



Olmsted and Bartholomew's 1930's Plan Revisited: Adaptations for Today's Los Angeles

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June 12, 2009**

Olmsted and Bartholomew's 1930's Plan Revisited: Adaptations for Today's Los Angeles

A Senior Project

Presented to the Faculty of the
Landscape Architecture Department

University of California, Davis

in Partial Fulfillment of the Requirement for the
Degree of Bachelors of Science of
Landscape Architecture

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I ABSTRACT I

Los Angeles, California spread out over four-thousand square miles, is home to over 9 million residents. Known more for its grid-locked freeways and polluted air than its park system, Los Angeles includes more than 800,000 acres of green space. Unfortunately, it lacks the connectivity that Olmsted-Bartholomew's 1930's Plan for Los Angeles sought to resolve.

A system of parkways and large parks, the Olmsted-Bartholomew 1930's plan attempted to better link Los Angeles with a comprehensive park system. However, the 178 page proposal, which took nearly three years to develop, was turned down. One has to wonder what Los Angeles would have been like today had the plan been pushed through.

Using a Ian McHarg 1960's inspired analysis it was discovered that there are similarities between Olmsted-Bartholomew's 1930's plan and Los Angeles today. It was also discovered that there are many areas within the the Los Angeles Region that are in dire need of improvements.

Inspired by the Olmsted and Bartholomew parkways concept, adaptations were made and a model community was designed with hopes to one day inspire the entire Los Angeles region.

I ACKNOWLEDGEMENTS I

I would like to thank my family and friends for supporting my return to school. I could not have done it without them. I would also like to thank the faculty and my fellow students for inspiring me to become a better landscape architect. Passion is contagious! And to the committee members of this project, I would like to thank you all for your support.

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| INTRODUCTION |

Purpose

Using Olmsted and Bartholomew's 1930 "Parks, Playgrounds and Beaches for the Los Angeles Region" as a guide, the purpose of this project is to adapt their foremost concept; connecting Los Angeles' existing and proposed open spaces i.e. community, regional parks, and natural areas with a system of parkways and large parks to achieve a more cohesive, sustainable city. Updating their concept for present day Los Angeles will provide an improved quality of life, recharged groundwater systems, revitalized native ecosystems, and improved accessibility to a an expansive system of parks.

Assessment

The city of Los Angeles will first be examined on a county wide scale. It will be assessed by the amount of

parks that are within a one half mile walking distance from its surrounding community; this is known as park access. Parks that are greater than one half mile from their surrounding community will be classified as park deficient communities. Following the first examination each community that falls into the park deficient category will be assessed a grade to determine which area is in greatest need of parks and park access. Grades are based on deficiency of parks and green space, population, and size (square miles). The last examination zooms into a specific community, mostly likely with the greatest need, to look for alternatives or solutions to remedy park deficiency and access. There are several possible solutions, of which I will choose the one or two that fits best, which have coined "Olmsted Adaptations": drainage wash to greenway modifications, open lots, schoolyards larger than 5 acres, and street modifications or "greening" to increase access to the community and between parks.

Olmsted Adaptation

The community chosen will receive an “Olmsted Adaptation” design, which will include a conceptual plan, streetscape sections, and renderings.

The community chosen will lead by example, serving as a model community for the remainder of the park deficient communities in the Los Angeles region.

I OLMSTED- BARTHOLOMEW'S LOS ANGELES I

In the 1930's Los Angeles was a bustling metropolis. Known for its Mediterranean-esqe climate, everybody and anybody came to the Southland. Most began migrating near the turn of the century, purchasing homes in the region to escape the harsh winters of the east coast. Families like the Gamble family, of Proctor and Gamble first came to Pasadena in the late 1800's for that very reason, finally taking up permanent residence in 1907 (History of The Gamble House, by Greene and Greene | Pasadena, California).

And so Los Angeles began to grow. During the 1920's the population in the county exploded, growing from 900,000 to over 2,200,000. This worried many, including the "citizens committee" a group composed mainly of members from the Chamber of Commerce and their associates. With more people than

ever coming to the Southland it would become "less and less attractive, less and less wholesome...the growth of the region will tend to strangle itself" (Hise, Greg and Deverell, William 3).

With the knowledge that Los Angeles lacked fewer acres of parkland relative to other metropolitan areas and it could get worse as populations grew, the committee hired the Olmsted and Bartholomew offices to develop a countywide plan titled Parks, Playground and Beaches to remedy this shortage. Not only would preserving beaches and mountain retreats ensure the tourist economy would not collapse, but it also would "improve health, reduce delinquency, and promote citizenship in the city's 'congested districts'" (Hise, Greg and Deverell, William 3).

So, in 1930 after 3 years exhausting over the task, the plan, encompassing more than 1,500 square miles, was presented to the Chamber of Commerce. The plan set out

"a system of neighborhood playgrounds and local parks linked to



Figure A. Olmsted-Bartholomew plan for the Los Angeles Region. Parks and Parkways shown in green, large reservations shown in red. Courtesy Eden By Design: Plates from the Original Report.

regional “reservations” along the Pacific coastline and interspersed across the surrounding foothills, mountains and desert.”

The 178 page cloth-bound document according to Hise and Deverell “played up the heroic scale.” Broken into two parts, Part I, the General Report, encompassed everything from general considerations and analysis to administrative and financial conditions affecting the creation of the park and recreation system. Part II contained specific recommendations for each aspect of the design: local recreation facilities, public beaches, regional athletic fields, large reservations, and pleasureway parks or parkways. See Figure A for Olmsted-Bartholomew Plan For The Los Angeles Region.

With tones of urgency in the prose, it was clear that the Olmsted Brothers and Bartholomew and Associates understood the consequences of an exploding population on a vulnerable landscape, it is just too bad the rest of Los Angeles

did not see it this way.

The plan, in its entirety, was never implemented. It is plausible that politics and money played a roll as a project of this magnitude would cost upwards of \$100,000,000 in 1930's currency but, the Olmsted brothers did not see it as being “out scale with the provision for recreation being made in other large metropolitan Regions.” (Hise, Greg and Deverell, William 99). They even proposed recommendations for possible sources of funding, including a ¢15 tax, which would cost the average homeowner \$15 per year.

It seems as though the proposal covered it all, so it is rather confusing as to why their plan was never implemented. For more information on the topic see “Eden By Design The 1930 Olmsted-Bartholomew Plan For The Los Angeles Region” by Greg Hise and William Deverell.

A brief summary of each aspect of the plan: local recreation facilities, public beaches, regional athletic fields, large reservations, and pleasureway

parks or parkways, is covered in the following pages.

Local Recreation Facilities

In the 1930's the brother's and Bartholomew noted that because of concentrations of populations schools were very equitably distributed; larger populations needed more schools. They noted that where there are high concentrations of schools you also have more available playgrounds.

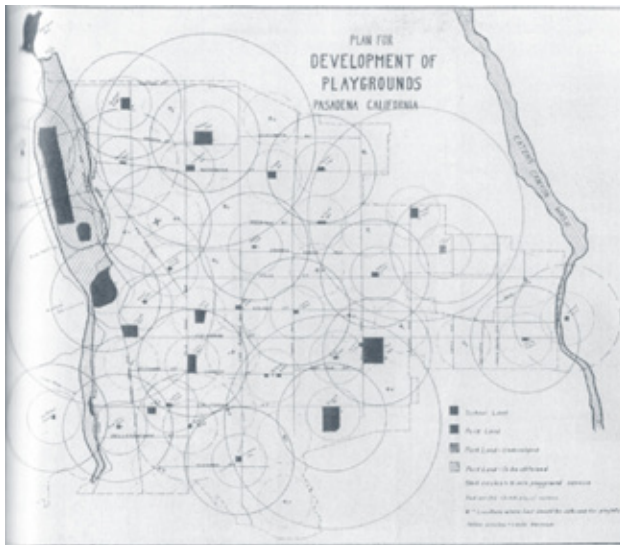


Figure B. Plan for Development of Playgrounds for Pasadena, CA. Courtesy Eden By Design.

They believed that “these same considerations should apply to or control

placing of recreational centers (Hise, Greg and Deverell, William 139). People should be within 1/2 mile of any park or recreational area and recreational areas should be located in each district. See Figure B for Plan for Development of Playgrounds for Pasadena, CA where the school grounds and playgrounds serve the entire city.

Public Beaches

At the time of the proposal beaches were significantly overcrowded; filled with bathers and spectators. There was great demand for beaches, but minimal supply. On July 4, 1928 at Santa Monica, an observer estimated some 47,670 beach goers soaking up the sun on a stretch of sand 3 miles long and 50 feet wide, about 15 square feet per person (Hise, Greg and Deverell, William 153). See Figure C for image of the crowded beach.

In order to solve the crowding problem Olmsted and Bartholomew



Figure C. Santa Monica, CA. July 4, 1928 Courtesy Edén By Design.

produced a detailed list of beaches, 32 of which should be acquired strictly for public recreation.

Regional Athletic Fields

According to the proposal when kids start becoming teenagers it is pivotal to provide them with an outlet to keep them out of trouble (Hise, Greg and Deverell, William 175). They proposed recreational athletic fields of 100 acres or more, easily accessible and within reach of a larger number of young people. Each city should have at least one or more on each side of the center. They included 10 detailed recommendations that would also

coincide with the parkways.

Large Reservations

The large reservations are one of the regions greatest assets that need safe and direct roads to be able to enjoy their scenic qualities.

See Figure D for an example of the picturesque scenery visible from

mountain roads. There are immense recreational opportunities within the reservations so the act of driving to these places, because some are quite a distance from the population, should be enjoyable. Four activities are outlined in the proposal that are involved with roads: Driving where one can enjoy views and events or the road; Pausing where one can enjoy points of special interest; Stopping to picnic or another form of recreation near the car; and Parking where one can go elsewhere on foot (Hise, Greg and Deverell, William 182). All this can be made even more enjoyable if mountain roads using slopes and ridges, screened views of



Figure D. Lower Topanga Canyon, picturesque scenery must be preserved. Courtesy Eden By Design.

opposing traffic, e.g. one-way terraced roads. This two-road system would be more enjoyable because views would be spectacular. See Figure E for typical sections.

Pleasureway Parks or Parkways

The “most extensive and

urgently needed class of parks and recreation facilities recommended for Los Angeles...”(Hise, Greg and Deverell, William 193). Not only would this network better connect the city, but it would also serve as a means to better control flooding and help conserve water, two immensely important issues for the Los Angeles region.

The aggregate length of the 9 (3

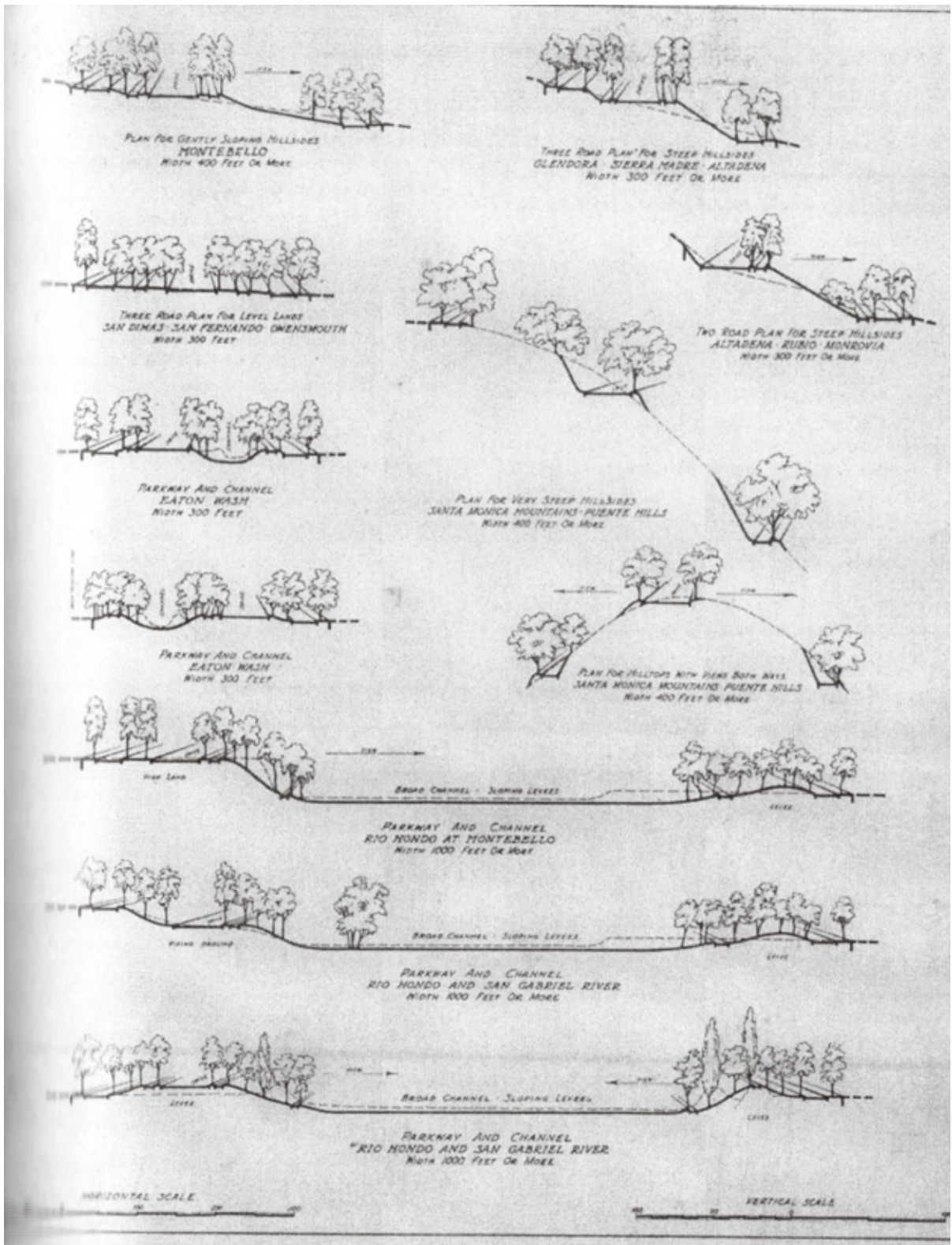


Figure E. "Typical sections for parkways, showing various slopes may be treated in a way to produce interesting variety and to protect good views and interesting scenery." Courtesy Eden By Design.

east-west and 6 north-south) proposed routes is 440 miles or 70,000 acres-just over 7 % of the total area or the entire region. The east-west chains include the Mountain Chain, the Coast Chain and The Hilltop Chain. The north-south chain include: the San Gabriel Valley, Rio Hondo and Eaton Wash, Arroyo Seco and Palos Verdes loop, Tujunga Valley and Ballona Creek Chain, Newhall Chatsworth and Topanga Canyon Chain, and the Dume Canyon Chain. (Hise, Greg and Deverell, William 195-204)
See Figure A for the general plan.

I LOS ANGELES TODAY I

Current state of conditions

Today Los Angeles covers 4,061 square miles (Los Angeles County-Government-Geography & Statistics). With 10,347,437 residents (Los Angeles

County-Government-Geography & Statistics) spread over mountains, hills, valleys, marshes, beaches and islands, Los Angeles is one of the most diverse

counties, geographically speaking, in the Nation. Unfortunately, for the majority of the population it is also one of the most green-space deprived counties.

For residents in the city of Los

Angeles, 7 of the 12 districts are below average when it comes to park acreage available. See Figure F parkland graph. Parks are so far between residents have to travel miles just to reach them. That would be all fine and dandy if we lived and died by the automobile, but in ideal world parks should be accessed by foot or bicycle; ideally no greater than 1/2

mile from the surrounding population. It has been said that persons living greater than 1/2 mile from any park space will seldom visit it. (Hise,

Greg and

Deverell, William 144). See Figure G for park access in Los Angeles.

This especially rings true for residents without automobiles. Of over 3 million Los Angeles county residents

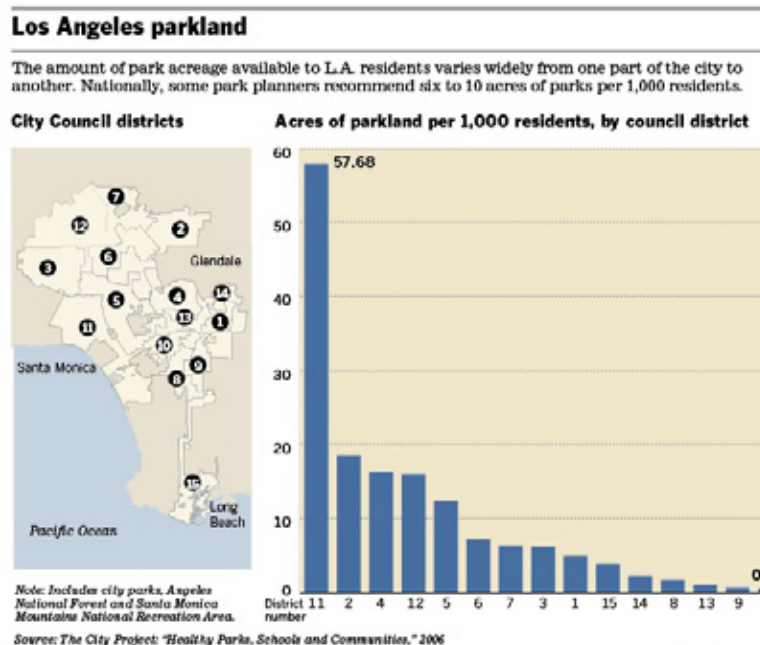


Figure F. Los Angeles park acreage per 1000 residents courtesy The City Project.

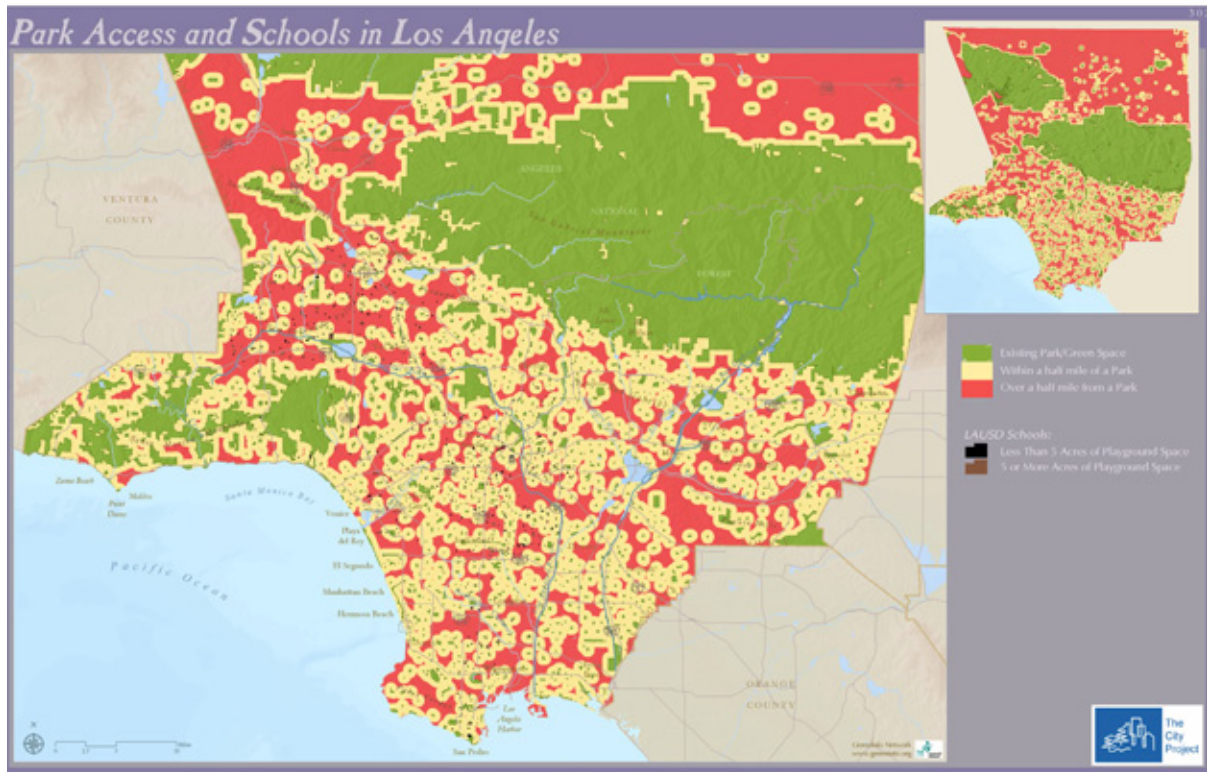


Figure G. Area in red illustrates persons living over 1/2 mile from park space. Courtesy The City Project.

that were surveyed by The City Project roughly 400,000, or 12% were said to not have access to an automobile. Add that together with the shortage of parks and there are some very green space deprived citizens.

According to The City Project, as far as density and park access are concerned, Los Angeles County, an area of 4,061 square miles (2,599,030 acres) and a population of 9,519,338 has 2,344 people per square mile or 3.66 persons per acre. Compare that

to available park space: 1,261.7 square miles or 807,684 total acres or about 84.85 acres per thousand residents.

When large reservation areas such as Angeles National Forest (559,033 acres), Santa Monica Mountains National Recreation Area (49,426 acres), Griffith Park (3,542 acres), Elysian Park (686 acres), and Baldwin Hills (462 acres) are excluded from the total acres of park space available the net acres equal 84,535 or 8.88 net acres of park space per thousand residents. See Figure

| Density/Park Access | |
|--|-----------|
| Area in square miles | 4,061 |
| Persons per square mile | 2,344 |
| Area in acres | 2,599,030 |
| Persons per acre | 3.66 |
| Square Miles of Park | 1,261.7 |
| Total Acres of Park Space* | 807,684 |
| Total Acres of Park Space per thousand residents | 84.85 |
| Net Acres of Park Space** | 84,535 |
| Net Acres of Park Space per thousand residents | 8.88 |

*Includes all park space (national forest land, SMMNRA, largest parks, and local parks).

**Excludes the following: national forest land, SMMNRA, and largest park space that lies within the County of Los Angeles.

Angeles National Forest - 669,033 Acres
 SMMNRA - 49,426 Acres
 Griffith Park - 3,542 Acres
 Elysian Park - 686 Acres
 Baldwin Hills - 462 Acres
 Total Acres = 723,149

Figure H. Density/Park Access Courtesy The City Project.

H for Density/Park Access table. The expansive size of Los Angeles coupled with the spread-out, sprawling nature of the population, work against the total park space available. The larger park/nature reserves sit on the outskirts of the county and are not as obtainable to the majority of the population without long stressful ridden drives through cramped congested freeways.

where improvements and connections are needed and adaptations can be made. To do this I drew on another famous landscape architect methods.

Los Angeles may have an adequate amount of parks, but accessibility is not there. To create a better connected Los Angeles, inspired by the 1930's plan it is necessary to see which areas of that design, which succeed in connecting the region where implemented. This will help locate ares

I MCHARG ANALYSIS & FINDINGS I

To fully discover what was implemented, where connections or improvements are needed, issue grades, and choose a model region, I drew on Ian McHarg's 1960's overlay technique for inspiration (McHarg 1969). Similar to GIS today, McHarg used transparent map overlays with each map representing a different factor. As the composite was generated the dark values came to represent the areas of greatest value and the light areas the least. (CSISS Classics - Ian McHarg: Overlay Maps and the Evaluation of Social and Environmental Costs of Land Use Change).

Using Adobe Photoshop and courtesy of The City Project, I used the Olmsted-Bartholomew Vision plan as a base, and overlaid the Park Access and Schools map of the Los Angeles Region, and a population density map. Each layer, save for the base layer was set

on a "darken" blend mode. The darken blend mode "compares each pixel value of the upper layer to its counterpart's pixel value of the lower layer and chooses the darker of the two to display." (Blending Modes in Photoshop and Elements). Just as the dark values displayed the areas of greatest value in McHarg's technique the Photoshop technique also displays the dark values as the greatest value. This technique facilitated the discovery of areas most in need of park access, which were those heavily populated with no park access. See foldout page for the McHarg inspired Adobe Photoshop overlay map.

Finally, the population density map was turned off so that only the park access layer and the Olmsted Vision layer remained. The two layers were analyzed to discover what areas of the Olmsted Vision had been implemented. The following pages reveal the results of both techniques.

Results/Findings

Of all the recommendations the Olmsted-Bartholomew proposal made, not very many were implemented. After carefully analyzing the foldout map the following areas were carried out.

Parks, Playgrounds and Recreational Centers

since 1930. See Figure I for existing parks in the 1930's. But the population has also increased from 2 million to over 10 million. However, surprisingly, and as noted before, Los Angeles has 8.8 acres of park space per 1,000 residents well within the recommended amount suggested by park planners nationally (L.A. Times How can L.A. create better places to play? on Flickr).



Figure I. Existing parks and recreation from 1930. Courtesy Eden By Design: Plates from the Original Report.

The amount of parks has greatly increased in the Los Angeles Region

OLMSTED AND BARTHOLOMEW'S 1930'S PLAN REVISITED: ADAPTATIONS FOR TODAY'S LOS ANGELES

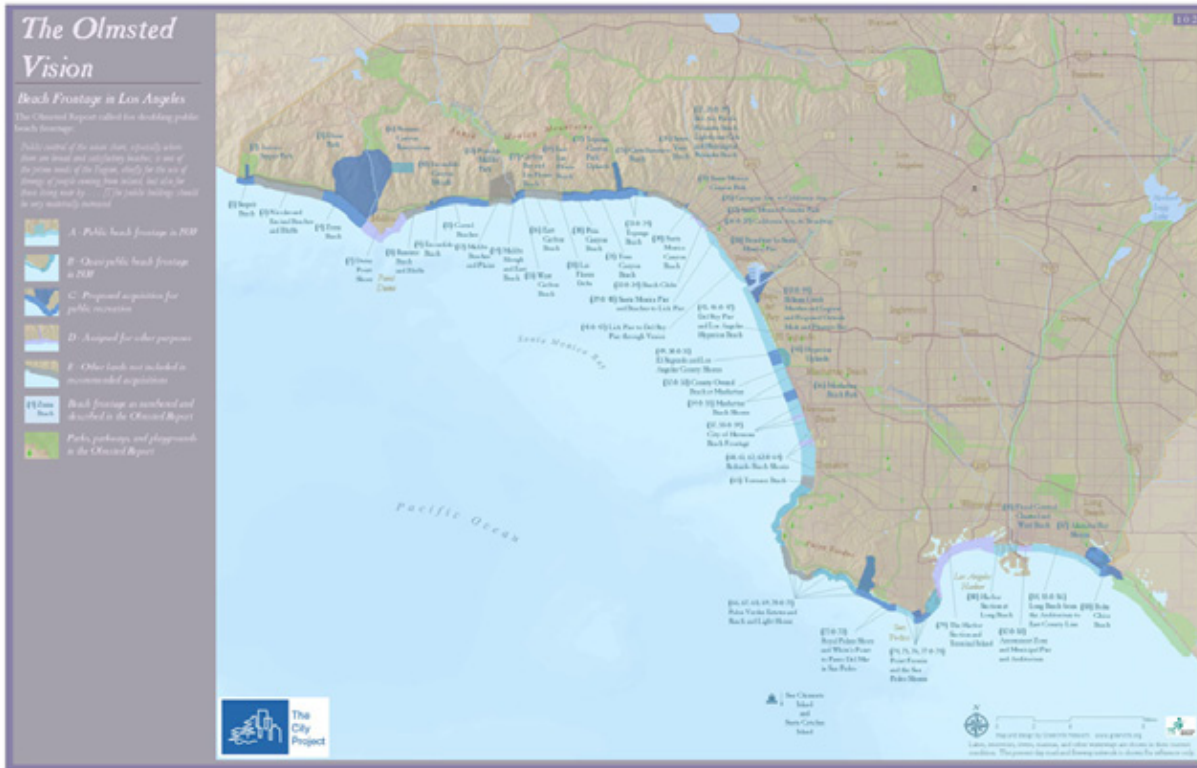


Figure J. Los Angeles Beaches. 1930 Olmsted Vision (top) and beaches in 2005. Courtesy The City Project.

Beaches

Compared with 1930, Los Angeles has more than doubled the amount of public beaches. Of all 32 recommended beaches to acquire, Los Angeles succeeded in obtaining them all, while adding additional beaches, though there are a few private beaches that still remain. See Figure J for Olmsted-Bartholomew

Olmsted and Bartholomew recommended 10 regional athletic fields. Listed in the table below are the 10 fields with their corresponding number, which are called out in the general plan. During the analysis it was discovered that six of the ten recommended fields were built where they were originally suggested, although not necessarily to Olmsted and Bartholomew’s likings. Located within mountains,

| Olmsted-Bartholomew Regional Athletic Field Recommendations 1930 | | Present Day | |
|---|-----------------------------|---------------------|--------------|
| Park Name | Park Acres Available | Materialized | Acres |
| 31. Culver Recreation Field | 160-190 | No | |
| 35. Rancho Cienega Recreation Field | 125 | Yes | 32 |
| 48. Long Beach Water Lands | NA | NA | |
| 55. South Gate Recreation Ground | 600-700 | No | |
| 57. Whitter Narrows | NA | Yes | 1500 |
| 57. Lincoln Park Recreation Grounds | NA | Yes | 17 |
| 59. Brookside Park, Pasadena | 520 | Yes | 62 |
| 61. Elysian Park (Chavez Ravine Section) | NA | Yes | 575 |
| 62. Griffith Park Playgrounds | NA | Yes | 4107 |
| 92. Eaton Canyon Wash | 500 | No | |

recommendations and a map of the current beaches from 2005.

Regional Athletic Fields and Large Reservations

deserts, and islands Los Angeles county currently has over 700,000 acres of the larger reservations, with the larger part occurring in the Angeles National Forest about the same amount as 1930.

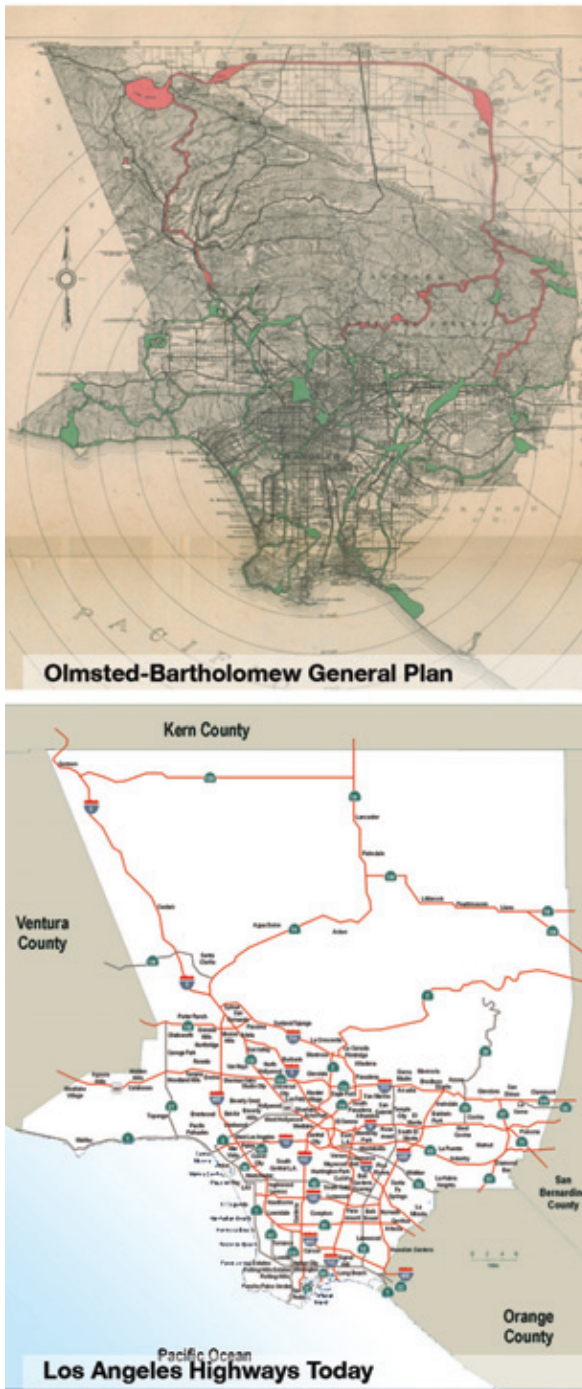


Figure K. Similarities between Olmsted-Bartholomew parkways and present day highways. Courtesy Eden By Design: Plates from the Original Report and Los Angeles County Freeway & Highway System Map.

Pleasureway Parks or Parkways

According to Olmsted and Bartholomew, pleasureway parks were the most urgently needed aspect of the entire proposal. A green network of large elongated parks, the pleasureways are actually the most visually noticeable component of the general plan from the 1930's that looks like it may exist today. Figure K illustrates these similarities.

That is where these similarities end. According to Olmsted and Bartholomew:

“parkways necessarily should be elongated real parks. Except that they include roadways for automobile travel...Varying in width, and having few cross traffic intersections, they should provide for traveling long distances by automobile, and should be well screened from the urban and suburban surroundings through which they pass.

They should be wide enough and have trees enough to produce, along with the topographic conditions, some sense of spaciousness and seclusion, and a variety of scenic effects.” (Hise, Greg



and Deverell, William 95).

Olmsted-Bartholomew's vision of parkways are a far cry from what exist today; large concrete channels carving through the region with little or no greenery. Generally accompanied with gridlock, driving the freeways in Los Angeles make for a very unpleasant experience.

Be that as it may the Pacific Coast Highway (State Route 1) and the Pasadena Freeway (State Route 110) can actually be pleasant drives if traveled at the right time of day. The Pacific Coast Highway is pleasant because of its scenic qualities and the Pasadena Freeway for its sinuous and historic nature. See Figure L for an example of parkways, gridlock and the Pasadena Freeway.

In the wake of examining the map for pieces of the design that were made a reality, the next step is to look a bit closer for areas that could use improvements by way of park access.

Figure L. Driving is a pleasure at a parkway in Olmsted park in Boston (top). Courtesy Eden By Design. Pasadena Freeway (middle). Gridlock on I-405 (bottom).

Needing Improvements

After carefully examining the map for regions needing improvements the following results were noted: There are several areas where high-density

populations exist with no park access within 1/2 mile. These areas include: cities of the Greater Wilshire District: Koreatown, Central Los Angeles and into Silver Lake; South Los Angeles: Inglewood, Watts, and South Gate; and

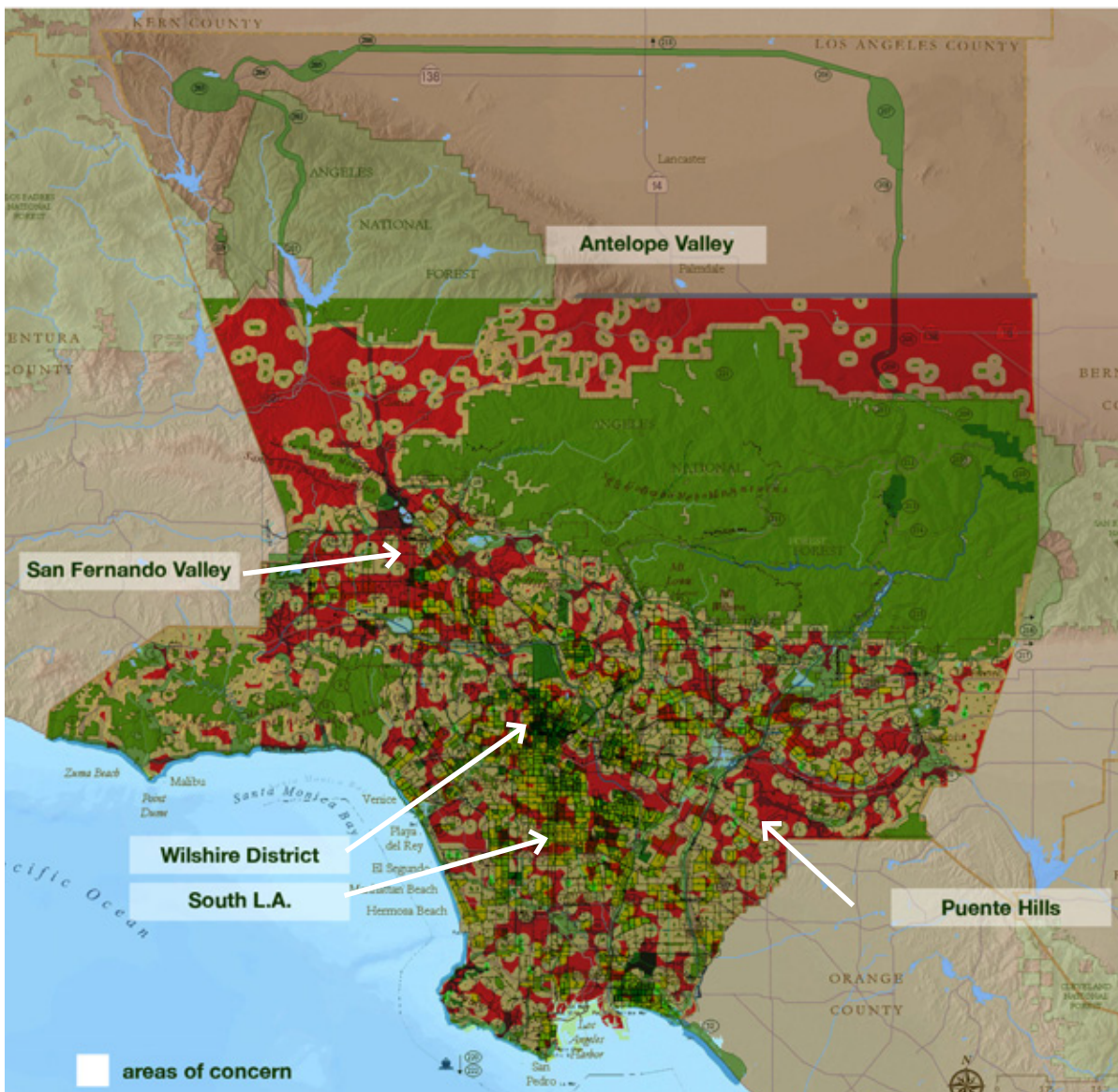


Figure M. Analysis map showing areas of greatest concern i.e. where high population density and no park access within 1/2 mile overlap. Base maps courtesy The City Project.

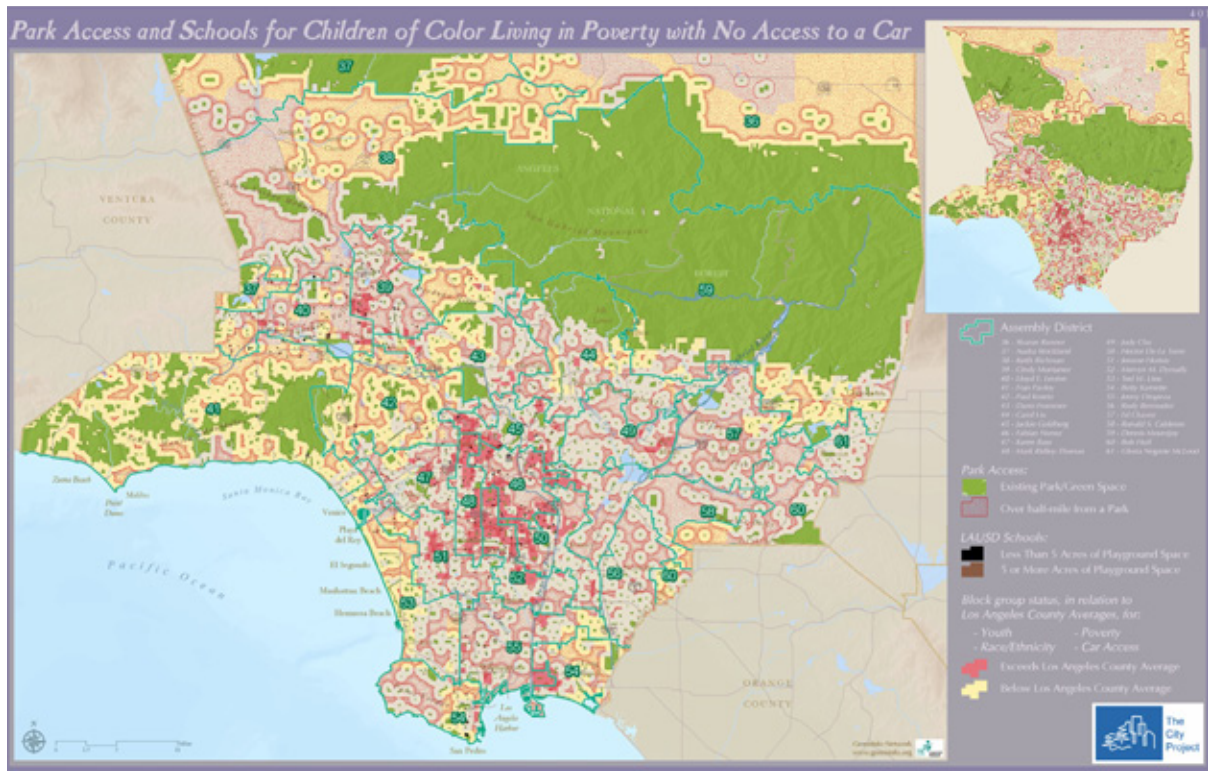


Figure N. Park access and schools for children living in poverty with no access to a car, courtesy of The City Project. Parts of South Los Angeles as well as the Wilshire district seen in darker red.

various cities within the San Fernando Valley. See Figure M for locations of these areas of concern.

It can also be noted that there are very large regions with no park access within 1/2 mile and slightly lower density populations. These areas include the Puente Hills region, the San Fernando Valley and cities north of the Angeles National Forest in the Antelope Valley.

Grading Regions Based On Access

Grades, using the letter grade system of A to F, were given out to the 5 regions noted previously, on population density, park access, and overall size of region.

The Antelope Valley lying to the north of the San Gabriel Mountains is a fairly large region, over 1300 square miles in Los Angeles County alone. With a population just over 360,000 (Aserrano; Loren) or about 277 persons per square mile, the Antelope Valley is the least dense of the 5 areas of

concern, therefore it receives an average letter grade of "C."

Chosen almost entirely for the lack of park access, Puente Hills, located in eastern Los Angeles County, is a chain of hills with average park access. However, the hills do offer some of the more natural park-type settings with access to hiking trails from 4 of the surrounding cities: Hacienda Heights, Whittier, La Habra Heights and Rowland Heights. Because population is not very dense in this region, Puente Hills also receives an average letter grade of "C."

South Los Angeles is a very dense region, upwards of 57,000 persons per square mile in some cities, has blotches with minimal park access. One of the poorest regions in Los Angeles County, which in all likelihood suffers the most in terms of lack of park access because most households can not even afford a vehicle. See Figure N for map illustrating lack of park and car access. Consequently, those households lying over 1/2 mile from any

park will suffer greatly in quality of life.

This region receives a letter grade of "F."

The Wilshire District is another area with very dense populations, upwards of 57,000 persons per square mile, and minimal park access. Lying just north of Downtown Los Angeles, the Wilshire District is home to Koreatown, Country Club Park, and Greater Wilshire/Hancock Park to name a few. Because car access is still an issue, but not quite as much as South Los Angeles, The Wilshire District receives a letter grade of "D."

Lastly, the San Fernando Valley, a 345 square-mile basin surrounded by the Santa Susana Mountains, Simi Hills, Santa Monica Mountains, and the San Gabriel Mountains. According to the analysis there are areas of high density, upwards of 57,000 persons per square mile as well lower densities between 5,000-10,000 persons per square mile (LACountyPopDensity.png). However, drowning in a sea of red, according to the analysis map (Figure M), the San Fernando Valley suffers from little to

no park access. Therefore the San Fernando Valley receives a letter grade of “D.”

Choosing A Model Region: The San Fernando Valley

After reviewing the grades and each individual region, the San Fernando Valley was chosen as the archetype. Although it may not represent the most park-deprived region in the county, the San Fernando Valley could represent a revival for Los Angeles.

Today plans are in affect to revitalize the Los Angeles River, which headwaters in the south western portion of the San Fernando Valley (see the Los Angeles River revitalization see <http://www.lariverrmp.org/> for more information). A 20 year plan seeks to bring back the culture and identity of old, reinvigorating Los Angeles.

Working to complement this revitalization I felt it was necessary to start in this region where it all begins, the West San Fernando Valley.

San Fernando Analysis

The West San Fernando Valley currently has 48 parks to serve 345 square miles. With each park serving an 1/2 mile radius it is evident a lack of connectivity exist. Parks seem to cluster in particular quadrants within the city leaving the heart of the valley park free. See Figure O for map of the West San Fernando Valley’s park access.

Opportunities

Currently there are 8 channels draining the Santa Susana Mountains to the north and feeding the Los Angeles River to the south. On a few occasions these channels run adjacent to parks. The Santa Susana Mountains also present great opportunities as they provide plenty of natural open space, great for handling larger populations.

Constraints

There are 5 major freeways dissecting the valley: I-5, I-118, I-101, I-405, and I-210. These Freeways present a bit of constraint because they create obstacles impeding connectivity within the region. Also impeding connectivity are the arterial streets. In the north-south direction one appears every quarter-mile.

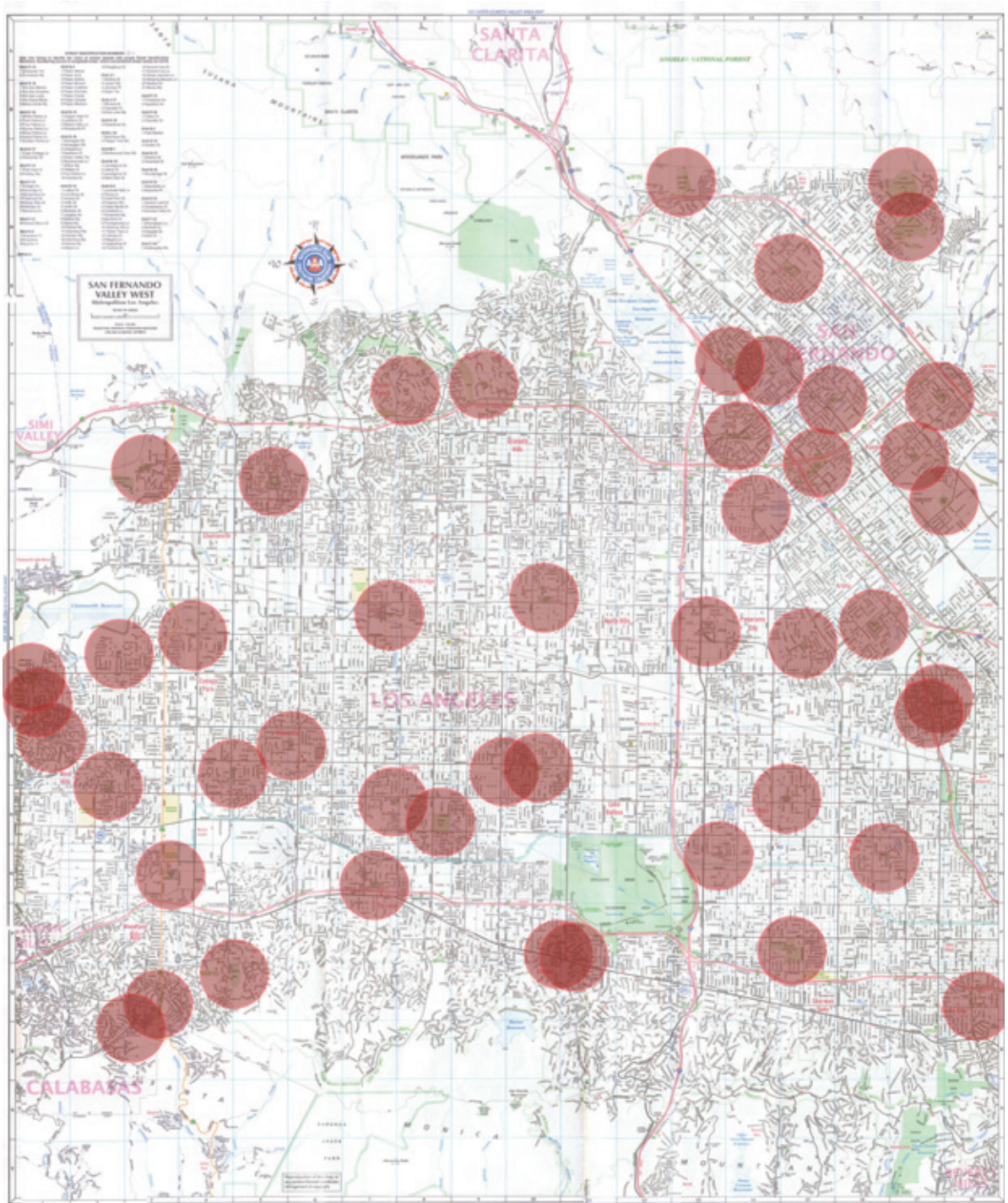


Figure O. San Fernando Valley - Red represents persons within 1/2 mile of park. Base map courtesy Automobile Club of Southern California.

I OLMSTED ADAPTATIONS: THE GREEN NETWORK I

Because the goal of the Olmsted Adaptation is to create a more connected city, enormous opportunity exists within the drainage channels. Looking at a map of the west San Fernando Valley I have highlighted all parks with half mile in radius circles. It can be noted that though plenty parks exist they seemed to be clustered in particular areas; leaving the middle communities deprived. Populations in the heart of the region lack access to parks within a half mile making It is easy to imagine that quality of life is fairly poor here. Because these drainage channels cover the entire north-south length of the region, traveling by foot or bicycle, if re-designed to greenway or belts, is facilitated.

Using the existing drainage channels like greenbelts would create better connections between parks like the Olmsted-Bartholomew parkway

system on a more human scale. See Figure P for the map of West San Fernando Valley with parks and drainage channels.

Using the Los Angeles River as a datum of organization these tributaries if rehabilitated, to where portions of concrete can be removed present great benefits to the region. By removing concrete and alternatively using more permeable surfaces, while still maintaining some control over the flow and movement of the water, ground water has a chance to recharge; reenergizing a much-depleted region.

Along with a selection of the right plants, like native Juncus and rushes within and adjacent to the redesigned channels allows for proper filtration of toxic constituents from the adjacent land uses. It is crucial to use Juncus, a type of grass, to allow flood flows to pass over them, rather than impede them (The Los Angeles River Revitalization Master Plan).

Making these channels more accessible so that the community is able

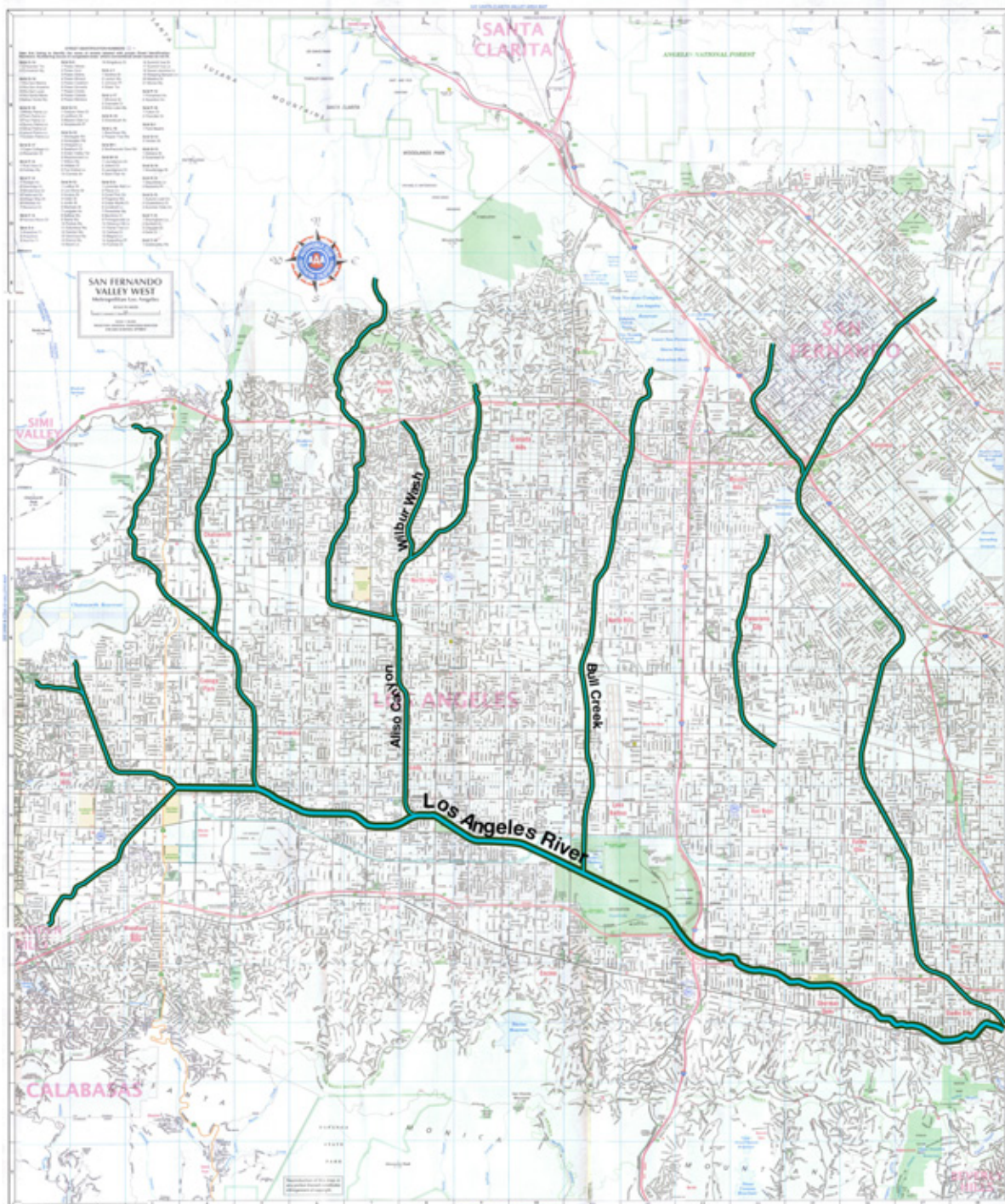


Figure P. San Fernando Channel Rehabilitation plan. Labeled channels include: Aliso Canyon, Wilbur Wash and Bull Canyon. Base map courtesy Automobile Club of Southern California.

to engage them should be one of the top priorities. Not only do they provide better access to the parks but they can also be elongated parks, just as Olmsted and Bartholomew saw them: a form of pleasure and relaxation in route to larger areas of recreation. By transforming these channels to pleasure ways, incorporating greenbelts along side them, rehabilitating them with permeable surfaces, lining them with native plants, and allowing the public direct access to the them (in specific more controlled locations) a region where people are

happier and enjoy a more merited quality of life is created.

The Green Network: Channels to Greenways

For the purpose of this project I have chosen 3 drainage channels: Bull Creek, Wiblur Wash, and Aliso Canyon to which I will rehabilitate using sections and perspective renderings. For location of channels see Figure P.

Bull Creek

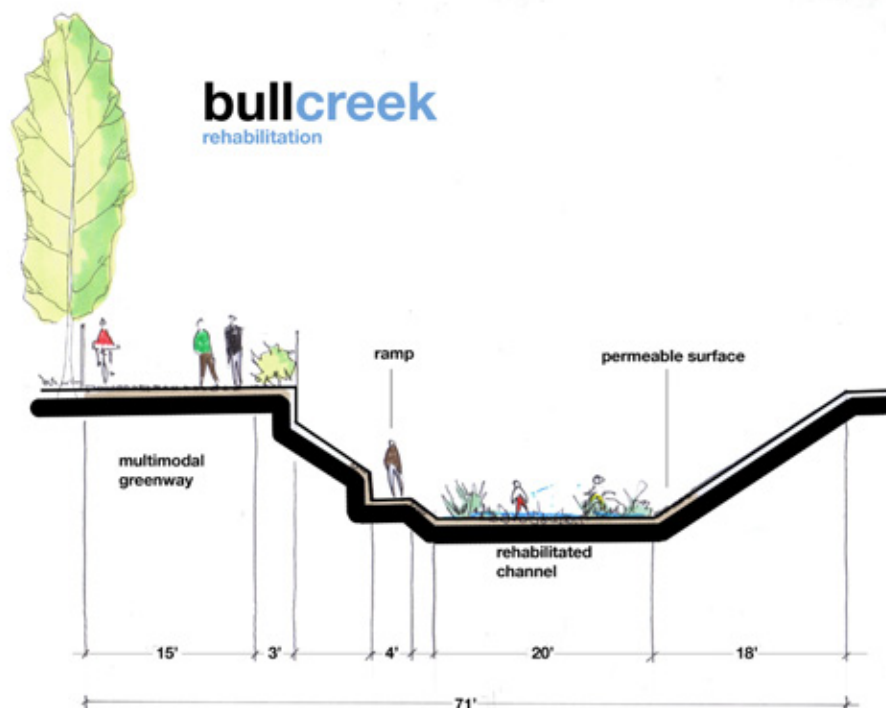


Figure Q. Bull Creek re-design section. Drawn and designed by Stephen Blewett.



BULL CREEK - BEFORE REHABILITATION



Figure R. Bull Creek before/after photo manipulation. Photos and manipulation by Stephen Blewett.

Bull Creek headwaters in the Santa Susana Mountains north east of Porter Ranch. Traveling south beneath I-118 freeway, it wanders about 3 miles through low-density residential neighborhoods, crossing thoroughfare after thoroughfare before it reaches the Van Nuys airport. Just south of the airport it meets the Sepulveda Basin Recreation Area where it finally merges with the Los Angeles River; a total journey of about 6 miles.

The current path on the east bank is transformed to a multimodal greenway, where biking, exercise, and walking are encouraged. And because the channel is designed with no vertical walls it would make a great candidate for water recreation. A simple ramping system, traversing the slope or stairway could facilitate the access. The sloping walls would be replaced with the *Envirogrid* structure allowing greater stormwater penetration and a greener looking creek. “Envirogrid is a flexible and expandable cellular soil confinement structure that combines

compaction resistance with drainage to provide slope and stream bank erosion control, as well as ground and retaining wall stabilization” (Margolis, Liat and Robinson, Alexander 154). The bottom of the channel is wiped free of concrete and replaced with a more natural creek bed allowing for better permeability. See Figure Q for a typical re-design section of Bull Creek. See Figure R for a before/after photo manipulation of Bull Creek.

Wilbur Wash

Wilbur Wash, the shortest of the selected channels, begins as two distinct dirt washes on the south side of the I-118 freeway between Wilbur Ave. and Reseda Blvd. South of Chastworth St. the wash becomes a concrete-lined channel with plenty of room for a greenbelt. In its totality it travels through about 1 3/4 miles of residential neighborhoods before it merges with Aliso Canyon.

Wilbur Wash has ample breathing room on each side of the channel to

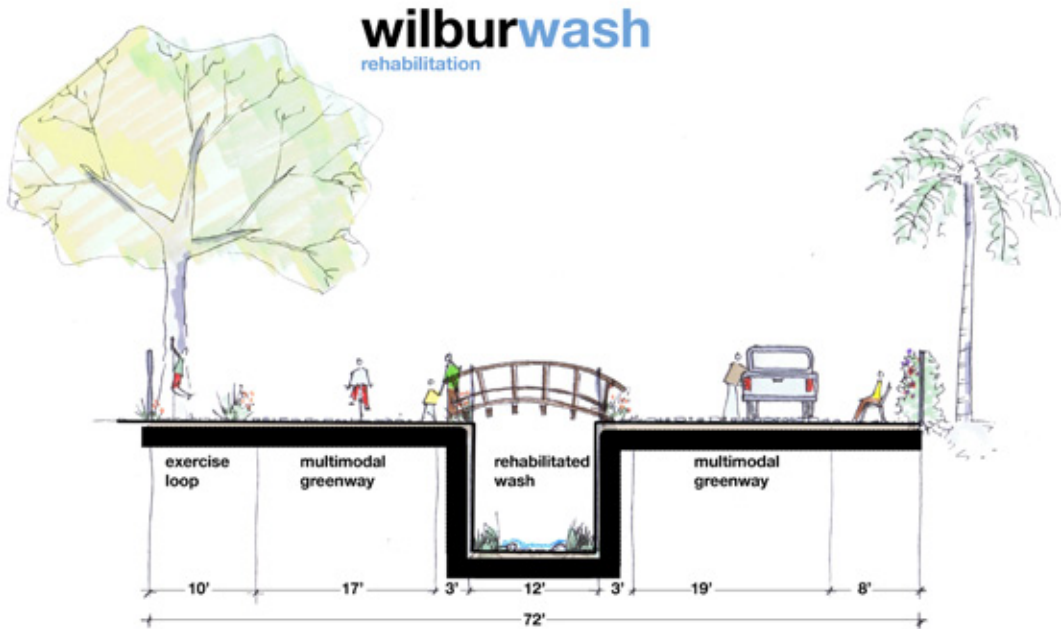


Figure S. Wilbur Wash re-design section. Drawn and designed by Stephen Blewett.

serve as both a multimodal greenway and vehicular access for needed repairs. Greenways are paved with the porous concrete for better water penetration and dressed up with native plants, such as *Mulhenberiga* and *Escholzia*. The walls are redesigned with *Envirogrid*, while the floor of the channel is wiped free of its concrete to give it a more natural creek-bed look. Native *Juncus*, or similar grass-type species will be planted to further slow the fast moving currents, while not impeding them in times of storms. See Figure S for a typical re-design section of Wilbur Wash. See Figure T for a before/after photo

manipulation of Wilbur Wash.

Aliso Canyon

Aliso Canyon, the longest of the three channels, is a result of the merging of Wilbur Wash and Limekiln Canyon south of the railroad. Beginning at Porter Ridge Park in Porter Ranch it travels south through two natural areas: Aliso Canyon Park and Eddleston Park. From there it dives beneath I-118 freeway and into a concrete-lined channel. For a good 2 1/2 miles it runs adjacent to some fairly wider unused tracts of land, which could be a good

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WILBUR WASH - BEFORE REHABILITATION



Figure T. Wilbur Wash before/after photo manipulation. Photos and manipulation by Stephen Blewett.

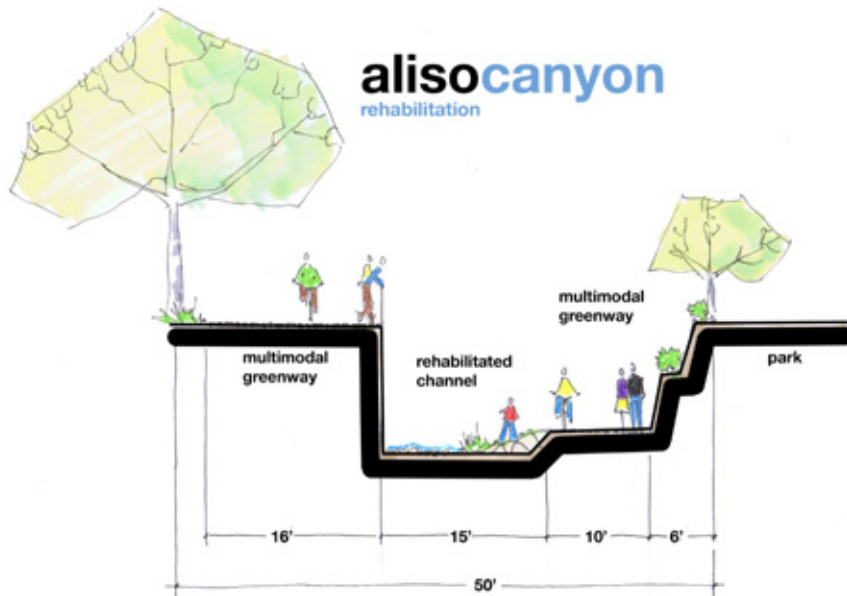


Figure U. Aliso Canyon re-design section. Drawn and designed by Stephen Blewett.

section for more park like recreation. Passing through Vanalden Park where it merges with Limekiln Canyon it travels further south, through mostly residential neighborhoods, 2 3/4 miles to the Los Angeles River.

Wide enough on both sides of the channel for native planting and multimodal greenways; Aliso Canyon offers a lot of opportunity for rehabilitation. The western edge of the channel is placed closer to the creek offering greater interactivity with travelers. Greenways are broken up, replaced with porous concrete and lined with native plants. Both the vertical

and terraced walls will be built with *Envirogrid*, while the channel bottom is also replaced with a creek-bed and native *Juncus* type plants. See Figure U for a typical re-design section of Aliso Canyon. See Figure V for a before/after photo manipulation of Aliso Canyon.

Channel Design

A structural approach versus a biological approach is used to re-design the channel walls in all three cases because of insufficient width. In order to utilize the biological approach, removing all concrete and replacing with

OLMSTED ADAPTATIONS: THE GREEN NETWORK



ALISO CANYON - BEFORE REHABILITATION



Figure V. Aliso Canyon before/after photo manipulation. Photos and manipulation by Stephen Blewett



Figure W. Envirogrid used for structural approach. Courtesy Living Systems.

native vegetation, ample space must be available to allow the creeks to take their more natural meandering course. In the structural approach Envirogrid is

suggested, but other alternatives such as concrete or rock walls, gabions, sacked concrete or articulated block walls also exist. See Figure W for example of Envirogrid. See Figure Y for an example of structural channel design.

For Bull Creek and Aliso Canyon, where persons are encouraged to enter the creek, the banks will be reinforced with what is called joint planting. Joint planting is a system that installs live willow stakes between rocks, or riprap, placed previously along the banks. See Figure X for diagram of joint planting.

Instead of using Willows, which because of their woody characteristics can impede peak flood flows, these designs call for more herbaceous plants like

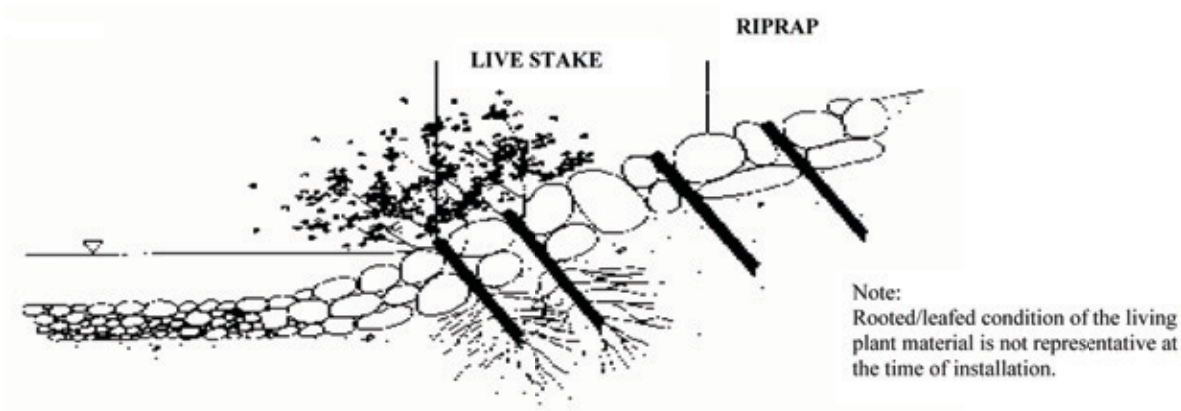


Figure X. Illustration of joint planting. Courtesy Karen D. Parson's Guidelines for Stream-bank Restoration.

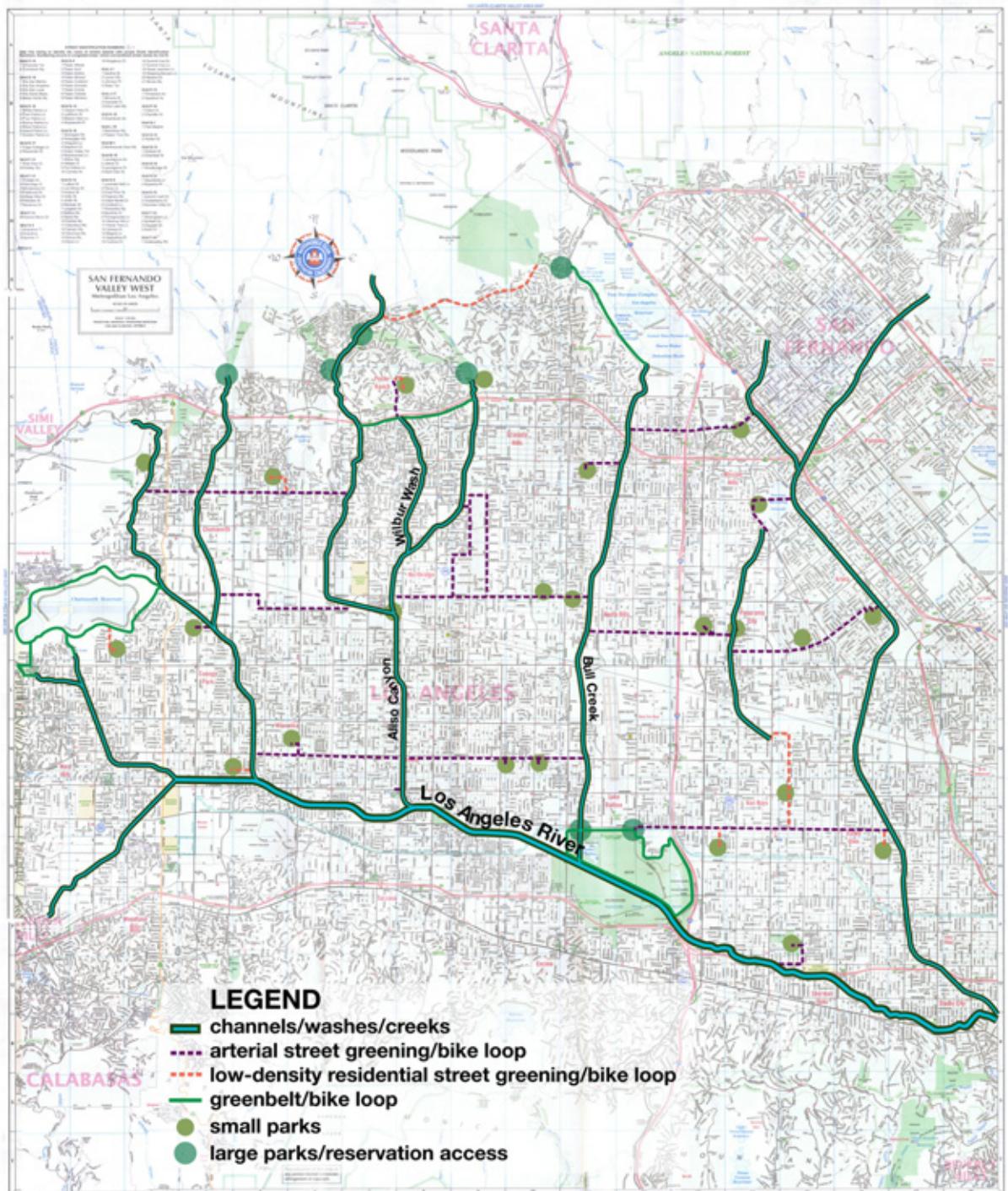


Figure Y. Channels & Connections Plan for San Fernando Valley. Base map courtesy Automobile Club of Southern California.

Juncus and Rushes which allow peak flows to pass over them.

Connecting the Channels

In order to successfully transform

the channels into greenways the design also includes green streets and bike lanes, which help create a more cohesive network. See Figure Y for general plan of Channels and Connections for the San Fernando Valley. These connections seek to fill in the gaps between the channels; linking them directly to parks via street greening and to the adjacent channels. As well as creating the necessary connections, they would also serve to activate the channels.

Greening Typology

Street greening would give a distinct character to the overall network of streets; making it easy for persons to differentiate a standard street from the green network streets. The goal being a person could easily recognize a green street, hop on it and be able to connect to the nearest channel.

There are a several levels of street greening, arterial, commercial, and high and low density residential, of which

two are applicable for the San Fernando Valley: arterial street greening and low-density street greening.

Arterial street greening marks the majority of the connections between the channels. These particular streets were chosen because of their proximity to parks; the closer more direct routes from the channels the better. The larger of the streets, used mainly as main thoroughfares, arterial street greening would include adding a bike lane, a green gutter for stormwater management, and a sidewalk. See Figure Z for typical arterial street greening.

Low-density residential street greening consist of mostly shorter routes either connecting arterial greening to parks or channel to channel. A typical low-density residential greening would include a green gutter for stormwater management and a sidewalk zone. A Bike lane will not be designated but because of the lesser flows, riding through these streets should not be an issue. See Figure AA for typical low-

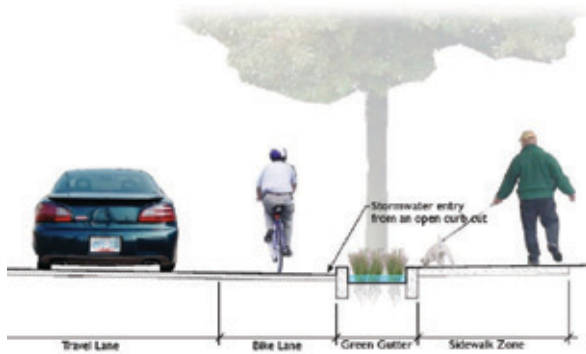


Figure Z. Typical arterial street greening. Courtesy San Mateo Guidebook.

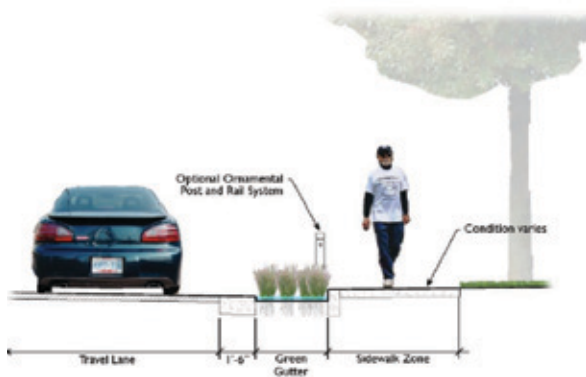


Figure AA. Typical low-density residential street greening. Courtesy San Mateo Guidebook.

density residential street greening.

Challenges and Benefits of the Green Network

There are many challenges that come with a project of this size, but it is expected that the benefits far outweigh the costs. The following are list of some of the more obvious challenges and

possible methods for solutions. Some of the more obvious challenges are presented with the design of the green channels.

Designed on the grid system the San Fernando Valley is loaded with bisecting streets and arterial roadways. This presents a challenge because is does not give the channels an unimpeded route to the Los Angeles river. If the channels were redesigned into the Green Network the greenways would have to dive underneath bisecting roads about every quarter mile (which already happens with existing channels).

If designed as under crossings, to ensure the safety of all persons using the path, they should be well lit with mural art and lighting to lighten the dark undersides, while blind corners should be avoided.

Another alternative, to diving underneath streets, would be on-grade crossing. Though this scenario may be safer and less costly, but it destroys the conveyance of the unimpeded routes.

Removing channel floors can be



Figure AB. Example of concrete reuse. Courtesy Living Systems.

a highly technical process because the surrounding walls generally depend on them for support. Therefore, all channel walls will be renovated with *Envirogrid*, to allow for channel floors to take on a more natural creek design. It may seem costly to rip out the concrete channel lining and install this geocell, but the benefits of having to install little drainage infrastructure outweigh the cost of implementation.

After all that concrete is removed where does it go? Instead of ending up in a landfill, there is a possibility that it can be reused to create permeable

surfaces for the greenways and green streets. Better yet If not used there, it may be reused in other large projects, for instance in the terminal floors for California's proposed high-speed rail! See Figure AB for an example of concrete reuse.

Tying the Green Network into the surrounding neighborhoods may also be challenging. Because most of the neighborhoods adjacent to the channels have their backyards facing them it can be difficult to provide persons access without cutting through someone's property. Opportunity may exist where

streets dead end into the channels. Otherwise the only real solution without causing too many problems is to provide access at arterial crossings.

Although there are many challenges to a project of this nature, not to mention cost, I felt it was only necessary to touch on a few that seemed the most obvious.

The following are examples of some of the benefits resulting from the Green Network

Stormwater management: greater stormwater management and infiltration back into the groundwater. Groundwater is one of three important sources of water for the San Fernando Valley; it should be a priority to return water back into ground. More water in the ground means larger aquifers and more wildlife. Also managing stormwater on site means less toxins getting released into the ocean.

Restoring corridors: by better connecting parks and reservations these channels act as corridors, restoring links between fragmented patches (parks and

reservations) enabling safe passage for wildlife. Connecting wildlife along direct corridors from larger reservations back to the rehabilitated Los Angeles River and eventually to the ocean is one of the primary goals.

Quality of life: these corridors also improve quality of life for the community, by better connecting them to the open space around them. Creating a link, where a person in the San Fernando Valley can one day walk or ride along one of the creeks, ride alongside the rehabilitated Los Angeles River and eventually spend a day at the beach would be an amazing feat. Improving access, more green space, restoring wildlife habitat and better stormwater management all are benefits that certainly outweigh the costs.

I CONCLUSION I

If Los Angeles had implemented the Olmsted-Bartholomew 1930's Plan For The Los Angeles Region, it may have been known more for its extensive system of parks and parkways than its confusing network of freeways. Fortunately, Los Angeles has held on to much of the green space and picturesque scenery that inspired the Olmsted-Bartholomew plan, but there is still room for much improvement.

Inspired by the Olmsted-Bartholomew parkways design, The Green Network seeks to reconnect the West San Fernando Valley with its parks and reservations. Creating a better-connected city, restoring habitat, and improving quality of life. By tying into the Los Angeles River, a datum of organization, revitalization, and life for the entire region, San Fernando's Green Network serves as a model for all cities within the Los Angeles Region.

If all the cities within the region followed the model set forth by the San

Fernando Valley, Los Angeles could once again be known for its picturesque scenery that the Olmsted brothers and Bartholomew set out to channel, providing a higher quality of life for all 10 million of its citizens.

I NEXT STEPS I

With the support of the community, local groups, and foundations implementation of the Green Network could get underway. Groups such as, *TreePeople*, *Friends of the Los Angeles River*, *The City Project*, *LA & San Gabriel Rivers Watershed Council*, *Sepulveda Basin Wildlife Reserve*, *Arroyo Seco Foundation*, *The River Project*, *The Village Gardeners*, and the City of Los Angeles, who have already started the march towards a cleaner Los Angeles, would be a crucial addition in the fight to revitalize the tributaries of the Los Angeles River.

Events such as, bike tours, river cleanups, adopt-a-creek, river walks, and a green network web site, can



Figure AC. Visions of a greener Los Angeles. Courtesy City of Los Angeles :: Los Angeles River Revitalization

educate the public, facilitate fund-raising and create the necessary exposure to get this project underway.

A project of this magnitude will not happen by one person efforts alone.

The region must band together, like the Los Angeles of old. The river that once brought people together, then divided communities with its channelization can now bring them back. See Figure AC for a rendering of the revitalized Los Angeles River. Let us all unite to make a better, greener Los Angeles!

“The way we treat rivers reflects the way we treat each other” Aldo Leopold (1887-1948)

I GLOSSARY I

Aquifer: Any subsurface material that holds a relatively large quantity of groundwater and is able to transmit that water readily.

Bank :The margins of a channel.

Articulated block walls: A porous gravity structure that resist lateral earth forces mainly by their weight.

Channel: An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.

Corridor: A belt or zone representing a habitat system, such as a stream or valley.

Concrete or rock walls: A gravity structure that resist lateral earth forces mainly by their weight.

Erosion: The removal of rock debris by an agency such as moving water, wind, or glaciers: generally the sculpting or wearing down of the land by erosional agents.

Gabions: Used in a variety of forms to stabilize slopes. May be in the form of wide mesh baskets containing rocks. May be used with plants.

Groundwater: Water that is in the zone of saturation, from which wells, springs, and ground water runoff are supplied.

Habitat: The local environment of an organism from which it gains resources.

Infiltration: The flow of a fluid into a substance through pores or small openings.

Meander: A bend or loop in a stream channel

Multimodal Greenway/Green Network: A path wide enough to support, pedestrian, bicycle and vehicular access.

Open Space: An area of land that is valued for natural processes and wildlife, for agricultural and sylvan production, for active and passive recreation, and/or for providing other public benefits.

Parkways/Pleasureways: Elongated real parks that would include roadways for automobile travel

Patch: an area of habitat that differs from its surroundings with sufficient resources to allow a population to persist.

Peak Flood Flow: The highest peak water discharge in a year.

Permeability: The rate at which soil or rock transmits groundwater.

Porous Concrete: Concrete that is mixed in a manner that creates a series of voids allowing water and air to travel through.

Recharge: The replenishment of groundwater with water from the surface.

Reservation: Natural reservations; mountains, deserts, and beaches.

Revitalize: To bring new life or vigor to; to restore to a better state; to refresh or renew -- whether a natural system or a neighborhood or community.

Riprap: Rubble such as broken concrete and rock placed on a surface to stabilize it and reduce erosion.

Stormwater: Surface runoff in response to heavy rainfall and/or snowmelt that rushes over the land to stream channels. Also used to refer to surface runoff or overland flow from developed areas.

Sustainable: Continue for an extended period of time without degradation.

Tributary: A river or stream flowing into a larger river or lake.

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