Title
Interventions on Pacoima Wash: Repurposing Linear Infrastructure into Park Spaces

Author
McManama, Brigid Erin

Publication Date
2012

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Interventions on Pacoima Wash:

Repurposing Linear Infrastructure into Park Spaces

A thesis submitted in partial satisfaction

of the requirements for the degree Master of Arts

in Architecture

by

Brigid Erin McManama

2012

ABSTRACT OF THE THESIS

Interventions on Pacoima Wash:

Repurposing Linear Infrastructure into Park Spaces

by

Brigid Erin McManama

Master of Arts in Architecture

University of California, Los Angeles, 2012

Professor Dana Cuff, Chair

There is a movement underway in Los Angeles led by community groups, non-profits, and local officials to combat environmental racism with the creation of new public parks and greenspaces. This is a dramatic change in the city's land use priorities. In this paper, I situate the current round of park development within the literature on environmental racism and the siting of industry activities and their attendant linear circulation infrastructure in predominately low-income and minority communities. Utilizing Kevin Lynch's classifications of urban forms, this paper demonstrates three typologies for park interventions on linear infrastructure—parkways, nodal parks, and cap parks—and how they would operate upon Pacoima Wash.

The thesis of Brigid Erin McManama is approved.

Diane Favro

Sylvia Lavin

Dana Cuff, Committee Chair

University of California, Los Angeles

2012

DEDICATION

This project is dedicated in loving memory to my nephew Michael Ladino, my brother Morgan Otonicar, and my grandfather Roger McManama—all of whom I lost while earning this degree and whose memory sustains me.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

I wish very much to thank my graduate committee—Diane Favro, Sylvia Lavin and, especially, my graduate advisor Dana Cuff—for their mentorship and support. I am profoundly humbled and grateful to have had the opportunity to work with Dana. Thank you.

Profound gratitude is also due to Amelia Wong, who supplied the images for this project. This project would not be complete without these images, and Amelia's generosity and talent go without saying.

I wish to thank Jennifer Wolch, who was an early mentor to me and who spurred my interest in parks and recreational open space. It is largely Jennifer's research to which this project responds.

Lastly, I wish to acknowledge the help from the kind people at UCLA Graduate Division in filing this thesis.

INTRODUCTION

Pacoima is a 6-square-mile neighborhood located in the San Fernando Valley 23 miles northeast from downtown Los Angeles via the Golden State Freeway, and it is possible to live in Los Angeles for years without ever visiting Pacoima. Commuter rail lines cut through Pacoima, but no trains stop here. Pushed up against the foothills of the San Gabriel Mountains and bordered by three major freeways, on a map Pacoima seems less like a destination than someplace on the way to get somewhere else. However, once off the freeway, one finds animated residential streets in Pacoima that could serve as textbook models for studies in Everyday Urbanism: paleta men make their rounds, sidewalks and planting strips are transformed into improvised retail spaces, and driveways are converted into patios from where norteño beats and barbecue smoke spill out on weekends. Perhaps due to its geographic isolation from the rest of the city, Pacoima has a small town feel.

In spite of the vibrant and visible residential life, Pacoima could just as easily be characterized by its poverty, over-crowding, and environmental hazards. Forty-six percent of the neighborhood's 100,000 residents live at or below the federal poverty level, 95% are non-white, 21% live in garages or rented rooms, and Pacoima is home to over 300 industrial sites yet only 5 public parks. Where the houses abruptly end just west of the Ronald Reagan Freeway lies an industrial belt, which boasts none of the charm of Pacoima's residential areas. There is virtually no public greenspace here, and nothing to buffer the industrial activity from nearby homes and schools.

One of the major infrastructural features (and eyesores) within this industrial belt is Pacoima Wash—a 9.5-mile concrete channel that carries storm water from the San Gabriel Mountains to Tujunga Wash (itself a tributary of the Los Angeles River). In the 1930 report

"Parks, Playgrounds, and Beaches for the Los Angeles Region," the Olmsted Brothers and Harland Bartholomew & Associates proposed preserving Pacoima Wash as a wooded parkway within a regional network of greenspaces.[1] Instead, its banks were raised and paved by the Army Corps of Engineers in the 1940s as part of a comprehensive flood-control program, and the entire corridor is presently fenced off from the public. Its current condition poses more of a safety threat than in any way resembles a landscape feature, a dead zone disconnected from the fabric of the neighborhood. In fact, the rare mention of Pacoima Wash in the *Los Angeles Times* in the last decade has primarily been occasions when children, curious by this urban oddity, have been rescued from the channel after playing too close to its swift-moving water. In short, Pacoima Wash is both a curiosity and an afterthought.

Despite this bleak diagnosis, Pacoima Wash has the potential to be more. While the space along the channel itself is unused, hazardous and unsightly, it is also available, and it is for these reasons that Pacoima Wash cries out for redefinition. In 2010, the community-based organization Pacoima Beautiful released a vision plan for Pacoima Wash that proposed restoring the riverbed and developing park space along the wash.[2] This plan for Pacoima Wash is part of a larger movement led by community groups, non-profits, and local officials to combat environmental racism with the creation of new public parks and greenspaces in neighborhoods like Pacoima—densely populated, low-income and minority areas with disproportionately greater environmental hazards and disproportionately fewer environmental amenities.[3] Historical industrialization and residential segregation has meant that Los Angeles's low-income and minority areas have borne a greater burden of undesirable land uses, such as hazardous industrial activity, while they have simultaneously had fewer parks and recreational open space opportunities than other districts.[4] These issues of environmental racism have gained broad

critical attention, and new parks have been identified as a means to redress these historic spatial inequities, improve public health, re-green the city, and restore the natural landscape.[5]

While scholars of environmental racism and park advocates have identified the unequal distribution patterns with regards to parks and industrial installations in Los Angeles that are divided along lines of race, class and geography, they have failed to draw the distinct connection to the presence of attendant linear circulation infrastructures traversing these low-income and minority communities. Underused linear infrastructural systems like Pacoima Wash have been considered for new park space largely because publicly- or utility-owned lands are some of the last remaining undeveloped spaces in the already densely built city.[6] However, the siting of these disruptive linear systems is also a function of the historical development of racialized urban space in Los Angeles. In fact, in Los Angeles it is as though the presence of linear infrastructures serves as an index of a community that is park-poor. Like Pacoima Wash, crisscrossing Los Angeles are linear networks of publicly-owned and operated circulation systems (i.e. railways, freeways, and flood-control channels) that are not robust at present, but that could be redeployed as public amenities. Therefore, these linear infrastructural systems should not be viewed by park advocates, planners, and architects merely as lamentable obstructions and nuisances, but also as inherent opportunities and assets.[7]

The state of Pacoima Wash is recounted here in order to demonstrate different typologies for reclaiming lost or underused urban linear infrastructures for park spaces and the rationale for doing so. This analysis limits itself to interventions upon large-scale, physically imposing, and obstructive circulation infrastructures—an essay on Los Angeles's particular pattern of development. These networks are underutilized by architects and planners, in part, because they pose obstacles to conventional development: the spaces along these networks are often relatively

small and irregular in form, or lie simply outside of the interests of conventional urban design practices.[8] However, circulation infrastructural systems have certain physical and non-physical characteristics that are distinct to them, and their rights-of-way, attendant nodes, and air rights can be expanded and put to good use as both connective and recreational spaces. Due to the connective nature of linear networks, their reach over large geographical areas and inherent tie to spatial inequity, more so than other parts of the urban fabric linear infrastructure opens up new opportunities for the next generation of urbanism—one defined by connectivity at a human scale—and therefore, merits the immediate attention of architects and planners.

BACKGROUND

Environmental racism is a social and spatial problem defined by the disproportionate exposure of people of color to environmental hazards and their exclusion from the benefits of environment amenities.[9] Los Angeles, in particular, has a long history of environmental racism.[10] Zoning laws enacted in the 1920s established the concentration of industrial activities in non-white and immigrant areas. Due to racial segregation and financial insecurity, these groups lacked initially the opportunity to move to less-industrialized areas. In "Environmental Racism and Urban Development," Laura Pulido argues:

> The production of urban space in Los Angeles in the 1920s shows how race and class influenced the location of both residential and industrial districts. Affluent whites moved to residential suburbs such as Pasadena, Rancho Palos Verdes, and Beverly Hills, areas that were never seriously threatened by industrial activity. Instead, industry developed in conjunction with nonwhite spaces (Eastside and south of downtown) and the white working class.[11]

Suburbanization later allowed for working class white households to move elsewhere, and people of color largely took their place. As industrial activities were disproportionately located in low-income and minority communities, public parks, as well as other public services, were disproportionately located in other districts.[12] Therefore, these spatial inequities that are based on race and class were not by accident, but rather reflect Los Angeles's historical land use priorities.

These residential and industrial patterns endure. Today, many of the industrial activities associated with environmental hazards are concentrated in central and south Los Angeles and along industrial arteries.[13] One large grouping of industrial installations follows the transportation corridor created by the Golden State Freeway and the railroad from East Los Angeles, through downtown, and to the eastern San Fernando Valley. Another follows the Harbor and Long Beach Freeways and the railroad from downtown to the Los Angeles Harbor.

Industry is always sited along industrial circulation infrastructure, and industrial circulation infrastructure always expands to meet the needs of growing industry.[14] Therefore, industry and industrial circulation infrastructure cannot be functionally or spatially divorced from each other. Further, the siting of industrial activities and their attendant linear infrastructure creates a vicious cycle where the negative externalities of these land uses—air and noise pollution and surface level obstruction—further reduces property values.[15] Therefore, it is no wonder then that these large industrial zones remain inhabited by predominately low-income people of color.

The concrete flood-control channel that remains of the Los Angeles River and its tributaries can be characterized similarly. The river's 48-mile long core basin also stretches largely along the large industrial corridor from the San Fernando Valley, through downtown, and ultimately discharging in Los Angeles Harbor.[16] While the river is not itself a polluter like freeways and railroads, like these other systems it also imposes negative externalities upon households located along its banks in that it produces an urban heat island,[17] as well as surface level obstruction. Further, channelization has not eliminated all risk of floods, and Los Angeles has experienced several major floods since channelization most recently in 2005. Therefore, it is easy to conceive of the floodplain of the Los Angeles River to be an undesirable place to live, and studies have shown that property values are negatively linked to floodplains.[18]

CASE FOR PARKS

Parks and open spaces bring—without question—tremendous social, environmental, economic, aesthetic, and health benefits to a city and its inhabitants.[19] Los Angeles, however, is tremendously park-poor, raking last among major U.S. cities in per capita open space.[20] Beyond the inadequate availability of parks and recreational open space opportunities as a whole, there are severe disparities in park access based upon race, class, and geography. A 2008 report by The Green Visions Plan found that while only 14.6 percent of the population of the Los Angeles region has pedestrian access to greenspaces, African-Americans and Latinos have disproportionately less access to these resources compared to whites by a factor of 12 to 15 times less park acreage.[21] Children of color are far more likely to live in concentrated poverty without sufficient access to public parks or private backyards, and are more likely to suffer from child obesity, diabetes, and other inactivity-related illnesses.[22] White and more affluent people with fewer children than the county average benefit from disproportionately greater access to public parks and recreational facilities, and regional recreational open spaces are more difficult to access from the densely populated inner cities via public transportation.[23]

Los Angeles is unique in its lack of parks and open space, and the causes for which are deeply rooted in the city's historical land use priorities. Few early planners saw a need to set aside land for public open space given the city's bordering mountains, beaches and orchards, nor did early real estate developers support large-scale land acquisitions for park space.[24] Further, Los Angeles's historic vision for its residential neighborhoods has been low-density communities of single-family homes with private yards.[25] However, in the 1930 report to a committee of the Los Angeles Chamber of Commerce, "Parks, Playgrounds and Beaches for the Los Angeles Region," authors Olmsted Brothers and Harland Bartholomew and Associates

argued that rampant development had already left the city with a critical park shortage, and that without immediate intervention, conditions would only worsen. The report described the open space resources of low-income households as "[t]hose of lower incomes generally live in small-lot, single-family home districts, and have more children and less leisure time in which to go to distant parks and recreational areas. These families comprise 65 percent of the population, and they should be given first consideration, not only for their own good but for the welfare of the community."[26] These precise concerns about unequal access to greenspaces remain true today.[27]

In the last 15 years, perhaps the most successful urban development initiative in Los Angeles has been the movement to provide new public parks and greenspaces.[28] In 1996, the City of Los Angeles adopted Proposition K, which was designed to address the city's severe inadequacies of public services including parks and recreation facilities.[29] Further, in 2001, the State of California legislature passed the Urban Park Act, which was dedicated to financing the acquisition and development of parks and recreation areas in underserved neighborhoods. These two measures combined have resulted in hundreds of millions of dollars, as well as dozens of acres of urban land, being set aside for park development and acquisition. Therefore, there has been no better time to propose new park spaces given the substantial attention on this issue, available funding, and critical need for additional park spaces.

INTERVENTIONS

Linear infrastructural systems have certain spatial characteristics that are distinct to them. These corridors are inherently about movement—be it the movement of freight, passengers, or storm water—and they are also physically imposing and obstructive, span great distances, and set up barriers that break cities apart and divide inhabitants. However, these conditions breed particular urban design typologies that operate as thresholds onto the network. In his delineations on the unique ways that linear infrastructures organize space, Stan Allen writes:

> Not only [do infrastructures] provide a network of pathways, they also work through systems of locks, gates, valves—a series of checks that control and regulate flow...What seems crucial is the degree of play designed into the system, slots left unoccupied, space left free for unanticipated development.[30]

Therefore, there is an opportunity established in a problem, an opportunity to transform the boundary nature of the network into new forms of connectivity at a human-scale.

This analysis identifies three strategies for reclaiming lost linear infrastructure in the city for connective and recreational uses that fall into two of Kevin Lynch's classifications of physical urban forms: paths and nodes.[31] The first strategy is the parkway, which provides a narrow path along the original infrastructural corridor, such as along various rights-of-way. The strategy for linear strips of public open space is based on the capacity to generate opportunities for both recreation and transportation in the form of pedestrian and bicycle flow. Linear parks traverse districts and connect neighborhoods. The second strategy is the use of sites along an infrastructural system made up of non-linear protuberant spaces, or nodes, which occur at strategic points along the main corridor. Finally, the third strategy is the cap, or lid, park, which is a path and node hybrid. Cap parks exploit the air rights of an existing infrastructural system by decking part of the system with park space. Cap parks are located at strategy points, like

nodes, but also provide cross-lateral movement, like paths. Further, cap parks bridge neighborhoods otherwise severed by linear corridors and break down edges.[32]

1. Parkways

The concept of converting abandoned infrastructural corridors into multi-use parkways and trails emerged in the mid-1960s with the Rails-to-Trails movement. The ascendance of motor transportation over rail left much of the nation's once-extensive network of railways in ruin.[33] Planners and park advocates then identified parkways and trails as a means to resuscitate these faded rail networks. Now more than 15,000 trails of various lengths have been developed within railroad corridors in the United States.[34] Perhaps the best known example of a linear park built on an abandoned urban railway is the High Line in New York. In contrast to rail trails, paths within or adjacent to freeway rights-of-way are far less common, but the concept of roads-with-trails has gained broader attention in recent years.[35] The rights-of-way along linear circulation infrastructure are relatively narrow (railroad rights-of-way, for example, are typically 50 to 150 feet wide), which is ample space for multi-use paths, but too narrow for much additional programming. However narrow, linear strips also provide certain advantages over other parcels: they have proportionally longer perimeters than square or rectangle parks of greater bulk, and by possessing greater perimeter space, these spaces also provide the highest visual impact and maximum physical access.[36] This maximum amount of contact expands the sense of open space associated with the parkway and breaks down the sense of a boundary. Linear parks also encourage active physical recreation, such as walking, jogging and cycling, and therefore, can serve as one step toward tackling child obesity and other diseases related to inactivity, while also making the city more conducive to non-motorized transportation.[37] Further, by maintaining the linear integrity of the original network, these spaces offer greater functionality when linked to other parks and open spaces, such as school sites, beaches, etc.[38]

Parkways pose an especially apt solution for Los Angeles's park-poor low-income and minority communities. There exists not only the unequal distribution of park space along lines of race and class, but also the unequal distribution of particular types of parks and park amenities. The park equity analysis conducted by The Green Visions Plan found that parks outfitted with walkways are more likely to be located in predominately white areas of Los Angeles.[39] Whites also reside in higher numbers along beaches and the foothills of the Santa Monica Mountains, which places them in greater proximity to beach paths and mountain trails. Further, the region's public transportation system does not provide easy access from densely populated inner cities to the Santa Monica Mountains, beaches, and other regional recreational open spaces.[40] Therefore, parkways and trails are especially needed in the low-income and minority areas of Los Angeles that are already home to linear infrastructural systems.

Sites along the Los Angeles River and its tributaries have been a focus of recent efforts to create new parkways. The Los Angeles River is an unique infrastructural feature, and no other major city has a flood-control system of its size and expanse. One completed project is the Compton Creek Bike Path—a paved multi-use path that courses through the city of Compton for 3.3 miles along the east bank of Compton Creek between El Segundo and Greenleaf Boulevards (p. 21). Compton Creek is an 8.5-mile tributary of the Los Angeles River and, like Pacoima Wash, most of this waterway is encased in a concrete flood-control channel. The Compton Creek Bike Path connects residential neighborhoods of Compton to schools, the civic center, churches, and a Metro light rail station. Opened in 2005, this parkway has been such a success with users in the otherwise park-poor community that the Rails-to-Trails Conservancy has funded a project to work with the surrounding community on developing ways of improving the path.[41]

Over the past two decades, community groups, non-profits, and local officials have worked toward a plan to restore the Los Angeles River's ecological function and transform its riverbed into a public parkway. In 2007, the City of Los Angeles released the "Los Angeles River Revitalization Master Plan," which is an ambitious 20-year blueprint for the development of the river. The master plan has two main goals: 1) the removal of the river's concrete walls where feasible and the creation of a continuous riparian habitat within the channel while retaining its flood-control role, and 2) the creation of a continuous greenway of multi-use paths and parks along the river. The $2 billion-plus project is still unfunded, but it is significant in that it demonstrates a bold effort to re-green and reconnect the city. The vision plan for Pacoima Wash proposed by Pacoima Beautiful shares the same goals of restoring the riverbed and developing park space along the wash as the Los Angeles River master plan. The rights-of-way along either side of Pacoima Wash average between 30 and 70 feet wide, which is enough space to provide a generous multi-use path and some additional passive recreational amenities, such as gardens and benches (pp. 25-6).[42] A parkway along Pacoima Wash holds great potential not only to provide much needed park space for the community, but also to encourage active recreation, improve watershed health, and link residents to trails in the San Gabriel Mountains.

2. Nodal Parks

As linear infrastructural corridors traverse the city and meet the grid, they often create irregular parcels. Also, infrastructural corridors often require facility nodes at key points that operate within the networks, but that also bulge from the main line (e.g. rail yards, water treatment facilities, and park-and-rides). By straddling infrastructural networks, these leftover and auxiliary spaces are typically unfit for conventional development, and are often the last remaining undeveloped acreage in urban communities.[43] Further, when developed into parks within the framework of an open space network, these nodes establish new gateways that serve as initial entry and end points for linear parks. For example, Hansen Dam was erected in the late-1930s to impound Tujunga Wash as part of the comprehensive flood-control program that resulted in the channelization of the Los Angeles River and its tributaries. In 1949, the city opened the man-made 130-acre impoundment lake to the public for recreational uses and converted the surrounding flood basin, which was otherwise uninhabitable, into a vast public park. Hansen Dam Recreation Area remains one of the city's most heavily used parks, and serves as a gateway to a parkway along the banks of the channelized Tujunga Wash, as well as trails in the San Gabriel Mountains.[44] Further, in the Sun Valley neighborhood, De Garmo Park sits upon an irregular parcel that lies between the Golden State Freeway and private homes (p. 22). This portion of the Golden State Freeway is elevated, and so this pocket park is well below the grade of the freeway. De Garmo Park is small, but it accommodates walkways, picnic tables and community murals, and it is one of the few parks in the area.

There are two recently completed parks at separate abandoned rail yards located along the railroad and the Los Angeles River in the heart of the city: the 32-acre Los Angeles State Historic Park at River Station, or the Cornfield (between the Pasadena Freeway and Los Angeles

River), and the 40-acre Rio de Los Angeles State Park (p. 23) at Taylor Yards (between the Glendale and Pasadena Freeways). These parks are the product of a community-driven effort to prevent the expansion of industrial uses in these already densely industrialized and park-poor communities. The sites were purchased by the State of California under the Urban Park Act with the goal of contributing to regional park acquisition and connectivity of public open space. Brownfield sites such as these require extensive environmental remediation to clean up hazardous materials and toxins; however, these particular sites are ideal for parks given their connection to the Los Angeles River both visually and functionally, and proximity to regional open space areas, such as Griffith Park and Elysian Valley, civic and cultural sites, such El Pueblo Historical District, City Hall and local schools, and several residential neighborhoods.

There are several vacant or underused parcels along Pacoima Wash that could serve as potential sites for parks. In the Pacoima Wash vision plan, Pacoima Beautiful identifies two long, narrow, vacant, and contiguous parcels that lie between the wash and private homes that are anchored by Telfair Avenue (p. 25-6).[45] One of these irregular parcels was recently purchased by the City of Los Angeles with the intent of developing the site into a pocket park akin to De Garmo Park. The other is owned and maintained by the Homeowners Association of an adjacent housing development, and if also acquired, these two parcels together would make a roughly 4-acre park. In addition, there is a 36-acre paved lot at the intersection of Pacoima Wash and Glenoaks Boulevard that functions as the San Fernando Swap Meet. Though currently operating as a private enterprise, this is the largest least-developed site along the wash and holds the greatest potential for a large regional park at the scale of the Los Angeles State Historic and the Rio de Los Angeles State Parks.

3. Cap Parks

A key attribute of linear infrastructural networks is that they are impenetrable to cross movement for long distances, and therefore, establish boundaries that break cities apart and heighten the notion of an edge. Cap parks offer a valuable urban design intervention in that they transcend boundaries, and provide new ways of supplying public amenities and reuniting previously disparate neighborhoods without having to destroy or displace existing infrastructure. By occupying air rights, cap parks can exist above fully functioning networks and span seamlessly the flow of traffic. The first urban infrastructural project to showcase the use of air rights for park space is the 5.2-acre Freeway Park in Seattle. At the time of its completion in 1976, the Freeway Park was notable not only for its mixture of Brutalist architecture and greenspace, but also for marking a shift in urban design priorities that sought to mend the deep cuts in the urban fabric left by the post-war boon in freeway construction.[46] The air rights over freeways and other linear networks are publicly owned spaces, which eliminates land acquisition costs. However, due to the enormity of such engineering and construction undertakings, the capital intensity requirements for covering acres of infrastructure with planted concrete lids can be formidable, and therefore, cap park projects are long to complete and not conducive to incremental growth. To overcome funding restraints, successful cap park projects, such as Freeway Park, Millennium Park in Chicago and Olympic Sculpture Park in Seattle, have relied upon public and private funding. The incentive for private investment in such projects is the increase in nearby land values and economic development after park completion. Millennium Park, for example, had a final cost of $475 million of which private donors paid $205 million, and the park has generated up to $1.6 to $2.2 billion in increased earnings for hospitality and retail establishments in downtown Chicago since it opened in 2004.[47]

In Los Angeles and other densely built cities, there is a premium on space, and so the concept of decking linear infrastructure (freeways, in particular) has gained tremendous popularity in the last decade. The community of La Cañada-Flintridge incorporated a cap park into a project to expand its City Hall campus and provide direct access from City Hall to a public elementary school, as well as a nearby churches and businesses (p. 24). With zero room for growth, in 2004, a small concrete lid was constructed over the Foothill Freeway upon which the 1.5-acre Memorial Park connects these previously disconnected sites. The result is a viable and connected civic center equipped with play areas, picnic tables, and a bandstand. Several communities in the Los Angeles region have completed feasibility studies and vision plans on potential cap parks at 8 different sites, including sites in Santa Monica, Hollywood, and downtown Los Angeles.[48] The largest and furthest developed proposal is the Hollywood Central Park project, which would deck a 1-mile stretch of the Hollywood Freeway between Hollywood and Santa Monica Boulevards with a 44-acre park. The Hollywood neighborhood is one of the most park-poor areas in Los Angeles, and households within a mile of the proposed park are predominately low-income and minority.[49] A 44-acre park on top of an 8-lane freeway would provide ample room for a wide variety of programming, including active and passive recreation and community features. The proposed cap park has gained tremendous support from neighborhood residents and local officials, and studies indicate that a cap park over the Hollywood Freeway is buildable from both a financial and engineering perspective. The proposed park would accompany infrastructural improvements to the freeway and surrounding streets, overpasses, and ramps. In addition to providing much needed park space, this project would reunite the two communities on either side of the Hollywood Freeway, which have otherwise been severed during the corridor's 50-year lifespan.

Pacoima Wash can likely accommodate a cap park given that the channel is below the grade of the neighborhood and with the exception of pedestrian and motor bridges its air rights are available. However, Pacoima Wash is perhaps an unsuitable site for this type of intervention, in part, because it is relatively narrow as compared to freeways.[50] Unlike the 8-lane Hollywood Freeway, the air rights of Pacoima Wash cannot as easily provide for acres and acres of new park space in order to justify the high cost of cap parks. Further, while Memorial Park in La Cañada Flintridge is relatively small at 1.5 acres, this cap park serves to bridge the adjacent city hall and elementary school. There are no contiguous public structures in Pacoima located adjacent to Pacoima Wash to connect with a cap park. The spaces on either side of the wash alternate between residential and industrial uses, and therefore, there are few compelling sites to link with a cap park. One possible site, however, is along the Haddon Avenue Pedestrian Bridge, which would expand the surface of the existing Paxton Park and provide a stronger link between the park and nearby San Fernando and Mission High Schools (pp. 25-6).

CONCLUSION

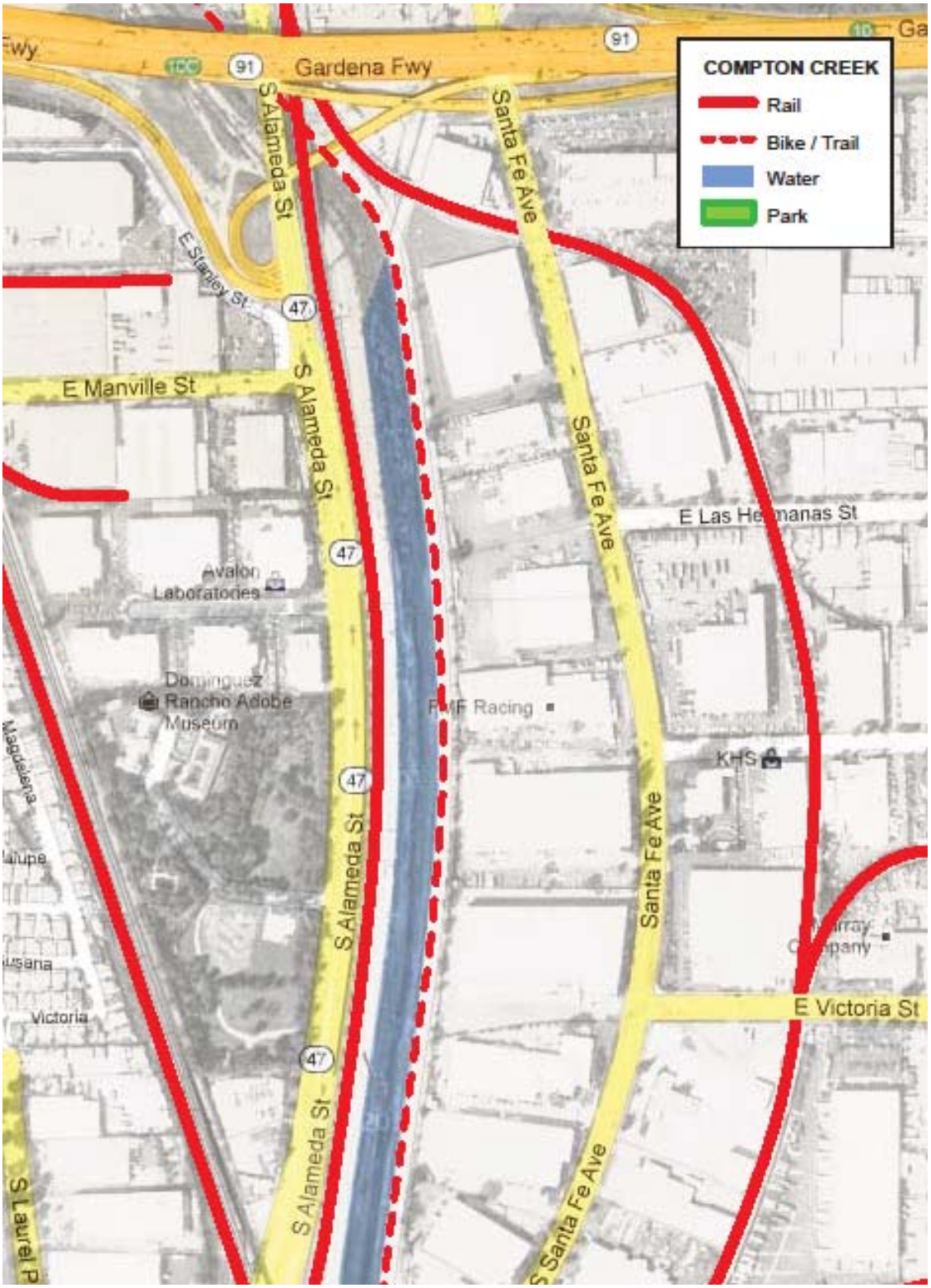
Recently, there has been a resurgence in interest in the role of architecture and design have in reinventing public infrastructure to shape the future of the city.[51] The nation's investment in networks of circulation and communication infrastructure in the late-nineteenth and early-twentieth centuries facilitates a period of profound urban growth and change, and these grand networks became symbols of the power of modern architecture and design. However, much of infrastructural projects of the twentieth century—now decades old—are structurally deficient and/or functionally obsolete, and require (or soon will) total replacement.[52] In fact, a 2005 report by the American Society of Civil Engineers assigned the United States's infrastructure an overall grade of "D," down from "D+" four years earlier, and the estimated investment cost for rehabilitation is $1.6 trillion.[53] Therefore, the role of architecture and design with regard to infrastructure has changed—today the task for architecture and design is no longer just to plan new networks of circulation and communication infrastructure, but also to intervene on existing networks. Plans to rebuild crumbling infrastructure can incorporate new uses onto the original network, such as parks, that hold the potential to revitalize cities, connect neighborhoods, and establish the next generation of urbanism.

In the Los Angeles region, there are several pertinent examples of previously underutilized spaces along linear infrastructural systems that have been redeveloped into greenspaces and that serve to improve the social and environmental health of the city. In this moment of rising demand for parks and diminishing supply of available urban land, repurposing neglected linear infrastructure in already built-up areas provides a highly adaptable and efficient land use alternative and addresses the need for urban infill. The conversion of spaces along linear infrastructure in urban areas into public amenities holds significant relevance to current

efforts at reshaping urban and suburban development patterns, particularly in the context of sprawl and the consequent dwindling of accessible open space for parks and recreational activities. Efforts to reshape urban and suburban development patterns need not require grand gestures, but rather, as this paper suggests, are possible through a series of interventions at key sites and upon key networks. Further, in the case of linear circulation infrastructure, opportunities are established by a problem; opportunities for new paths, nodes, and connections. In that way, these systems cease to be limits and become thresholds. In an ideal world, Pacoima residents, as well as all citizens of Los Angeles, would have equal access to high quality parks and recreational open space opportunities, and low-income people of color would not be relegated to districts with greater environmental hazards. Establishing park spaces along Pacoima Wash would not eliminate the causes of concentrated poverty or the environmental hazards that dot the neighborhood, but it would serve as one measure to combat environmental racism and promote further debate on the causes and solutions for spatial inequity.

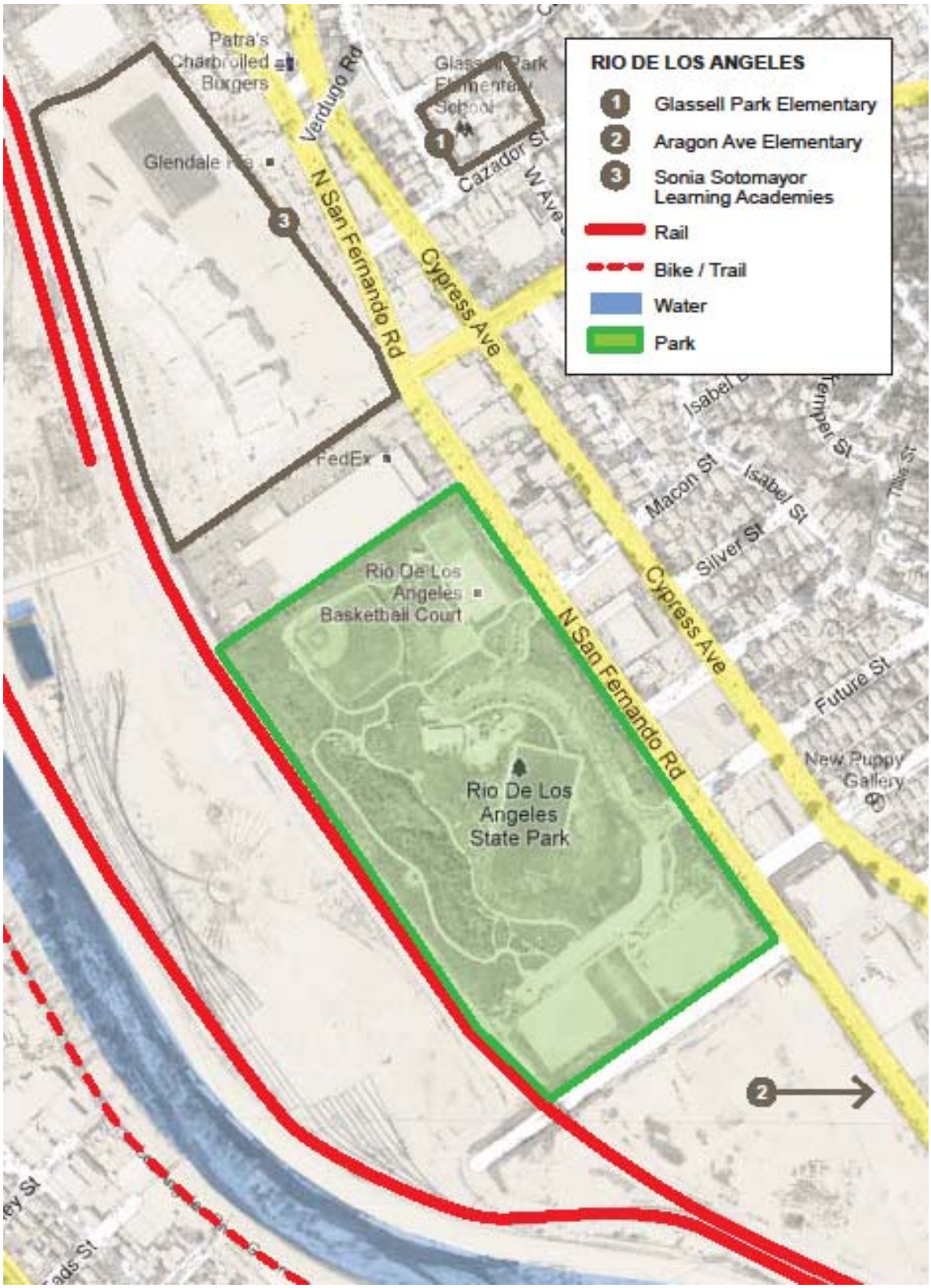
IMAGES

Compton Creek Bike Path, Compton, CA.



De Garmo Park, Los Angeles, CA.

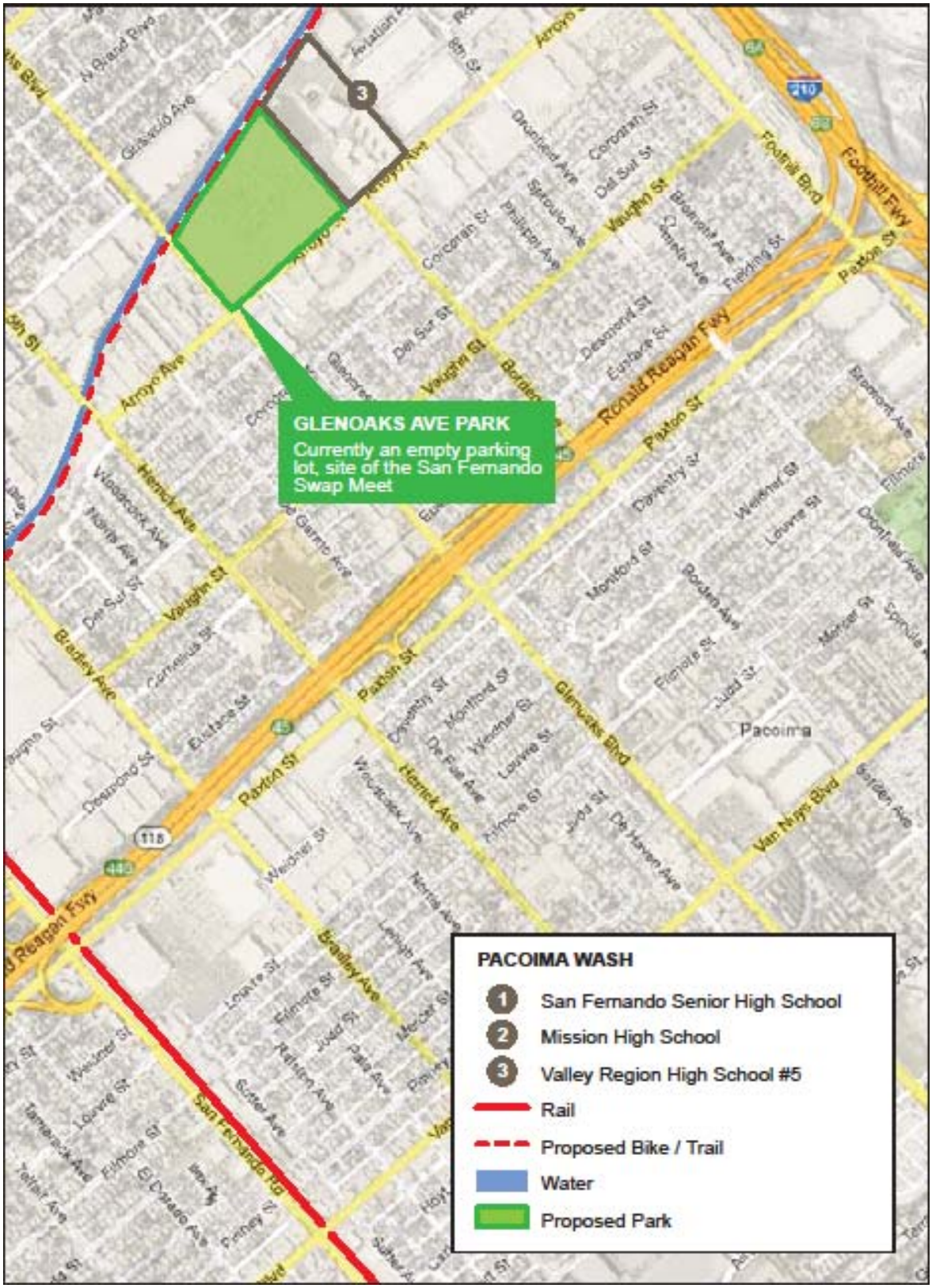
Rio de Los Angeles State Park, Los Angeles, CA.



Memorial Park, La Cañada-Flintridge, CA.

Proposed Parks along Pacoima Wash, Los Angeles, CA.

Continued.


GLENOAKS AVE PARK
Currently an empty parking lot, site of the San Fernando Swap Meet
PACOIMA WASH
1 San Fernando Senior High School
2 Mission High School
3 Valley Region High School #5
Rail
Proposed Bike / Trail
Water
Proposed Park
Pacoima
Ronald Reagan Fwy
Foothill Fwy
Paxton St
Vaughn St
Glenoaks Blvd
Van Nuys Blvd
Arroyo Ave
Herrick Ave
Bradley Ave
San Fernando Rd

NOTES

[1] Olmsted Brothers and Bartholomew and Associates, “Parks, Playgrounds, and Beaches for the Los Angeles Region,” Eden by Design: The 1930 Olmsted-Bartholomew Plan for the Los Angeles Region, eds. Greg Hise and William Deverell (Berkeley: University of California Press, 2000) 214.

[2] Pacoima Beautiful, Pacoima Wash Visions Plan: Imaging a New Multipurpose Greenway for the Northeast San Fernando Valley (Los Angeles: Pacoima Beautiful, 2010).

[3] Jason Byrne, Megan Kendrick, and David Sroaf, “The Park Made of Oil: Towards A Historical Political Ecology of the Kenneth Hahn State Recreation Area,” Local Environment 12.2 (2007) 6.

[4] Jennifer Wolch, John Wilson, and Jed Fehrenbach, “Parks and Park Funding in Los Angeles: an Equity-Mapping Analysis,” Urban Geography 26.1 (2005) 4-35.

[5] Byrne, 4.

[6] Chona Sister, Jennifer Wolch, and John Wilson, “Got Green? Addressing Environmental Justice in Park Provision,” GeoJournal 75.3 (2010) 244.

[7] Asset-based community development is a methodology for sustainable community-led development that seeks to identify and utilize a community’s existing strengths.

[8] Gil Doron, “Those Marvelous Empty Zones on the Edge of Our Cities: Heterotopia and the ‘Dead Zone,’” Heterotopia and the City: Public Space in a Postcivil Society, eds. Michiel Dehaene and Lieven de Cauter (New York: Routledge, 2008) 207.

[9] Wolch, 7.

[10] Laura Pulido, “Environmental Racism and Urban Development,” Up Against the Sprawl: Public Policy and the Making of Southern California, eds. Jennifer Wolch, Manuel Pastor, and Peter Drier (Minneapolis: University of Minnesota Press, 2004) 71-98.

[11] Ibid, 83-84.

[12] Wolch, 8.

[13] Pulido, 78.

[14] Wolfgang Schivelbusch, The Railway Journey: The Industrialization and Perception of Time and Space (Berkeley: University of California Press, 1987).

[15] Thomas Sanchez, Rich Stolz, and Jacinta Ma, Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities (Cambridge, MA: The Civil Rights Project at Harvard University, 2003) 20.

[16] Beginning in the 19th Century, early mills and factories had traditionally been located along riverbanks due to the transportation properties. See Friedrich Engels, "The Great Towns" ed. Richard T. Le Gates, City Reader (New York, Routledge, 2003) 46-54.

[17] Pacoima Beautiful, 22.

[18] Robert Alton Young, Determining the Economic Value of Water: Concepts and Methods (Washington, DC: Resources for the Future, 2005) 300.

[19] Paul Sherer, The Benefits of Parks: Why America Needs More City Parks and Open Space (San Francisco: Trust for Public Land, 2006) 3.

[20] Stephanie Pincetl and Elizabeth Gearin, "Urban Open Spaces: Gateways to Urban Sustainability," Urban Geography 26.5 (2005): 365-384.

[21] Chona Sister, John Wilson, and Jennifer Wolch, The Green Visions Plan for the 21st Century. 17. Access to Parks and Park Facilities in the Green Visions Plan Region (Los Angeles: University of Southern California GIS Research Laboratory and Center for Sustainable Cities, 2008) 3. In this study, pedestrian access is defined as living ¼ mile—or ½ mile round trip—to the nearest park.

[22] Robert Garcia and Aubrey White, Healthy Parks, Schools, and Communities: Mapping Green Access and Equity for the Los Angeles Region (Los Angeles: The City Project, 2006) 3.

[23] Sister, "Got Green?" 244.

[24] Byrne, 14.

[25] Wolch, 5.

[26] Olmstead,110.

[27] The authors of "Got Green?" cross-layered demographic information and park locations, and through a GIS-based equity mapping analysis concluded like Olmstead and Bartholomew that: 1) low-income areas tend to have higher people-to-park ratios than the city average, while residents of higher-income areas ten to share more park space with fewer people, 2) areas with the highest densities of children under 17 tend to have the worse park access, 3) due to higher concentrations of multi-family housing units, residents in low-income areas are less likely to have private backyards, 4) regional recreational open spaces are more difficult to access from the densely populated inner cities via public transportation, and in addition, 5) African-Americans and Latinos were more likely to reside in areas with high park pressure, with congestion levels increasing with the increased percentage of these populations.

[28] Byrne, 6.

[29] Wolch, 5.

[30] Stan Allen, Points + Lines: Diagrams and Projects of the City (New York: Princeton Architectural Press, 1999) 55.

[31] In his work on the imageability of cities, Kevin Lynch classified the physical forms that make up the contents of city images into five elements: paths, edges, districts, nodes, and landmarks. Lynch defined paths and nodes as such: "*Paths*. Paths are channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads." "*Nodes*. Nodes are points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling. They may be primary junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift form one structure to another." Kevin Lynch, The Image of the City (Cambridge: MIT Press, 1960) 47.

[32] Lynch defines edges as: "Edges are the linear elements not used of considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls." Ibid.

[33] John Stilgoe, Metropolitan Corridor: Railroads and the American Scene (New Haven: Yale University Press, 1983) 3.

[34] Charles Flink, Kristine Olka, and Robert Searns, Trails for the Twenty-First Century: Planning Design, and Management Manual (Washington: Island Press, 2001) 3.

[35] John B. Thomas, Shared Use Paths in Limited Access Highway Corridors (Albany: State University of New York at Albany, 2007) 5. Examples of shared-use paths along freeways can be found in Portland, OR (I-5), Arlington, VA (I-66), and Seattle, WA (I-90).

[36] William Whyte, The Last Landscape (New York: Double Day, 1968).

[37] A significant factor in the disparity of park usage among low-income and minority communities is access to cars or an adequate transit system to reach parks.

[38] This is akin to a 19th Century model of regional park design first introduced in the United States by Frederick Olmstead best exemplified with Brooklyn's Ocean Parkway and Boston's Emerald Necklace.

[39] Sister, "Got Green?" 238-39.

[40] Ibid, 244.

[41] Compton Creek Bike Path, Rails to Trails Conservancy, Web, 1 August 2012.

[42] Pacoima Beautiful 40.

[43] State of California Department of Parks and Recreation, Rio de Los Angeles State Park: Preliminary General Plan and Draft Environmental Impact Report (Sacramento: State of California, 2005) 1-1.

[44] Cities across the country have also put their contiguous elements along infrastructural corridors to good use as recreational amenities. For further examples see Riverbank State Park in New York, NY and Arcata Marsh and Wildlife Sanctuary in Arcata, CA.

[45] Pacoima Beautiful, 33.

[46] Alan Tate, Great City Parks (New York: Spon Press, 2001) 19.

[47] Park 101 District Freeway Cap Feasibility Study provides a national case study of completed cap parks.

[48] Peter Harnik, Urban Green: Innovative Parks for Resurgent Cities (Washington: Island Press, 2010) 140-141.

[49] Philip Hart and Laurie Goldman, Cap Parks, Urban Land Institute, 12 July 2011, Web, 9 August 2012.

[50] The width of Pacoima Wash and its easements vary. However, the San Fernando Road Bridge and the Foothill Boulevard Bridge are 140 feet- and 144 feet-long respectively.

[51] In 2009, UCLA's cityLAB organized WPA 2.0—a design competition that sought proposals that re-envisioned publicly-supported infrastructure. Entries came from nearly 200 professional teams and nearly 150 student teams.

[52] American Society of Civil Engineers, 2009 Report Card for America's Infrastructure (Washington: American Society of Civil Engineers, 2009).

WORKS CITED

Allen, Stan. Points + Lines: Diagrams and Projects of the City. New York: Princeton Architectural Press, 1999.

American Society of Civil Engineers, 2009 Report Card for America's Infrastructure. Washington: American Society of Civil Engineers, 2009.

Ames, George. Recreational Reuse of Abandoned Railroad Rights-of-Way: a Bibliography and Technical Resource Guide for Planners. CPL Bibliography 66. Chicago: Council of Planning Librarians Bibliographies, 1981.

Byrne, Jason, Megan Kendrick, and David Sroaf. "The Park Made of Oil: Towards A Historical Political Ecology of the Kenneth Hahn State Recreation Area." Local Environment 12.2. (2007): 153-181. Rpt. in Baldwin Hills Conservancy. Web. 1 August 2012.

Calthorpe, Peter. The Next Metropolis: Ecology, Community, and the American Dream. Princeton: Princeton Architectural Press, 1993.

Cassidy, Arly, Josh Newell, and Jennifer Wolch. Transforming Alleys into Green Infrastructure. Los Angeles: USC Center for Sustainable Cities, 2008.

City of Los Angeles. Los Angeles River Revitalization Master Plan. Los Angeles: City of Los Angeles, 2007.

Cohen, Jean-Louis, and Andre Lortie. Des Fortifs au Perif: Paris, les Seuils de la Ville. Paris: Picard Éditeur, 1991.

Compton Creek Bike Path. Rails to Trails Conservancy. Web. 1 August 2012.

Cuff, Dana. The Provisional City: Los Angeles Stories of Architecture and Urbanism. Cambridge: MIT Press, 2000.

Czerniak, Julia, and George Hargreaves, eds. Large Parks. Princeton: Princeton Architectural Press, 2007.

Davis, Mike. Ecology of Fear: Los Angeles and the Imagination of Disaster. New York: Vintage, 1998.

Dear, Michael, and Steven Flausty, eds. The Spaces of Postmodernity: Readings in Human Geography. Oxford: Blackwell Publishers, 2002.

Doron, Gil. "Those Marvelous Empty Zones on the Edge of Our Cities: Heterotopia and the 'Dead Zone,'" Heterotopia and the City: Public Space in a Postcivil Society. Eds. Michiel Dehaene and Lieven de Cauter. New York: Routledge, 2008. 203-14.

Engels, Friedrich. “The Great Towns.” Ed. Richard T. Le Gates. City Reader. New York, Routledge, 2003. 46-54.

Flink, Charles, Kristine Olka, and Robert Searns. Trails for the Twenty-First Century: Planning Design, and Management Manual. Washington: Island Press, 2001.

Garcia, Robert, and Aubrey White. Healthy Parks, Schools, and Communities: Mapping Green Access and Equity for the Los Angeles Region. Los Angeles: The City Project, 2006.

Ghent Urban Studies Team. The Urban Condition: Space, Community, and Self in the Contemporary Metropolis. Rotterdam: 010 Publishers, 1999.

Gottlieb, Robert. Environmentalism Unbound: Exploring New Pathways for Change. Cambridge: MIT Press, 2001.

Grumprecht, Blake. “Who Killed the Los Angeles River?” Land of Sunshine: And Environmental History of Metropolitan Los Angeles. Eds. William Deverell and Greg Hise. Pittsburgh: University of Pittsburgh Press, 2006. 115-134.

Harnik, Peter. Urban Green: Innovative Parks for Resurgent Cities. Washington: Island Press, 2010.

Hart, Philip, and Laurie Goldman. Cap Parks. Urban Land Institute. 12 July 2011. Web. 9 August 2012.

Harvey, David. Spaces of Hope. Berkeley: University of California Press, 2000.

Kelbaugh, Douglas. Repairing the American Metropolis. Seattle: University of Washington Press, 2002.

Leach, Neil, ed. The Hieroglyphics of Space: Reading and Experiencing the Modern Metropolis. New York: Routledge, 2002.

Lynch, Kevin. The Image of the City. Cambridge: MIT Press, 1960.

Olmsted Brothers and Bartholomew and Associates. “Parks, Playgrounds, and Beaches for the Los Angeles Region.” Eden by Design: The 1930 Olmsted-Bartholomew Plan for the Los Angeles Region. Eds. Greg Hise and William Deverell. Berkeley: University of California Press, 2000.

Pacoima Beautiful, Pacoima Wash Visions Plan: Imaging a New Multipurpose Greenway for the Northeast San Fernando Valley. Los Angeles: Pacoima Beautiful, 2010.

Pellow, Deborah, ed. Setting Boundaries: the Anthropology of Spatial and Social Organization. Westport, CT: Bergin & Garvey, 1996.

Pincetl, Stephanie, and Elizabeth Gearin. "Urban Open Spaces: Gateways to Urban Sustainability." Urban Geography 26.5 (2005): 365-384.

Portney, Kent. Taking Sustainable Cities Serious: Economic Development, the Environment, and Quality of Life in American Cities. Cambridge: MIT Press, 2003.

Pulido, Laura. "Environmental Racism and Urban Development." Up Against the Sprawl: Public Policy and the Making of Southern California, ed. Jennifer Wolch, Manuel Pastor, and Peter Drier. Minneapolis: University of Minnesota Press, 2004. 71-98.

Riley, Ann. Restoring Streams in Cites: a Guide for Planners, Policy Makers, and Citizens. Washington: Island Press, 1998.

Robbins, Edward, and Rodolphe El-Khoury, eds. Shaping the City: Studies in History, Theory and Urban Design. New York: Routledge, 2004.

Sanchez, Thomas, Rich Stolz, and Jacinta Ma. Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities. Cambridge, MA: The Civil Rights Project at Harvard University, 2003.

Schivelbusch, Wolfgang. The Railway Journey: The Industrialization and Perception of Time and Space. Berkeley: University of California Press, 1987.

Sherer, Paul. The Benefits of Parks: Why America Needs More City Parks and Open Space. San Francisco: Trust for Public Land, 2006.

Sister, Chona, Jennifer Wolch, and John Wilson. "Got Green? Addressing Environmental Justice in Park Provision." GeoJournal 75.3 (2010) 229-248.

---. The Green Visions Plan for the 21st Century. 17. Access to Parks and Park Facilities in the Green Visions Plan Region. Los Angeles: University of Southern California GIS Research Laboratory and Center for Sustainable Cities, 2008.

Southern California Association of Governments. Park 101 District Freeway Cap Feasibility Study. Los Angeles: Southern California Association of Governments, 2010.

Stilgoe, John. Metropolitan Corridor: Railroads and the American Scene. New Haven: Yale University Press, 1983.

State of California Department of Parks and Recreation. Rio de Los Angeles State Park: Preliminary General Plan and Draft Environmental Impact Report. Sacramento: State of California, 2005.

Tate, Alan. Great City Parks. New York: Spon Press, 2001.

Thomas, John B. Shared Use Paths in Limited Access Highway Corridors. Albany: State University of New York at Albany, 2007.

Varnelis, Kazyz, ed. The Infrastructural City: Networked Ecologies in Los Angeles. New York: Actar, 2008.

Whyte, William. The Last Landscape. New York: Double Day, 1968.

Wolch, Jennifer, John Wilson, and Jed Fehrenbach. "Parks and Park Funding in Los Angeles: an Equity-Mapping Analysis." Urban Geography 26.1 (2005): 4-35.

Young, Robert Alton. Determining the Economic Value of Water: Concepts and Methods. Washington: Resources for the Future, 2005.