Urban Freeway Cap Parks
Policy Briefing Paper

Considering the Barriers and Opportunities for More Park Space in Los Angeles
Project ID #103

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EXECUTIVE SUMMARY

Cap parks, also referred to as highway or deck parks, are parks built over segments of freeways that are below grade. Four major cap park proposals are currently being considered in the Los Angeles region, including the Hollywood Central Park, PARK 101 in downtown, and two smaller cap parks in Santa Monica. This policy briefing paper is intended to help policy makers, environmental advocates, and the general public to better understand cap parks, and the associated environmental and public health issues. Specifically, this paper offers a background on the shortage of public parks in the Los Angeles region, discusses the pros and cons of cap parks, studies four examples of cap parks built elsewhere, describes current cap park proposals, and addresses the barriers and constraints to implementing cap parks in the Los Angeles region.

The lack of public parks in Los Angeles is an issue that demands urgent attention. Nearly two out of three children in Los Angeles County do not live within walking distance (one-quarter mile) of a park, playground or open space. These children are more likely to be obese and are at higher risk of developing asthma, diabetes, or obesity related diseases. Los Angeles needs more parks and open spaces to meet the recreation and public health needs of its residents, especially children. Capping segments of freeways to create park space is one way to address the shortage of parks in the region.

Like any proposed solution to a problem, the idea of cap parks has both pros and cons. Capping segments of freeways is a good way to create large new parks in urban areas where vacant land is scarce. By building on unused space over freeways, creation of cap parks will not displace residences or businesses and can reconnect neighborhoods or communities divided by freeways. Large cap parks have the potential to generate economic benefits, including enhanced values to adjacent properties, attraction of businesses and visitors, and creation of new jobs. Political and business leaders are particularly eager to advocate for and support visions of large new parks. Los Angeles has the benefit of learning from the experiences of other cities where cap parks have been built. The four examples studied in this paper offer insights as to the potential benefits and challenges with the implementation of cap park projects of varying sizes at diverse locations.

Construction costs will be high for new cap parks, especially large ones. Operation and maintenance costs will also be significant for large cap parks given their size and amenities. Time and process required for cap park development will be lengthy and complicated. Feasibility, environmental, economic, and other studies must be completed before actual construction begins. In addition, cap parks may expose park users to potential health risks related to air quality and noise. However, these impacts could be addressed through innovative park design and other mitigation measures.

As land has become increasingly scarce in Los Angeles, we need creative and resourceful planning solutions to meet the park and recreational needs of the population. Cap parks offer hope and benefits that simply cannot be ignored. In particular, larger cap parks have the potential to: improve regional air quality; help reduce obesity and its associated problems; create short- and long-term jobs; raise adjacent property values; and enhance the overall quality of life. While they can be costly and complex projects that are challenging to implement, cap parks represent a strategy that must be seriously considered to promote sustainability, address the need for more parkland, and reconnect neighborhoods that have been fragmented as a result of freeway construction.

1. INTRODUCTION

Cap parks, also referred to as highway or deck parks, are parks built over segments of freeways that are below grade. Four major cap park proposals are currently being considered in the Los Angeles region, including the Hollywood Central Park, PARK 101 in downtown, and two smaller cap parks in Santa Monica. This policy briefing paper is intended to help policy makers, environmental advocates, and the general public to better understand cap parks, and the associated environmental and public health issues. Specifically, this paper offers a background on the shortage of public parks in the Los Angeles region (Section 2), discusses the pros and cons of cap parks (Section 3), studies four examples of cap parks built elsewhere (Section 4), describes current cap park proposals (Section 5), and addresses the barriers and constraints to implementing cap parks in the Los Angeles region (Section 6).

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2. PROBLEM AND BACKGROUND

Problem

The lack of public parks in Los Angeles is an issue that demands urgent attention. Nearly two out of three children in Los Angeles County do not live within walking distance (one-quarter mile) of a park, playground or open space.[1] These children are more likely to be obese and are at higher risk of developing asthma, diabetes, or obesity related disease.[2] Los Angeles needs more parks and open spaces to meet the recreation and public health needs of its residents, especially children. Capping segments of freeways to create park space is one way to address the shortage of parks in the region and is the focus of this paper.

Background

In 1930, the firm Olmsted Brothers and Bartholomew & Associates submitted a report titled "Parks, Playgrounds, and Beaches in the Los Angeles Region" to the Los Angeles Chamber of Commerce.[3] The report proposed a comprehensive and coherent network of parks, playgrounds, schools, beaches, forests, and transportation to promote the social, economic, and environmental vitality of Los Angeles and the health of its residents. The Olmsted-Bartholomew Plan was a model of visionary and bold planning commissioned at a time when land was available and the region's population was growing tremendously. However, the plan was never adopted and only segments of the report have been implemented to date due to a variety of political, economic, and financial reasons.

Today, Los Angeles is one of the most park-poor cities in the United States. With only 10 percent of its total area devoted to parks and open space, Los Angeles lags behind all other major cities on the west coast (see Table 1) and ranks below New York and Philadelphia nationally. In addition, parks and open spaces are distributed unevenly in the region, with a significant portion of parkland located away from the urban core and underserved communities (see Figure 1). Griffith Park, for example, has an area of over 4,000 acres, but does not provide for the active recreation elements

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[1] Trust for Public Land. (2004, November). *No place to play: a comparative analysis of park access in seven major cities*, p. 4.

[2] Los Angeles County Department of Public Health (2007, October). *Preventing childhood obesity: the need to create healthy places*, p. 5.

[3] Hise, G. & Deverell, W. (2000). *Eden by Design: the 1930 Olmsted-Bartholomew Plan for the Los Angeles Region*, p. 1.

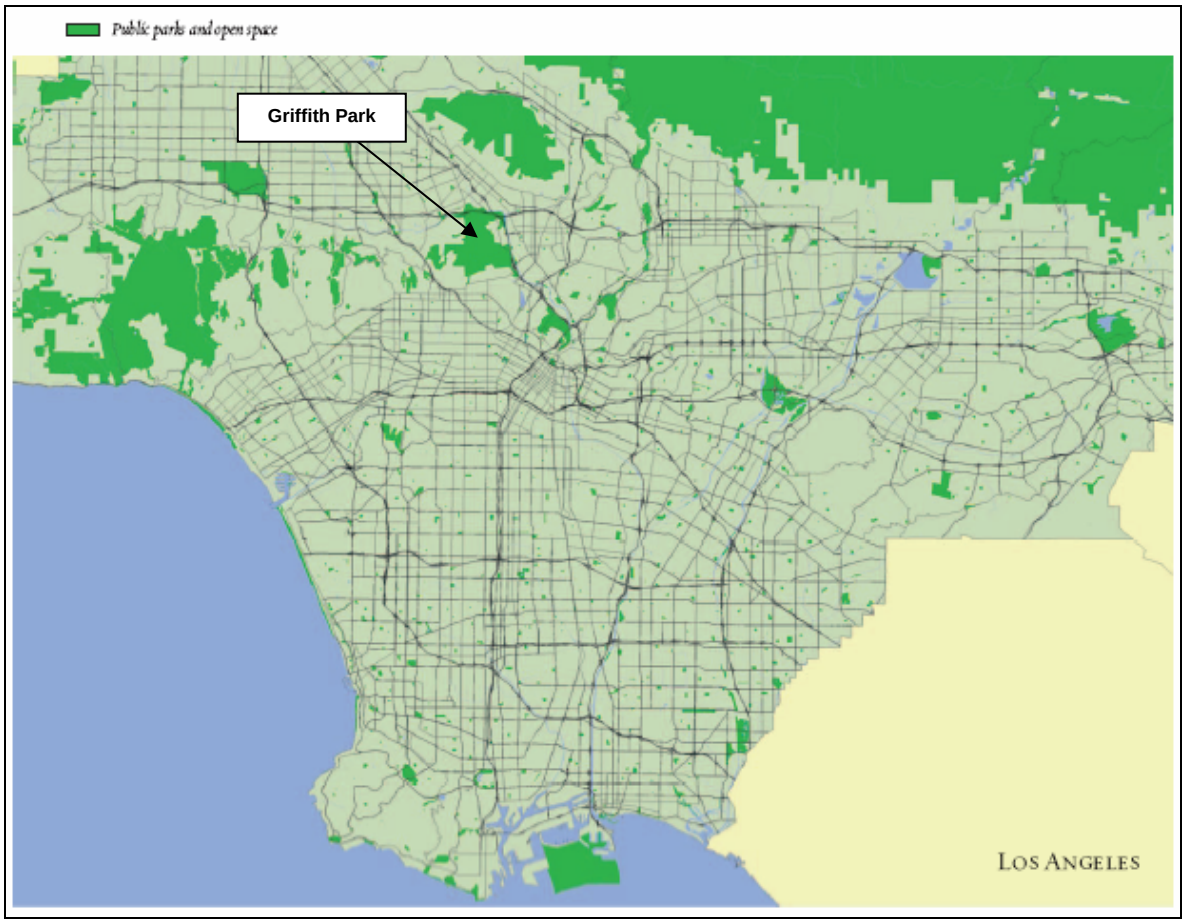
typically available in an urban park.[4] The park consists primarily of rugged hillsides and mountains, and is difficult to reach without a car.

Table 1: Total Parks and Open Space as Percentage of City Area

City	City Area (in acres)	Total Parks/Open Space (in acres)	Park/Open Space as Percentage of City Area
Los Angeles	300,352	30,121	10.0%
Seattle	53,696	6,194	11.5%
Portland	79,808	12,591	15.8%
San Diego	207,360	36,108	17.4%
San Francisco	29,888	7,594	25.4%

Source: Harnik, 2000.

Figure 1: Public Parks and Open Space in Los Angeles



Source: Trust for Public Land, 2004.

Another indicator of park needs in a community is access as measured by the percentage of children within walking distance or one-quarter mile of a park.[5] Los Angeles offers its children the

[4] Active recreation requires constructed facilities such as basketball courts and fields for soccer and football.

worst access to parks among the seven major cities evaluated.[6] As shown in Table 2 below, only one-third of the city's children live within walking distance of a park.

Table 2: Children's Park Access in Seven Major Cities

City	Percentage of children within one-quarter mile of a park	Number of children not within one-quarter mile of a park
Los Angeles	33%	657,700
Los Angeles County	*36%*	*1,694,400*
Dallas	42%	182,800
San Diego	65%	102,300
Seattle	79%	18,600
San Francisco	85%	16,700
New York	91%	178,500
Boston	97%	2,900

Source: Trust for Public Land, 2004.

Access to and availability of public facilities for physical activity, such as parks and playgrounds, has an important role in the prevention and treatment of obesity. Research shows that when people have access to parks, they are more likely to exercise, which can reduce obesity and its associated health risks and costs.[7] A number of studies reviewed in the *American Journal of Preventive Medicine* showed that "creation of or enhanced access to places for physical activity combined with informational outreach" produced a 48 percent increase in the frequency of physical activity.[8] These studies also found that easy access to a place to exercise resulted in a five percent median increase in aerobic capacity, along with weight loss, a reduction in body fat, and improvements in flexibility.[9]

There are unfair park and health disparities in Los Angeles based on ethnicity, income, and access to cars.[10] Children of color disproportionately live in communities of concentrated poverty without enough parks and playgrounds to play in, and do not have the means to reach parks in other neighborhoods. Figure 2 identifies neighborhoods in Los Angeles with the greatest need for new parks. These neighborhoods have high concentrations of residents under the age of 18 and have

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[5] Most cities and counties rely on National Recreation and Park Association (NRPA) standards to determine whether they have enough parks. These standards are expressed in terms of acres per 1,000 residents. While these standards are helpful as general measures of parkland availability, they were established decades earlier and do not accurately reflect the environment and variety of communities today. NRPA standards, for example, do not address access nor do they include many types of open space common in urban environments such as greenbelts and trails. In addition, these standards are silent on the issue of equity; the same standards are used regardless of whether a community is currently park-poor or park-rich.

[6] Trust for Public Land. (2004, November). *No place to play: a comparative analysis of park access in seven major cities*, p. 6.

[7] Gies, E. (2006). *The Health Benefits of Parks*, p. 8.

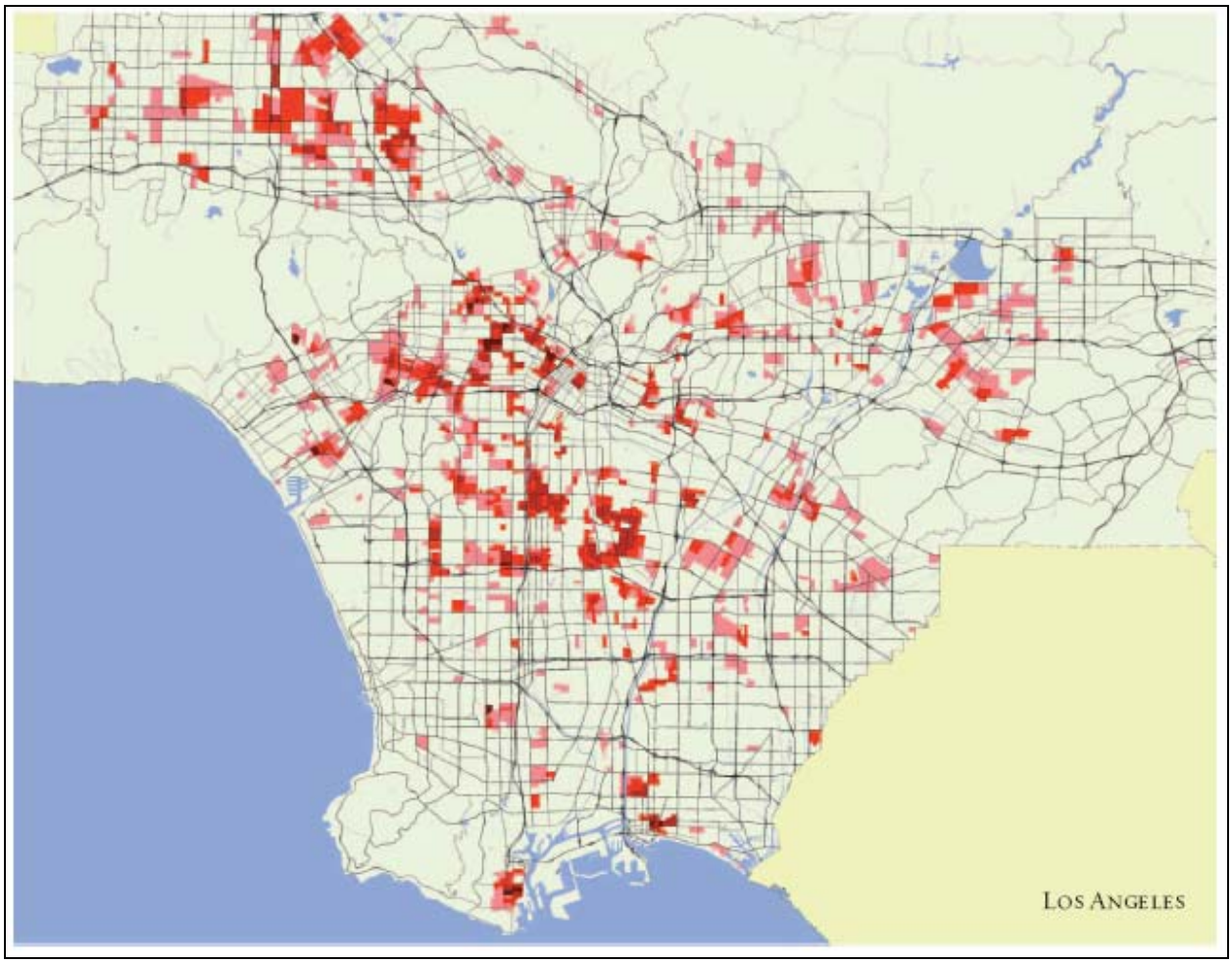
[8] Kahn, E. et al (2002). *The Effectiveness of Interventions to Increase Physical Activity*. American Journal of Preventive Medicine, pp. 87-88.

[9] Ibid.

[10] García, R. & White, A. (2006). *Healthy Parks, Schools, and Communities: Mapping Green Access and Equity for Los Angeles Region*, p. 3.

limited or no parks within walking distance. The health implications of the lack of physical activity are significant. Children in underserved communities are much more likely to suffer from obesity, diabetes, and other diseases related to inactivity.[11] García and White (2006) even declared that "this is the first generation in the history of this country in which children will have a lower life expectancy than their parents if present trends continue" (p. 3).

Figure 2: Neighborhoods with the Greatest Need for New Parks



Source: Trust for Public Land, 2004.

Fortunately, a coalition of community-based environmental and social justice groups has emerged recently to lead efforts to address inequities in the provision of parks in the Los Angeles area.[12] This coalition is trying to revive the Olmsted-Bartholomew vision and has experienced some success along the Los Angeles River and at nearby lands that were previously slated for non-park

[11] Los Angeles County Department of Public Health (2007, October). *Preventing childhood obesity: the need to create healthy places*, p. 5.

[12] This coalition was led by The City Project (formerly of the Center for Law in the Public Interest) and included (but not limited to): Friends of the Los Angeles River, Concerned Citizens of South Central Los Angeles, and the Catholic Archdiocese of Los Angeles.

development. Specific examples include the Cornfield near Chinatown and Taylor Yard, both of which have been developed with State parks serving inner city residents.[13]

In addition, the business community as well as planning and design professionals have advocated for large new urban cap parks in Los Angeles. One proposal is the "PARK 101" idea which calls for a new 100-acre park district in downtown Los Angeles.[14] Another is the proposed 44-acre Hollywood Central Park which has the support of the Hollywood Chamber of Commerce and numerous political leaders.[15] Proponents of both proposals believe that the parks would offer economic benefits in addition to addressing the park deficit in Los Angeles, including: enhancing real estate values, attracting tourists and businesses, and creating jobs. Prominent park researcher Dr. John L. Crompton (2001) has demonstrated through his studies that the economic values of parks can be measured and their economic benefits can be realized through appropriate design, siting, maintenance, and marketing.[16]

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3. PROS AND CONS OF CAPPING FREEWAYS TO CREATE PARK SPACE

Cap parks, also referred to as highway or deck parks, are parks built over segments of freeways that are below grade. Like any proposed solution to a problem, the idea of cap parks has both pros and cons as discussed below.

Table 3: Summary of Pros and Cons of Cap Parks

Pros	Cons
✓ Create large new parks in park-poor urban areas	× Construction, operation, and maintenance costs are high for large cap parks
✓ Reconnect neighborhoods divided by freeways	× Time and process required for park development will be lengthy
✓ Enhance adjacent property values	× Only one or two large cap parks will likely be pursued at a time due to costs and complexity of these projects
✓ Attract businesses and visitors	× May expose park users to: 1) potential health risks related to air quality and noise; and 2) potential safety risks since pedestrian access to cap parks may be dangerous
✓ Create direct and indirect jobs	× Cap parks may be taken over by the homeless
✓ Large park proposals appeal to a much broader audience than smaller projects	
✓ Build on successes of cap parks developed elsewhere	

Pros

Capping segments of freeways is a good way to create large new parks in urban areas where vacant land is scarce. It is very difficult, if not impossible, to acquire and assemble several acres of land in densely populated areas to create new parks. Major challenges include the high cost of land acquisition and community opposition, especially when displacement of residences and/or

[13] More information regarding the Cornfield and Taylor Yard are provided in Arnold (2007)'s *Fair and Healthy Land Use: Environmental Justice and Planning*, pp. 112-113.
[14] Davies, V. (2008, August). A "Central Park" for Los Angeles? *Urban Land, 67*(8), pp. 42-45. About 16 acres of the park district would be a cap over the 101 Freeway.
[15] Hollywood Chamber of Commerce. (2007). *Fact Sheet: Hollywood Freeway Central Park*.
[16] Crompton, J.L. (2001). *Parks and economic development*.

businesses is necessary. Cap parks provide a viable and superior alternative because the land or space above the freeway may be free, made available as air rights by the agency responsible for the freeway. By building on unused space over freeways, creation of cap parks will also not displace residences or businesses and can reconnect neighborhoods or communities divided by freeways.

Large cap parks have the potential to generate economic benefits, including enhanced values to adjacent properties, attraction of businesses and visitors, and creation of new jobs. An example is Hance Park in Phoenix which is surrounded by a growing number of upscale condominium towers. Large park proposals also appeal to a much broader audience than smaller projects. Political and business leaders are particularly eager to advocate for and support visions of large new parks. Such parks would not only meet recreational needs, but also help to upgrade or improve the image of cities. Millennium Park, for example, has elevated the status of Chicago and may be considered to be the city's most important project since the World's Columbian Exposition of 1893.[17]

Los Angeles has the benefit of learning from the experiences of other cities where cap parks have been built. The four examples studied in this paper offer insights as to the potential benefits and challenges with the implementation of cap park projects of varying sizes at diverse locations.

Cons

Construction costs are high for cap parks, especially large ones. The State of New Jersey, for example, spent $150 million on the 6.5-acre South River Walk Park. Not surprisingly, the proposed 44-acre Hollywood Central Park has a price tag of nearly $1 billion. Operation and maintenance costs will also be significant for large cap parks given their size and amenities.

Time and process required for cap park development will be lengthy. Feasibility, environmental, economic, and other studies must be completed before actual construction begins. During the construction phase, delays can also occur, as evidenced by Boston's now infamous "Big Dig" project also known as the Rose Kennedy Greenway. In addition, only one large cap park will likely be pursued at a time in a region due to the costs and complexity of these projects. It is unclear, for instance, whether the Hollywood Central Park and PARK 101 can occur simultaneously as both will impact traffic on the 101 Freeway.

Cap parks may expose park users to potential health risks related to air quality and noise. Studies have shown both the adverse health impacts of living in close proximity to freeways and of driving in long tunnels due to exposure to poor air quality.[18] Also, noise is an issue of concern, especially in smaller cap parks. In addition, potential safety risks exist if access to cap parks is not properly designed to protect pedestrians from vehicular traffic around the parks.

Like any park, cap parks may be subject to problems relating to crime and homelessness, if not properly managed and improved over time. For example, at one point Seattle's Freeway Park fell into disuse, resulting in the park becoming a place where crime occurred regularly and where the homeless took over.

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[17] The 24.5-acre Millennium Park is not a freeway cap park, but is similar in that covers land previously occupied by rail yards and parking lots. Please visit http://www.millenniumpark.org/parkhistory/ for more information.

[18] Please refer to sources cited later on page 18 of this policy paper.

4. EXAMPLES OF EXISTING FREEWAY CAP PARKS

A 2007 Trust for Public Land (TPL) study found that there are over 20 cap parks in the United States and at least a dozen more in various stages of planning.[19] The average size of the country's cap parks is nine acres and each covers an average of 1,620 linear feet of highway. Summarized in Table 4 and described below are four examples of completed cap parks.

Table 4: Examples of Cap Parks

Park Name	**Freeway Park**	**South River Walk Park**	**Hance Park**	**Rose Kennedy Greenway**
Location	Seattle, WA	Trenton, NJ	Phoenix, AZ	Boston, MA
Tunnel Length *(linear feet)*	528	898	2,640	5,280
Park Size *(acres)*	5.2	6.5	10.0	30.0
Highway	I-5	U.S. 29	I-10	I-93

Source: Harnik, 2010.

Freeway Park (5.2 acres)
Seattle, Washington

Seattle's Freeway Park was created to draw together city neighborhoods divided by Interstate 5.[20] When Freeway Park was completed in 1976, it was hailed as a major architectural and engineering accomplishment. Designed by the world-renowned firm of Lawrence Halprin & Associates, it was the first park to be constructed over a freeway. The idea for a downtown park over the freeway is as old as the Seattle segment of Interstate 5 itself. In 1966 civic-minded individuals and the city, county, and state officials were already talking about constructing a cap over the below-grade portion separating First Hill from downtown. The park was developed with bond money, as well as county, state and federal funding.

Figure 3: Freeway Park

Source: http://www.bing.com/maps/

Freeway Park is intended to provide a gathering place for residents, shoppers, downtown office workers, hotel visitors, and the rest of the downtown population. Initially, the park was actively programmed with lunchtime and evening concerts. Over the years, however, as programming became more limited, the park fell into disuse. As the vegetation matured and cut sightlines, the park became darker, more difficult to navigate, and even dangerous. Seattle's growing drug-using

[19] Harnik, P. & Welle, B. (2007, April). Nature over traffic. *Urban Land, 66*(4), p. 102; Harnik, P. (2010). *Urban Green: Innovative Parks for Resurgent Cities*, pp. 136-137. Other examples of cap parks not covered in this policy paper include: Riverwalk Plaza (Hartford, CT); Memorial Park (La Cañada Flintridge, CA); Lytle Park (Cincinnati, OH); Waterside Park (Atlantic City, NJ); Gateway Park (Arlington, VA); Mid-City Bridge Park Deck (San Diego, CA); Capitol Reflecting Pool (Washington, D.C.); I-95 Park & Memorial Parks (two parks in Philadelphia, PA); Carl Schurz Park (New York); Sam Smith Park (Seattle, WA); and Rose Garden, Lake Place, Cooke Plaza (3 parks in Duluth, MN).

[20] http://www.cityofseattle.net/parks/park_detail.asp?ID=312

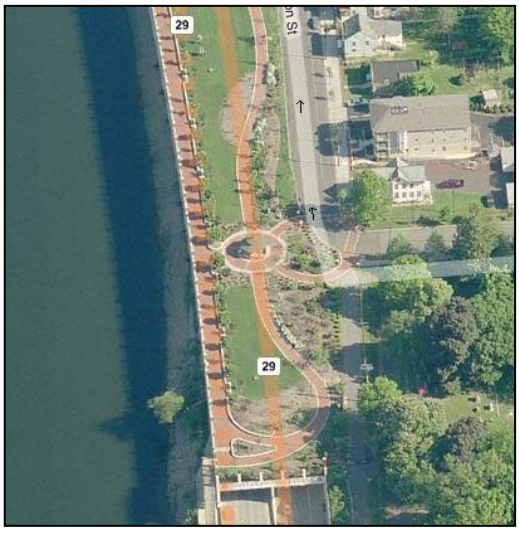
and drug-selling population, as well as its homeless population, also found a home in Freeway Park. Various physical and other improvements have been made to address these problems. Today, the park is in better shape and well-used by office workers during the day.

Acoustics is an issue at Freeway Park. Due in part to its relatively small size (5.2 acres), park users are subject to a constant white noise caused by traffic. While the sound is not obtrusive, it is not minimal either.[21]

South River Walk Park (6.5 acres)
Trenton, New Jersey

South River Walk Park is located above the Route 29 tunnel and was gifted to the Mercer County Park Commission in 2004 by the State of New Jersey.[22] The 6.5-acre park focuses on the history of Trenton and its connection to the Delaware River. The park is home to five arches of materials which represent various eras of the city from pre-revolutionary through the Industrial Revolution to the modern era. The park has hosted many festivals and art fairs as well as weddings, walk-a-thons and family events.

Figure 4: South River Walk Park



Source: http://www.bing.com/maps/

The State of New Jersey spent $150 million on the South River Walk Park. According to Trenton Planning Director Andrew Carten, "The project resulted in a significant spike in interest and sale prices of property. After all, would you rather look over 600 trucks barreling past every day, or a scenic park and river?" One lot with a value of $120,000 prior to park construction was developed with six housing units that sold for $200,000 each. The park also helped attract a new 82-unit market-rate residential development.[23]

Hance Park (10 acres)
Phoenix, Arizona

Opened in 1992, the Margaret T. Hance Park is located in central Phoenix.[24] The park is built on top of the I-10 tunnel and is named after Margaret T. Hance, former mayor of Phoenix. The park is home to the Japanese Tea House and Friendship Garden, the Irish Cultural Center, and the annual St. Patrick's Day Irish Family Faire.

Figure 5: Hance Park

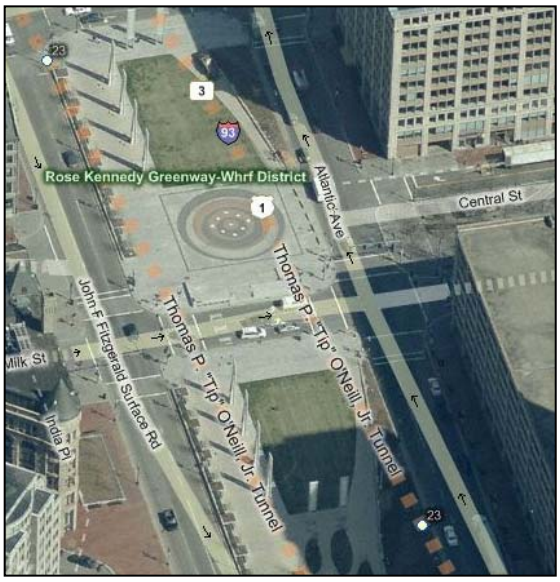
Source: http://www.bing.com/maps/

[21] Harnik, P. (2010). *Urban Green: Innovative Parks for Resurgent Cities*, p. 138.
[22] http://www.state.nj.us/counties/mercer/commissions/park/millyard.html
[23] Harnik, P. (2010). *Urban Green: Innovative Parks for Resurgent Cities*, p. 139.
[24] http://phoenix.about.com/library/blmaphancedeckpark.htm

At ten acres, Hance Park is not as impacted by noise or acoustic issues as Seattle's Freeway Park. Labeled by the *Phoenix New Times* "a rare Phoenix instance of nature over traffic—in this case, literally," Hance Park is decked over the Papago Freeway, uniting uptown and downtown and providing a park next to the central library. The freeway was originally planned as an elevated bridge through downtown, but community opposition killed that idea in a 1973 ballot measure. It was not until ten years later that the city finally accepted a below-grade solution with the park as a key added amenity. As a sign of its success, the park has spurred efforts to revitalize the surrounding downtown area, including construction of market rate and affordable housing and the expansion and/or renovation of local museums.[25]

Rose Kennedy Greenway (30 acres)
Boston, Massachusetts

Figure 6: Rose Kennedy Greenway



Source: http://www.bing.com/maps/

Opened in 2008, the Rose Kennedy Greenway is a roughly 1.5-mile-long series of parks and public spaces created in downtown Boston.[26] It is the final part of the massive Central Artery/Tunnel Project (CA/T) or Big Dig that put I-93 underground and removed the elevated freeway that served as the main highway through downtown for more than 40 years. The Greenway was named in honor of Rose Fitzgerald Kennedy and officially dedicated in 2004. Officials originally predicted a 2005 completion date for the park components of the Greenway. However, due to numerous delays, cost overruns, and the Big Dig ceiling collapse, the parks were not completed until 2007.

As the Greenway runs above an interstate highway, the Massachusetts Turnpike Authority retains ownership of most of the land. The non-profit Rose Fitzgerald Kennedy Greenway Conservancy has been created jointly by the Turnpike Authority, the City of Boston, and the Commonwealth of Massachusetts to oversee maintenance, fundraising, and programming of the Greenway parks.

The $14-billion price tag of the CA/T has caused some people to question the financial feasibility of cap parks. However, it should be noted that this was primarily a transportation project and included major bridges and underwater tunnels. About $40 million (of the $14 billion) was actually spent on the mile-long stretch of the four parks that make up the Greenway.[27]

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5. CURRENT STATUS OF PROPOSED CAP PARKS IN LOS ANGELES COUNTY

Civic and business leaders, planners, and architects have proposed several cap parks in Los Angeles County. Los Angeles seems ideal for new cap parks. Its extensive network of freeways, including numerous below-grade segments, translates to various locations that may be capped with new parks. The region's four major cap park proposals are summarized in Table 5.

[25] AECOM. (2010, August). *PARK 101 District Feasibility Study*, p. 4-8.
[26] http://www.rosekennedygreenway.org/
[27] Harnik, P. (2010). *Urban Green: Innovative Parks for Resurgent Cities*, pp. 139-140.

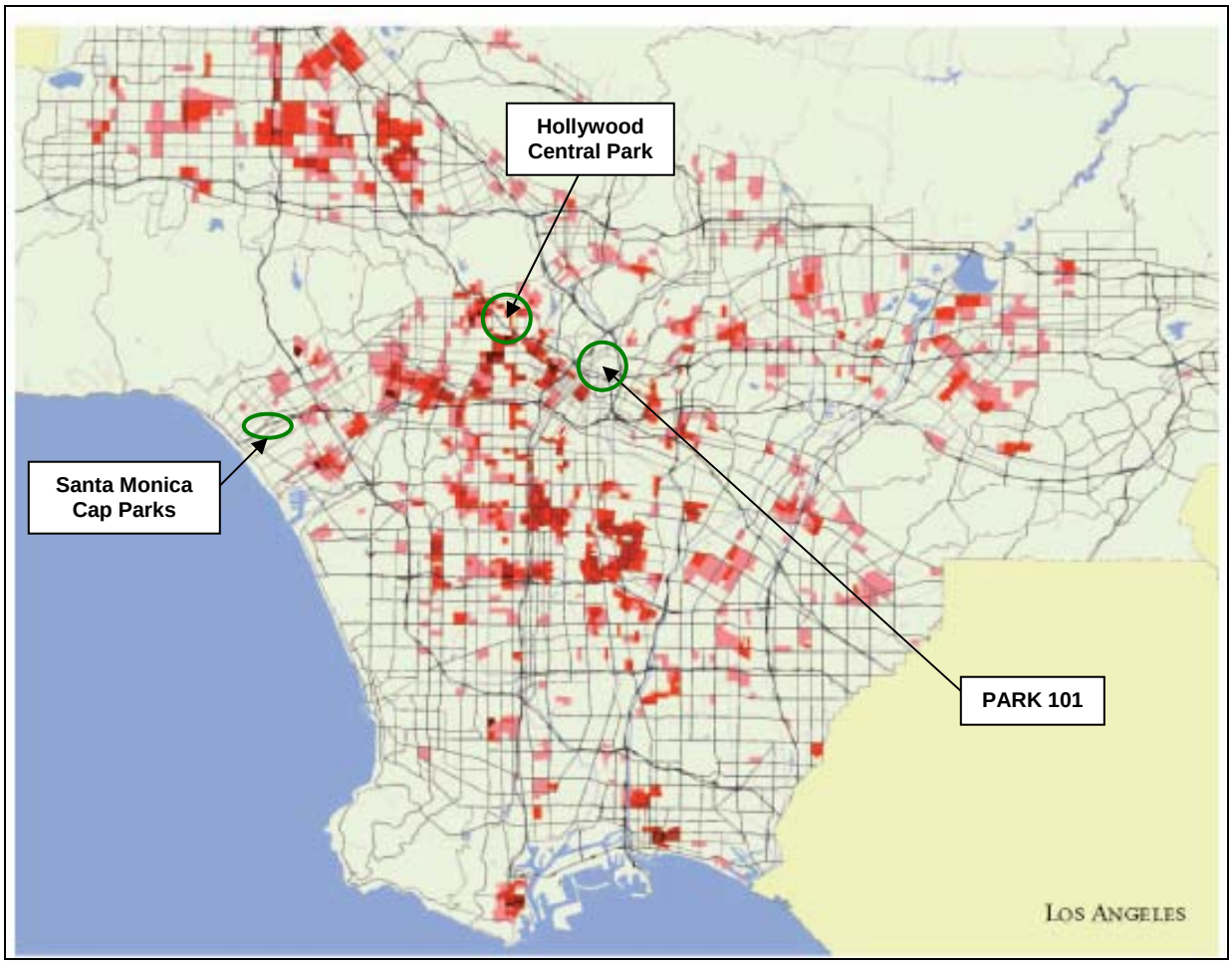
Table 5: Major Cap Park Proposals in Los Angeles County

Cap Park Proposal	Hollywood Central Park	PARK 101	Santa Monica Cap Parks	
Location/Freeway	Hollywood Above the 101 Freeway between Sunset & Hollywood Boulevard	Downtown L.A. Above the 101 Freeway, between Union Station and Grand Avenue	Santa Monica Above the 10 Freeway, between Ocean Avenue & 4th Street	Santa Monica Above the 10 Freeway, between 14th & 17th Streets
Park Size	44 acres	16 acres above freeway; 100 acres total	5 acres	7 acres
Total Cost	$950 million	$328 million for the cap above freeway	$87 million	To be determined

Sources: AECOM, 2010; V. Davies, 2010; City of Santa Monica, 2010.

Figure 7 identifies the location of the proposed cap parks in relation to those neighborhoods with limited access to parks or other open space as identified by the Trust for Public Land.

Figure 7: Major Cap Park Proposals in Los Angeles County



Sources: Trust for Public Land, 2004; AECOM, 2010; City of Santa Monica, 2010.

Hollywood Central Park

The Hollywood Central Park proposal is the construction of a cap over the U.S. 101 Freeway, between Hollywood and Santa Monica Boulevards, as the freeway travels below grade through the heart of Hollywood. By capping a portion of the Hollywood Freeway, this project will create a much-needed street-level 44-acre public park in one of the lowest resident-to-park space communities in California. Hollywood has 0.005 acres of open space per resident as compared to 0.012 acres within the City of Los Angeles. In addition, the project would reunite diverse communities and dense neighborhoods, separated for more than 50 years, by the Hollywood Freeway.

Figure 8: Hollywood Central Park

Source: http://www.hollywoodfreewaycentralpark.org/

At 44 acres, the park is a large project with the potential to strengthen the economy through job creation, increased tourism, and enhanced property values around the park. The park would also encourage participation in physical exercise and provide green open space and recreational facilities to more than 40,000 children, a majority of who live in apartments. From a traffic engineering standpoint, the project would also be desirable because it would: make long-needed ramp improvements; streamline freeway functioning; and improve freeway overpasses.

Of the four cap park proposals in Los Angeles County, the Hollywood Central Park is the furthest along; AECOM completed a feasibility study for this project in 2008. The Friends of Hollywood Central Park has been very active in its efforts to make the park a reality, including lobbying political leaders at all levels, raising support and funds, and coordinating with Caltrans on the required environmental impact studies. The group has even retained a consultant to provide a preliminary study on the Hollywood Central Park's potential return on investment.

PARK 101

PARK 101 was initially the vision of a group of college students from around the world who participated in EDAW Inc.'s Intern Program in June 2008.[28] The interns were asked this question: "How can we reconnect the City's historic core north of the Hollywood Freeway with the civic, cultural and financial centers to the south?" Their solution, PARK 101, is a vision for a 100-acre urban park district serving downtown and adjacent neighborhoods such as Chinatown and Little Tokyo, all of which lack adequate open space. It would involve building a 16-acre cap above a portion of the Hollywood Freeway and its exit ramps. This proposal would also incorporate nearby parking lots and underused land next to the freeway, and reconfigure the Civic Center area—converting an eyesore into an urban park and a walkable, vibrant neighborhood.

This project provides a unique opportunity to shape a new direction for downtown. Focused on a relatively small area straddling the 101 Freeway and situated in an existing maze of roadways,

[28] EDAW is now a part of AECOM (http://www.aecom.com/), an international provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government.

PARK 101 can remake Los Angeles into a more sustainable and livable city. According to AECOM, the PARK 101 proposal focuses on six design principles: maximizing regional connectivity; developing a pedestrian focus; providing flexibility of open space; reconnecting communities; being a regenerative tool; and creating a "Wow" factor.

PARK 101 is not just a cap over a freeway. Proponents of PARK 101 envision a new park district that mends the fragmentation of the City's central core. The design of the park is based on the extension and intersection of disconnected street grids on both sides of the freeway, as well as the opportunities inherent at Union Station and its future high speed rail component. The points of intersections and the axial vistas connecting key landmarks such as the Cathedral of Our Lady of the Angels, Union Station, and the Los Angeles River generate a series of links that create shapes for different programmatic components, and create the alignments and forms that give shape to the park.

Figure 9: PARK 101 District

Source: AECOM, 2010.

The vision of PARK 101 will be very costly to realize: $328 million for the cap park portion alone.[29] However, the project will be built in five phases and will offer adjacent "value creation opportunities" in the form of new real estate developments that create value where it does not currently exist. A feasibility study by AECOM indicates that every dollar of the public investment in PARK 101 would spur $1.25 in new private development, which is not otherwise likely to occur.[30] Anticipated new development in the Park sub-district includes an estimated 1.0 to 1.9 million square feet of hotel, office, and retail space and 600 to 800 new residential units worth an additional $490 million. In addition to 2,800 to 3,500 one-time construction jobs, the PARK 101 district is expected to create 2,800 to 6,000 new permanent jobs.

Santa Monica Cap Parks

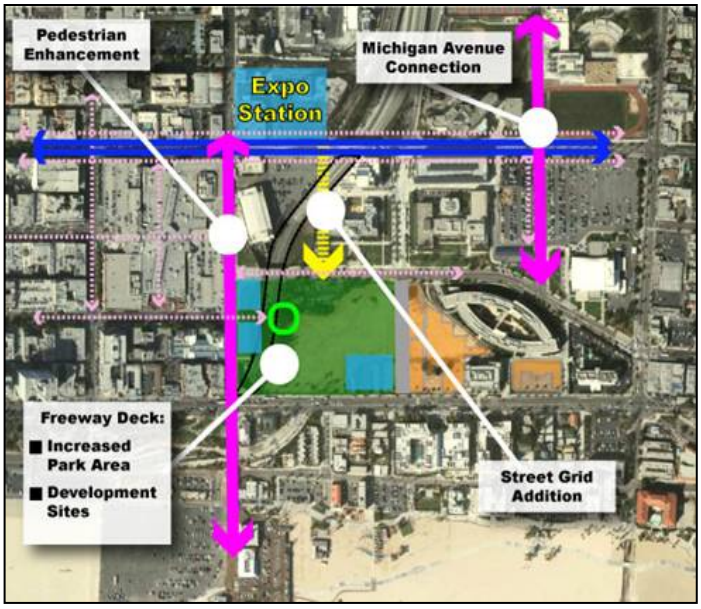
The City of Santa Monica is proposing to cap two portions of the 10 Freeway: between Ocean Avenue and 4th Street and between 14th and 17th Streets. The first project would tie together Main Street with downtown Santa Monica, while the second would function as a green space near 14th and 17th Streets. According to city staff, momentum is building for both projects.

[29] According to AECOM (2010), the total estimated cost of the infrastructure investment for the PARK 101 district is approximately $825 million, and is distributed among the three sub-areas: $385 million for the Park Sub-District (includes the cap park component); $300 million for the Station Sub-District; and $135 million for the River Sub-District.

[30] AECOM. (2010, August). *PARK 101 District Feasibility Study*, p. 1-11.

Between Ocean Avenue and 4th Street: As part of the city's implementation of the Civic Center Specific Plan, this capping project would extend the McClure Tunnel and cover the 10 Freeway from 4th Street to Ocean Avenue, offering an enlarged green space for outdoor enjoyment. The five-acre freeway cap would improve connection between downtown Santa Monica and the Civic Center. Specifically, the cap would improve public access to the new Palisades Garden Walk and Town Square Project. With an Expo Line light rail station at Colorado Avenue and 4th Street scheduled to be completed by 2015, the project could also enhance walkability by providing a pedestrian connection between Third Street Promenade, Santa Monica Place, and Main Street. A preliminary study indicates that the project would cost about $87 million. AECOM is currently completing a full feasibility study for this project.[31]

Figure 10: Cap Park at Ocean Avenue/4th Street



Sources: City of Santa Monica, 2010; The LookOut news, 2010.

Between 14th and 17th Streets: This seven-acre cap park is envisioned as an opportunity to expand open space, explore joint development, and reconnect neighborhoods that were broken by the construction of the freeway. This park would also be located near the future Expo Line station at Memorial Park, which is located on Olympic Boulevard between 14th and 16th Streets, just north of the freeway. The proposed park would reconnect the Pico neighborhood to the larger city fabric. The City received $250,000 in grant money from Caltrans to complete a feasibility study for this cap project. This study is one component of planning for the area which will include the Memorial Park Master Plan, the Expo light rail station area planning, and a future specific plan for the district as proposed in the city's Land Use and Circulation Element.

6. IMPLEMENTATION

Funding

Construction costs for large cap parks can be very high, as evidenced by the expected price tag of the Hollywood Central Park. Some may argue that numerous existing parks may be improved or upgraded using $950 million - the estimated cost of creating the Hollywood Central Park (not including any land acquisition costs). However, the land or space above the freeway may be free, made available as air rights by Caltrans. This can translate to a multimillion-dollar gift in urban locations. For example, land costs approximately $2 million to $3 million per acre near the Santa Ana Freeway by the Los Angeles City Hall.[32] There would be no land costs if Caltrans agrees to

[31] The City Council and Redevelopment Agency authorized the execution of a reimbursement agreement, in an amount not to exceed $3,156,508, using redevelopment funds to pay for costs associated with the freeway capping feasibility study, including engineering and constructability analysis, and the preparation of options for connecting the Civic Center and downtown over the freeway.

[32] Harnik, P. & Welle, B. (2007, April). Nature over traffic. *Urban Land, 66*(4), p. 103.

make air rights above freeways available. This is not unlikely considering that Caltrans has identified itself as a key stakeholder involved in making PARK 101 a reality.[33]

In addition, there are various sources of local, state, and federal funds that can be obtained, particularly if an economic analysis shows that associated development will generate significantly more tax revenue. One approach is to create a tax increment financing district, whereby future increased tax revenue is used to pay back the costs of the park. The PARK 101 proposal, for example, is expected to offer adjacent "value creation opportunities" in the form of new real estate developments: the project is expected to spur $1.25 in new private development for every dollar of public investment. The project may also receive funding created to mitigate impacts related to the future development of high speed rail. Other local funding sources include public works capital funds or municipal bonds. The federal or state government often pays for the deck superstructure, while the city finances the actual park development. For example, the Trenton deck for the South River Walk Park came about through reconstruction of a state highway and was paid for by the State of New Jersey.[34]

Construction of large cap parks must be done in phases, as proposed for both the Hollywood Central Park and PARK 101. Incremental development allows park developers to build on early successes and to secure funding over a longer period of time. This approach also minimizes disruption to traffic and circulation during the construction period.

Another aspect of funding is the cost of operating and maintaining the parks. While local parks and recreation departments are typically responsible for operation and maintenance, it would be beneficial to create a non-profit management organization for each large cap park. For instance, the non-profit Rose Fitzgerald Kennedy Greenway Conservancy was created to oversee maintenance, fundraising, and programming of the Greenway parks.

Stakeholder Engagement

The development of cap parks involves and affects a broad range of stakeholders:

Residents in Underserved Communities, especially Children	These residents live in communities without sufficient places to recreate and do not have the means to reach parks and school fields in other neighborhoods. They are the intended beneficiaries of strategies to increase the supply of parks in underserved neighborhoods.
Business Interests	Business interests support large urban parks with the potential to generate economic benefits: enhancing real estate values, attracting tourists and businesses, and creating jobs. For example, the Hollywood Chamber of Commerce is the key proponent of the Hollywood Central Park.
Transportation Officials	Transportation officials play a critical role in the development of cap parks because these parks would be developed above segments of freeways under their control. Caltrans is a key partner in all four cap park proposals.
Local and State Politicians	Local and state political representatives play a key role by advocating for new parks and securing funding for their development. For example, city, county, and state officials worked together to create Vista Hermosa Park, downtown's first new public park in many years.[35] To be implemented, any new strategy to create new parks requires the backing of political leaders.

[33] http://www.dot.ca.gov/dist07/travel/projects/park101/

[34] Harnik, P. (2010). *Urban Green: Innovative Parks for Resurgent Cities*, p. 141.

[35] Vista Hermosa Park was built on a brownfield in downtown Los Angeles by the Santa Monica Mountains Conservancy and the Mountains Recreation and Conservation Authority in a joint-use partnership with LAUSD and the City of Los Angeles. The 10.5-acre park restores some of the natural topography and native

Environmental Justice Groups	Environmental justice groups are the leaders of the urban parks movement in Los Angeles. They seek to eliminate unfair park, school, and health disparities based on race, ethnicity, poverty, youth, and access to cars. These groups contributed significantly to the development of new parks at the Cornfield and Taylor Yard.
Public Health Officials	Public health officials generally support the development of new parks because they provide opportunities for physical activity, especially for children. However, public health experts must evaluate the potential health concerns of placing new parks at locations such as above freeways.
Local Parks and Recreation Departments	Local parks and recreation departments provide parks and recreation services, and will most likely be responsible for the operation and maintenance of any new cap parks, unless new non-profits are created for such purposes.
State Parks Department and Conservancies	State Parks helped make the new parks at the Cornfield and Taylor Yard possible. The Santa Monica Mountains Conservancy and the Mountains Recreation and Conservation Authority contributed to the development of Vista Hermosa Park. All three will continue to partner with local agencies to provide new urban parks.
Conservation and Environmental Groups	These groups support projects that protect and restore the natural environment. For example, Friends of the Los Angeles River seeks to restore the river's natural habitat and develop bikeways, paths, and trails on the riverbanks. They typically favor passive recreational activities such as hiking, bird watching and nature study.

Proper engagement of and cooperation between these stakeholders are critical to the success of the proposed cap parks. It is important to ensure that stakeholders understand the goals and anticipated benefits associated with the proposed parks. There are various forms of engagement and communication, including the community dialogue, news media, and simulation tools, which can provide a better understanding of the proposals, and demonstrate how the parks could impact quality of life and social equity.

Political Will and Support

Without political will and support, the proposed cap parks would be great ideas left unimplemented. Fortunately, all four projects have their fair share of supporters. The Friends of Hollywood Central Park, for example, has done an outstanding job of outreach and education, as evidenced by the long list of politicians supporting the project.[36] PARK 101 is well-supported by public agencies[37] and is described briefly in the Central City Community Plan, an official planning document prepared by the Los Angeles City Planning Department. However, the project will require more open and vocal support from one or more political champions to move forward, especially to work with Caltrans to streamline its review and permitting processes. As smaller projects, the Santa Monica cap parks do not require the same level of political support as the Hollywood and PARK

vegetation of the area and features trails, streams, meadows, oak savannahs, picnic areas, art elements, an environmentally-themed children's adventure area, and a 120-student capacity outdoor amphitheater. Built with state-of-the-art "green" technologies, the park enhances environmental and natural history educational opportunities for the adjacent high school, and provides a regulation soccer field for shared use by the school and the community.

[36] Politicians include: Mayor Antonio Villaraigosa, City Council members Eric Garcetti and Tom LaBonge, Congressman Xavier Becerra, Congresswoman Diane Watson, former State Senator and current County Supervisor Mark Ridley-Thomas, and California Assemblyman Mike Feuer.

[37] Including Metro, SCAG, Caltrans, and CRA/LA.

101 proposals. Nevertheless, the two parks have received the blessing of city leaders who committed funding to study their feasibility.

As of this writing, there are no vocal opponents to the four proposals. Understandably, some may be concerned about the high costs of cap parks and commuters may be uneasy about being stuck in tunnels for lengthy periods during traffic jams.[38]

Environmental and Public Health Impacts

The environmental and public health impacts of the cap park proposals have not yet been comprehensively evaluated as required by California Environmental Quality Act (CEQA). Unfortunately, the Los Angeles County Department of Public Health also has not conducted any research on the potential public health impacts of cap parks.[39] Nevertheless, it is logical to consider that because of their location, the proposed cap parks may expose future park users to potential health threats related to traffic noise and poor air quality. Excessive traffic noise could be an issue, especially for the smaller cap parks proposed in Santa Monica. These parks are similar in size to Seattle's Freeway Park which has some noise/acoustic issues relating to freeway traffic.

A University of Southern California study has shown that children living near freeways are more likely to develop asthma and other respiratory problems.[40] In addition, a recent study conducted in Sydney, Australia provides evidence that ultrafine particles produced by fuel combustion are lurking inside road tunnels in concentration levels so high they have the potential to harm drivers and passengers.[41] However, exposure to air pollutants for a resident next to a freeway or for a driver inside the tunnel is not the same as for a park user above the freeway. Also, by covering segments of freeways, cap parks could possibly limit the amount of air pollutants adjacent residents would be exposed to. Published information, for the most part, indicates that the concentration of most air toxicants detected in communities exposed to tunnel emissions are below those concentrations that are generally considered to pose either a significant acute or chronic health hazard.[42] Another environmental issue may be the short-term traffic and air quality impacts associated with the need to transport a significant amount of soil necessary to plant trees and landscaping at the park sites.

The long-term air quality and noise impacts can be mitigated to some extent through the design of the parks. Some landscape architects argue that cap parks can mitigate the impacts without relying exclusively on mechanical systems. One idea, for example, is that the Hollywood Central Park could be designed to function as a "breathing apparatus" capable of filtering the carbon monoxide that would be vented out of the tunnel after the capping of the freeway.[43] This proposed

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[38] Pool, B. (2008, November 19). Plan for park atop Hollywood Freeway is praised. *L.A. Times*, p. B3.

[39] E-mail from Gayle Haberman of the Los Angeles County Department of Public Health received on 6/4/2010.

[40] Gauderman, W. J. *et al* (2007). Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study. *The Lancet, 368*, pp. 535-537. The study, which tracked 3,600 children for 13 years, found that those living within 500 yards of a highway faced risk of permanent health damage, including stunted lung growth and respiratory problems.

[41] Queensland University of Technology (2009, August 30). Tunnels Concentrate Air Pollution By Up To 1,000 Times. *ScienceDaily*. Retrieved June 26, 2010, from http://www.sciencedaily.com/releases/2009/08/090827101241.htm

[42] Kuykendall, J.R. *et al* (2009). Chemicals present in automobile traffic tunnels and the possible community health hazards: A review of the literature. *Inhalation Toxicology*, *21*(9), pp. 747-792.

[43] Conversation with Gerdo Aquino of SWA Group on 7/2/2010. Professor Andrea Hricko of USC also expressed concerns about how and where air pollutants would be vented out from the tunnels during our phone conversation on 9/10/2010.

design would effectively suck up carbon monoxide from the tunnel and filter it through layers of vegetation on the surface. Some mechanical systems would be required, but the intent is to make visible the process of ventilation while incorporating an active, natural systems-based approach to filter the polluted air from the tunnel.[44]

From a big picture perspective, cap parks actually have the potential to improve the region's air quality and overall quality of life. In particular, the proposed cap parks are consistent with and help to implement Senate Bill 375 which seeks to reduce greenhouse gas emissions through land use planning. The vehicle for this coordination is a new regional land use plan called a Sustainable Communities Strategy (SCS). The result is expected to be more rational and coordinated regulation and public funding, which in turn should accelerate the pace at which development consistent with these plans can proceed. The Urban Land Institute (ULI)'s *SB 375 Impact Analysis Report* specifically points out that state funding priorities need to take into account: 1) SB 375 redirects future growth towards existing urban areas; and 2) in addition to transportation funds, other infrastructure investments such as monies for parks should also be linked to the SCS.

Cap parks can also play an important role in the prevention and treatment of obesity. When people have access to parks, they are more likely to exercise, which can reduce obesity and its associated health risks and costs. As mentioned previously (on page 5), a number of studies have shown that enhanced access to places for physical activity produced an increase in the frequency of physical activity.

Timing

Because of their smaller size, Santa Monica's cap parks will most likely be developed before the proposals in Hollywood and downtown Los Angeles. As large-scale projects, Hollywood Central Park and PARK 101 will require lengthier environmental reviews and permitting processes. However, given the need for these parks, their potential benefits, and consistency with SB 375 goals, one might ask whether these reviews and processes could or should be streamlined or relaxed.

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7. CONCLUSION

As land has become increasingly scarce in Los Angeles, we need creative and resourceful planning solutions to meet the park and recreational needs of the population. Cap parks offer hope and benefits that simply cannot be ignored. In particular, larger cap parks have the potential to: improve regional air quality; help reduce obesity and its associated problems; create short- and long-term jobs; raise adjacent property values; and enhance the overall quality of life. While they can be costly and complex projects that are challenging to implement, cap parks represent a strategy that must be seriously considered to promote sustainability, address the need for more parkland, and reconnect neighborhoods that have been fragmented as a result of freeway construction.

[44] E-mail from Gerdo Aquino of SWA Group on 8/31/2010.

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