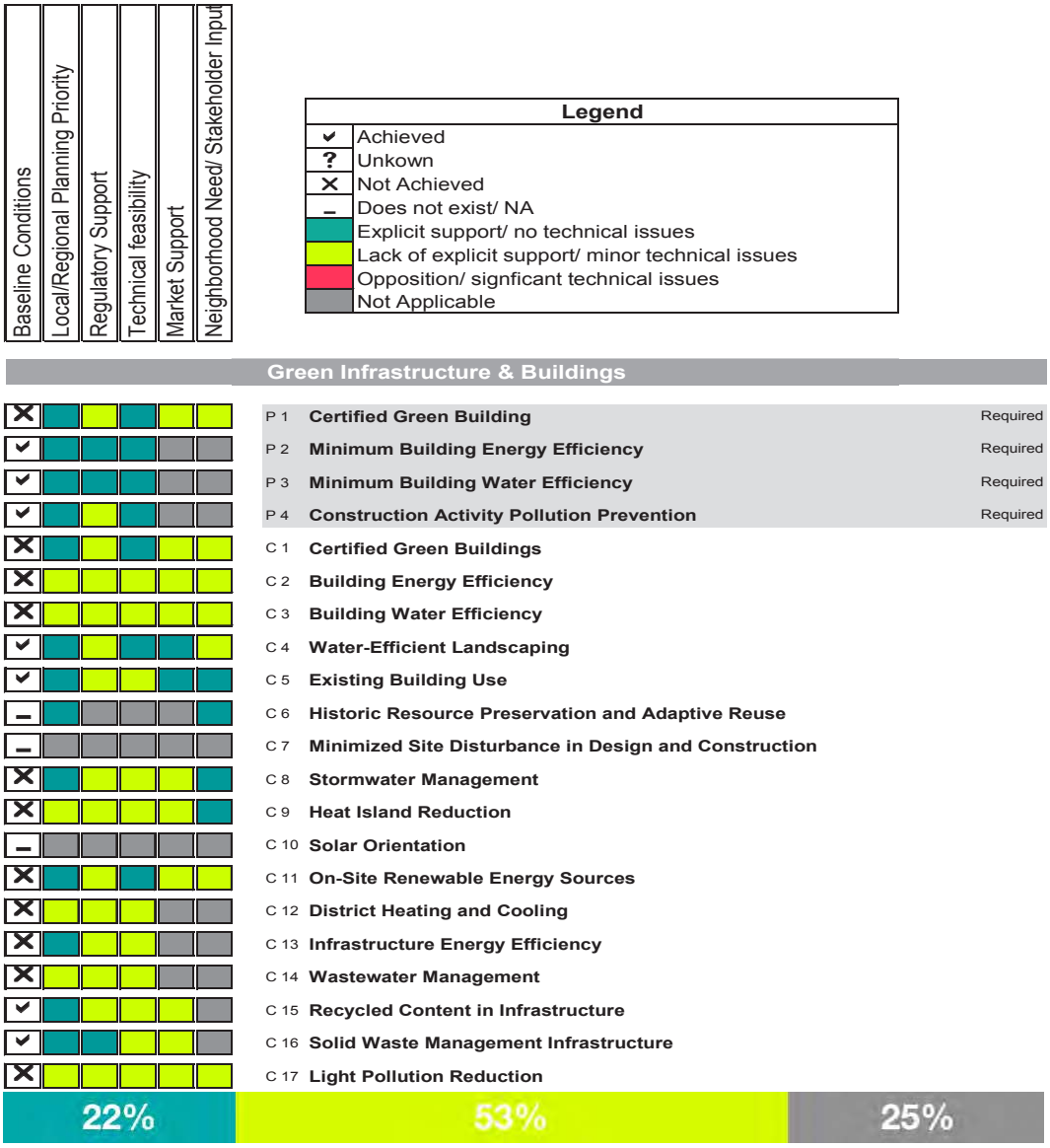
Sustainability Assessment



Neighborhood Pattern and Design

Neighborhood Pattern and Design aims to influence the physical layout and design of the community to yield walkable communities with a variety of land use types. Union Station's location and core function contribute to an underlying framework that approach the vision of NPD. Despite this, finer grain analysis highlights many site-specific conditions that limit full realization of a walkable mixed-use neighborhood center. Some of these challenges include large blocks with many sidewalk intrusions for parking, limited access to surrounding community amenities- particularly to the south due to the 101 Freeway, and the volumes, speeds and widths of surrounding streets.

Sustainability Assessment



Green Infrastructure and Building

Green Infrastructure and Building seeks to optimize individual buildings and surrounding infrastructure systems to reduce their energy and water consumption and associated emissions. Because Union Station is located in California, many of the efficiency standards in this category's prerequisites are satisfied by Title 24 and CalGreen standards. Two areas for Metro's attention include exploring stormwater management systems that reduce impact on the adjacent LA River and optimizing water and energy efficiency strategies for all new buildings and the Station's surrounding grounds.

Appendix

A. LEED for Neighborhood Development Credit Categories

Smart Location and Linkage [SLL]:
SLL focuses on preserving the environmental characteristics inherent to the site such as water body and steep slope protection and influencing development patterns to reduce sprawl and automobile dependence. Credits in this category encourage locating new developments near city centers with robust public transportation options and sites that have been previously developed or are immediately adjacent to existing development.

Neighborhood Pattern and Design [NPD]:
NPD influences the physical layout and design of the community in question through minimum thresholds for density, internal and external connectivity, and characteristics of a walkable community such as continuous sidewalks or building frontages that face public streets. Credits in this category reward projects that have nearby civic, educational and recreational facilities, limited surface parking and have transportation facilities complete with maps and bicycle racks.

Green Infrastructure and Buildings [GIB]:
GIB emphasizes the importance of the optimized performance of structural systems and city infrastructure through minimum building energy and water efficiency, water-efficient landscaping and on-site renewable energy production. Credits in this category promote the adaptive reuse of existing buildings, on-site stormwater management, recycled content in infrastructure such as roadbeds and energy efficient traffic lights, street lights and water pumps .

For more information, please visit www.usgbc.org

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