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ARROYO SECO PARKWAY  
(Pasadena Freeway)  
(California 110)  
Arroyo Seco Parkway  
Los Angeles to Pasadena  
Los Angeles  
Los Angeles County  
California

HAER No. CA-265

PHOTOGRAPHS

XEROGRAPHIC COPIES OF COLOR TRANSPARENCIES

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
National Park Service  
1849 C Street, NW  
Washington, DC 20240

THE HISTORIC AMERICAN ENGINEERING RECORD

ARROYO SECO PARKWAY

HAER No. CA- 265

Location: From Glenarm Street in Pasadena, California, 8.2 miles to intersection with Hollywood Freeway (State Highway 101) at Four-Level Interchange in Los Angeles, California; Los Angeles County, California.

Dates of construction: 1938-53

Designers: California State Division of Highways, District VII (Spencer V. Courtelyou, Chief Engineer); City of Los Angeles (Lloyd Aldrich, Chief Engineer); City of Pasadena (Harvey W. Hincks, Chief Engineer); City of South Pasadena (Frank H. Clough, Chief Engineer); Automobile Club of Southern California (Ernest E. East, Chief Engineer); Works Progress Administration, Public Works Administration; United States Bureau of Public Roads

Present Owner: California Department of Transportation

Present Use: Northernmost portion of California Interstate Freeway 110.

Significance: The Arroyo Seco Parkway (Pasadena Freeway) was the first divided-lane, high-speed, limited-access road in the urban western United States and the first stretch of road for what would become the extensive Los Angeles freeway network. The approximately six-mile initial stage of the 8.2-mile roadway, completed in 1940, was envisioned as both a scenic road traversing the Arroyo and a vital traffic conduit linking the expanding cities of Pasadena and Los Angeles. Engineers and planners attempted to blend landscaping and native plants into the overall design while implementing safety features appropriate for high-speed travel. Construction proceeded alongside the installation of the federally assisted Arroyo Seco Flood Control Channel, necessary to ameliorate seasonal flooding. As road construction proceeded southward towards downtown Los Angeles in the early 1940s, the road began to more closely resemble a high-speed freeway. As a prominent example of the evolution from recreational parkways to

more utilitarian high-speed freeways, the Arroyo Seco Parkway marks an important stage in the history of American transportation engineering.

Historians:

J. Philip Gruen and Portia Lee, August 1999

Project Information:

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## Preface

The Arroyo Seco Parkway, also known as the Pasadena Freeway and California Interstate 110, marks an important stage in the evolution of the modern motorway. Though originally conceived as a recreational pleasure drive through scenic parklands along the lines of popular East Coast parkways, by the time the roadway was completed it functioned primarily as a high-speed commuter route linking downtown Los Angeles with Pasadena and other nearby suburbs. At the official opening ceremonies on December 30, 1940, in fact, California Governor Culbert L. Olson declared the Arroyo Seco Parkway to be the "first freeway in the West." In reality, the initial six-mile segment between Pasadena and Los Angeles Avenue 22 was a transitional landscape that combined aspects of traditional parkway design with the utilitarian emphasis on speed, efficiency, and stripped-down esthetics that would characterize much subsequent freeway development.

Perhaps Olson was thinking ahead, for the Arroyo Seco Parkway had long been envisioned as part of a much larger high-speed road network. By the time of Olson's speech, workers had already begun clearing for a planned 2.2-mile, eight-lane "Southerly Extension" that would bring the road closer to downtown Los Angeles and fulfill the ultimate goal of integrating it into a wide-ranging high-speed road system. Because the federal government recognized the road's utilitarian capabilities, the extension project was declared part of the National Strategic System of Roads, permitting federal financial assistance, Works Progress Administration labor, and wartime priority for scarce materials like steel and concrete. When the final stretch of road was completed from the Southerly Extension to the Four-Level Interchange northwest of downtown Los Angeles in 1953, the Arroyo Seco Parkway was united with the growing Los Angeles regional freeway system. While the initial stretch of road begun in the late 1930s featured characteristics resembling modern-day freeways, it was during the following thirteen years that the Arroyo Seco Parkway began to more closely live up to Olson's proclamation.

Transportation historians have long recognized the Arroyo Seco Parkway's significance as a transitional phase between early motor parkways and full-fledged high-speed freeways. In the early 1990s, California state legislators acknowledged the Arroyo Seco Parkway's place in highway history by designating it as a "California Historic Parkway" within the state scenic highway system. To commemorate this event, three brown and white signs reading "Historic Arroyo Seco Parkway" were placed along a stretch of road. The roadway's historical importance was further underscored in the summer of 1999, when the American Society of Civil Engineers (ASCE) designated the original section as a National Civil Engineering Landmark.

The parkway's historical significance is largely lost upon area commuters, who tend to view it as out-dated rather than venerable. In 1999, the road -- originally built to handle approximately 27,000 automobiles per day -- carried more than 120,000 cars per day. Once thought of as a prototypical high-speed motorway, the tight curves, narrow lanes, and intermittent "safety bays" of the Arroyo Seco Parkway have long been considered inadequate for the needs of modern-day motorists. Area residents were grumbling about the parkway's limited capacity, its bottlenecks,

and its dangerous on- and off-ramps in letters to the *Los Angeles Times* even as this draft was nearing completion.<sup>1</sup>

Some clarifications about the terminology used in the following narrative should be noted. Although the Arroyo Seco Parkway was alternately called “parkway” and “freeway” before, during, and after construction, when we use the term “parkway,” it refers to the road in *any* of its guises, either today or in the past. Although the road has been known as a freeway longer than a parkway, unless the narrative refers specifically to a proposal calling for a “freeway,” the “parkway” nomenclature is used to maintain consistency with the title of the HAER summer project: The Arroyo Seco Parkway Recording Project. Furthermore, the term “Arroyo,” although technically incorrect (it should normally be written as “arroyo”) is capitalized throughout (except in quoted passages where it is written otherwise). The decision to capitalize replicates the word’s use in the majority of primary sources surrounding the parkway’s construction.

The authors would like to thank the following people who lent their assistance, advice, suggestions, or were otherwise instrumental to the completion of this written report: Laurel Clark at the California Department of Transportation History Library; Ken Breisch and Greg Hise at the University of Southern California; Morgan Yates and Matt Roth at the Automobile Club of Southern California; Virginia Neeley, Charles Fisher, and Nicole Possert of the Highland Park Heritage Trust; Alicia Brown of the Solano Avenue Neighborhood Association; Francesca Smith and Mary Jo Winder at the City of Pasadena Landmarks Commission; Jeanne Bonfilio, Ivy Estrada, and Patricia Reid of the Public Affairs Department of District VII of the California Department of Transportation, and Arthur Krim of Survey Systems in Cambridge, Massachusetts. Special thanks go to Charles J. O’Connell, former deputy chief of operations at District VII of the California Department of Transportation, for his engineering expertise, patience, and support; historian Tim Davis of the Historic American Engineering Record, who rightly encouraged the team to more closely examine the “parkway” origins of the completed road and thus helped to shape a significant portion of this report; and to Diane Kane, architectural historian with District VII of the California Department of Transportation, without whose efforts this project would have never been possible.

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<sup>1</sup> *Los Angeles Times*, “Historic Pasadena Freeway,” 31 July 1999.

## Introduction

Now I know how a package feels when it gets an unobstructed ride through a chute to the shipping department. I've just made a run out to Pasadena on the completed Arroyo Seco Parkway . . . . From the relatively narrow Figueroa tunnels you immediately find yourself launched like a speedboat in a calm, spacious, divided channel. Channel is the word, too, for it's in the *arroyo*, below the level of traffic-tormented streets. No brazen pedestrians nor kids riding bikes with their arms folded. No cross streets with too-bold or too-timid drivers jutting their radiators into your path. And no wonder I made it from Elysian Park to Broadway and Glenarm Street in Pasadena in 10 minutes without edging over a conservative 45 miles an hour.<sup>2</sup>

So wrote John Cornell in *Westways*, a magazine published by the Automobile Club of Southern California, less than one month after the Arroyo Seco Parkway was opened to traffic. Cornell's remarks captured the experience of driving this new road -- an experience which, for Cornell, was both efficient and leisurely -- offering a new opportunity for motorists in Southern California.

The Arroyo Seco Parkway was the first grade-separated, limited-access, high-speed divided road in the urban western United States and the initial stretch of road for what would become the world-renowned Los Angeles metropolitan area freeway system. Built in three major stages from 1938 to 1953, the 8.2-mile parkway was envisioned both as a scenic pleasure road traversing the Arroyo Seco and as a vital traffic conduit linking the expanding cities of Pasadena and Los Angeles. Combining ideas reminiscent of an older parkway tradition with those more appropriate for modern freeway design, the Arroyo Seco Parkway marks an important transitional moment in the history of American engineering and transportation.

The roadway, as completed in 1953, extended from Glenarm Street in Pasadena to the Four-Level Interchange just northwest of downtown Los Angeles. The six-lane, approximately \$9 million roadway required over thirty bridges and underpasses, four tunnels, and numerous safety features. Its construction was facilitated by the installation of the concrete Arroyo Seco Flood Control Channel, completed as a Works Progress Administration relief project. The initial six miles of road, completed from 1938 to 1941, were described by engineers as "picturesque" and characterized by a comprehensive landscaping program that included a primarily native plant palette. The connection of the parkway in 1953 to the Four-Level Interchange (and thereby to the larger Los Angeles regional freeway network) marked the final chapter in a series of plans and proposals dating back to the late nineteenth century for a high-speed road connecting Los Angeles and Pasadena.

The first spade of earth was turned for the Arroyo Seco Parkway in March 1938 under the aegis of the State Division of Highways.<sup>3</sup> The approval for the Arroyo Seco Parkway was hammered

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<sup>2</sup> John Cornell, "Riverbed Route, UN-Ltd.," *Westways* (January 1941).

<sup>3</sup> The road is now under the jurisdiction of the California Department of Transportation, District VII.

out earlier that year by a characteristically large and unwieldy coalition of state and local lawmakers, planners, the Automobile Club of Southern California, the Union Pacific and Santa Fe railroads, the cities of Pasadena, South Pasadena, and Los Angeles, the growing communities of the San Gabriel Valley, and residents along the right-of-way. It was not a particularly smooth process, and there was rarely agreement about whether the road should be a high-speed thoroughfare, a recreational parkway, or some combination of the two.

Part of this apparent confusion stemmed from the fact that the Arroyo Seco Parkway was built at a transitional time in the history of road building, both in the city of Los Angeles and throughout the United States more generally. While borrowing certain features of the parkway tradition on the East Coast (such as limited access and the elimination of at-grade intersections), the Arroyo Seco Parkway was different from most earlier parkways in that its design was inspired more by the need for a high-speed commuter route than any other factor. It was envisioned as part of a larger scheme of metropolitan high-speed roadways, and its construction was spurred by the desire to alleviate traffic congestion on the streets between Pasadena and Los Angeles. It was thus no coincidence that the opening ceremonies for both the six-mile original stretch and the 2.2-mile "Southerly Extension" took place on December 30, just in time for the New Year's Day Tournament of Roses Parade and college football game in Pasadena – events which always attracted a tremendous amount of traffic.

Safety features also played a large role in the overall parkway design. Safety concerns were particularly important because it was made to accommodate 45-mile-per-hour travel -- the maximum allowable speed for California state roads in the 1930s and 1940s. It was hailed both as a "modern" and "model" road by state highway engineers. The parkway eliminated all at-grade crossings and incorporated other safety features that had been recently adopted as new policy measures by the California Division of Highways at a time when these features had not been implemented together in a single road design in the western United States.<sup>4</sup>

Yet the Arroyo Seco Parkway was not strictly a utilitarian freeway as were many of the subsequent generation of high-speed roads constructed in and around the congested metropolis of Los Angeles. Even if it was conceived as part of a larger network of high-speed roads, there are noticeable differences between the Arroyo Seco Parkway and the newer metropolitan freeways that surround it. To understand why the road looks the way it does, one cannot ignore the lingering influence of late nineteenth and early twentieth century proposals for a series of parkway roads intended to connect a number of city parks. The road's curving design, its careful landscaping with native plants, and the decorative railings on some of its bridges suggest a very different kind of road than the utilitarian high-speed freeways that followed in the Los Angeles region.

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<sup>4</sup> Charles C. Cohan, *Los Angeles Times*, 3 May 1936. Regarding the road's "modernity" vis-à-vis its elimination of grade crossings, see *California Highways and Public Works*, "Ceremonies Launch Work on Arroyo Seco Highway," 16, no. 4 (April 1938): 27 and S. V. Courtelyou, "Arroyo Seco Parkway Unit Open," *California Highways and Public Works* 18, no. 8 (August 1940): 16.

There was a strong emphasis on parkway landscaping in the project's planning stages. It was important to engineers that anything unsightly should be concealed from view: sometimes by landscaping, at other times through design. Only with the commencement of construction for the Southerly Extension did the "parkway" ideals began to fade into the background.

Today, the Arroyo Seco Parkway has two historic designations. The first, which refers to it as "The Historic Arroyo Seco Parkway," indicates its status with the state of California scenic highway system. This designation is reserved for freeways constructed prior to 1945. The legislation gives special status to the Arroyo Seco Parkway as the first freeway in the Los Angeles region, and applies to that portion of the road that runs from Riverside Drive to Glenarm Street in Pasadena.<sup>5</sup>

The Arroyo Seco Parkway has also been designated as a National Historic Civil Engineering Landmark, which recognizes a 6.7-mile section from the south end of the Los Angeles River Bridge in Los Angeles to Glenarm Street in Pasadena (similar to that of the scenic highway designation). These limits were chosen to correspond to those assigned when the route became part of the state highway system in 1935. Under this designation, the roadway was declared significant because it was the first fully grade-separated, limited-access landscaped freeway that was built as a non-toll state highway, a direct ancestor of urban freeways in the United States and the initial link in California's statewide freeway system.

## **Description**

Motorists in downtown Los Angeles setting a north course for Pasadena on the 8.2-mile route of the Arroyo Seco Parkway today will first encounter the Four Level Interchange, which sends motorists either to the 5, 101, 10 or 110 freeways. Travelers will either follow signs that read "Pasadena Freeway" or "110 North," depending upon their entry location. Proceeding through the five-lane stretch that diverts travelers going to the Hollywood Freeway (101), the road begins to rise and narrows to three lanes.

At Avenue 22, the parkway continues to rise through Elysian Park. A brown and white road sign reading "Historic Arroyo Seco Parkway" appears between the first and second of the Art Deco tunnels. After the fourth tunnel, drivers continue under a set of interchanges for the 5 Freeway. Near Avenue 35, they cross the Figueroa Street Viaduct, where a glance to the left reveals the Second Los Angeles River Bridge running parallel, yet canted slightly upward, to the northbound route. The Arroyo Seco Flood Control Channel becomes visible to the right and follows the parkway for much of its length. The road continues in a northeasterly direction carrying drivers under the Avenue 26 Bridge.

The road next enters the Los Angeles community of Highland Park, and residential neighborhoods soon border the parkway on either side. As the road twists and turns, nearby hills

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<sup>5</sup> Chapter 179, California state statutes of 1993.

and the distant San Gabriel mountains pass in and out of view. As the road nears the Avenue 43 exit, motorists looking to the right can view several turn-of-the-century buildings saved from demolition and brought to a small architectural park for restoration, while the Southwest Museum becomes prominently visible on a hill to the left. The road then passes along Sycamore Grove Park to the west and Ernest E. Debs Regional Park to the east. Visible park vegetation consists of tall trees (sycamore, alder and pine), low-growing bushes, and chaparral. Near the border of South Pasadena, the road passes under the 1898 Arroyo Seco Santa Fe Railroad Bridge. Heading east and north, the multi-arched span of the York Street Bridge comes into view. At intermittent intervals along the roadway, motorists can see rubble rock walls consisting of recycled pieces of concrete sidewalks, curbs, and gutters on either side. Just before the York Street Bridge, tall palm trees spring from rubble-masonry planter boxes in the parkway's median.

After passing under the York Street Bridge, the South Pasadena Golf Course comes into view to the east of the channel from Hawthorne Avenue to Sterling Place. The road then enters the City of South Pasadena, passing over Hough Street and the flood control channel on the Arroyo Seco Bridge. On the hill to the east, the City of South Pasadena sign, made of native Arroyo stone and in place since the late 1930s, is momentarily visible. At Arroyo Drive, the roadway runs through a deep cut that follows Grevelia Street and Sterling Place. A series of bridges built in conjunction with the parkway pass overhead at Arroyo Drive, Grand Avenue, Orange Grove Avenue, Prospect Avenue, Meridian Avenue, Fremont Avenue and Fair Oaks Avenue. Residential neighborhoods are partially visible above the roadway on both the east and west side of the parkway. At Fair Oaks Avenue, the road returns to grade level, swings abruptly north around South Pasadena's Raymond Hill, and terminates at Glenarm Street in the City of Pasadena – just beyond the city's power plant.

The experience of southbound motorists traveling from Pasadena to Los Angeles is somewhat different, though not substantially so. The principal difference on the trip through South Pasadena is that motorists cannot see the "City of South Pasadena" sign made of Arroyo stone, and, while southbound motorists are not afforded the opportunity to view the San Gabriel Mountains, they are briefly rewarded with views of the Los Angeles downtown skyline as they proceed further west and south. Views of the skyline are facilitated because the southbound lanes are not constrained in tunnels through Elysian Park. The skyline figures prominently in the motorists' view as the road moves out of Elysian Park and the parkway widens to four, then five lanes as it approaches the Four Level Interchange and its merge with the Harbor Freeway.

## **I. The Early Arroyo**

Running northeasterly from the Los Angeles River to its headwaters in the San Gabriel Mountains, the Arroyo Seco is a natural drainage channel, a gorge of eroded alluvium carved out by a primary stream that begins in Devil's Gate Canyon in the mountains north of Pasadena. The channel carries rainfall from Devil's Gate to its confluence with the Los Angeles River near the present-day intersection of San Fernando Road and Figueroa Street near downtown Los Angeles. For years, indigenous inhabitants and settlers co-existed with the natural environment

of the Arroyo Seco, using it as a source of food and, later, for transportation. In the summer, the Arroyo was a dry riverbed; in early spring, it became a gentle stream; after a series of winter rains, it produced a powerful onrush of debris-laden waters.

The Gabrielinos, the local Native Americans, first established human settlements along the Arroyo; later, Spanish explorers crossed it on their way to found Mission San Gabriel.<sup>6</sup> The Gabrielinos probably established the first paths or trails in the Arroyo, following those created by animals in search of food and water. One trail started at the Los Angeles River and followed the west bank of the Arroyo in a northerly direction until it came to present-day Garvanza in the York Valley. Another followed York Valley west to the Verdugo Hills in Glendale. At their junction, these two paths crossed the Arroyo and led into the San Gabriel Valley to the east. These paths, which criss-crossed the Arroyo, were expanded over time as successive waves of newcomers displaced one another: first the Gabrielinos, then Spanish explorers, followed by Mexican-era “carretas,” and the wagons of American settlers.<sup>7</sup>

Following the Mexican-American War and the transfer of land rights from Mexico to the United States, syndicates of Midwesterners, such as the San Gabriel Orange Grove Association, acquired 1,500 acres of land in and around the Arroyo. Members chose individual acreage for orchard farming and put 100 lots up for sale. As other land under private ownership began to undergo subdivision, business centers and schools were built and towns coalesced along the Arroyo Seco. Highland Park annexed itself to Los Angeles in 1895 when its water supply, pumped from a spring in the Arroyo Seco, was no longer sufficient for a growing population.<sup>8</sup> Pasadena incorporated in 1886, but South Pasadena remained unincorporated until 1888.<sup>9</sup>

By the late nineteenth century, the newly settled communities along the Arroyo had become seriously engaged in city building, and there was extensive trade and communication between these communities and those in the Los Angeles area to the south and west. Wagon traffic and the Sierra Madre passenger stage had a simple choice of routes between Pasadena and downtown Los Angeles. Travelers could take either of two muddy, bumpy routes between Los Angeles and South Pasadena: an “adobe” road along present-day Huntington Drive suitable for all-weather travel, and a faster, yet less-reliable route directly across the Arroyo that was passable only in the dry season.

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<sup>6</sup> Jane Apostol, *South Pasadena: A Centennial History, 1888-1988*, (South Pasadena, California: South Pasadena Public Library, 1987), 7. The expeditions of Don Gaspar de Portola from 1769 to 1771 crossed the San Gabriel Valley three times. On August 2, 1769, one of the expedition diaries reported the wide watercourse of the dry Arroyo. The following year, the “Sacred Expedition” was instrumental in the founding of Mission San Gabriel, which was moved in 1775 to a location near the Raymond Dike to take advantage of more abundant sources of water. Following this, the Gabrielino were put to work making lime for adobe bricks along the Arroyo.

<sup>7</sup> Wilfred Dellquest, “Gabrielino Indians Area’s First Families,” *Highland Park News-Herald and Journal*, 17 May 1959.

<sup>8</sup> “There’s Plenty of Water for L.A., If You Just Want to Dig,” 26 February 1977, Scrapbook Collection, Highland Park Public Library. Los Angeles.

<sup>9</sup> Scheid, *Crown of the Valley*, 32-33.

While such trails were necessary to speed the pace of growth and expansion, not everybody in these newly settled communities regarded the rapid transformation of the natural environment for “city building” as necessarily beneficial. In accordance with contemporary City Beautiful ideals, some prominent groups and individuals focused their vision of an ideal community around the preservation of parklands and greenery. These competing visions would later play themselves out in the construction of the original 6.2-mile stretch of the Arroyo Seco Parkway.

Among the local groups leading an early fight to devote the Arroyo to parklands was the South Pasadena’s Women’s Improvement Association.<sup>10</sup> Later, in 1912, the “Arroyo Seco Parkway Association” was organized with representatives from the three cities and Los Angeles County. Theodore Roosevelt’s 1911 remark that the “Arroyo would make one of the greatest parks in the world” was frequently quoted for inspiration and authority. Despite continuing coordinated efforts among the interested parties, however, the idea languished until after World War I.<sup>11</sup>

By the mid 1920s, strong support had gathered for parklands in Highland Park and South Pasadena. In 1923, South Pasadena park supporters placed a bond issue on a local ballot calling for \$100,000 to purchase the hundred acres of the Arroyo lying within the borders of South Pasadena for use as a public park.<sup>12</sup> In that same year the Arroyo Seco Federation was formed to create a park district of Arroyo lands adjoining the neighborhoods of Highland Park and Garvanza. The Los Angeles City Council then passed an ordinance stipulating that sixty acres of the Arroyo be forever reserved for recreational purposes.

The Arroyo Seco Federation’s founder and president was Charles Fletcher Lummis. In the late nineteenth and early twentieth centuries, Lummis, a writer, editor, librarian, photographer, mission preservationist, and archaeologist gathered together a circle of artists who established what became known as the “Arroyo Culture.”<sup>13</sup> These artists took their inspiration from the Arroyo’s natural colors and materials. To them the Arroyo represented the creative power of nature -- a power that transformed both life and art. Like Lummis, many embraced the ideals of the English Arts and Crafts movement, committing themselves to social action and issues of the day that affected the natural and built environment as well as the welfare of ordinary men and women.

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<sup>10</sup> Newspaper editor George W. Glover suggested in 1894 “that cities bordering the Arroyo join in making a park from Los Angeles to the mountains.” See Apostol, *South Pasadena*.

<sup>11</sup> These efforts included a picnic in Highland Park’s Sycamore Park that featured a twenty-three automobile caravan across the new Arroyo Seco Bridge and a trek to Devil’s Gate Canyon. See Apostol, *South Pasadena*, 68-9.

<sup>12</sup> *The Five Friendly Valleys* (Los Angeles: Security Trust & Savings, 1923), 2, 3, Scrapbook Collection, Highland Park Public Library, Los Angeles.

<sup>13</sup> Lummis devoted his life to writing, lecturing, and service to the ideal of a historic past and creative present in California arts and culture. He served as a Los Angeles City librarian, an editor of the *Los Angeles Times*, and for nearly fifteen years, editor and frequent contributor to *Land of Sunshine/Out West* magazine, a publication celebrating the possibilities inherent in the Southern California lifestyle. He recorded and photographed the dances of Native Americans in the New Mexico region and collected their rugs, jewelry, pottery and textiles – a collection that became the foundation of the Southwest Museum. As a founder of the Landmarks Club, an organization dedicated to the preservation of the California missions, Lummis revived an interest in the history and architecture of these neglected and deteriorating structures and promoted their restoration.

Lummis began the Arroyo Seco Federation during the years he was building his home, El Alisal, in a grove of alder and sycamore trees using concrete and wood beam construction faced with Arroyo Seco boulders. The home embodied the architectural principles first laid down by the English Arts and Crafts movement: art as a necessity to life; the worth, dignity and fulfillment of hand labor; and a concern for the beauty of objects. The peculiarly Californian contribution to these principles was the emphasis on the integration of the natural environment into the creative process. That vision was rooted in personal philosophy, lifestyle and, above all, a sense of place.

Lummis attracted a like-minded group of artists and intellectuals responsive to the ideals embodied in the California natural environment. Printer Clyde Browne, Lummis' neighbor a mile and one-half north along the Arroyo, had built his own house using boulders from the Arroyo and added a wing of workshops and studios in order to gather together an atelier of printers, bookbinders, and graphic artists. Tilemaker Ernest Batchelder interpreted the colors, plants, and trees of the Arroyo in his highly-prized ceramic creations. Writers such as Mary Austin and George Wharton James (editor of *Out West Magazine*) disseminated the spirit and ideals of the work and life possible in this new California Eden. Retired Chicago businessman Amos Throop, who founded the Polytechnic Institute (which later became the California Institute of Technology), offered instruction in crafts and manual training. William Lees Judson, who established the College of Fine Arts on the Arroyo at Garvanza, was appointed dean when it was incorporated into the University of Southern California. The partisans of the Arroyo Culture formulated a tradition of lifestyle, aesthetic value judgments, and a belief in the integrity of materials and labor.

It is certainly possible that the understanding and appreciation for the native landscape of the Arroyo formulated by the Arroyo Culture had an impact on the design and development of the Arroyo Seco Parkway. The members of this community clearly prized the Arroyo for its natural beauty and for its romantic, if rather vague, associations with early Californian and Southwestern cultures. The parkway plan, especially in its earlier, more park-like manifestation, was intended to preserve and showcase these values. Even the later, more utilitarian roadway made allowances for the local environment, as both an aesthetic attribute and a practical design concern. While much of the parkland celebrated by Lummis and his associates was lost, the road's appearance would certainly be different had the green space never been acquired. Furthermore, parkway builders might have paid less attention to landscaping the parkway with native plants along its banks. The Arroyo Culture also fostered an appreciation for the subtleties of the California landscape that might have been lost on landscape architects accustomed to working in more lush and traditionally picturesque environments.

Without the highly developed sensitivity to the appeal of the local landscape, discussion about the parkway's development would probably have paid less attention to the natural beauty of the Arroyo, the presence of the Southwest Museum, the Native American heritage, and the need to make the road beautiful -- or at least pleasing -- to motorists. These allusions, in harmony with the "parkway" concept of the road, were prominent in popular publications and crept into many

of the reports by engineers and builders explaining their approach to road design. Whenever these references appeared, they suggest the lasting influence of the Arroyo Culture.<sup>14</sup>

## II. Early Infrastructure of the Arroyo

The promoters and builders of the early forms of mechanized transport in the region, however, seemed little concerned with preserving the native landscape of the Arroyo. In the 1880s, the owners of the Los Angeles and San Gabriel Valley Railroad (L.A. & S.G.V.), recognizing the need to improve upon the wagon transport of goods, materials, and tourists between the cities, built a connecting line and charged fifty cents per round trip. The ride included a trip over a wooden railroad trestle built in 1885 -- the first known bridge for vehicular traffic to cross the Arroyo Seco. This line was later purchased by the Atchison, Topeka, and Santa Fe Railroad (A.T. & S.F.), which needed the existing L.A. & S.G.V. line to complete a transcontinental route from Chicago.<sup>15</sup> The Los Angeles Terminal Railway Company (L.A.T.), which extended from Pasadena to the port at San Pedro, offered another steam railroad route between Pasadena and Los Angeles and also built a bridge (a wooden trestle) over the Arroyo.

These steam railroads soon became inadequate for local inter-city transportation, however, and attention turned to electric streetcar proposals to link the cities. In 1895, the Pasadena & Los Angeles Electric Railway Company (P. & L.A.) built the first of such electric lines, including a trestle over the Arroyo just downstream from the existing bridge for the L.A.T. This was followed by new rails for the Pasadena & Pacific Railroad Company in 1895, and a proposal by the L.A.T. to electrify its lines. In 1899, Huntington's Los Angeles Railway system, later incorporated as the Pacific Electric, purchased the P & L.A. (now reorganized as the Los Angeles & Pasadena Railway). To thwart competition from the L.A.T., Huntington built additional lines, including one running from Monrovia to Los Angeles along what is today's Huntington Drive and, in 1902, a "Short Line" running along Fair Oaks through South Pasadena to downtown L.A. Within just a few years, Pasadena residents could use one of three Pacific Electric lines to move between the cities. All of these lines crossed the Arroyo and one did so in two places.<sup>16</sup> Eventually, the "Big Red Cars" of Henry Huntington's Pacific Electric system extended from downtown Los Angeles and spread all over the Los Angeles metropolitan region, incidentally laying the groundwork for much of the freeway system which followed.

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<sup>14</sup> See Timothy Andersen, Eudora Moore and Robert W. Winter, *California Design 1910* (Layton, Utah: Peregrine Smith, 1974). Also see Kevin Starr, *Inventing the Dream: California Through the Progressive Era* (New York: Oxford University Press, 1985).

<sup>15</sup> The line also enabled the A.T. & S.F. to offer package tours to Midwesterners and easterners to southern California and compete with the Southern Pacific. The A.T. & S.F. also replaced the wooden trestle over the Arroyo with the existing steel bridge in 1896.

<sup>16</sup> Information on early Pasadena rail transportation taken here from Charles Seims, *Trolley Days in Pasadena* (San Marino, California: Golden West Books, 1982). Only one of these lines was still in operation when construction began on the parkway, and by the 1950s, only the A.T. & S.F. line continued to provide rail service between the cities.

Not everybody who road the rails, however, did so purely for practical reasons related to the day-to-day growth of the local economy. The completion of a transcontinental line to Pasadena in the nineteenth century also brought wealthy tourists, lured by publicity that helped make Pasadena one of the nation's premier winter vacation spots. Many of these winter visitors chose to settle in Pasadena permanently, helping to establish the city's early reputation as a province of the rich and leisured.

The local clientele and the continual influx of wealthy tourists provided a ready market for automobiles, first introduced into the area in the late nineteenth century. Soon, automobiles began to compete with rail transportation for mobility in and around Pasadena, as well-to-do residents and tourists spent afternoons traversing the city's newly built "pleasure roads." By the 1910s, auto repair garages and "auto liveries" replete with rental cars awaited tourists in Pasadena, and articles about the growing number of tourist and private cars arriving in the city by rail frequently graced the front pages of the *Pasadena Star-News*. The *Star-News* contributed significantly to the promotion of automobile use in Pasadena. In the 1910s, the newspaper was hailing the city as the "motor hub of the universe," noting the appeal of its "wonderful boulevards" to residents and tourists alike.<sup>17</sup>

While these pleasure drives were largely the province of the wealthy and leisured classes (particularly in the early days of automobile production), by the 1920s the automobile was within financial reach of a considerably wider public.<sup>18</sup> In 1929, there were 27,500 cars registered in Pasadena – nearly one car for every 2.4 people. According to the *Star-News*, this figure gave Pasadena a higher rate of automobile ownership per capita than any other American city of comparable size.<sup>19</sup> As automobile usage grew, its use for "pleasure" transport took a back seat to its more practical function as transportation to and from places of employment.

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<sup>17</sup> See, for example, *Pasadena Star-News*, "In Private Cars Come to City," 25 January 1916, or *Pasadena Star-News*, "Large Number of Cars Are Arriving," 1916, history files, Landmarks Commission, City of Pasadena. "Pleasure drives" had long been a part of Pasadena's history. In the late nineteenth century, a popular tourist carriage drive known as the "Grand Round" departed from downtown Los Angeles and continued to Pasadena with stops at the Raymond Hotel and the Sierra Madre Villa before its return. In 1903, well before the automobile had become commonplace in American life, a *Star-News* advertisement titled "Automobiling in Pasadena" promoted the city's "hard, smooth roads of moderate grade" and argued that Pasadena's roads were the nation's best in the winter. See *Pasadena Star-News*, "Automobiling From Pasadena," 28 February 1903. That same year, the first automobile repair garage opened in Pasadena and provided service to those tourists who brought their cars from the east coast. See C. F. Shoop, "Auto Garage," *Pasadena Star-News*, 20 October 1957.

<sup>18</sup> Much of this had to do with the decreasing price and increasing availability of Henry Ford's "Model T," which revolutionized the automobile industry by the late 1910s.

<sup>19</sup> *Pasadena Star-News*, "Pasadena Has Auto Record in Nation," n.d., 10, history files, Landmarks Commission, City of Pasadena. Compared to the sprawling city of Los Angeles to its south, Pasadena's car ownership statistics seem insignificant. The city of Los Angeles had become the automobile capital of the world by the 1920s, and the stories of that city's relationship and love affair with the automobile are legion. With 672,000 cars by 1929 (one for every 2.2 people), Los Angeles was easily the most automobile-dependent city in the nation, characteristics that would soon spread to the city's rapidly expanding suburbs. Regarding Los Angeles and its early dependency upon the automobile, see, for example, David Brodsky, *L.A. Freeway: An Appreciative Essay* (Berkeley: University of California Press, 1981), 80-85; Robert Fogelson, *The Fragmented Metropolis: Los Angeles, 1850-1930* (Berkeley: University of California Press, 1993), 137-85.

Many of those who settled in Pasadena in the early twentieth century treated it as a place of permanent residence (rather than a winter resort) and realized that most of the area's employment was to be found in industry and job-rich Los Angeles. Although incorporated as a municipality in the 1870s and having a distinct identity apart from Los Angeles dating back to its nineteenth-century origins, Pasadena began to operate as a bedroom community for the much larger city to the south. By the 1920s, the large number of automobiles in Pasadena was less an indication of the tourist industry than it was a reflection of the increasing number of drivers commuting to and from Los Angeles. Given this situation, it is not surprising that the earliest proposals and most ardent supporters for a new high-speed road between the two cities hailed from Pasadena.

For automobile owners, it had become evident that there was no quick and convenient manner in which to travel between Pasadena and Los Angeles. The fastest automobile route prior to the completion of the Arroyo Seco Parkway traversed Figueroa Street into Los Angeles, but this was becoming increasingly congested. Even the construction of the Figueroa Street tunnels, which extended Figueroa Street and permitted direct access from downtown Los Angeles through Elysian Park in the early to mid-1930s, did not relieve traffic congestion.

Given the number of automobiles in metropolitan Los Angeles in the 1920s, traffic planning in would have been a problem under nearly any circumstances. This problem was compounded, however, by the presence of streetcars operated by Pacific Electric and the Los Angeles Railway Company. Despite the growing popularity of the automobile, many area residents still relied upon the streetcar for interurban local transportation.

The demise of the Los Angeles streetcar system and the rise of motorized transport reflected numerous factors that cannot be detailed here.<sup>20</sup> By the mid-1910s, however, it is safe to say that automobile transport was becoming the preferred mode of transportation for the Los Angeles region -- in part because of the automobile's ability to access places that the streetcars, forced to follow existing rails, could not. Where automobiles shared the road with streetcars (most notably along principal roads providing access within the downtown business district or along major roads between cities), traffic congestion was the norm and streetcar service suffered because train conductors had a difficult time maintaining timely schedules.

Traffic problems, of course, affected both streetcars and automobiles. But the combination of the two in Los Angeles -- a city reliant upon vehicular transportation because of its pattern of decentralized urbanism (created in part by the Pacific Electric and its pattern of laying rail lines in advance of settlement) -- created traffic problems on an unprecedented scale. The traffic situation was most notable in downtown Los Angeles along Main Street and Broadway, and along Figueroa Street (the principal traffic route between Los Angeles and Pasadena), where

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<sup>20</sup> Privately-operated "jitney" buses first posed a threat to the streetcars, for operators offered what seemed to many a more flexible, reliable, and cheaper service. To supersede the jitneys, companies like the Pacific Electric opened bus lines of their own to complement their existing, yet declining, rail service. Others have noted that the monopolistic practices of the Pacific Electric marked the streetcars' downfall, while still others insist that the General Motors company operated conspiratorially to replace streetcars with automobiles. For a good summary of this discussion, see Fogelson, *Fragmented Metropolis*, 165-85.

automobiles and streetcars battled each other and traffic lights, stop signs, horses, wagons, and pedestrians. The situation became so intolerable that road that Governor Culbert L. Olson could feel justified in noting the “terrifying” traffic problems that were allegedly to be eliminated with the opening of the new Arroyo Seco Parkway.<sup>21</sup>

While congestion along the principal streets connecting downtown Los Angeles with downtown Pasadena helped to justify the need for a new, high-speed road, the situation did not suddenly reach a point where citizens, highway engineers, and city, county, and state officials pressed for such a road and quickly assembled the funds to build it. In fact, when construction began for the Arroyo Seco Parkway in March of 1938, that event marked the culmination of proposals, debates, and political battles for a vehicular road in the Arroyo dating back to the late nineteenth century.

### III. Planning the Arroyo Seco Parkway

Prior to the parkway’s legislative authorization in 1934, a series of proposals were put forth by various agencies recommending a new road in the Arroyo. These proposals envisioned the road either as part of a larger network of high-speed traffic arteries to reduce congestion, or as part of a series of recreational parkways intended to improve public access to the city’s vastly underused parks. While most of these proposals leaned heavily in one direction or the other, a few of them, such as the Olmsted Brothers’ *Parks, Playgrounds, and Beaches for the Los Angeles Region* (1930) called for high-speed roads that were also intended for scenic, recreational pleasure driving.

Such a combination looked good on paper, but was normally incompatible with the political realities over right-of-way purchasing and growing public for roads to provide the shortest and quickest passage between two points. Because of the Depression and the Second World War, construction for many of the individual roads initially proposed in the 1910s and 1920s as “parkways” did not begin until the mid-1940s. By that time, goals for building the roadways to improve access to parks and provide a higher quality of life in the city – so common to Progressive political thinking in late nineteenth and early twentieth century America – had been superseded by the allegedly more practical solution of building fast roads to lessen traffic congestion.

It would be difficult to determine, however, a single point where the early ideas for parkways in the region suddenly shifted to a desire for high-speed roads. It would be equally difficult to cite the Arroyo Seco Parkway as the fulcrum upon which debate turned. It would be impossible to argue, for example, that all high-speed roads built in the Los Angeles metropolitan region before the Arroyo Seco Parkway were “parkways,” and all those built afterwards were “freeways.” Indeed, there were roads completed earlier, such as the Ramona Parkway and Riverside Drive,

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<sup>21</sup> Amerigo Bozzani, “Governor Olson Dedicates and Opens Arroyo Seco Freeway,” *California Highways and Public Works* 19, no. 1 (January 1941): 4.

that included the elimination of grade crossings and other characteristics typical of contemporary high-speed road design. Similarly, some of the “freeways” completed during or after the Arroyo Seco Parkway, like the Cahuenga (later Hollywood) Freeway, featured aspects that one might more commonly associate with “parkway” design, including an occasionally curving alignment and a landscaping program. As in other American metropolitan areas, the transition from parkway to freeway in the Los Angeles region was a gradual process.

Nevertheless, because the Arroyo Seco Parkway was conceived in the early 1930s when “parkway” ideas were still nationally pertinent but was not finished until 1953, when “freeways” prevailed, it provides an excellent illustration of this gradual shift. Throughout the planning process – from the 1920s well into the 1940s – politicians, planners, and engineers in the Los Angeles region referred interchangeably to their high-speed road proposals, including the Arroyo Seco Parkway, as “parkways” and “freeways.”<sup>22</sup>

The early proposals for a high-speed automobile road between Los Angeles and Pasadena were conceived within the tradition of the recreational, scenic parkway dating to the late nineteenth century. In this tradition, a parkway is most accurately defined as a strip of land, of varying width, that includes a roadway in addition to other features, such as walks, trails, and a stream. The roads within these parkways were intended to be driven for pleasure but often took on commuting functions, especially with the proliferation of automobiles.

In the Arroyo, the earliest proposal for such a roadway presumably dates back to 1895, when Pasadena’s T. D. Allen conducted a survey for a road through the Arroyo bed. Had the roadway been built, it might have become one of the more celebrated routes among Pasadena’s ever-growing “wonderful boulevards” that helped to attract eastern tourists.<sup>23</sup> What became of Allen’s survey remains a mystery, but in 1897, two additional proposals were made to build vehicular routes through the Arroyo. These proposals were similar in that they were designed to provide transportation roughly between Pasadena and Los Angeles, but they differed in motive and road-building ideology, for they were intended principally as commuter routes, not recreational ones. They represent the beginnings of a parkway/freeway debate for an Arroyo road that would continue well into the 1930s.

One of these 1897 proposals, offered by Los Angeles City Engineer Henry Dockweiler, was rooted firmly within the parkway tradition. Dockweiler’s scheme included a parkway in the

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<sup>22</sup> This problem is compounded because of the similarities in definition between the two terms: both parkways and freeways are limited-access roads designed for the sufficient and uninterrupted flow of traffic. Even when the roads were conceived strictly as high-speed commuter routes and bore few formal similarities to the winding, pleasure roads that characterized an earlier stage of parkway design, transportation officials (and the public) continued to call these roads “parkways” well into the 1940s. In the contemporary planning literature, “parkways” were roads where the need for recreational, leisure travel was the *predominant* reason for their construction, while “freeways” were high-speed, limited-access, grade-separated divided roads principally designed to reduce congestion and provide the quickest mode of transport between points. These definitions, however, do not preclude the possibility that parkways could not be commuter routes, or that freeways could not be used for recreational purposes.

<sup>23</sup> Allen’s 1895 survey is cited in a number of newspaper articles – even those dating from the 1930s – but the actual survey could not be located during the twelve-week HAER project.

Arroyo Seco as part of a larger plan to construct a rustic, 1 seventeen-mile circuit road system linking five city parks: East Lake (now Lincoln), Hollenbeck, Westlake (now MacArthur), Echo, and Elysian. He suggested that additional parkways be constructed to provide links to Griffith Park and to the city of Santa Monica.<sup>24</sup> Although Dockweiler's proposal was never carried out, it would not be forgotten.

Rather different was Horace Dobbins' proposal to run an elevated bicycle commuter route – the “California Cycleway” -- from downtown Pasadena through the Arroyo and into downtown Los Angeles. Spurred by the bicycling craze that had taken hold in 1890s America, Dobbins undertook the cycleway largely as a speculative venture. He began by purchasing a six-mile right-of-way stretching from downtown Pasadena to Avenue 54 in the Los Angeles community of Highland Park and started building the elevated wooden route from a spot near the newly completed Green Hotel in Pasadena. He also charged a toll. Approximately one-and-a-quarter miles of Dobbins' cycleway was built, but it never extended beyond the Pasadena city limits and, in fact, never reached the Arroyo.<sup>25</sup> While the cycleway idea never gained widespread popularity (what was built was dismantled sometime in the first decade of the twentieth century), it is nevertheless important to the Arroyo Seco Parkway story because it represents one of the earliest proposals for a commuter route between the cities of Los Angeles and Pasadena. More importantly, it was the first to actually begin construction.

While Dobbins and, later private companies promoted other pragmatic paths from Pasadena to Los Angeles, progressive public officials and reformers gave renewed life to Dockweiler's 1897 scheme by proposing a parkway in the Arroyo Seco as part of a master plan to link city parks and bring additional privately held parkland into the public domain. Such plans emerged from the City Beautiful movement and its attention to civic beautification. The City Beautiful movement sought to improve physical and moral landscapes through the development of grand boulevards, monumental buildings using beaux-arts interpretations of the classical architectural vocabulary, and the incorporation of the natural landscape into organized and aesthetically uplifting city plans. Such plans had already been proposed and, in some cases, partially carried out, in the cities of Chicago, Kansas City, and Cleveland.

In the spirit of progressive reform, Protestant minister Dana Bartlett suggested a series of improvements to Los Angeles in his 1907 book *The Better City*. He included a road in the Arroyo Seco within a chapter of the book entitled “The City Beautiful.” Calling attention to parkway development carried out in Kansas City and Cleveland and proposed in San Francisco, Bartlett explained that the Arroyo Seco stream was bordered by a natural growth of trees and

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<sup>24</sup> *Los Angeles Times*, “Boulevard Routes,” 24 August 1897 and *Los Angeles Times*, “A Boulevard Project,” 3 September 1897, as quoted in Blake Gumprecht, *The Los Angeles River: Its Life, Death, and Possible Rebirth* (Baltimore: The Johns Hopkins University Press, 1999), 259.

<sup>25</sup> Information on the cycleway from Seims, *Trolley Days in Pasadena*, 86. See also *Pasadena Star-News*, 15 June 1936. It is thought that Dobbins abandoned his venture because he saw that the newly-invented automobile would soon render his “speedway” obsolete, although it is more likely that Dobbins knew it would be impossible to compete with Henry E. Huntington and his newly-created Pacific Electric system which, by the early twentieth century, had already secured three lines running from Pasadena to Los Angeles.

shrubs, including native sycamores and live oaks, creating an effect of “silence and beauty” that had already inspired some of the more unique and costly dwellings in southern California to be erected along its banks. A road through the Arroyo Seco, he wrote, “can be made one of the most charming drives that any city could desire.”<sup>26</sup>

Calls for a scenic roadway in the Arroyo Seco were reintroduced in 1907 when the Los Angeles Municipal Art Commission – an organization founded in 1903 to approve designs on municipal buildings – hired renowned journalist, poet, planner, and City Beautiful proselytizer Charles Mulford Robinson to create a plan for the beautification of Los Angeles that would improve its moral and physical health. Robinson, having recently developed similar plans for Hawaii and Denver, expanded upon Bartlett’s vague proposals with the introduction of a concrete plan for a Los Angeles regional parkway system – this time with a series of roads extending from the city center. Like Bartlett, Robinson recommended that the city be given the right to acquire privately held land for the purposes of turning it into a “public improvement.”<sup>27</sup> In advocating his plan, Robinson argued that costs for taking the land could be recouped through the increased assessed land and property valuation resulting from such an “improvement.”<sup>28</sup>

In 1911, the idea of a parkway in the Arroyo Seco caught the attention of the Los Angeles Park Commission and its commissioner, J. B. Lippincott. The park commission would soon introduce plans for a series of parkways including proposals for a “Silver Lake Parkway” and an “Arroyo Seco Parkway.” When the commission introduced the proposals in the progressive journal *California Outlook* in 1911, the commissioners hinted at the city’s poor capitalization of the natural resources within its limits by arguing that it was city’s “duty” to develop its parks and parkways by means of the “highest talent in landscape gardening.” This talent was to assist in the “beautification” of the city, and to improve it along both “scientific and artistic lines.”<sup>29</sup> Citing the elegant manner in which the cities of Minneapolis, Seattle, and Kansas City had linked their city parks via parkways and boulevards, the commission lamented that Los Angeles did not even contain a single city street with easy grades connecting its parks.<sup>30</sup>

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<sup>26</sup> Dana W. Bartlett, *The Better City: A Sociological Study of a Modern City* (Los Angeles: The Neuner Company Press, 1907), 32-33; 48-50. Bartlett’s text was also rooted firmly in a Progressive tradition bent upon creating a more organized and manageable landscape to convert individuals into “better” Americans. For more on Bartlett and the Progressive movement more generally in southern California, see Starr, *Inventing the Dream*, 246-48.

<sup>27</sup> Charles Mulford Robinson, *The City Beautiful: Report to the Municipal Art Commission* (Los Angeles, 1909), as cited in Gumprecht, *The Los Angeles River*, 260-61. For Robinson’s general theory on parkways (as opposed to “speedways”) see Robinson, *The Improvement of Towns and Cities or the Practical Basis of Civic Aesthetics* (New York: G. P. Putnam’s Sons, 1901), 165-71.

<sup>28</sup> Mike Davis, *Ecology of Fear: Los Angeles and the Imagination of Disaster* (New York: Metropolitan Books, 1998), 63-64.

<sup>29</sup> J. B. Lippincott, “Parks and Parkway: Here and Elsewhere,” *California Outlook*, (3 June 1911): 11-12. The construction of the Arroyo Seco Parkway, to extend to the “National Forest Reserve,” would have allowed it to nearly traverse the length of the Arroyo Seco, bringing it as far north as the Devil’s Gate Dam extension proposal in the mid-1930s.

<sup>30</sup> While the Los Angeles Park Commission argued that such an improved landscape would help to draw more tourists and increase property values, its suggestions overall were in keeping with Progressive-era ideals of using municipal power and money to enhance the urban environment for the public’s benefit.

The *California Outlook* article highlighted the pressing need for a parkway extending along a ravine connecting Westlake and Sunset Parks with the Silver Lake Reservoir. From that location, the report claimed, it would be relatively easy to extend parkways to the much larger Elysian and Griffith Parks. While the Silver Lake Parkway proposal received the bulk of attention, the document also recommended a new, easy-grade parkway in the Arroyo Seco, extending from Sycamore Grove Park in the Los Angeles community of Highland Park to the boundaries of the National Forest Reserve in Pasadena. Noting that the bed of the Arroyo was “heavily timbered” with native California trees, the commission suggested that a “winding driveway” would provide a “most attractive feature.”<sup>31</sup>

Landscape architect Laurie Davidson Cox was hired to turn these proposals into renderings for a metropolitan parkway system. The first of these plans was presented to the Los Angeles City Council on June 20, 1911 and published in a brochure promoting a “Silver Lake Parkway” in February 1912. Noting that the Los Angeles area was attractive to tourists and those who desired “beautiful and attractive homes,” the park commission suggested a Silver Lake Parkway as part of a parkway system to put Los Angeles on par with Kansas City and Minneapolis and in the “front rank in national improvements that go to make the city beautiful.”<sup>32</sup> Included in the proposal was a diagram of a parkway through the Arroyo Seco and its relation to a possible parkway and boulevard system. This diagram expanded on Dockweiler’s 1897 proposal by including an improved Figueroa Street connection to Exposition Park, a high-line drive linking Elysian and Griffith parks, and the proposed Silver Lake Parkway -- which was to run from Griffith Park southwesterly to Vermont Avenue while wrapping around the Silver Lake Reservoir. A hypothetical section for the Silver Lake Parkway showed a wide parkway of which the road was only a small part. Also included were two walking paths, numerous trees, a bridge crossing a brook, and a right-of-way for an electric trolley.

In 1913, the park commission published the Arroyo Seco Parkway plan, which it had introduced in 1911. This publication was primarily a call for political action to obtain the entire length of the Arroyo Seco for public recreational purposes in order to “preserve to posterity the most beautiful example of natural scenery within the limits of the city.” This document included proposals for the parkway strip through the varying geological conditions of the Arroyo Seco from the Angeles National Forest to its confluence with the Los Angeles River. The park commission’s recommendations had been presented to the Los Angeles City Council on December 19, 1911 and approved on April 16, 1912, but the proposal was not carried out due to confusion over the boundaries of the project. To justify the public acquisition of parkland for the construction of a parkway, the park commission argued the point made earlier by Charles Mulford Robinson: the creation of a park would increase the value of all adjoining real estate.<sup>33</sup>

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<sup>31</sup> Lippincott, “Parks and Parkways,” 12.

<sup>32</sup> Los Angeles Park Commission, *Silver Lake Parkway: A Brief Discussion of the Proposed Silver Lake Parkway and its Relation to a Park and Boulevard System for Los Angeles*. . . . (Los Angeles: Los Angeles Park Commission, 1912).

<sup>33</sup> Los Angeles Park Commission, *The Arroyo Seco Parkway: A Brief Discussion of the Proposed Arroyo Seco Parkway and its Relation to a Boulevard from the Mountains to the Sea* (Los Angeles: Los Angeles Park Commission, 1913), 4, 14.

The plan called for a wide parkway strip with walks, planting, and a drive through much of the Arroyo, particularly through the “heavily wooded” sections between South Pasadena and Sycamore Grove. The drawings that accompanied the report included a section similar to that offered with the Silver Lake Parkway plan. Closer to the Los Angeles River, the road was to be a “narrow strip” because in that area the Arroyo was declared to be “of no great scenic value.” Where the proposed parkway ran through Los Angeles, the park commission noted that approximately 125 buildings stood in the path but none of “any considerable value.” Thus, the park commission recommended the taking of the approximately 380 acres within the city of Los Angeles and the condemnation of all structures within it.<sup>34</sup>

The park commission’s plan for an Arroyo Seco Parkway called for an alignment beginning at the junction of Dayton Avenue and Avenue 20 at the southwestern side of the Los Angeles River, crossing it by means of a road wrapping along the bluff of Elysian Park, and connecting to the existing Buena Vista Street Bridge. From this point, the parkway was to extend northward along the Arroyo to the National Forest Reserve in the vicinity of the present-day Devil’s Gate Dam. Views of the numerous railroad tracks and the commercial district near the route’s beginning were to be screened from the park and parkway by trees, helping to create what the park commission envisioned to be “one of the world’s most beautiful parkways” that would “without doubt lay the foundation for a metropolitan scheme of park development.” In addition to re-emphasizing the Kansas City and Minneapolis examples, the park commission also cited the creation of a metropolitan park district in Boston that helped to create a park system with no “serious rival either in this country or abroad.” Despite the emphasis on the aesthetic and recreational value of a parkway system linking city parks, the commissioners acknowledged the practical advantages of a new road in the Arroyo Seco connecting Pasadena to the business heart of downtown. While very little was written along these lines in the proposal, it was noted that the “great value of such a parkway lies in its connection to the heart of the city.”<sup>35</sup>

In June 1914, Los Angeles Mayor Henry Rose recommended abandonment of the Silver Lake Parkway plan because of the difficulty of acquiring land along the route. Attempts to build a parkway in the Arroyo Seco continued, though the exact form, location, and function of the proposed development remained in flux.<sup>36</sup> While the park commission continued to push for a scenic parkway extending the length of the Arroyo as part of a larger plan to connect the region with such roads, representatives from the city of Pasadena proposed to shift the road in a slightly different direction.

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<sup>34</sup> Los Angeles Park Commission, *The Arroyo Seco Parkway*, 8, 17.

<sup>35</sup> Los Angeles Park Commission, *The Arroyo Seco Parkway*, 8, 12.

<sup>36</sup> It was not always for a road connecting the forest reserve with Los Angeles that planners examined the Arroyo Seco. In August of 1915, the Automobile Club of Southern California hired J. B. Lippincott as a consulting engineer to make reconnaissance surveys for a road from the headwaters of the Arroyo Seco to the Cajon Pass, which would later become the Angeles Crest Highway. See J. Allen Davis, *The Friend to All Motorists: The Story of the Automobile Club of Southern California Through 65 Years, 1900-1965* (Los Angeles: The Automobile Club of Southern California, 1967). See also “Arroyo Seco Road,” F3778: 1133, Road Survey File of Highway Engineer’s Office, California State Archives, Sacramento, or field survey notebooks for a “Pasadena Highway,” also located in the California State Archives.

By 1916 Pasadena promoters mindful of their own practical concerns were calling for an Arroyo Seco road to be routed towards the business heart of Pasadena instead of following the Arroyo for its entire length and bypassing the center of town. The road they conceived, while traversing part of the Arroyo, was motivated less by the reformist goal of enhancing public access to urban parks than by pragmatic desires to facilitate transportation to Pasadena, reduce traffic congestion, and prevent the numerous accidents caused by grade crossings. Their primary concern was to create the quickest, most practical route between Pasadena and Los Angeles – the same goal that would motivate those who later saw the road as a “freeway.” The proposal was initially advanced by Dean George A. Damon of Throop Polytechnic – a civil engineer and longtime proponent of grade crossing elimination.<sup>37</sup>

Damon’s proposal to the Pasadena Transportation Committee on February 15, 1916 called for a “high-speed highway” that would be as “broad and short as possible.” In proposing the road, he noted that when he wanted to travel from Los Angeles to Pasadena, he took his automobile – not the Pacific Electric streetcar. Using the same terminology as Lippincott some five years before, Damon insisted it was the transportation committee’s “duty” to provide a “high speed line on which to run our autos.”<sup>38</sup> While the route proposed by Damon – from Eagle Rock to downtown Los Angeles via Elysian Park – was not approved, the idea of a high-speed *road* that started in the Arroyo and ended on Broadway in Pasadena would ultimately gain favor with Pasadena officials.

Only three months later, with support from the Pasadena Chamber of Commerce and the Automobile Club of Southern California, Pasadena City Engineer and Superintendent of Streets Harvey W. Hincks drew up a plan and section for an “Arroyo Seco Parkway” linking Pasadena, South Pasadena, and Los Angeles.<sup>39</sup> Hincks’ plan of May 1916 called for a road beginning at Glenarm Street and Broadway (later Arroyo Parkway) in Pasadena, meeting the Arroyo just southwest of Arroyo Drive, and extending toward downtown Los Angeles. Hincks’ plan bears careful scrutiny. Instead of the scenic parkway intended to showcase the Arroyo’s natural environment, Hincks’ proposed a utilitarian traffic artery that foresook the upper reaches of the Arroyo for a more direct route into the heart of the Pasadena business district. Hincks’ plan shifted the alignment of the road at Arroyo Drive in South Pasadena away from the Arroyo itself and towards Broadway (now Arroyo Parkway) in Pasadena – a principal thoroughfare leading into the heart of Pasadena’s business district.

That Hincks’ plan was intended primarily as an *economic*, rather than an aesthetic venture, is borne out by a schematic cross-section of the road through South Pasadena in which the road

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<sup>37</sup> See *Pasadena Star-News*, “Grade Crossings is [sic] His Subject,” 13 November 1915. When the Arroyo Seco Parkway finally began construction, however, the *Pasadena Star-News* claimed that the idea for the road should be given to former Pasadena Chamber of Commerce member Charles M. Williams. References to Williams’ role appear in *Pasadena Star-News*, “Dirt Starts Flying on New Road,” 22 March 1938, Cohan, *Los Angeles Times*, 3 May 1936, or *Pasadena Star-News*, “Arroyo Seco Freeway is Boosted,” 14 November 1934.

<sup>38</sup> See *Pasadena Star-News* article, February 1916?, in history files, Landmarks Commission, City of Pasadena.

<sup>39</sup> *Pasadena Star-News*, “High Speed Way Endorsed by Auto Club,” 19 May 1916.

resembles a high-speed track with mechanically spaced, tightly cropped trees reinforcing the utilitarian nature of the proposed road. Hincks' vision was a far cry from the park commission's earlier proposals. If the plan had a precedent, it was that of Dobbins' cycleway, for both routes were intended to create the shortest commuter road between downtown Los Angeles and Pasadena. While the names of some of the nearby streets have since changed, the road's route was remarkably similar to what was eventually built.

Not everyone in Pasadena favored the Hincks plan, which was presented while Pasadena city officials, community members, and special interest groups debated the most appropriate mode of transportation between Los Angeles and Pasadena. Just as automobile enthusiasts decried the traffic jams caused by streetcars and the increasing number of automobiles, transit supporters complained about the lack of a direct rail link between the two cities, noting that the current, twelve-mile Pacific Electric route took forty-five minutes. Others participants in the debate looked beyond conventional forms of transportation.

One of these visionaries was Los Angeles inventor Fletcher J. Felts, who in 1916 presented a plan for a torpedo-shaped monorail to run between the Pasadena and Los Angeles. This monorail, designed to hold 100 passengers, was to be suspended from an elevated track supported by evenly spaced steel towers. The principal monorail route would have begun in the Los Angeles community of Eagle Rock (adjacent to Pasadena) and proceeded through canyons in both Mount Washington and Elysian Park en route to downtown Los Angeles. Another alternative called for erecting towers both on city streets and in the bed of the Arroyo. The entire trip, supporters claimed, would cut the traveling time between Los Angeles and Pasadena to eight minutes.<sup>40</sup>

A group called the "Pasadena Rapid Transit Company" had incorporated earlier, in 1908, to promote a more direct nine-mile route from Pasadena to Los Angeles. The company was headed by Dobbins, who had abandoned his bicycle scheme but still owned much of the right-of-way. In 1916, local debate re-opened over Dobbins' proposal, which was similar to Hincks' but intended for streetcars, extending northward along Broadway to Colorado Street. The route, as proposed, required various combinations of elevated tracks, tunnels, and open cuts to bring the transit line from Pasadena to downtown Los Angeles. Dobbins claimed the new route would shorten the traveling time between the two cities to twelve minutes. He intended to construct the line and sell it to the city of Pasadena, but a bond issue authorizing its construction lost in a close vote at the Pasadena polls in 1919.<sup>41</sup>

Neither of these proposals succeeded. In fact, by 1919, as the vote for the bond issue for the transit company was approaching, public favor for an Arroyo Seco road was increasing.<sup>42</sup> By the

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<sup>40</sup> *Pasadena Star-News*, "Elevated Line to City is Proposed," n.d., history files, Landmarks Commission, City of Pasadena. See also *Pasadena Star-News*, "Monorail is Argument Cause," 16 February 1915.

<sup>41</sup> Seims, *Trolley Days*, 137-38. It could be argued that the defeat of the transit line proposal marked the turning point away from railway plans to a high-speed road to link Los Angeles and Pasadena. See *Pasadena Star-News*, 14 November 1934.

<sup>42</sup> *Pasadena Star-News*, "Favor 21-Foot Arroyo Seco Highway," 18 November 1919.

early 1920s, the most serious proposals for an Arroyo route were planned for automobiles, not streetcars, railroads, monorails, or bicycles. The idea of a scenic, recreational road primarily intended to link city parks still existed, but proposals for a parkway system were increasingly subsumed under the need to provide utilitarian roads to move motor vehicles from place to place.<sup>43</sup> As municipal acquisition of parklands in the Arroyo proceeded, whether a road in the Arroyo Seco was being planned from Los Angeles to Pasadena or from Los Angeles to the Angeles National Forest, it was always considered in relation to a larger system of roads and, more often than not, as a “high speed traffic artery.”

In 1921 the Automobile Club of Southern California, which was always in the business of recommending good roads for its members, again launched its support for an Arroyo Seco road. This time, the club hired Lippincott as a consulting engineer to document traffic problems in the Los Angeles region. In the finished report, the Auto Club advocated the construction of a highway extending along the bed of the Arroyo from the proposed Angeles Crest Highway to the Los Angeles River. The route continued through Elysian Park, by means of a number of tunnels and viaducts, to a connection with North Figueroa Street above College Street.<sup>44</sup>

In 1922 the Traffic Commission of the City and County of Los Angeles prepared a document entitled “The Los Angeles Plan,” which proposed major highways for Los Angeles, including a roadway in the Arroyo Seco.<sup>45</sup> In this plan, the traffic commission recommended a double roadway, with traffic moving in opposite directions on either side of the water channel. Neither this plan, nor the auto club’s plan called for the road recommended by Hincks and the Pasadena interests.

Drawing upon this proposal and Lippincott’s recommendations to the Auto Club, Frederick Law Olmsted Jr., Harland Bartholomew, and Charles Henry Cheney were hired by the same traffic commission to provide the comprehensive *A Major Traffic Street Plan for Los Angeles*. Olmsted and Bartholomew were two of the leading planners and landscape architects of the time, with extensive experience in city planning and park system development. Their plan, approved on November 4, 1924, focused on pragmatic concerns but included recommendations for several scenic roads. Their primary emphasis, however, was on providing a “balanced scheme for handling a tremendous traffic flow.” The approach was deemed necessary to provide Los Angeles with “adequate relief” from the congestion problems of its overburdened city streets.<sup>46</sup> Among other general recommendations, the authors suggested the “separation of classes of traffic” onto different roads designed for their use, the gradual elimination of grade crossings where possible, and the extension of a major street plan to cover the entire metropolitan district. Arguing that Los Angeles streets were laid out on the scale of a nineteenth century “horse-and-

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<sup>43</sup> *Los Angeles Herald-Examiner*, “Action on New Road Awaited,” 19 December 1926.

<sup>44</sup> E.E. East to S.V. Courtelyou, 28 May 1940, Ernest E. East collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>45</sup> A. N. George, “Arroyo Seco Parkway Extension Adds Four Southbound Traffic Lanes,” *California Highways and Public Works* 22, nos. 1, 2 (Jan.-Feb. 1944): 4.

<sup>46</sup> Frederick Law Olmsted, Harland Bartholomew, and Charles Henry Cheney, *A Major Traffic Street Plan for Los Angeles* (Los Angeles: May, 1924), 9.

buggy town,” they called for the city’s rationalization and modernization along with the elimination of the “unscientific width” of its streets.<sup>47</sup>

The desire for roads linking a series of parks did not entirely disappear, however. Olmsted, Bartholomew, and Cheney suggested a series of roads restricted to passenger automobiles, thereby limiting commercial traffic to other streets dedicated to their use. Nevertheless, the authors used the terms “parkways” and “boulevards” interchangeably and justified their construction because of their ability to serve both utilitarian and recreational traffic. The two functions were not mutually exclusive, the authors noted. “A parkway or boulevard may be used mainly by people going to and from business,” they wrote, “and yet give them a great deal of incidental recreation and pleasure.”<sup>48</sup>

In advocating an Arroyo Seco Parkway as one of several parkways and boulevards for the Los Angeles region, Olmsted, Bartholomew, and Cheney suggested that the road be treated as a “parkway,” meaning that substantial space should be left over for shrubs, trees, and flowers. They also noted that such a “radical thoroughfare” would carry a large body of traffic and should connect, by a viaduct, with Riverside Drive and a proposed “River Truck Speedway” for commercial traffic to the port of Los Angeles in San Pedro. The *Major Traffic Street Plan* thus represented one of the first attempts to make the Arroyo Seco Parkway part of a larger system of high-speed roads principally intended to move a large volume of traffic, and secondarily to provide recreational access to various city parks. After 1924, no proposals for an Arroyo Seco Parkway considered it without at least acknowledging the possibility that the road might be needed for commuter travel more than anything else. With population exploding in the Los Angeles region, it became obvious that commuter concerns would be the primary force behind the road’s construction.

Olmsted and Bartholomew were hired again in 1930 to provide yet another comprehensive planning document for Los Angeles, this time by the newly created Citizens Committee on Parks, Playgrounds, and Beaches. The resulting 178-page report, entitled *Parks, Playgrounds, and Beaches for the Los Angeles Region*, focused on the natural features of the Los Angeles region and recommended their enhancement in the manner of the early Progressive-era proposals for civic beautification. Like proponents of these earlier proposals, Olmsted and Bartholomew insisted that the importance of parkland to the health of the region could not be overemphasized. “Without adequate parks,” they wrote, “the bulk of the people are progressively cut off from many kinds of recreation of the utmost importance to their health, happiness, and moral welfare.”<sup>49</sup>

To provide access to these recreational features, Olmsted and Bartholomew recommended a series of “pleasureway parks” or “parkways,” which they now argued were entirely different from multi-use “boulevards.” These “pleasureway parks” were intended for travel “amid pleasant

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<sup>47</sup> Olmsted, et. al., *Major Traffic Street Plan*, 18-19.

<sup>48</sup> Olmsted, et. al., *Major Traffic Street Plan*, 21.

<sup>49</sup> Olmsted Brothers and Bartholomew and Associates, *Parks, Playgrounds, and Beaches for the Los Angeles Region* (Los Angeles, 1930), 3.

surroundings” and were to be “well screened from the urban and suburban surroundings through which they pass.” An Arroyo Seco Parkway was included within the plan course.

The proposed Arroyo Seco route was similar to that suggested in the *Major Traffic Street Plan*, although the details of the route were more specific: the parkway would follow the Arroyo from Riverside Drive at Elysian Park to the Devil’s Gate Dam at the foot of the Angeles National Forest.<sup>50</sup> Olmsted and Bartholomew noted that much of the land in the Arroyo Seco, including Sycamore Grove Park, two Victory Parks, Lower Arroyo Park, Arroyo Seco Park, Brookside Park, and Oak Grove Park had already passed into municipal ownership. They suggested that remaining land in private hands be brought into public control.<sup>51</sup>

Taking into account the growth of Los Angeles and the popularity of the automobile, Olmsted and Bartholomew recommended a “few specially agreeable routes of pleasure travel” designed upon a regional scale “and of a character intended to meet the metropolitan conditions of the automobile age.”<sup>52</sup> One of the principal features of these pleasureway parks was the elimination of cross-traffic intersections – something that would later be hailed as a hallmark of the California freeway system.<sup>53</sup>

*Parks, Playgrounds, and Beaches* represented the last concerted effort to create a system of recreational parkway roads for the Los Angeles region. By the late 1920s, the Los Angeles Regional Planning Commission and its Chief Engineer William Fox had begun issuing a series of utilitarian regional traffic plans. The planning commission itself was founded in 1922 with the pragmatic mission of developing a “comprehensive network of through highways, extending over the entire county.”<sup>54</sup> In 1934, it offered a plan for a proposed “Arroyo Seco Freeway” that largely followed the alignment of the 1916 Harvey Hincks plan while including an extension toward downtown Los Angeles via a bridge over the Los Angeles River and through the Figueroa Street Tunnels in Elysian Park, three of which were completed in 1931.<sup>55</sup> While the question of whether the road should be built as a recreational parkway winding through the Arroyo or a high-speed commuter route linking Pasadena and Los Angeles continued through the 1920s, by the mid 1930s, the recreational road proposals had begun to fade into the background.

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<sup>50</sup> Olmsted and Bartholomew, *Parks, Playgrounds, and Beaches*, 13, 128.

<sup>51</sup> The cities of Los Angeles and South Pasadena had acquired these parks as public property by 1922.

<sup>52</sup> Olmsted and Bartholomew, *Parks, Playgrounds, and Beaches*, 3, 12.

<sup>53</sup> Elimination of cross-traffic intersections may have been a hallmark of the California freeway system, but nevertheless had earlier origins with the Bronx River Parkway and Olmsted and Vaux’s plan for New York’s Central Park.

<sup>54</sup> Los Angeles Regional Planning Commission, *A Comprehensive Report on the Regional Plan of Highways: Section 2-E San Gabriel Valley* (Los Angeles: The Regional Planning Commission, 1929), 7. See also Hugh R. Pomeroy, “The Los Angeles Regional Plan,” *Proceedings of the Sixteenth National Conference on City Planning, Los Angeles, California, April 7-10, 1924* (Baltimore: The Norman, Remington Co. 1924): 118-28.

<sup>55</sup> This plan is reproduced in Regional Planning Commission, *A Comprehensive Report on the Master Plan of Highways for the Los Angeles County Regional Planning District*, 1 (Los Angeles: Regional Planning Commission, 1941), 74. The commission noted that freeways, once in a theoretical stage, were now being built and “daily proving their efficiency.” The Arroyo Seco, or “Pasadena Parkway,” the publication noted, was one of these roads, combining the “landscape aspects of the parkway with the essential features of the freeway,” 17.

#### IV. Figueroa Street Tunnels

The Arroyo Seco Parkway's gradual design transition from a parkway to a freeway was facilitated by a separate project to widen and extend Figueroa Street from downtown Los Angeles, through Highland Park, and towards Pasadena. Commencing in the 1920s, this project was designed to reduce the traffic congestion that was making the commute between Los Angeles and points north increasingly intolerable.<sup>56</sup> The major traffic-reducing element of the project involved the construction of four tunnels through Elysian Park. City officials thought these tunnels would speed traffic *through* the park, rather than forcing commuters along North Broadway where at-grade intersections caused tremendous congestion. The tunnels were expected to save commuters as much as ten minutes over the existing route.

Officials also pushed for the tunnels because they were deemed necessary for the eventual construction of a high-speed road from Los Angeles to Pasadena.<sup>57</sup> Though the tunnels were not originally part of the Arroyo Seco Parkway, they were nevertheless part of a visionary scheme projected by the Automobile Club of Southern California in 1921 to link downtown Los Angeles with Pasadena via a high-speed road.<sup>58</sup> When the tunnels opened in 1931, *Southwest Builder and Contractor* reported that a viaduct would eventually carry tunnel traffic to a proposed "high-speed road" to be built through the Arroyo to Pasadena.<sup>59</sup> Tunnel construction allowed motorists to turn off North Broadway at Solano Avenue, proceed west, enter the tunnels, then cross Riverside Drive to Dayton Avenue. The traffic plan did not shorten the distance, but the series of tunnels permitted an uninterrupted flow of traffic free from the hazards of cross streets.

Engineers faced a difficult situation, for the tunnel route went through the Elysian Hills. The geology of the hills made the construction challenging. Excavation for both the tunnels and approaches was in a soft, stratified sandstone formation that was badly broken on the north side of the most northerly hill. In addition, a shattered earth fault was discovered at the north portal to one of the tunnel sites.<sup>60</sup> Almost 800 cubic yards of broken rock came down in three different

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<sup>56</sup> Part of the overall project included the construction of a bridge where busy Temple Street crossed Figueroa Street at grade, thereby allowing for Figueroa Street traffic to continue into and out of downtown with one fewer troublesome grade crossing.

<sup>57</sup> For references that suggest the Figueroa Street Tunnels were built in accordance with an overall plan to ultimately link them to a new high-speed road, see *Pasadena Star-News*, "Arroyo Seco Boulevard Favored," 21 May 1928; or *Pasadena Star-News*, "Parkway Link to Be Open by June 1," 6 May 1936. See also Courtelyou, "Streets Cross Over." For a source that indicates that both the tunnels and grade separations at College Street and Temple Street were built with the Arroyo Seco Parkway itself in mind, see S.V. Courtelyou, "Arroyo Seco 6-Lane Freeway," *California Highways and Public Works* 17, no. 6 (June 1939): 13, and especially R. C. Myers, "Figueroa-Temple Street Grade Separation in City of Los Angeles," *California Highways and Public Works* 17, no. 11 (November 1939): 15.

<sup>58</sup> E.E. East to Fred Stillwell, 11 May 1936, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles. The Auto Club's plan, however, did not propose the construction of the Figueroa Street Tunnels in their exact location.

<sup>59</sup> "Elysian Park Bores Now Opened to Traffic," *Southwest Builder and Contractor* (November 1, 1931).

<sup>60</sup> This was in the vicinity of tunnel No. 3.

slides during construction. Rock formations were more stable at the lower portal of the southernmost tunnel (Tunnel No. 1) because the rock was stratified, but not shattered.<sup>61</sup>

The first three of the set of four tunnels were constructed in 1931. The 461'-0"-long south tunnel, No. 1, and the 405'-0" long northern tunnel, No. 3, were drilled through the hills, while the shorter 130'-0"-long middle tunnel, No. 2, was built by the open-cut method with earth replaced to the original contour once construction was finished. Uniform in width and height at 46'-6" and 28'-4" respectively, these tunnels carried a 40'-0" roadway, allowing for four lanes of traffic, with a 5'-0"-wide sidewalk on one side and an 18" wheel guard on the other. Tunnel No. 4, located south of the first group, ran from a point near Bishops Road to Solano Avenue. Identical in width and design, it was the longest at 755'-0". It was not completed and opened until 1935.<sup>62</sup>

Tunnels 1 and 3 were not visible to the public for several months, because they were bored beneath the surface of the hill and completed from the midpoint to the ends. The middle tunnel was also planned as a bore since park commissioners wished to save trees on the hill above. Shallow earth on top of the hill prevented this plan, however, and park commissioners agreed to an open cut so long as the hill was restored and new trees planted after completion. Pedestrian subways under Figueroa Street and Solano Avenue allowed pedestrians to reach park grounds.

During construction, three heavily timbered drifts were made large enough to permit the operation of a railway whose cars carried material in and out. Work was done from the drifts, one at the top and one on each side of the base of the arch where walls and footings were built. Excavation for the footings and walls proceeded from the drifts, leaving an immense core on the inside to support the forms for concrete. After the concrete lining was poured and stripped of forms, the core was removed. Steel "H"-ribs consisting of short sections bolted to plates supported the rock roof of the tunnel, extending down on either side to the footing. Each end had a base bolted into the concrete. The ribs, embedded into the concrete, were left in place as a permanent reinforcement.<sup>63</sup>

The tunnels were not merely feats of engineering. Attention was also paid to the ornamentation of the tunnels and associated roadway features along Figueroa Street. The Art Deco portals featured the city of Los Angeles seal at the top of the arch, and cement was poured into carefully made formwork to create sharp edges for the "sunburst" panels. Where the roadway was extended to the west to a junction with Riverside Drive, it cut into sandstone. There, reinforced concrete columns and girders necessary to support the outer edge of the roadway were given a decorative stone railing and ornamental lighting posts.<sup>64</sup>

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<sup>61</sup> William Wallace, "Construction of Tunnels Through Elysian Park Hills Pushed," *Southwest Builder and Contractor* (12 December 1930): 44-46.

<sup>62</sup> *American City*, "Los Angeles Highway By-Pass Tunnels," (April, 1932): 95.

<sup>63</sup> Wallace, "Construction of Tunnels Through Elysian Park," 45.

<sup>64</sup> Wallace, "Construction of Tunnels Through Elysian Park," 45; *Southwest Builder and Contractor*. "Griffith Park Bores Soon Ready For Use," 11 September 1931.

## V. Political Debates and Route Selection

The completion of the Figueroa Street Tunnels brought into focus the question of the exact route that the Arroyo Seco Parkway would follow, as well as the character of the roadway itself. Should the Arroyo be the site of a high-speed limited-access roadway or should it contain a parkway that would function primarily as a recreational route to Devil's Gate and the San Gabriel Mountains? The controversy over the use the Arroyo involved complex issues of population growth, conservation, retail business, commuting, automobile touring, recreation, and the interaction of governmental agencies and elected officials with their most vocal constituents.

In its downward course from Devil's Gate Canyon to the Los Angeles River, the Arroyo Seco flowed through the political jurisdictions of Pasadena, South Pasadena and Los Angeles. Within Los Angeles, the Arroyo extended through the neighborhoods of Highland Park and Garvanza. Its depth required the construction of numerous bridges in order to provide for movement between communities and downtown Los Angeles. Many of these structures, like the Arroyo Seco Bridge of 1914, had to be rebuilt after floods. By the late 1920s, parklands less susceptible to flood damage were in place on both sides of the Arroyo, but northbound travel on city streets out of Los Angeles was accident-prone and congested. Sentiment grew for the construction of a more efficient roadway along the Arroyo as a matter of urgent public interest -- whether it would embody the ideals of a "parkway" or a "freeway" seemed considerably less important.

In December of 1928, Los Angeles City Engineer Lloyd Aldrich began preliminary surveys for an "Arroyo Seco Highway," which would be routed from Dayton Avenue to the northern city limits. The Los Angeles City Council then appropriated \$175,000 for a road along the west side of the Arroyo from Avenue 22 to San Pascual Avenue at the South Pasadena city boundary. The funds were not used for road building, however, but to acquire property between Pasadena Avenue and San Fernando Road at Avenue 35.

After a year-and-a-half of the Depression, the Los Angeles City Council resolved that work should begin on the "Arroyo Seco Highway" as soon as possible, in part because the city council saw the road as a way to participate in federal job relief programs. With funds derived from the 1931 Los Angeles Street Construction Bond Fund, Aldrich and his crews graded the roadway between Avenue 60 and Avenue 66. Roadwork was suspended when that money ran out, and in January 1932 the city council stipulated that all street improvement money be allotted to the highway project. By June 1, the city council was apparently able to finance work once again, and Aldrich was authorized to grade the roadway from the intersection of Bridewell and Princess Streets to the connection at San Pascual.<sup>65</sup>

It seems unlikely that grading would have taken place unless route planning was at least tentatively established. Presumably, the Los Angeles City Council was influenced by the *Los*

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<sup>65</sup> H. Marshall Goodwin Jr., "The Arroyo Seco: From Dry Gulch to Freeway," *Historical Society of Southern California Quarterly* 47 no. 1 (March 1965): 74.

*Angeles Plan* (1922) and the *Major Traffic Street Plan* (1924), which were transformed into legislation approved by voters on November 4, 1924. The legislation asked voters to approve a general traffic plan for the city of Los Angeles, which included a road in the Arroyo. In addition, the Los Angeles Board of City Planning Commissioners formulated a parkway plan for the Los Angeles region in 1931 that included elements similar to earlier Los Angeles regional parkway plans.

By June 1932, the residents of Highland Park and the Garvanza neighborhood grew suspicious of Aldrich's progress, although the road had only been roughly graded from Hermon Avenue to the intersection of Bridewell and Princess Streets. They sent petitions to the Los Angeles City Council stating that they had encumbered their property with tax assessment bonds to pay for parkland to ensure that the land would not be used for a road. Whether this argument or the additional opposition from North Figueroa Street merchants in Highland Park prevailed became moot, for the council ordered the Los Angeles Board of Public Works to stop all work on the project.<sup>66</sup> At this point, the county – trying to keep men employed -- passed a resolution requesting the Los Angeles City Council to give "full and if possible favorable" consideration to beginning work on the proposed "Arroyo Seco Drive."<sup>67</sup>

In September of 1932, the Los Angeles City Board of Park Commissioners weighed in with another proposal: an 80'-0"-wide right-of-way through Arroyo parklands with a 24'-0"-wide access road for private owners and a 40'-0"-wide pleasure roadway separated by a 6'-0"-wide planted divider. This location of the road on the west side of the Arroyo could take advantage of concurrent construction. If extended from the Pasadena Avenue (later York Street) Bridge at Avenue 35 to Avenue 22, it would connect with the Figueroa Street extension being built in Elysian Park, which included the tunnels. This plan met opposition from Aldrich, who stated that grading along Carlota Boulevard between Pasadena Avenue and Avenue 43 would be expensive and difficult since Los Angeles County would only be providing hand labor paid for by a work relief program. Earlier in the year, when the city had been forced to stop grading, the county had offered to pay for laborers with charity funds, and these men apparently made up many of Aldrich's crews.<sup>68</sup>

Aldrich came forward with a different plan to further the project. On November 18, 1932, the Public Works Committee of the Los Angeles City Council reported that Aldrich had asked for approval of a plan to locate the proposed parkway on the eastern bank of the Arroyo. Under this plan, the road would cross the Arroyo at Sycamore Grove Park and follow the high ground on the east side of Arroyo Seco Park to connect with Homer Street. From that point, it would follow Homer Street for one-half mile, then proceed along the foot of a bluff on the east side of the park to connect with Pasadena Avenue at the south end of the Avenue 35 Bridge.

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<sup>66</sup> Goodwin, "From Dry Gulch to Freeway," 76.

<sup>67</sup> *Los Angeles Times*, 28 June 1932.

<sup>68</sup> *Los Angeles Times*, "Driveway Views Aired," 12 September 1936; Goodwin, "From Dry Gulch to Freeway," 74.

Aldrich told the committee that the route could be graded and surfaced at less cost than the roadway down the west bank. The report also noted the Los Angeles County Board of Supervisors' offer to furnish labor for the development of the project from county appropriations. The city council adopted the report as read and recommended that the Los Angeles Board of Public Works and the city engineer "be instructed to prepare the necessary grading plans and to provide the necessary field engineering and supervision of labor when furnished by the County."<sup>69</sup> The city council then authorized grading between Avenue 35 and Avenue 52 along the eastern route, extended in December of 1932 from Avenue 52 to Hermon Avenue and, in February 1933, from Hermon Avenue to San Pascual Avenue.<sup>70</sup>

The principal group advocating the western roadway was the Fourteenth District Federated Association (FDFA). According to members of the FDFA, the eastern route was narrower and more dangerous, and therefore unsuitable as a major traffic artery. Besides, the FDFA argued, it would destroy a grove of beautiful sycamore trees and occupy important level ground in the park. "We wish to emphasize the fact that the road as previously planned is an actual part of the major traffic street plan and was voted upon by the entire city and approved by the voters," members of the FDFA wrote in a locally distributed leaflet.<sup>71</sup>

Leading the dissenters were merchants on Pasadena Avenue (North Figueroa Street), who feared the loss of business from the diversion of traffic onto a limited-access roadway. They named Los Angeles City Councilman Edward L. Thrasher as their spokesman. Thrasher, in a position of power on the city council, became a vocal and unremitting opponent of the western route and a formidable obstacle to a politically satisfactory route compromise.<sup>72</sup>

On December 16, 1932, H.W. Keller, an Automobile Club of Southern California director, wrote the club's chief engineer, Ernest E. East, requesting information about the club's position on the east-west route controversy. East advised that the east bank road was more readily adaptable to hand labor, but observed that the project would require heavy construction and that most of the material would have to be hauled in by truck. He also noted that the construction of the east bank road from the south end of Homer Street to Pasadena Avenue near Avenue 35 would be of doubtful value as a part of the Arroyo Seco Parkway project, observing that it probably would be improved as a park development road only after the west bank roadway was built.

In addition, East wrote, narrow Homer Street lay outside the park area so that additional right-of-way acquisition would be necessary before the parkway could be developed. He also pointed out that the west bank from Avenue 43 to Pasadena Avenue was already graded and open, and that either location could be extended southerly to the Figueroa extension. Finally, East explained that the work being done by the unemployment forces on the east bank location north of Avenue

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<sup>69</sup> Minutes of the Los Angeles City Council, Nos. 3266-3794, 18 November 1932, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>70</sup> Goodwin, "From Dry Gulch to Freeway," 77.

<sup>71</sup> Goodwin, "From Dry Gulch to Freeway," 78.

<sup>72</sup> C.J. Elsasser and J.H. Lester, letter to City Council of Los Angeles, November 25, 1932, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

23 could be continued north to connect with the graded roadway on the west bank of Avenue 57. At that point, grading could be completed northerly to San Pascual Avenue near the South Pasadena border.

East's synthesis of the issues brought into focus the underlying issue of the debate. Should the new road be a parkway or a freeway? If the road went through with a compromise protecting the parklands, it would literally be a parkway – a pleasure drive through the Arroyo. If land was taken by eminent domain for a roadway with all the features of a high-speed, limited-access thruway, the parkway ideal would be effectively rejected. His letter summarized the issue more succinctly:

It would appear that the west bank location as originally planned will fit in better with the future development of the Arroyo Seco Drive as a major traffic parkway than will the east bank location. However, we believe that the east bank road, which is now under construction between Avenue 43 and Avenue 49, will fit into the picture as a park development road and will be usable as a direct connection between Griffin Avenue and the Park Highway.<sup>73</sup>

Determined to protect, or perhaps assert, the Auto Club's stance as the lofty and fair-minded advocate for the rights of motorists and the untrammelled enjoyment of driving, East concluded his letter by listing the names of persons who had called at his office "and solicited the help of the club in defeating the opening of the east bank road."<sup>74</sup>

In fact, the Auto Club was deeply interested, if not openly involved, in the choice of routes. Cleveland Heath of the Auto Club's Investigation Bureau wrote to the club's General Counsel Ivan Kelso on January 24, 1933 reporting on the January 4 meeting of the Board of Public Works to protest the move to the east bank of the Arroyo:

Apparently this is a continuation of the fight between the proponents and opponents of Victory Park. The opposition claims that during the campaign for Victory Park it was their belief that the park was being promoted for the purpose of providing a highway through the district, which at that time was denied by the proponents and also by councilmen. Now that they have been forced to accept a park they expect it to be used for park purposes.<sup>75</sup>

Heath expressed doubt that the committee would change its previous report, and he was correct. Work on the east side route stopped after the grading approved by the city council had been completed, however, indicating that by January 1935, political alliances on the council had realigned. Aldrich went to the council with two recommendations. He called for negotiations with the Santa Fe Railway to purchase the right-of-way between Loreto Street and Pasadena Avenue, and advised construction of a road on the west side of the Arroyo from Figueroa Street to the city boundary at San Pascual. Thrasher countered by demanding that grading resume on

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<sup>73</sup> Ernest E. East to H.W. Keller, 16 December 1932, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>74</sup> Ernest E. East to H.W. Keller.

<sup>75</sup> Ernest E. East to H.W. Keller.

the east side as a relief project. Advocates of a counter-proposal moved to grade the west side from Avenue 43 to Avenue 49. The council did not move forward on any of the proposals.<sup>76</sup>

As the choice of routes became increasingly contentious in Los Angeles, political forces in Pasadena began to gather in support of an Arroyo roadway that would cut travel time from downtown Los Angeles. Members of the Pasadena Chamber of Commerce, the Pasadena Realty Board, and the Pasadena City Planning Commission essentially revived Harvey Hincks's 1916 plan, which followed the Arroyo Seco through Los Angeles but turned east at Arroyo Drive, cut through South Pasadena along the line of Grevelia Street, and funneled north into Broadway, a principal Pasadena business thoroughfare.

Once the City Council of South Pasadena and the Pasadena Board of Directors endorsed the new plan on August 14, 1934, the Pasadena interests persuaded the Los Angeles Regional Planning Commission to draft the new version with one modification: the route had to terminate in the vicinity of Arroyo Drive at the South Pasadena city limits. Rather than replacing Grevelia Street with the parkway, Pasadena proponents felt that this modified route, as drawn up by a seemingly more neutral party, would be more acceptable to the city of South Pasadena.<sup>77</sup>

Both city governments adopted resolutions in favor of the route with some important reservations: the road would not be financed through an assessment district; both cities would have to approve engineering and details so that traffic flow would be continuous to and from Los Angeles; and the right-of-way would have to be a minimum of 100'-0"-wide, in order to enable a roadway not less than 76'-0"-wide.<sup>78</sup>

While this was good news for road proponents, securing funding for the \$900,000 right-of-way-costs remained a complex challenge. The Arroyo Seco Parkway planners knew that the state and counties traditionally financed roadway costs, so they looked to these jurisdictions for some creative financing. The federal government had allocated \$8 million for highway construction in the state. Pasadena and South Pasadena applied to the California Highway Commission for \$200,000 in state gas tax funds for State Route 165 (Figueroa Street) and State Route 150 (Colorado Street), attempting to show that the new Arroyo road would connect the two state highways. This reasoning was not persuasive and the application was refused. The authority to include new roads in the state highway system, they were reminded, belonged to the state legislature. In January 1935, after the State Emergency Relief Commission provided \$20,000 for a route survey through South Pasadena and Pasadena, the Pasadena proponents took the hint from the California Highway Commission and asked their assemblywoman, Eleanor Miller, to forward a bill to place the Arroyo route in the state highway system. This bill called for a route incorporating Grevelia Street into the right-of-way, similar to that suggested by the Hincks plan some twenty years earlier.<sup>79</sup>

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<sup>76</sup> Cleveland Heath to Ivan Kelso, 4 January 1933 and 24 January 1933, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>77</sup> *Pasadena Star News*, "Call Meeting on Freeway Project," 16 August 1934.

<sup>78</sup> Goodwin, "From Dry Gulch to Freeway," 78.

<sup>79</sup> Goodwin, "From Dry Gulch to Freeway," 81.

Because gas tax funds were going to be needed to build the road, another formidable political force joined the alternately strident, persuasive, and aggrieved stakeholders: the State Highway Commissioners. Unless the Arroyo Seco Parkway could qualify as a state highway, it would not receive the tax funds that would maintain it. As guardians of the 1 ¼ cent highway gas tax fund doled out to counties and cities, however, the commissioners opposed adding any more mileage to the state highway system.

To solve the problem, Los Angeles County Supervisor Roger Jessup offered a swap: the county would take back ten to fifteen miles of the Pear Blossom Highway, which ran from Palmdale to Cajon Pass at the northeastern edge of Los Angeles County, allowing that mileage to be granted to the Arroyo Seco Parkway. The State Highway Commission balked at this idea, requiring the county to assume control of the entire thirty-four miles of the Pear Blossom Highway. To keep the scheme alive, the county agreed to this.

Miller amended her bill by inserting a provision that effectively removed the Pear Blossom Highway from the state system. The coalition of South Pasadena and Highland Park residents who supported the parks for which they had been assessed, led by Thrasher, sought an amendment to return previously levied park assessment funds in the Arroyo Seco to the cities losing the land to highway right-of-way. This amendment was defeated. Assembly Bill 2345 authorizing the Arroyo Seco Parkway passed the state assembly and senate by a large margin, and Governor Frank Merriam signed it into law on July 13, 1935. The bill did not specify the exact route.<sup>80</sup>

With state approval for the Arroyo Seco obtained, South Pasadena residents opposed to the division of their city by a roadway had their backs to the wall. As Thrasher threatened legal action in Los Angeles, state highway engineers developed plans for the route through South Pasadena. No roads would be closed according to the plan. A cut for the roadway through South Pasadena would allow existing streets to continue across the road on bridges at the same level, while some sections of the Arroyo would be filled. The road would go under the Santa Fe and Union Pacific Railroads near Fremont Street, continue under Fair Oaks Avenue, curve around Raymond Hill at the South Pasadena-Pasadena border, and connect with Broadway at Glenarm Street in Pasadena. The South Pasadena City Council was unsure about accepting this plan and passed a resolution showing that the old rivalries between that city and Pasadena had not lessened. Part of the resolution read as follows:

Such a plan would segregate a substantial part of the City of South Pasadena from the remainder . . . [It would] create many dead end streets and would be of no local benefit or advantage . . . . The construction of said highway as proposed from the city limits of Los Angeles to the limits of the city of Pasadena is solely for the benefit of and advantage to, the city of Pasadena.<sup>81</sup>

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<sup>80</sup> Goodwin, "From Dry Gulch to Freeway," 82-84; *Pasadena Star-News*, "Arroyo Seco Road Vote Delays," 16 May 1935. See also *Pasadena Star-News*, "Fete is Set in Freeway Progress," 18 June 1935.

<sup>81</sup> *Los Angeles Times*, "Road Plan Denounced," 13 February 1936, as quoted in Goodwin, "From Dry Gulch to Freeway," 84.

Petitions were circulated in opposition to the parkway, noting that it would not only create dead end streets, but would also require new bridges, depreciate property, and hurt businesses. In addition, South Pasadena City Council members were determined to recoup losses for park assessments and property losses.<sup>82</sup>

The South Pasadena Freeway Association, a group that favored the road, argued that it would make the city more accessible and attract additional population and business. After Spencer V. Courtelyou (chief engineer for District VII of the California State Division of Highways) sent a request to the South Pasadena City Council to approve the parkway route, the dispute boiled over. When South Pasadena Councilman Burton E. Heartt proposed submitting the parkway issue to the voters, Councilman David L. Butler opined that the state had the power to put the highway through wherever it pleased. The city attorney agreed. The Arroyo Seco question figured prominently in the upcoming South Pasadena City Council elections. The lure of progress and growth from a high-speed roadway was apparently irresistible. Despite the loss of one-third of its parklands and the prospect of a highway knifing a longitudinal cut through the city, voters elected a slate of supporters pledged to support the new Arroyo Seco Parkway.<sup>83</sup>

Meanwhile, in Pasadena, supporters backed a plan to extend the proposed route northward into the hills to reach Devil's Gate Dam. A coalition of property owners and business interests in Pasadena published leaflets and newspapers telling the "Freeway Truth," urging voters to support the Devil's Gate extension because a road extending the length of the Arroyo would increase property values within Pasadena city limits and prevent prospective home-buyers from purchasing property elsewhere; namely, in Arcadia, San Marino, and South Pasadena. In an attempt to generate further support for this plan, they claimed that such a route would promote wider public use of pre-existing parkland around Brookside Park and the Rose Bowl.<sup>84</sup> The Pasadena City Board of Directors voiced its opposition to extending the road, arguing that it would destroy parkland and insisting that the freeway as authorized by the state was "sufficient to care for all traffic into and through Pasadena."<sup>85</sup> A measure was eventually introduced into the state legislature advocating the extension, but it was never approved. In April 1937, Pasadena voters rejected the proposal to extend the proposed extension to Devil's Gate Dam by a two to one vote.<sup>86</sup>

On April 4, 1936, the State Highway Commission approved the Arroyo Seco Parkway route that had been suggested by the Pasadena interests and approved by the Pasadena City Board of Directors and the Los Angeles City Council. The proposal called for a minimum right-of-way of

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<sup>82</sup> *Los Angeles Times*, "Road Fight Opens Anew," 14 February 1936.

<sup>83</sup> *Los Angeles Times*, "Boulevard Held Asset," 19 March 1936; *Los Angeles Times*, "Vote Given to Parkway," 12 March 1936; *Los Angeles Times*, "Road Plan Denounced," 13 February 1936; *Los Angeles Times*, "Road Fight Rally Set," 12 February 1936. See also Apostol, *South Pasadena*, 110.

<sup>84</sup> *Freeway Truth*, 25 March 1938?; *Freeway Truth* 31 March 1938?, and *The Freeway Bulletin*, n.d., in Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>85</sup> "Arroyo Seco Highway is Opposed," n.d., in Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>86</sup> *Los Angeles Times*, "Pasadena Voters Defeat Arroyo Seco Extension," 2 April 1937.

80'-0", with two 34'-0"-wide roadways separated by a 6'-0"-wide center strip. The roadway ran along the west bank of the Arroyo from the Figueroa Street Bridge to Bridewell Street, crossed the Arroyo, cut eastward through South Pasadena, curved around Raymond Hill, and funneled northward into Broadway at Glenarm Street in Pasadena.<sup>87</sup>

Despite their long struggle, the park supporters did not receive any reimbursement for the lands preempted for the parkway right-of-way. Before engineers could begin construction, the Los Angeles Park Commission had to give its approval for the 80'-0" easement. Opponents apparently rallied once again, but the easement was approved with the commissioners' proviso that money under assessment bonds would be refunded through state legislation. Assembly Bill 90, introduced in 1937, provided for state reimbursement when parkland was taken for a state highway. In addition, a portion of the money was to be refunded to property owners in the assessment district. Although the state assembly and senate passed the bill, Governor Frank Merriam did not sign it. Plans for the parkway proceeded unobstructed.<sup>88</sup>

## VI. Arroyo Seco Flood Control Channel

Before parkway construction could begin, the perennial problem of flooding in the Arroyo had to be controlled to build a road suitable for year-round use. Though a dry climate prevailed over the region for most of the year, when rainstorms of high intensity occurred in the winter months, the seasonally dry creeks that ran down from the surrounding mountains could turn into raging torrents. Climate, topography, and increasing urban development required a program of control and conservation of floodwaters. Until measures to control floods were undertaken, Los Angeles County was probably subject to a greater potential flood hazard than any area of comparable size and population density in the United States.<sup>89</sup>

The Arroyo Seco was particularly prone to flooding. On February 21, 1914, banner headlines in the *Los Angeles Times* reported the most disastrous flood to inundate the Los Angeles Basin in forty years: "Storm-Swept Countryside Faces a New Menace in Lashing Winds. Dynamite Resorted to in City's Battle with Flood. Arroyo Seco Bridge Blown Up to Save Residential Property. Houses Undermined and Swept Away as River Spans Destroyed." Over six inches of rain in four days -- 1.40 in twenty-four hours -- had brought the Los Angeles River and its tributaries over their banks. The Arroyo Seco, flowing down from the San Gabriel Mountains, was two feet above the river and rising rapidly. The *Times* reported that the mayor, the chief of

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<sup>87</sup> Spencer V. Courtelyou, "Arroyo Seco Parkway Will Include a Six-Mile Double Lane Depressed Arterial," *California Highways and Public Works*, 14, no. 8 (August 1936): 24-25.

<sup>88</sup> *Los Angeles Times*, "Arroyo Seco Route Approved," 18 September 1936; *Los Angeles Times*, "The Arroyo Highway," 18 September 1936.

<sup>89</sup> "Flood Control District," in *Los Angeles County: Its Government and Services* (Los Angeles: 1950), 290-92; Stephen R. Van Wormer, "A History of Flood Control in the Los Angeles County Drainage Area," *Historical Society of Southern California Quarterly* 73 no. 1: 55-107.

police, and the fire chief were personally in charge of the men “working against and watching the flood at the Arroyo Seco and the Los Angeles River.”<sup>90</sup>

The 1914 flood in the Arroyo Seco destroyed ten bridges and over thirty homes.<sup>91</sup> While not the greatest flood on record, the 1914 disaster caused property losses of between five and ten million dollars, left hundreds homeless, damaged infrastructure, isolated communities, and took forty-three lives.<sup>92</sup> Destructive floods in Los Angeles also damaged many parts of the city in 1934 and did extensive damage in the communities of Montrose and La Crescenta in 1938.

The 1914 flood underscored the need for a county-wide flood control plan. An act of the state legislature created the Los Angeles County Flood Control District on June 12, 1915. This legislation gave the district, which covered the entire county except the Mojave Desert and offshore islands, the authority to carry out water control and conservation by protecting harbors, waterways, highways, and public property, as well as by storing, spreading and retaining water.

As part of its comprehensive plan to provide flood protection for the district, the county issued bonds in 1917 to construct dams in the county’s major watersheds in order to impound floodwaters in reservoirs and release them into natural aquifers and newly constructed “spreading grounds.” One of these proposed dams was located in the northernmost portion of the Arroyo Seco at Devil’s Gate Canyon.<sup>93</sup> The city of Pasadena gave an easement to the dam and reservoir sites in the Arroyo Seco in May 1916; the Devil’s Gate Dam was completed in June 1920. It was the first major dam built by the Los Angeles County Flood Control District. According to the district’s assistant chief engineer, Paul Baumann, it was the first concrete dam on the west coast built by means of removable panels. Situated across Devil’s Gate, a gorge approximately a mile below the mouth of Arroyo Seco Canyon, the dam controlled a watershed of 30.62 square miles.<sup>94</sup>

A concrete gravity arch structure, the dam is approximately 100’-0” high above the streambed and approximately 310’-0” in length along the crest. When the wooden La Cañada highway bridge located upstream of the dam site was declared unsafe, engineers decided not to replace it. Instead, they built Devil’s Gate Dam with a crest wide enough for a permanent two-lane highway

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<sup>90</sup> *Los Angeles Times*, “Storm-Swept Countryside Faces A New Menace in Lashing Winds,” 21 February 1914. Among the bridges destroyed were the Los Feliz Bridge, large wood bridges at Avenue 43, smaller wood bridges at Avenue 52 and 54, the bridge at Avenue 60 that connected Hermon Avenue with the Highland Park District, and the county bridge across the Arroyo connecting Garvanza with Lincoln Park. Further destruction was halted when engineers cut down a dozen giant pepper trees, anchoring them with sacks of cement and sand to offset the force of the debris coming down the channel. The Santa Fe passenger train was saved by the owner of a nearby rock and gravel quarry who flagged it to a stop just after one span of the steel bridge had collapsed into the stream.

<sup>91</sup> *Los Angeles Times*, “Storm-Swept Countryside”; *Los Angeles Times*, “Dozens of Homes Caught in Whirling Torrent,” 22 February 1914.

<sup>92</sup> “Flood Control District,” 292.

<sup>93</sup> H.B. Hodgkinson, “Los Angeles County Flood Control District, Report to Paul Baumann on Devil’s Gate Dam,” 19 February 1935, in *Devil’s Gate Dam Chronology* (1943), located at Los Angeles County Flood Control District, Alhambra, California.

<sup>94</sup> Paul Baumann, “Sluiceway at Devil’s Gate Dam,” in *Devil’s Gate Dam Chronology*, located at Los Angeles County Flood Control District, Alhambra, California.

supported by arched buttresses on the structure's downstream side. To maximize its capacity, the broad-crest spillway located on the east abutment was modified after the dam was built. This was done by extending a small earth dike with a concrete facing slab easterly from the spillway to higher ground to act as a water seal for the east abutment, reducing seepage and the risk of overflow on the abutment ridge.<sup>95</sup> The total project cost was \$483,000.

The meandering and seasonally changing nature of the Arroyo Seco watercourse resulted in a somewhat chaotic amalgam of streets and subdivisions arranged around the circuitous banks of the intermittent stream.<sup>96</sup> When the 1914 flood washed out several thousand feet of city streets, the city saw an opportunity to channel some of the Arroyo banks and reorganize the surrounding streets into a more permanent and ordered arrangement. The city entered into a cooperative agreement with the owner of gravel pit lots near Avenue 35 to construct concrete walls protecting the new channel in return for free aggregates and city permits for quarrying. The walls could only be erected where the Arroyo Seco was paralleled by adjoining streets, since the walls would be incorporated in the street's right-of-way. When completed, the concrete wall extended for 3,200'-0" on one side of the Arroyo and 1,600'-0" on the other. The total cost of the effort was \$19,900. The low cost reflected the fact that much of the labor was performed by men serving sentences in the county jail.<sup>97</sup> The work proved to be impermanent, however, since it was redone when the Arroyo Seco Flood Control Channel was built.

Since the Arroyo extended through three cities, the Board of Supervisors of Los Angeles County administered the flood control district and oversaw long range planning for water control in the Los Angeles Basin. Despite the ambitious building program constructing Devil's Gate and other mountain watershed dams, the Board of Supervisors' flood control efforts were tainted with accusations of mismanagement. Ernest East of the Automobile Club of Southern California complained to E. C. Eaton, chief engineer of the Los Angeles County Flood Control District, that he was "convinced that the solution of flood control problems in this County can be met only in removing this work from the control of the Board of Supervisors and setting up a Flood Control Commission or organization to carry out a definite program without interference."<sup>98</sup> The district was reorganized, a semi-independent agency was formed, and a new bond issue passed in 1934.<sup>99</sup> Apparently still dubious about the ability of local agencies to solve flood control problems in a fair and professional manner, business leaders in the community looked to another resource -- the federal government. In March 1936, Congress appropriated funds for a preliminary survey of the Los Angeles and San Gabriel River watersheds.

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<sup>95</sup> *Engineering Geology Report, Devil's Gate Dam* (December 1973), located at Los Angeles County Flood Control District, Engineering Geology Section, Alhambra, California.

<sup>96</sup> R.W. Stewart, "Controlling an Erratic Stream with Concrete," *American City* (December 1918): 482-83.

<sup>97</sup> Stewart, "Controlling an Erratic Stream with Concrete," 483.

<sup>98</sup> East to Eaton, 19 July 1934, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>99</sup> "Los Angeles Flood Control District History," n.d., Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

Two years later, work began on the approximately 9.5-mile Arroyo Seco Flood Control Channel. The most complete technical report on the project was written by Project Engineer H. W. Fraim of the Bureau of Engineering of the City of Los Angeles. Before describing the engineering and design of the channel, Fraim briefly detailed the project's chronology. He credited J. B. Lippincott, who served as a member of the Board of Consulting Engineers of the Los Angeles County Flood Control District, for presenting a comprehensive plan for the Los Angeles County Flood Control Commission in 1915 that not only provided for flood control, but also foresaw the advantages of a roadway between Los Angeles and Pasadena. Lippincott had pointed out that the construction of a proper flood control channel would permit construction of a highway. His report recommended a revetted channel with a boulevard on each bank along with the acquisition of contiguous land for parks. "In substance," wrote Fraim, "that scheme has been adhered to."<sup>100</sup> "In substance" is a somewhat puzzling term since the Arroyo Seco Flood Control Channel did not divide the roadway and no property was acquired for parkland. In fact, parkland was lost to the roadway.<sup>101</sup>

The area chosen for the Arroyo Seco Flood Control Channel had been a borrow pit for highway grading between August 1931 and July 1934. Funds for the channel came from a variety of relief sources: the city of Los Angeles' Unemployment Bond issue, the federally sponsored Reconstruction Finance Corporation, the County Emergency Relief Fund, and the California Work Authority. In July 1934, the State Unemployment Relief Administration was the principal funding source. Finally, in July 1935, the Works Progress Administration of the federal government took over the project, designating it as a flood control project sponsored by the city of Los Angeles.<sup>102</sup>

The flood control district's engineers determined that the channel should be protected against erosion and that its design should be flexible enough to provide for greatly increased capacity. Engineers acknowledged that the design should be capable of handling an excessive amount of water because the rate of flow in open channels was not completely understood in cases like the Arroyo Seco where debris loads could reach "astonishing" proportions.

Most of the channel work was financed from federal relief funds. Federal agencies were bound by regulations governing a labor-material ratio in allocating funds, requiring that the receiving agency spend a higher percentage of the relief funds on wages rather than on building materials. This factor influenced channel design. Engineers selected a trapezoidal cross-section that satisfied federal requirements since it used mostly hand labor with a minimum requirement of lumber and steel.<sup>103</sup> Vertical concrete walls would have created a marginally more efficient and attractive design, but hand labor could be more easily employed in constructing "less"

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<sup>100</sup> H.W. Fraim, "Flood Control and Parkway Project Along Arroyo Seco at Los Angeles," *Western Construction News* (June 1938): 233-34.

<sup>101</sup> Goodwin, "Arroyo Seco," 78.

<sup>102</sup> Fraim, "Flood Control and the Parkway Project," 234.

<sup>103</sup> The Los Angeles County Flood Control District does not appear in the documentation on the channel as a funding source, for it was largely a long-range planning group of separate political jurisdictions. However, it seems likely that the three cities were entitled to a share of money from bonds floated by the district as part of its county-wide long-range water control plans.

technologically sophisticated slopes and banks. Since it was necessary to incorporate existing sewers and bridges into the design, bottom widths varied from 40'-0" to 80'-0" depending on the slope of the invert walls. The 80'-0" wide channel had an unpaved floor. The Los Angeles Park Department asked that the banks be paved with loose boulders above the water line so that shrubbery and creeping vines could be planted.

Local conditions and politics affected the flood channel's overall design in a few instances. The City of South Pasadena asked that the 2000'-0" section across its subterranean gravel reservoir and municipal water supply have an unpaved bottom so that it would continue to function as a spreading ground for the normal summer flow of the Arroyo Seco. This request was accommodated by protecting the flat bottom with masonry check dams and slope key walls 6'-0" deep with heavy boulder rip-rap.<sup>104</sup> Transitions from trapezoidal sections to rectangular ones were deemed necessary to maintain or extend older bridges, such as those at Avenue 26 or the Santa Fe Railroad Bridge, and to provide for new bridges and right-of-way for the Arroyo Seco Parkway.

Since the purpose of channel construction was to protect park development as well as the parkway, all plans had to be approved by the Los Angeles Park Department. However, it seems clear that once work began on the channel project and the Division of Highways took over the planning for the road's construction, a parkway resembling the scenic drive proposed by the park commissioners in 1911 would not be built on the Arroyo Seco.

Los Angeles' Board of Public Works did the planning and construction for the Arroyo Seco Channel. The overall design was supervised by L. W. Armstrong, division engineer for storm drain design. "Highway and channel designs were considered together," Fraim wrote.<sup>105</sup> Sixty years later the two civic purposes appear as one, though the story of the parkway's development has tended to dominate the historical record. While easily over-looked by observers focusing on the Arroyo Seco Parkway's role in the evolution of the modern motorway, the Arroyo Seco Flood Control Channel made the parkway possible.

## **VII. Roadway Design: Parkway as Freeway**

With the clearing of most of the legislative hurdles and construction proceeding on the water channel, engineers for the State Division of Highways, led by District Chief Engineer Spencer V. Courtelyou and Design Engineer A. D. Griffin, began to produce the drawings and documents necessary to begin construction on the Arroyo Seco Parkway. Engineering assistance and additional drawings were provided by Chief Engineer Lloyd Aldrich of the City of Los Angeles and his staff, in addition to the engineering staffs of Pasadena (led by Harvey Hincks as chief engineer), and South Pasadena, headed by Frank H. Clough.

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<sup>104</sup> Fraim, "Flood Control and the Parkway Project," 235.

<sup>105</sup> Fraim, "Flood Control and Parkway Project," 236.

With the exception of the Ramona Parkway and Riverside Drive, engineers had few local precedents from which to draw their design ideas. Even the Ramona Parkway and Riverside Drive in Los Angeles were not entirely grade-separated, divided, limited-access high-speed roads. Neither combined the variety of high-speed and decorative road design characteristics that engineers were preparing to employ along the Arroyo Seco Parkway. These engineers turned to recent East Coast developments for more relevant design precedents.

In early 1938 a number of Division of Highways engineers traveled to Boston for a highway convention, combining that trip with a tour of East Coast roads. In recounting that trip, the engineers noted a number of significant design features, including the modified cloverleaf interchanges and bituminous pavement used along the Massachusetts highway system, the full cloverleaf interchanges found on several New Jersey highways, and Chicago's recently completed six-lane Lake Shore Drive (1933) – an early example of an urban high-speed automobile transportation corridor. They recommended that California highway planners learn from these examples and provide new limited-access highways with cloverleaf interchanges in the state's congested areas.<sup>106</sup>

The group reserved its most effusive praise, however, for developments in and around New York City, where construction was proceeding on a non-stop, limited-access, grade-separated highway from the tip of Manhattan to Westchester County along the Hudson River. This highway was part of a series of high-speed parkways authorized by Robert Moses to circle New York City. In a movie presentation put together by the California Division of Highways to celebrate the Arroyo Seco Parkway, the first ten or so minutes featured footage of these New York parkways.<sup>107</sup> The engineers proclaimed that, as models of modern motorway development, these parkways demonstrated that the highway planners in New York were "more thoroughly educated to the problems of highway transportation in the vicinity of a great metropolis, than is found either in the Middle West or on the Pacific Coast."<sup>108</sup>

It is highly likely that Division of Highways engineers were keeping abreast of other high-speed road developments, including the German Autobahns, which cut straight lines through much of the landscape to provide the world's first high-speed road network. Construction of the Pennsylvania Turnpike -- a 160-mile limited-access "super-highway" between Harrisburg and Pittsburgh with fully grade-separated interchanges, miles of straight-aways through mountains and forests, and a 70 mile-per-hour speed limit -- and the limited-access, divided-lane Merritt

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<sup>106</sup> McCoy, "Progress on Highways," 27.

<sup>107</sup> These also included the Southern State Parkway and the Henry Hudson Parkway. Movie now on videotape, in possession of California Department of Transportation, District VII, Graphics Department, Los Angeles.

<sup>108</sup> George T. McCoy, "Progress on Highways," *California Highways and Public Works* 16, no. 2 (February 1938): 2. McCoy, an assistant state highway engineer, wrote the article based upon written reports from those engineers who toured the roads. It is also known that in 1934, Pasadena officials used photographs of New York's grade-separated, limited-access Bronx River Parkway to promote the construction of a new road in the Arroyo, noting how the Bronx road had transformed a neglected natural landscape while still permitting motorists to move at high speeds. See *Pasadena Star-News*, "Arroyo Seco Freeway is Boosted," 14 November 1934.

Parkway, connecting northern New York City suburbs to Connecticut, proceeded simultaneously with the Arroyo Seco Parkway.<sup>109</sup>

Unlike the parkways that emerged from Progressive-era ideals to improve the moral and physical health of cities with winding roadways connecting city parks, the construction of these roads was primarily motivated by the desire to transport motorists quickly across the landscape. Many Connecticut residents, for example, used the Merritt Parkway to commute between suburban Connecticut and urban New York City, even if the road included some decorative bridges and other features to link it with an earlier parkway tradition. Compared to the meandering nature of earlier roads such as New York's Bronx River and Hutchinson River parkways, new roads like the Merritt Parkway, the Pennsylvania Turnpike, the divided-lane Detroit Superhighway (1924), Lake Shore Drive, and the new urban New York parkways seemed little more than efficient traffic corridors.

The parkway tradition, with its emphasis on scenic, recreational roads intended primarily for pleasure drivers, seemed in the 1930s to be fading in the face of a number of factors including increased automobile ownership and subsequent traffic congestion, the growth of middle-class suburbs resulting in a demand for high-speed commuter roads, and the need to reduce troublesome grade crossings and the head-on collisions facilitated by the lack of center dividers along conventional highways.<sup>110</sup> There was also the long-standing belief that new, high-speed roads would make contiguous areas more desirable from a residential point of view. All of this motives contributed to the design and development of the Arroyo Seco Parkway.<sup>111</sup> Throughout the 1920s and 1930s architects, planners, and engineers across the nation offered a variety of proposals for new roads and cities appropriate for the emerging "automobile age."<sup>112</sup> While there were certainly differences among them, most of these plans envisioned a series of high-speed, grade-separated, limited-access roads wrapping around and through cities for the purposes of reducing traffic congestion on city streets.

One of these plans was the 1937 *Traffic Survey* for the Los Angeles region issued by the Automobile Club of Southern California. The *Traffic Survey*, among other things, recommended a network of high-speed, divided and landscaped "motorways" linking the entire metropolitan region. While some of the recommended motorways followed rights-of-way proposed by early

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<sup>109</sup> The California Division of Highways kept abreast of national highway developments through its involvement with the American Association of State Highway Officials. This association was concerned with the establishment of national standards for highway design. See Division of Highways, *Twelfth Biennial Report* (30 June 1940), 31-32.

<sup>110</sup> The development of motor parkways in the early twentieth century is described in detail in Timothy Davis, "Mount Vernon Memorial Highway and the Evolution of the American Parkway," Ph.D. diss., University of Texas at Austin, 1997.

<sup>111</sup> See S.V. Courtelyou, "Streets Cross Over Depressed Highway," *Architect and Engineer* (October 1936): 50.

<sup>112</sup> Among the more notable of these visionary plans for the "new" twentieth-century city was a 1922 proposal offered by Swiss architect Le Corbusier for a *Contemporary City for Two Million Inhabitants*. Yet elevated highway proposals to whiz motorists around the metropolis, the need for grade separated highways, and the segregation of different classes of traffic emerged well before the 1930s. Frederick Law Olmsted and Calvert Vaux's bridges and pathways in New York's Central Park in the 1860s, for example, were designed to allow carriage traffic to be separated from pedestrians.

park commission reports, the highway network proposal in the *Traffic Survey* embodied the utilitarian ideals that guided the subsequent development of the Los Angeles metropolitan freeway system more closely than the earlier proposals to create a series of pleasure parkways.<sup>113</sup>

The *Traffic Survey* included drawings of a future city. A model was also constructed in conjunction with the plan.<sup>114</sup> The Auto Club's motorways were designed to transport drivers through residential districts on wide, limited-access roadways marked by cloverleaf traffic interchanges and on- and off-ramps, and through business districts along elevated roadways slicing through buildings designed especially to accommodate them. Over 1,000 copies of the *Traffic Survey* were distributed nationally and internationally.<sup>115</sup> Yet the *Traffic Survey* was more than just another visionary plan. It was produced for the purposes of reducing traffic in Los Angeles, and was rooted in specific local concerns. Not surprisingly, the plan included a route along the line of the proposed Arroyo Seco Parkway. The pictured road was one of many on a map of "proposed motorways" deemed necessary to create a nearly 400-mile high-speed network.

By 1939, the City of Los Angeles Transportation and Engineering Board, headed by Lloyd Aldrich, had borrowed this plan and incorporated it into its "Plan of Parkways" in the *Transit Program for the Los Angeles Metropolitan Area*. Despite the name "parkways," the board offered yet another proposal for a high-speed freeway system for the Los Angeles region. Similar plans followed in the early 1940s, reaffirming the Auto Club's call for a high-speed road network.<sup>116</sup> As early as October 1940, the California State Highway Commission was urging the development of a master plan for high-speed freeways in the region.<sup>117</sup>

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<sup>113</sup> Automobile Club of Southern California, *Traffic Survey: Los Angeles Metropolitan Area* (Los Angeles: Automobile Club of Southern California, 1937).

<sup>114</sup> For a picture of the model, see Davis, *Friend to All Motorists*.

<sup>115</sup> Automobile Club, *Traffic Survey*. Many of these ideas later appeared in Norman Bel Geddes's Futurama exhibit at the 1939 World's Fair, which formed the basis of his widely distributed book *Magic Motorways* (New York: Random House, 1940). Also see E. E. East, "The City Traffic Problem," manuscript, 21 October 1938, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>116</sup> These included, in 1941, *A Parkway Plan for the City of Los Angeles and the Metropolitan Area* offered by the Los Angeles Department of City Planning (which essentially reaffirmed the 1939 Traffic and Engineering Board plan), and the Regional Planning Commission's 1941 *Master Plan of Highways* and its 1943 *Freeways for the Region*. It should be noted that the Auto Club's *Traffic Survey* was not the first traffic survey of the region. While the Regional Planning Commission produced its *Report of a Highway Traffic Survey in the County of Los Angeles* in 1934, the commission did not recommend a high-speed road network. For more detail on these individual plans, see the summary in Brodsky, *L.A. Freeway*, 85-106.

<sup>117</sup> Amerigo Bozzani, Los Angeles representative for the State Highway Commission, announced the need to develop a "super-highway" system for the Los Angeles region in October of 1940, and reaffirmed this need prior to the Arroyo Seco Parkway's dedication ceremonies in December of that same year. "Los Angeles has the greatest traffic congestion in the country," Bozzani wrote, "and it is our purpose to cure it as quickly as possible." By January 9, 1941, the commission had allocated over \$10 million to Los Angeles County for the continuing construction of the Cahuenga (Hollywood) and Arroyo Seco freeways, in addition to the upgrading of the Ramona Parkway to freeway status and the beginning of construction for the Santa Ana Freeway. In August of 1941, the *Los Angeles Examiner* backed Bozzani in urging the L.A. city council to approve an expanded parkway plan that "would easily accommodate the two million motor vehicles expected in this area by 1960." See *Los Angeles Examiner*, "Council Should Act: Parkway Plan Deserves O.K.," 16 August 1941; *Los Angeles Northwest Leader*, "Freeways to be Stressed in City Highway Program," 9 January 1941; *Monrovia Journal*, "San Gabriel Valley to be Linked Via

With proposals for an inter-linked series of high-speed roads gaining favor, the actual plans for the Arroyo Seco Parkway called for a roadway featuring the latest developments in high-speed road design. In planning such a road, California Division of Highways engineers paid close attention to safety issues and other practical engineering considerations. The engineering department of the Automobile Club was also involved in these plans, recommending the implementation of various safety features along the new road. Borrowing some ideas offered by Miller McClintock in a national highway accident prevention plan presented in the mid-1930s, the Auto Club suggested that the new parkway include a center divider to prevent the possibility for head-on collisions and to limit access from adjoining streets.<sup>118</sup>

The need for divided highways in a growing California system of roads was also becoming an issue of some import to the Division of Highways. By 1936, the division explained in its biennial report that some members of the public were pushing for a greater number of divided roads to “cure” the “traffic ills.” The agency itself remained skeptical of their overall effectiveness under all manner of conditions. Once they had adopted the divided lane road as a construction possibility, the state recommended that medians on such roads be landscaped with “low growing shrubs” to prevent headlight glare. They further recommended a standard 6” height for median curbs and the installation of light-reflecting panels in the curbs to increase nighttime visibility.<sup>119</sup>

Even earlier, in 1936, the Division of Highways had already considered more limited-access roads for the purposes of increased driver safety, but the organization still awaited the authority to construct these roads on the state highway system. Once legislation making State Route 205 – what would become the Arroyo Seco Parkway -- a secondary route in the state highway system was signed into law in 1935, the Division of Highways could legally build it according to the design principles of what it was calling “freeways” – roads where no abutting property owner had any right of light, air, or access; where entrances and exits to and from the road would be controlled by access ramps and service roads built especially for that purpose; and where all cross-traffic was eliminated by grade separations. The Division of Highways’ *Twelfth Biennial Report*, published in 1940, noted that this legislation marked an important step in the “development of adequate express routes so necessary to a highway system which will satisfactorily serve modern traffic.”<sup>120</sup>

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‘Freeway’ through Populous Los Angeles Area,” 31 October 1940; or *Los Angeles Daily News*, “Arroyo Seco Parkway Held Just First Step,” 14 December 1940.

<sup>118</sup> “Safety Roads to be Tried,” source unknown, 1936?, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>119</sup> State of California, Department of Public Works, Division of Highways, *Tenth Biennial Report of the Division of Highways of the Department of Public Works, State of California* (Nov. 1, 1936); State of California, Department of Public Works, Division of Highways, *Eleventh Biennial Report of the Division of Highways of the Department of Public Works, State of California* (1 November 1938), 27. By 1938, the Division of Highways had adopted a center divider as necessary for all state roads requiring four or more lanes.

<sup>120</sup> Division of Highways, *Twelfth Biennial Report*, 19.

The Arroyo Seco Parkway (State Route 205) was the first high-speed road in the California state highway system to be built under this new legislation, and the first to employ all these safety features, which had only been implemented in piecemeal fashion on other California roads built in the 1930s.<sup>121</sup> Despite the new legislation and the emergence of the term “freeway” to describe high-speed, limited-access, grade-separated roads, these features were also common to many of the East Coast parkways.<sup>122</sup> In fact, it was never clear to engineers whether they were designing a “parkway,” a “freeway,” or something in between. At different times before, during, and after construction, references to the road in the Arroyo Seco refer to it as a “limited-access highway,” a “limited-access freeway,” a “boulevard,” an “express highway” and a “super highway.” In writing about the inclusion of numerous safety features along the Arroyo Seco Parkway, a passage written by Courtelyou typified the confusion surrounding the road’s definition: “These safety provisions are in accordance with accepted ‘Freeway’ design,” he wrote, “and will result in a minimum of interference with ‘Parkway’ traffic.”<sup>123</sup>

Whatever the confusion over the road’s classification, safety features were integral to the design of the Arroyo Seco Parkway. To reduce the possibility of head-on collisions, specifications called for a divided highway with a 6’-0”-wide median strip raised 6” above the roadway flanked by concrete curbs and gutter blocks. A bituminous material was to be filled between the curbs to prevent water seepage and weed growth. Along certain sections of the parkway, steel barriers in the median were planned to further reduce the possibility that drivers would cross into oncoming traffic. On the sides of the road, chain-link or “woven wire” fences were designed to separate traffic from nearby property and to make it difficult for children and animals to stray onto the roadway.<sup>124</sup>

The two travel lanes on either side of the median were initially to be 11’-0” wide, with a 10’-0”-wide outside shoulder planned for each side of the roadway. The 11’-0” width was a foot wider than the previous standard for state roads, a change adopted between 1936 and 1938 by the Division of Highways. With the introduction of divided highways, however, state highway engineers determined that even newer standards of lane width were necessary to allow for passing traffic and to eliminate sideswiping, and they called for a 12’-0” width for inside lanes

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<sup>121</sup> There were many other divided highways in California, a number of which were in Los Angeles County. These included Rosemead Boulevard, Foothill Boulevard, Ramona Parkway, Santa Monica Boulevard, the Coast Route, and the road through the Newhall Tunnel. By June of 1940, many limited-access roads built under the new “freeway law” were under construction in California. In southern California these included the Cahuenga (Hollywood) Freeway, Ramona Freeway (Los Angeles to Pomona), Santa Ana Freeway (Los Angeles to Santa Ana), Santa Barbara Freeway (Bath Street to Hollister Avenue), Inland Road (Pomona at San Bernardino County line), South Main Street Extension (Route 43 to Newport Beach), San Fernando Road (grade separation in Burbank), and the Arroyo Seco Parkway. In northern California, the East Shore Freeway (Oakland to Richmond) and San Rafael Freeway (through San Rafael) were built under the new legislation.

<sup>122</sup> The term “freeway” was defined in 1930 in an article by Edward M. Bassett, president of the National Conference on City Planning. Bassett stated that a “freeway” was a “strip of public land, dedicated to movement, over which the abutting owners have no right of light, air, or access.” Edward M. Bassett, “The Freeway—A New Kind of Thoroughfare,” *American City*, vol. 42, no. 2 (February 1930): 95.

<sup>123</sup> Courtelyou, “Arroyo Seco 6-Lane Freeway,” 10. The quotations and capitalization in the passage were present in the original text. The words “Parkway” and “Freeway,” in quotes, appear throughout the article.

<sup>124</sup> *Engineering News-Record*, “First Parkway for Los Angeles,” (21 July 1938): 79.

and an 11'-0" width for outside lanes adjacent to the shoulder.<sup>125</sup> The inner lanes were to be paved with .17'-thick "Type A" asphalt concrete (AC) pavement above a .33'-thick leveling course, and the outer lanes with .55'-thick portland cement concrete (PCC) pavement deepened to .75' at the edges.<sup>126</sup> This pavement was then to be laid either directly atop the ground or the bed of the Arroyo.

Where this natural ground did not provide sufficient foundation, workers were instructed to provide a foundation composed of compacted "till" material. For drainage, 3'-0"-thick reinforced concrete pipe storm drains were deemed necessary. With the exception of the lane width and the four-lane configuration, these specifications were largely carried out in the completed roadway.<sup>127</sup>

Engineers promoted the use of differently colored types of concrete for the lanes (the AC was black and the PCC largely gray) to encourage drivers to stay in designated travel ways and thus preclude the possibility of more accidents caused by drivers needlessly switching lanes. Furthermore, they thought the different colors would help to clearly demarcate one of the two lanes as a passing lane.<sup>128</sup> Although the Division of Highways was proud of the numerous AC roads already built in California and boasted that in no other part of the country were roads built to standards as high as those built in California, it is possible that the alternating patterns of pavement resulted from effective lobbying on the part of the California Oil and Gas Association.<sup>129</sup> Aware that the state intended to build the Arroyo Seco Parkway entirely with PCC, the association promoted the use of AC because of its durability, its non-skid properties, and the fact that the parkway was being constructed in one of California's greatest oil-producing areas.<sup>130</sup>

The new road permitted speeds up to 45 miles per hour – the maximum speed limit for state roads at that time. To accommodate such high speeds, engineers provided suitably banked or "superelevated" curves to counteract centrifugal forces and keep vehicles on the road. These superelevations were necessary where geological and right-of-way conditions -- such as the proximity of houses, the Arroyo Seco Flood Control Channel, or railroad tracks – created sharp curves.<sup>131</sup>

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<sup>125</sup> Division of Highways, *Eleventh Biennial Report*, 27, 29.

<sup>126</sup> *Southwest Builder and Contractor*, "First Section of the Arroyo Seco Now Under Construction," (19 August 1938): 13.

<sup>127</sup> *Southwest Builder and Contractor*, "Arroyo Seco Now Under Construction," 12-13.

<sup>128</sup> For the safety rationale of color-contrasting pavement, see Division of Highways, *Eleventh Biennial Report*, 32.

<sup>129</sup> Boasting of the asphalt roads can be found in McCoy, "Progress on Highways," 27. It should be noted that the existing four-lane Ramona Parkway, south and east of downtown Los Angeles, also featured a combination of asphalt and portland cement concrete roads.

<sup>130</sup> *California Oil and Gas Association*, "Resolution," 21 October 1937, Ernest E. East Collection, Automobile Club of Southern California Archives, Los Angeles.

<sup>131</sup> S. V. Courtelyou, "Arroyo Seco Parkway Unit Open," *California Highways and Public Works* 18, no. 8 (August 1940): 15-16. Writing twenty years after the opening of the parkway, Division of Highways engineer A. D. Griffin noted that the superelevation curves on the Arroyo Seco Parkway were built to only one-half the present-day standard. Because of this, he explained that the Arroyo Seco Parkway had to be restricted to a 55-mile-per hour speed limit once California raised the state speed limit to 65 miles per hour. Furthermore, sections through Highland

Facilitating the smooth integration of traffic to and from the Arroyo Seco Parkway presented engineers with some of their greatest challenges. Where southbound parkway traffic accessed the road from the Fair Oaks Avenue and Orange Grove Avenue on-ramps in South Pasadena, the lighter traffic load allowed engineers to temporarily prohibit parkway traffic from using the outer lane, giving merging automobiles their own lane.<sup>132</sup> These ramps were differentiated from the travel lanes by white, wooden railings paralleling the ramps and, closer to the parkway, by a slightly raised, alternately painted black and white curb.

Engineers had difficulty incorporating the latest safety and design features into every part of the parkway. Further west and south, where traffic would be heavier, the engineers believed it would not have been desirable to temporarily eliminate lanes to allow for merging traffic. Instead, engineers widened the pavement of the on- and off-ramps, hoping the lanes would be wide enough to allow traffic to merge effectively onto the highway. It is possible that these lanes did not initially include stop signs, encouraging merging automobiles to literally plunge into the flow of traffic.<sup>133</sup>

In still other locations, the difficult topographical conditions and the narrow right-of-way through the densely built up adjoining districts of South Pasadena and Highland Park sometimes made it impossible for engineers to incorporate on- or off-ramps at all. In these instances, workers built what engineers referred to as “modified cloverleafs,” “compressed cloverleafs,” or “compressed ramp types” to allow entering motorists to at least point in the correct direction of parkway traffic thereby reducing the possibility of left-hand turns into oncoming cars.<sup>134</sup>

To create these interchanges, engineers designed triangular-shaped “neutral” areas or “islands” intended to restrict the width of parkway exits so only one-way traffic could travel in specified lanes. These islands were shaped by bituminous plant mix material 9” wide and 2” to 3” high,

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Park (particularly near the Via Marisol intersection) required abrupt shifts from straight alignments to a curving arcs. See A. D. Griffin, “Arroyo Seco: Pasadena Freeway, First in West, Has 20<sup>th</sup> Birthday,” *California Highways and Public Works* 40, nos. 1, 2 (January-February 1961), 62. Longer merging zones providing an additional lane for entering or existing traffic eventually became a standard component of high-speed motorway design.

<sup>132</sup> The Fair Oaks and Orange Grove on-ramps were near the beginning of the parkway.

<sup>133</sup> It is unclear whether the road was completed and opened to traffic with “boulevard stop” signs at the ramp entrances. A 1940 letter by a Los Angeles traffic engineer noted that the parkway was being planned without them, and he suspected that “the entrance of vehicles from ramps at relatively high speeds will develop confusion and interfering influences with the primary lanes of traffic.” R. T. Dorsey to the Honorable Board of Police Commissioners of the City of Los Angeles, 12 June 1940, Ernest E. East Collection, Automobile of Southern California Archives, Los Angeles.

<sup>134</sup> For a discussion of the difficult right-of-way way conditions that faced highway engineers, see Reese, “One-in-a-Million,” 7. For references to the “compressed cloverleafs,” see “The Arroyo Seco Parkway” March, 1941, Ernest E. East collection, Automobile Club of Southern California Archives, Los Angeles. References to a “modified” cloverleaf appears in S. V. Courtelyou, “Arroyo Seco 6-Lane Freeway,” *California Highways and Public Works* 17, no. 6 (June 1939): 10, and *Los Angeles Times*, “Arroyo Parkway Dedication Set,” 3 November 1940. For a reference to “compressed ramp types,” see *California Highways and Public Works* 24, nos. 1, 2 (January-February 1946): 33-34.

and the outer strips were alternately painted black and white for easy visibility.<sup>135</sup> In at least one instance, however, engineers incorporated neither an on-ramp nor a compressed cloverleaf, requiring drivers to make 90-degree turns in order to enter the roadway. To prevent accidents, a one-way sign was installed in the median.<sup>136</sup>

Directional and warning signs, installed by the Automobile Club of Southern California, were an important part of the overall safety project. In addition to one-way signs, there were a number of safety warnings, including posted "No Left Turn" signs near the tops of on-ramps and "Do Not Enter" notices near the entrances to off-ramps. Often, more than one of these signs were posted within close proximity. It is probable that the additional signs were added to reinforce the directionality of the lanes following early accidents. The lettering on some of the signs was traced by small glass beads intended to reflect headlight glare and increase nighttime visibility.

Other safety features for parkway night driving included lighting units on arms projecting from standards along the outside curbs, light standards along the bridges, sodium vapor lights at all entrances and exits, and red reflectors and amber-colored flashers installed in curbs near intersections. These flashers, which resembled car headlights, may have functioned to direct automobiles to the entrances or exits, or to instruct motorists to slow down or speed up.<sup>137</sup> Along certain sections of the parkway, particularly in Pasadena and South Pasadena, the median curb included repetitive patterns of recessed square panels designed to reflect headlight glare and mark the median's edges. Even some of the landscaping was intended to provide a nighttime safety function: the shrubbery in the center divider was intended to grow tall enough to help shield drivers from the headlight glare of oncoming traffic.

The number of safety features and the attention given to them in trade journals and the popular press suggests the novelty of such a road to highway engineers and the traveling public. The Division of Highways was proud to announce that engineers attempted to incorporate "every known safety feature" into the design of the Arroyo Seco Parkway. The agency pointed to those features in noting the remarkably low ratio of accidents on the roadway in its first few years relative to other major state highways carrying a similar volume of traffic. Most accounts cited the parkway's divided lanes and its lack of at-grade crossings as the key features for minimizing accidents.<sup>138</sup>

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<sup>135</sup> Reese, "New Barriers," 22.

<sup>136</sup> Most drivers were not accustomed to high-speed roads with traffic lanes dedicated to one-way use, and it is perfectly reasonable to imagine motorists turning left onto the parkway from an at-grade intersection. It is unclear whether the compressed cloverleafs were installed in an effort to eliminate these turns. One of the photographs in the Auto Club collections shows a group of engineers inspecting one of the ninety degree turns with traffic moving on the parkway in the background. It is possible that these intersections existed along the road as sections of it opened to traffic prior to the opening ceremony on December 30, 1940, but were replaced shortly thereafter. For the existence of this at-grade intersection requiring a ninety-degree turn, see 1940 photographs of the parkway at the Automobile of Southern California Archives, Los Angeles.

<sup>137</sup> At least two of these amber flashers still exist along the roadway, both on the west sides of the roadway at Avenue 43 and 64. Other intersections today reveal places where the flashers were once installed.

<sup>138</sup> For the low accident ratio on the Arroyo Seco Parkway, see R. E. Pierce, "Study Shows Accidents on Arroyo are Less than on Some Los Angeles City Streets," *California Highways and Public Works* 23, nos. 7, 8 (July-August,

### VIII. Roadway Design: Parkway as Parkway

These concerns with safety and efficiency were combined with ideas common to the older, recreational parkway tradition developed on the East Coast. Although specifics from the earlier Los Angeles Park Commission plans seemed to have little affect on the final alignment and overall design of the Arroyo Seco Parkway, the legacy of the earlier park movement nonetheless remained. There was never any question that the road would run through the Arroyo for at least part of the way. Even Courtelyou repeatedly stressed the need to build a “beautiful” and “picturesque” road in articles published in *California Highways and Public Works* and *Southwest Builder and Contractor* in the late 1930s.<sup>139</sup>

Engineers involved in the design of the Arroyo Seco Parkway invoked East Coast parkway precedents not just for their traffic safety innovations but in regard to aesthetic issues and broader planning goals as well. The Bronx River Parkway, for example, was cited as an inspiration in part because it was an environmental reclamation project that transformed the landscape through which it ran, providing scenic views and recreational opportunities while increasing property values in adjacent lands.<sup>140</sup> Although some parkway dissenters argued that its construction would destroy the valuable parkland that had been painstakingly obtained by the municipalities along the Arroyo, promoters argued that more people would have access to the narrow strip of parkland than would have been able to enjoy it without easy automobile access.<sup>141</sup>

The inclusion of a comprehensive landscaping program as part of the construction of the Arroyo Seco Parkway was in keeping with a nationwide practice of “roadside beautification,” which encouraged the removal of what many highway engineers and planners considered the visual obstructions of commercial roadside blight. The prohibition of advertisements along early East Coast parkways was part of what engineers argued made driving that road enjoyable. More importantly, local engineers also asserted that a new parkway road in the Arroyo Seco would mirror its East Coast precedents by increase land values and subsequent tax revenues.<sup>142</sup>

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1945): 1-3, 30; and *California Highways and Public Works*, “Traffic Safeguards: Improvements on the Arroyo Seco Parkway are Recommended,” 27, nos. 5, 6 (May-June 1948): 8. The reference to “every known safety feature” taken here from N. W. Reese, “New Barriers on Freeway for Protection of One Driver in Million who Takes Wrong Way,” *Southwest Builder and Contractor* (August 7, 1942): 22-23. Between 1941 and 1945, however, fewer accidents occurred on Los Angeles’s high-speed Riverside Drive than on the Arroyo Seco Parkway, in part because of that road’s inclusion of shoulder lanes.

<sup>139</sup> See, for example, Courtelyou, “Streets Cross Over,” 49; or S.V. Courtelyou, “Arroyo Seco Parkway Unit Open,” *California Highways and Public Works* 18, no. 8 (August 1940): 17. Even before the Division of Highways became involved with the construction, the parkway was supposed to be one of the most “picturesque” roads in California and a rival of the “famous highways” along New York’s Hudson River. See Cohan, *Los Angeles Times*, 3 May 1936.

<sup>140</sup> See, for example, *Pasadena Star-News*, “Data on Arroyo Traffic Artery Aids Trade Hope,” 12 August 1935; or *Pasadena Star-News*, “Route is Set for Arroyo Parkway,” 26 April 1936.

<sup>141</sup> S. V. Courtelyou, “Six Mile Double Lane Depressed Arterial,” 25.

<sup>142</sup> Ernest E. East to Mr. S. L. Mitchell, 4 June 1936, Ernest E. East collection, Automobile Club of Southern California Archives, Los Angeles. There was, of course, a potential predicament: any new highway created an increase in the volume of traffic which, in turn, might encourage more roadside business that would counteract the

The California Division of Highways had adopted roadside beautification policies by the late 1930s. In designing state roads, the Division of Highways suggested the elimination of anything that was “unpleasing and inharmonious” and detracted from the overall appearance of the landscape. Roadside beautification included planting state roads with vegetation, the adjustment of the road’s contours to fit the landscape (such as the flattening and rounding of slopes), a general clean-up of the entire right-of-way, the daylighting of desirable viewpoints, removing or covering visible portions of old pavement, and the installation of “rustic” rails or rubble parapet walls.<sup>143</sup> Initially, the process of beautification along state highways was accomplished by planting trees and shrubs to remove construction scars and improve appearances in general.

Division of Highways Landscape Engineer H. Dana Bowers acknowledged that landscaping could enhance property values, but warned that it was expensive and difficult to maintain roadside beautification projects. In an address to the Roadside Development Committee of the American Association of State Highway Officials in November of 1944, Bowers justified the expenses of landscaping and maintaining a plant palette on a high-speed road on two primary grounds: soil stabilization and aesthetics. He contended that soil stabilization could easily be justified in pragmatic terms, but admitted that the case for aesthetics could only be made on broad economic grounds. Bowers contended that when these high-speed roads bisected a community or a “high type” of business district, they could have a significant effect on property values. Bowers believed that the future value of property along a parkway would be dramatically improved by its attractive appearance.

The problem of stabilizing and enhancing cut slopes was particularly acute on the Arroyo Seco Parkway in the section going through South Pasadena. At this location engineers no longer had the advantage of building in the natural depression of the Arroyo, so they had to design the road 20’-0” below grade to allow for bridges to cross above the parkway. In doing so, they created a steep 1:1 slope, which created problems with erosion and the establishment of viable plantings. To diminish the effect of the slope, workers first filled wooden frames divided into compartments with fertilizer and soil, then placed a 6” straw cover over them, held down by wire mesh. Vines were then planted through the mesh. Other planting techniques along the parkway involved planting trees and shrubs to screen views of the flood control channel.<sup>144</sup>

Approximately ten thousand young plants of different varieties were propagated for planting on the Arroyo Seco Parkway. Out of forty-seven types of plants used for the right-of-way, forty-two were native species. The plant palette contained fremontia and eleven varieties of ceanothus to provide colorful blooms. Catalina and holly-leaved cherry were chosen for their heavy green foliage. Poppies were set out to bloom in early spring, while the toyon shrub provided a show of red berries in the fall and winter.

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landscaping efforts. While businesses were not allowed along the right-of-way, most of the original landscaping eventually succumbed to pollutants associated with the road’s heavy traffic.

<sup>143</sup> Division of Highways, *Eleventh Biennial Report*, roadside development section.

<sup>144</sup> Division of Highways, *Twelfth Biennial Report*, 39.

In their attempt to use as many native plants as possible, the landscape designers planted sycamore varieties native to the Arroyo, as well as shrubs familiar to many southern California gardeners: barberry, wild roses, sage, manzanita, sumac, and fuchsia. Non-native or “exotic” plants like morning glory vines were used in difficult places on steep banks.<sup>145</sup>

The highway engineers employed other means of roadside beautification. These included white wooden railings flanking the on- and off-ramps, and composite “rubble masonry” walls made of recycled concrete curbs, gutters, and sidewalks in decorative patterns. These walls appeared intermittently at various sections of the road, including the center divider, the outer lanes, the sides of the off-ramp at the western edge of Avenue 43, and around the planter boxes just south of the York Street Bridge holding what originally were native sycamore trees.<sup>146</sup> Although not technically a part of the roadway design, South Pasadena residents used stones from the bed of the Arroyo to create the highly-visible “City of South Pasadena” sign embedded into a hillside on the south side of the Arroyo Drive Bridge. Many different combinations of rock and stone patterns can also be found along the Arroyo Seco Flood Control Channel. All these features together helped engineers create an attractive environment for Arroyo Seco Parkway motorists.

## IX. Bridges

Despite the oft-stated desire to create a pleasure drive, one of the primary aims of the parkway undertaking in 1938 had always been to facilitate the rapid movement of commuter traffic. Accomplishing this goal required the elimination of all at-grade highway, pedestrian, and railroad crossings, and the prohibition of stop signs and traffic signals. This was accomplished by the construction of a number of bridges or “grade separations” along the parkway.

Beginning at the Figueroa Street Viaduct, parkway builders constructed the road with frequent grade separations to minimize the problems that had created contention during the route selection process. These bridges were needed for safe and easy crossings, and were deemed necessary to maintain established community links in areas separated by the newly constructed parkway. Pedestrian bridges and equestrian tunnels were similarly intended to unify park facilities situated on either side of the roadway. By the time the Southerly Extension was completed, twenty-six new bridges had been built along the parkway. Responsibility for the design of the parkway’s bridges was shared by the City of Los Angeles Engineering Department and the State Division of Highways. The Bridge Department of the Division of Highways supervised the construction.<sup>147</sup> Bridges accounted for nearly \$1,600,000 of the total Arroyo Seco Parkway project expenditure of \$12 million, and were financed by a consortium of state and federal agencies together with the cities of Los Angeles and South Pasadena.<sup>148</sup>

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<sup>145</sup> “Landscaping Arroyo Freeway,” *California Highways and Public Works* 18, no. 12 (December 1940), 14.

<sup>146</sup> Today, palm trees are in these planter boxes.

<sup>147</sup> Jones, C.W., “Eighteen Bridge Structures Will Span Arroyo Seco Parkway,” *California Highways and Public Works* 15, no. 12 (December 1937) 10-11, 27.

<sup>148</sup> *California Highways and Public Works*, “Project Required 26 Structures,” 15, 19.

Bridges in place prior to construction of the parkway exhibited significant ornamentation with decorative details characteristic of older spans over the Los Angeles River. These included the Beaux Arts-styled North Broadway Bridge (1911) and the Art Deco inspired Washington Street Bridge (1931). New bridges constructed for the parkway, however, were less elaborately ornamented, reflecting both the rise of modernist aesthetics and the economic constraints involved in the construction of so many new structures.

Utility and economy were vital when budgets were considered. Works Progress Administration labor was used wherever possible to alleviate the unemployment problem and ease the financial burden on municipalities. While it is possible to fit the new bridge aesthetic into an emerging design sensibility that favored minimalistic functional lines over decorative ornamentation, the engineers appear to have been more concerned with practical requirements than with aesthetic issues. C.W. Jones, senior bridge engineer of District VII of the Division of Highways, emphasized the pragmatic economic appeal of simple concrete girder and rigid frame bridges with shallow, minimally ornamented deck structures<sup>149</sup>

The earliest bridges over the Arroyo operated as important communication links between sparsely settled communities, but these were often impermanent wooden trestle bridges. With the arrival of the transcontinental railroad in the Los Angeles area in 1895, the first substantial and structurally sound bridge -- the Santa Fe Arroyo Seco Railroad Bridge -- was built over the Arroyo.<sup>150</sup> Located near Avenue 61 in Arroyo Park on the west side of the roadway, the railroad spans the Arroyo Seco Parkway and crosses the Arroyo Seco Flood Control Channel near Monterey Road. The highest (and quite possibly the oldest) railway bridge surviving in Los Angeles County, it replaced a wooden trestle that stood near the present-day location of the Marmion Way Bridge. The single-track structure, which remained virtually unaltered for a century, has steel supports anchored in concrete bases designed to resist the floodwaters of the Arroyo Seco. When the Arroyo Seco Parkway was built in 1940, the roadway was designed to run between the existing piers of this bridge.

With the rise of vehicular traffic, however, area residents grew increasingly wary of the structural capabilities of the existing wood trestles. To alleviate the perils involved in crossing them, residents petitioned for the safety and permanence of reinforced concrete bridges. The first important concrete span across the Arroyo Seco, connecting Highland Park on the west with South Pasadena at Pasadena Avenue on the east, was the Pasadena Avenue Arroyo Seco Bridge, financed by South Pasadena's first municipal bond election.

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<sup>149</sup> Jones, "Eighteen Bridge Structures.," 27.

<sup>150</sup> For a summary of the story surrounding the construction of this bridge, see "Wheel Clicks," (May 1981) on file in the Cultural Heritage Commission, City of Los Angeles, attached to file "HCM #339, Santa Fe Arroyo Seco Bridge." In 1993, the Los Angeles County Transportation Commission purchased a segment of the Atchison, Topeka & Santa Fe Railroad line and right-of-way, including the Santa Fe Arroyo Seco Bridge for the Metropolitan Transportation Authority's Blue Line Light Rail Project. In January of 1994, the last Santa Fe train passed over the bridge, ending ninety-eight years of continual daily train use. To accommodate the new transit line, the bridge was disassembled, converted from single to double tracks, seismically strengthened, treated for lead abatement, and reassembled in place. The new, two-track roadbed was designed to keep the same shadow lines, maintaining the integrity of the bridge's original design.

A local civic reform association, the Lincoln Park League, whose members lived along the Arroyo, campaigned for this bridge. On May 15, 1910, the *Los Angeles Times* announced the results of the association's efforts: "Over the Tree Tops; Scenic Bridge to Span Arroyo Seco; Funds for Splendid Structure Raised and New and Beautiful Highway From Los Angeles to Pasadena Assured - Miles of Asphalt." An illustration of the proposed multiple-arched concrete structure along the line of Pasadena Avenue appeared above a photo of the existing wooden bridge, which did not completely span the Arroyo. The new bridge would not only change the appearance of that portion of the Arroyo, but alter the Garvanza and South Pasadena street system. Pasadena Avenue was widened through the Garvanza community for a mile and a half.

With the support of former mayor of South Pasadena, R.W. Pridham, who had been elected to the Los Angeles County Board of Supervisors, the cities of South Pasadena and Los Angeles, the County of Los Angeles, and the Salt Lake Railroad (whose line would run across the structure), agreed to construct the bridge and share the cost estimated at \$128,000.<sup>151</sup> The original bridge plan called for dirt fill at either end of the structure. Los Angeles County Supervisors wanted a more decorative bridge and a compromise was reached calling for a six-span concrete structure. On June 7, 1910, South Pasadena voters endorsed the plan 587 to 33.<sup>152</sup> The bridge opened a year later. Massive water flows down the Arroyo Seco in the record rainfall year of 1914 washed away thirty feet from its southerly approach. Los Angeles City engineers saved the structure by cutting and anchoring sections of large pepper trees along with sacks of dirt and sand to stem the tide. This span, today known as the York Street Bridge, has since maintained its structural integrity.<sup>153</sup>

The Avenue 60 Bridge was completed in February 1926. It connected Hermon Avenue (Via Marisol) with Pasadena Avenue (Figueroa Street) on Avenue 60. Oiled and graveled approaches above dirt fills at each end of the structure had a six percent incline. The side panels included rails of concrete, surmounted by eight ornamental light posts with lantern tops. The Avenue 60 Bridge provided a crossing through Arroyo Seco Park near the Los Angeles-South Pasadena boundary. Upon its completion, the *Highland Park News Herald* observed that the structure resolved the "long-standing problem of a connecting link over the Arroyo" and noted that the new bridge was "an example of fine construction, being built with local materials and workmanship."<sup>154</sup>

The Figueroa Street Viaduct, begun in 1937, gave motorists traveling northward out of the city an alternate to the route on North Broadway and relief from the heavy traffic over the North Broadway Bridge. Figueroa Street, one of the city's most important north-south arteries, had

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<sup>151</sup> The Pasadena Arroyo Seco Bridge required the cooperation of the Salt Lake Railroad, citizens of five jurisdictions, and the election of two favorable county supervisors. See John T. Pope, "Proposed Arroyo Seco Bridge," *Arroyoside Forum*, collection of Virginia Neeley, Highland Park, Los Angeles.

<sup>152</sup> Apostol, *South Pasadena*, 63.

<sup>153</sup> *Los Angeles Times*, "Storm-Swept Countryside Faces a New Menace in Lashing Winds," 21 February 1914.

<sup>154</sup> *Highland Park News-Herald*, "New Avenue 60 Bridge Nears Completion," 29 January 1926; *Highland Park News-Herald*, "Avenue 60 Bridge Opened to Traffic," 29 December 1925.

been stopped by the Elysian Hills and the Los Angeles River. After the completion of the fourth Figueroa Street tunnel through Elysian Park, the viaduct extended the road on a direct northerly line, crossing the tracks of the Southern Pacific Railroad, the San Fernando Road, the Los Angeles Railway Company streetcar tracks, and the Los Angeles River. Although the viaduct was envisioned to link Figueroa Street with a high-speed road, upon its completion it carried motorists to a junction with Figueroa Street on the north.<sup>155</sup>

The *Pasadena Star-News*, announcing the start of the work, asserted that many locals considered the Figueroa Street Viaduct one of the "most important public improvements of permanent nature of the decade."<sup>156</sup> The \$578,420 contract was given to the Clinton Construction Company, and the Division of Highways prepared the plans in conjunction with Los Angeles city bridge engineers. The Southern Pacific Railroad costs were estimated at \$99,580.<sup>157</sup> The 1000'-0" viaduct was built with a main span of 200'-0" over the river at an elevation of 70'-0" above the streambed. Pedestrian walks, 44'-0" wide, were provided on either side of the roadway. Both silicon and carbon steel were used in the construction of the three silicon plate steel girder spans, 127'-0", 200'-0", and 103'-0" respectively. Silicon steel was chosen by bridge designers for its strength and ability to reduce the weight of the large structure with its 15,400 cubic yards of concrete.<sup>158</sup> Soil cored from the Figueroa Street tunnels provided some of the 45,000 cubic yards of earth required for fill on the project.<sup>159</sup>

Before the construction of the Arroyo Seco Parkway, it was possible to cross the Arroyo at nine street locations: the Figueroa Street Viaduct, Avenue 26, Avenue 43, Avenue 52, Hermon Avenue, Avenue 60, Marmion Way, Pasadena Avenue (York Boulevard), and Arroyo Boulevard. The first three segments of the parkway, however, required the construction of eighteen new traffic separation structures. C.W. Jones noted that grade-separation structures would both allow for an uninterrupted traffic flow on the main parkway drive and improve access for motorists traveling to the New Year's Day festivities in Pasadena.<sup>160</sup>

Existing bridges at Avenue 26, Pasadena Avenue, and Avenue 60, originally built by the Los Angeles City Bureau of Engineering under the aegis of Bridge Design Engineer Merrill Butler, were reconstructed by that same agency in keeping with their original decorative appearance. Their spans needed to be increased in order to cross the new divided highway with two sections of roadway on either side of a central raised curb. The Avenue 43 bridge had to be rebuilt because of extensive damage suffered during the March flood of 1938. Extensions to these bridges provided service roads over the Arroyo Seco Flood Control Channel.

New bridges, as well as extensions and additions, were done with similar construction methods to maintain a unified appearance. The Division of Highways designed all the other bridges.

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<sup>155</sup> Paul R. Watson, "Figueroa Street Viaduct, Los Angeles," *Architect & Engineer* (May 1937): 49-51.

<sup>156</sup> *Pasadena Star-News*, "Work Starts on Freeway Section," 28 February 1936.

<sup>157</sup> *Pasadena Star-News*, "Work Starts on Freeway Section."

<sup>158</sup> *Pasadena Star-News*, "Work Starts on Freeway Section."

<sup>159</sup> *Pasadena Star News*, "Arroyo Road Link Span Awarded," 15 January 1936.

<sup>160</sup> Jones, "Eighteen Bridge Structures," 10-11, 27.

Most were two-span concrete girder or rigid-frame structures, with the center pier located in the highway median. The 80'-0" rigid frame, single-span concrete bridge at Arroyo Drive was intended by highway engineers as a "gateway" to South Pasadena.<sup>161</sup> At Avenue 52 and Hermon Avenue, new bridges were also constructed across the parkway and the channel at Cypress Avenue. Abutments and a foundation were put into place for a future bridge of two 35'0" lanes.

The parkway bridge-building effort also accommodated park visitors and rerouted street railway lines and railroad tracks. Pacific Electric tracks were laid on the Fair Oaks Avenue Bridge, and the existing Union Pacific and Santa Fe railroad bridges were modified. Both of these railroads cooperated to combine their operations onto one crossing at Avenue 35, consisting of a double-track railroad bridge with a continuous steel girder superstructure 260'-0" in length, with a 113'-0" channel span and roadway spans of 75'-0" and 68'-0". A new pedestrian bridge was built across the Arroyo for Sycamore Grove Park. In conjunction with the new bridge over the parkway at Grand Avenue, an equestrian and pedestrian tunnel was built. It featured automatic lighting facilities within the 16'-0"-wide, 10'-7"-high interior.<sup>162</sup>

At Fremont Avenue, two underpasses were built. One -- a joint crossing under the tracks of the Santa Fe and Union Pacific Railroad -- had two 68'-0" continuous plate girder spans. The superstructure girders, 140'-0" long, 10'-0" wide, and weighing 67 tons each, were brought to the parkway for assembly. The other, a pedestrian crossing under Fremont Avenue, consisted of two 43'-0" reinforced concrete slab spans, providing a 36'-0" roadway and two 5'-0" sidewalks on Fremont Avenue. The undercrossing allowed for two 35'0" roadway widths with a 6'0" dividing strip along the centerline of the parkway.<sup>163</sup>

## X. Road Work

Like the bridges, construction of the road itself also recalled earlier plans, involved route compromises, and required the cooperation of community interests. While it could be argued that construction of the Arroyo Seco Parkway began with the 1931 boring through of Elysian Park for the Figueroa Street Tunnels, or with the State Emergency Relief Aid-assisted funding of road surveys of the early- to mid-1930s, or even with the construction of the Figueroa Street Viaduct in 1937, the first spade of earth for the road was officially turned on March 22, 1938 when Tournament of Roses Queen Cheryl Walker pulled a lever on a huge tractor at South Arroyo Boulevard and Sterling Place in South Pasadena.<sup>164</sup> That event initiated the first of several contracts for the parkway: a \$109,837.40, .2-mile stretch of road that included the

<sup>161</sup> *Engineering News Record*, "First Parkway for Los Angeles," 80.

<sup>162</sup> *California Highways and Public Works*, "Arroyo Seco Project Required 26 Structures," 18, no. 11 (November 1940): 19.

<sup>163</sup> State of California, Department of Public Works, "Final Construction Report of the Fremont Avenue Bridge," Arroyo Seco Parkway files, Library, California Department of Transportation, Sacramento.

<sup>164</sup> *California Highways and Public Works*, "Ceremonies Launch Work on Arroyo Seco Highway," 16, no. 4 (April 1938): 21. Regarding surveying for road, see *Pasadena Star-News*, "Freeway Act Victory," 15 July 1935, or *Pasadena Star-News*, "Road Survey Leader is Assigned," n.d., Pasadena City Archives, Pasadena, California. In fact, grading for the roadway was four-fifths complete by November 14, 1934.

construction of an equestrian and pedestrian subway and two bridges between the Arroyo Seco Flood Control Channel and Grand Avenue in South Pasadena.<sup>165</sup>

Construction proceeded from Pasadena in the northeast to the Los Angeles River in the southwest, with many of the contracts overlapping and portions of the newly completed sections of road opened to traffic along the way. J. E. Haddock Ltd. of Pasadena was awarded most of the contracts completed by private contracting companies, including the first one, but ten other private contractors also contributed to the roadway's construction, including Claude Fisher Co., Ltd., The Contracting Engineering Co., Oscar Oberg Co., V.C.K Construction Co., Columbia Steel Co., J.S. Metzger and Son, Carlo Bongivanni, U.S. Engineer Dept., Radich and Brown, and Nick Perscallo. The rest of the work was overseen by Division of Highways forces and completed by day labor hired locally by the state. To expedite the process of construction along the parkway, many of the workers performed double shifts.

In addition to the grading and paving of the roadbed, the contracts often required other tasks in varying combinations, including the installation of curbs, gutters, walls, storm drains, service roads, and the removal of trees and other obstructions. The contracts frequently required the erection of bridges and underpasses – the most costly and time-consuming part of the process. The federally financed flood control channel project contributed excavated channel material to provide much of the rough grading for the parkway. Material from the adjoining Los Angeles River Flood Control Project, being carried out by the United States Engineering Department, was used to complete some of the parkway's embankments.<sup>166</sup> A variety of machines were put into service to build the roadway. Tractors, bulldozers, and carryalls were used for roadway excavation and grading, and sheepsfoot rollers were employed for compacting fills. Trench machines and cranes aided the excavation and construction of the storm drains.

Work was barely underway on the first contract when the Los Angeles region was hit with the "Flood of 1938." While this flood most significantly affected roads adjacent to other Los Angeles waterways, it also washed away a pre-existing bridge at Avenue 43 and disrupted Haddock's work on the first contract.

Haddock's company also offered a \$107,378.00 low bid on the second contract for a .8-mile stretch of road between Broadway and Glenarm Streets in Pasadena and Fair Oaks Avenue in South Pasadena, which included the major curve around Raymond Hill. This work necessitated the excavation of 20,000 cubic yards of earth through an old tin can dump along with the relocation of the Southern Pacific main line, a Pacific Electric section worker's camp, and a Shell Oil Company plant. This construction also required the relocation of portions of Grevelia Street, State Street, and Garfield Avenue in South Pasadena, which were altered in order to route the parkway through to Broadway in Pasadena.<sup>167</sup> The new Grevelia Street was converted into a

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<sup>165</sup> The reference to a "super-boulevard" in *Los Angeles Times*, "Bids Opened on First Work in Arroyo Seco Parkway," 4 March 1938.

<sup>166</sup> Courtelyou, "Arroyo Seco 6-Lane Freeway," 11-12.

<sup>167</sup> *Southwest Builder and Contractor*, "First Section of the Arroyo Seco Parkway Now Under Construction," (19 August 1938): 12-13.

service road for the parkway. The completion of this contract was followed by a ribbon-cutting opening ceremony on December 10, 1938, featuring a brass band from the local Pasadena Junior College and mayors from both Los Angeles and South Pasadena.<sup>168</sup> It was not even one-mile long, but by mid-1938, drivers could leave Broadway in Pasadena and experience the first completed section of the Arroyo Seco Parkway.

Most of the early contracts were completed along the Los Angeles portion of the roadway, stretching from the Arroyo Drive Bridge to Avenue 22. While Haddock's company did work along this stretch, a .8-mile section between Meridian Avenue in South Pasadena and Hough Street in the Los Angeles community of Highland Park was completed by Claude Fisher Co., Ltd. In an effort to reduce traffic buildup on surface streets, the partially completed, approximately 4.5-mile long parkway was opened to traffic when a number of different contractors and state day laborers completed much of a 3.7-mile stretch between Orange Grove Avenue in South Pasadena and Avenue 40 in Los Angeles on July 20, 1940.<sup>169</sup> Because there were no signs indicating speed limits, patrol officers were on hand to issue tickets for "reckless driving," which included drivers hurtling along at "unnecessary speeds" and those straddling the marked lanes of the roadway.<sup>170</sup>

A one-mile stretch between Avenue 40 and Avenue 22 still had to be completed before officials felt comfortable opening the entire parkway to traffic. This section, built by state day labor and various private contracting companies, took longer than expected because workers had to await the completion of the adjacent stretch of the Arroyo Seco Flood Control Project.<sup>171</sup> Contractor Nick Perscallo completed the grading and paving of this stretch of roadway between Avenue 35 and Avenue 26 on December 23, 1940, just one week before the official Arroyo Seco Parkway opening ceremonies.<sup>172</sup>

In order to accommodate the anticipated traffic heading to Pasadena for the New Year's Day Tournament of Roses Parade and Rose Bowl game between the University of Nebraska and Stanford University, the approximately six miles of the Arroyo Seco Parkway were opened on December 30, 1940, even though not all contracts had been entirely completed. Remaining work included the construction of a grade separation bridge for the Pacific Electric Railway in the vicinity of Fair Oaks Avenue (completed January 2, 1941), a .69-mile stretch of road between Grand Avenue and Fair Oaks Avenue (completed January 30, 1941), and a number of contracts for landscaping -- including the installation of an irrigation system and reinforced concrete and

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<sup>168</sup> *Pasadena Star-News*, "Three Cities, Bulldog Band Will Join Tomorrow in Colorful Ceremony Opening First Parkway Link," 9 December 1938.

<sup>169</sup> Courtelyou, "Parkway Unit Open," 14.

<sup>170</sup> *Los Angeles Times*, "First Arroyo Seco Parkway Section Opened to Traffic," 21 July 1940.

<sup>171</sup> Courtelyou noted that the stretch of road between Avenue 36 and Avenue 22 could not be let to contract until the lining of the Arroyo Seco Flood Control Channel was completed alongside it. Courtelyou, "Arroyo Seco 6-Lane Freeway," 13.

<sup>172</sup> *Final Report: Day Labor Work Order No. 27X35, P.W.A. Project No. 1644-F, Unit 30, Contract 5, VII-LA-205-LA* (23 December 1940), Arroyo Seco Parkway files, Library, California Department of Transportation, Sacramento.

rubble masonry walls – which were not begun until June 3, 1940 and not completed until September 1941.<sup>173</sup>

When the original stretch of parkway was completed, it ran from Glenarm Street in Pasadena in a southwesterly direction around Raymond Hill in South Pasadena. Between Fair Oaks Avenue and Arroyo Drive, it followed the line of Grevelia Street to the Arroyo Seco in an open cut, 20'-0" below ground level. After crossing the Arroyo, the road turned to follow the west bank of the Arroyo Seco Flood Control Channel in a southerly direction into Los Angeles. It eventually reached Avenue 22 just before the Los Angeles River and the new Figueroa Street Viaduct.

In a pre-parkway opening ceremony, five Native American leaders -- one from as far away as Oklahoma -- joined Chief Tahachwee of the Kawie, a tribe that had made their home in the Arroyo more than one hundred years earlier. The chiefs and the other Native Americans, numbering about 200, camped overnight in the Arroyo in preparation for the ceremony.<sup>174</sup> The *Los Angeles Times* pictured the Native Americans together with Frank W. Clark, State Director of Public Works, preparing to smoke a 150-year old "pipe of peace" signifying the transfer of Native American lands to "modern progress." Tahachwee shared some Indian lore with the audience, adding that the tribal designation "Kawie" meant "mountain of little rocks," in reference to rocks that the Native Americans tied to their feet as anchors while fishing in the streams.<sup>175</sup>

At 9:30 a.m. on December 30, a 474-automobile caravan of dignitaries and others involved with the project – accompanied by sixty pieces of armored military equipment — left the Los Angeles civic center for the south slope of Raymond Hill, where the opening ceremony was to take place beginning at 10:15 a.m. The event featured a series of speeches from individuals associated with a number of different agencies, reflecting the diverse interests involved in the parkway's construction. Among the speakers were Governor Culbert L. Olson, Pasadena Mayor Andrew O. Porter, Los Angeles Mayor Fletcher Bowron, State Highway Engineer C. H. Purcell, State Highway Commissioner Amerigo Bozzani, Director of Public Works Frank W. Clark, and representatives from the W.P.A., P.W.A., and the Public Roads Administration. The dedication program distributed at the opening ceremony included a number of articles by these speakers and others, detailing the parkway's construction and the future of high-speed roads in California. At

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<sup>173</sup> *Route 205, Los Angeles County, Contract 27X32, L.A.-205-LA, Pas, Spas, W.P.A. 1101-4706*, Highways file, District VII, California State Archives, Sacramento.

<sup>174</sup> *Los Angeles Times*, "Peace Reigns in Freeway," 29 December 1940.

<sup>175</sup> *Pasadena Post*, "Redskins Hold Their Own Parkway Dedication Rites," 30 December 1940; *Long Beach Press-Telegram*, "Indians to Relinquish Arroyo Seco Area," 29 December 1940; *Los Angeles Times*, "Indians to Aid in Dedication," 28 December 1940; "Indians to Give Up 'Title' to Arroyo Seco," *Los Angeles Times*, 24 December 1940. The Kawie, which Spaniards referred to as "Cahuilla," traditionally held lands to the southeast of the Gabrielino, and the two tribes were culturally and linguistically related. A relatively small number of the Gabrielino remained in the area following Spanish exploration, mission exploitation and secularization, epidemic diseases, and the political upheavals of the first half of the nineteenth century. Anthropologist John Foster has found that some Gabrielino went to the territory of the interior tribes to escape the Spaniards, and it may be the kinship between the tribes that made it seem suitable to the builders of the parkway to have the Kawie hand over their "title" to Gabrielino lands in and along the Arroyo Seco Parkway. Foster, personal communication, August 1999.

least 1,500 people attended the well-publicized event, which featured bands from Pasadena Junior College and the Third Coast Artillery. The opening ceremonies generated front-page coverage in the local newspapers, including the *Los Angeles Times* and the *Pasadena Star-News*, and was broadcast nationally on the radio.<sup>176</sup>

A wide-ranging speech was given by Governor Olson, who lauded the road's new safety features, praised the men and women involved in seeing the road through to completion, and dedicated it as the "first freeway in the West." Noting that construction had already begun on the Cahuenga (Hollywood) Freeway, Olson noted that the Arroyo Seco road was only the first freeway in a growing system. "And that is its great promise to the future," he said, "the promise of many more freeways to come."<sup>177</sup> At 11:35 a. m., following the speeches, new Rose Queen Sally Stanton and Governor Olson snipped a ribbon of two garlands of roses strung across the parkway and officially opened the \$5,750,000 parkway to traffic.<sup>178</sup>

## XI. The Southerly Extension

Olson was correct to anticipate a greatly enhanced freeway system, just as officials were correct to anticipate a larger volume of traffic using the parkway. Yet the vaunted "high speed" road immediately faced congestion challenges, despite early promises from transportation officials. Just two days after the ceremony, on New Year's Day, traffic was backed up all the way to the Figueroa Street Tunnels as motorists edged their way toward Pasadena for the Tournament of Roses Parade and the Rose Bowl game.<sup>179</sup>

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<sup>176</sup> *Pasadena Post*, "Carl Hinshaw Returns for Parkway Rites," 30 December 1940.

<sup>177</sup> Bozzani, "Governor Olson Dedicates," 7. In summarizing the days events, the *Los Angeles Daily News* had this to say: "High ranking officials of all branches of government today gathered in the Arroyo Seco to dance around the funeral pyre of demon traffic. With almost pagan glee they celebrated the latest body blow dealt to slow motion transportation by the science of highway engineering. Gov. Culbert Olson was on hand to help make official the dedication of the Arroyo Seco [P]arkway – that marvel of concrete that brings Pasadena and Los Angeles closer together by many minutes. This fast, safe, comfortable superhighway – the first freeway in the west – has removed forever the creeping, fuming parade of chokedup traffic between the two cities." See *Los Angeles Daily News*, "City Chiefs Dedicate High Speed Freeway Through Arroyo Seco," 30 December 1940.

<sup>178</sup> The cost of the original stretch of parkway, less than \$1 million per mile, was considered exceptionally low. This was due in part to the fact that most of the roadway was constructed in a natural depression, thereby precluding the high costs of excavation necessary for similar roads requiring numerous grade crossings. See *Southwest Builder and Contractor*, "Dedication of \$5,700,000 Arroyo Seco Parkway Big Event of the New Year," 3 January 1941, 20.

<sup>179</sup> At the 1941 parade, parkway motorists and others might have viewed the new float "Pasadena Salutes the New Parkway." The float was described in the *Pasadena Star-News* as a "floral highway" of dusty miller containing a floral automobile made of white pom-poms. At the rear of the float was a floral sun of marigolds, symbolizing the fact that commuters from Pasadena to Los Angeles would have the sun at their backs both morning and evening. *Pasadena Star-News*, "The Parkway Points to Pasadena," 1 January 1941.

Because of anticipated traffic, at some point during the first year of construction (between August 1938 and June 1939), it was deemed necessary to convert the 10'-0" planned shoulders on either side of the median into travel lanes. This necessitated the reconfiguration of the road's width and the installation of an eight-inch barrier-type curb lining the right side of the roadway for much of its length.<sup>180</sup> The reconfigured 35'-0"-wide roadway included 12'-0"-wide center lanes, with flanking lanes of 11'-0". Approximately 1'-0" in width was taken up by the space before the curbs on either side. While the majority of the road featured inner lanes of bituminous concrete and the outer two lanes of Portland cement concrete in a section of the road through the cut alongside Grevelia Street in South Pasadena, the outermost lanes on each side of the roadway switched to bituminous.

Engineers and planners knew, however, that even the conversion of the outer shoulder lanes into additional travel ways, would not be enough to solve the anticipated traffic problems. In October 1940, still three months before the official opening ceremonies, workers began preparation for what the Division of Highways was calling the "Southerly Extension" -- a 2.2-mile, four-lane stretch of road through Elysian Park.<sup>181</sup>

The extension was built in part to alleviate what engineers predicted would become a bottleneck just east of the Figueroa Street Viaduct, where the three-lane southbound parkway traffic met two-lane Figueroa Street. It was also intended to reduce the congestion west of the viaduct, where two-lane northbound Figueroa Street traffic was slowed by a left turn, across southbound traffic, onto Riverside Drive, and by at-grade intersections at Solano Street, Bishops Road, Cottage Home, Castelar Street, and Bernard Street. The northbound Figueroa Street intersection with Riverside Drive, in fact, was already congested *before* the parkway was completed, and the extension was intended to relieve motorists from this "frequent traffic agony."<sup>182</sup> The extension was built to carry southbound parkway traffic closer to downtown Los Angeles by means of a new viaduct and four additional lanes built through Elysian Park. The construction of the extension allowed the highway officials to transform the four two-way lanes of Figueroa Street, with its existing tunnels and viaduct, into a four-lane route dedicated exclusively to northbound travel. In keeping with the desire to build the road as a high-speed freeway with no interruptions, all grade crossings and stop signs were eliminated.

The construction of the approximately \$4 million Southerly Extension, forming a part of U.S. Highway 66, officially known as State Route 165, and jointly funded by state gasoline taxes, the Works Progress Administration, and the City of Los Angeles, marked an important step in an ultimate plan to link the business districts of Pasadena and Los Angeles with a high-speed road. The urgency of the extension's construction and the dearth of "beautification" associated with it relative to the initial development -- resulting in part from its incorporation into the National Strategic System of Roads in 1941 -- helped transform this part of the Arroyo Seco "Parkway" into something that would later more closely resemble the freeways of the Los Angeles

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<sup>180</sup> Sam Helwer, "Traffic Interchange Design," *California Highways and Public Works*, 30, nos. 3, 4 (Mar.-Apr. 1951): 53.

<sup>181</sup> Many of the original sources indicate that this was a 1.8-mile extension.

<sup>182</sup> *Los Angeles Times*, "Figueroa Road Project Moves Toward Finish," (6 December 1942).

metropolitan freeway system.<sup>183</sup> In June 1940, the Division of Highways biennial report noted that construction was only partially complete on the Arroyo Seco Parkway, and that the road would be “further extended as a freeway into the heart of Los Angeles.”<sup>184</sup>

But the extension did not suddenly materialize in 1940 as the original stretch neared completion. Even before beginning construction in 1938, Courtelyou wrote a letter to Aldrich predicting increased congestion at the Riverside Drive turnoff from the Figueroa Street Viaduct following the completion of the Arroyo Seco Parkway. Other letters between Courtelyou, Aldrich, and East noted the growing congestion in the vicinity of Avenue 26, San Fernando Road, Riverside Drive, and Figueroa Street, and suggested ways in which it could be alleviated.<sup>185</sup> By 1940, the Division of Highways was fully aware of the impending congestion problems once the Arroyo Seco Parkway opened to traffic. In October 1940, District VII Engineer A. D. Griffin warned, “it is not difficult to imagine what will happen when the Arroyo Seco Parkway is opened to traffic before the proposed increased facilities to the south have been completed.”<sup>186</sup>

These “increased facilities” for the Southerly Extension included the transformation of the tunnels for northbound traffic; the construction of a second bridge over the Los Angeles River; a grade separation with Riverside Drive, allowing northbound drivers to turn left onto that road under the new bridge; the construction of a new four-lane, 46’-0” southbound roadway; the erection of four additional bridges, the installation of a lighting system, and the completion of a mile and a half of storm drains.<sup>187</sup> While there was little debate about the need for the extension, there was some question about whether the four-lane roadway to Adobe Street in Los Angeles should be made in an open cut or by a series of parallel tunnels.

Because of safer construction conditions and the possibilities of “beautification and landscaping,” the Division of Highways initially recommended the road be built via the open-cut method. But planners had some doubt as to the stability of the cut slopes, their potential for landslides, and their effect on the existing Figueroa Street Tunnels. The Division of Highways hired geologist John P. Buwalda from the California Institute of Technology to report the advantages and disadvantages of open cuts in and around the tunnel area of Elysian Park. In his geological report, issued on August 21, 1940, Buwalda noted that a major landslide had occurred in Elysian Park just one-quarter mile distant from the most northerly of the four Figueroa Street tunnels. Despite this and the fact that the rock in the area was solid enough to permit safe and reasonably easy tunnel construction, Buwalda recommended the open-cut method because of the greater potential damage to the tunnels in an earthquake. To guard against landslides, Buwalda

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<sup>183</sup> Regarding the “frequent traffic agony,” see *Los Angeles Times* (6 Dec. 1942).

<sup>184</sup> Division of Highways, *Twelfth Biennial Report*, 37. According to one article, the Southerly Extension was planned in conjunction with a \$13 million proposal to extend the road all the way to the harbor in San Pedro. See *Los Angeles Evening Herald*, “Los Angeles High Speed Rd. Extension to Port Planned,” 16 November 1940.

<sup>185</sup> S.V. Courtelyou to Lloyd Aldrich, 4 March 1937. See also E. E. East to S. V. Courtelyou, 27 September 1937. Located in Ernest E. East collection, Southern California Automobile Club Archives, Los Angeles.

<sup>186</sup> A.D. Griffin, “Proposed Arroyo Seco Parkway Extension to Los Angeles Business Center Through Elysian Park,” *California Highways and Public Works* 18, no. 10 (October 1940): 6.

<sup>187</sup> The southbound roadway was built in an open cut through the park. It has a 1’-0” gutter and a 4’-0”-high rubble wall of broken concrete on either side.

suggested a 1:1 slope cut.<sup>188</sup> Most importantly for the Division of Highways, the cost of an open cut was estimated at \$1 million less than tunnel construction.<sup>189</sup> Regardless of the cut's cost, much of the expense for the Southerly Extension more generally was incurred by the seven bridges: the Los Angeles River Bridge, the Amador Street Bridge, the Park Row Bridge, the Castelar Street Bridge, a foot bridge over Solano Street, and two bridges over Bishops Road.<sup>190</sup>

The most substantial bridge erected for the Southerly Extension was the second Los Angeles River Bridge, paralleling the existing Figueroa Street Viaduct. The bridge's northerly approach consists of five 75'-0" continuous reinforced concrete spans and three continuous steel plate girder spans on reinforced concrete abutments and piers. On the southerly end of the bridge, four plate girder spans vary in length: 102'-6" over the Southern Pacific tracks on the north bank; 200'-0" across the river; 197'-1" over Riverside Drive and the Southern Pacific tracks at the east girder; and 150'-2 ½" at the west girder. The variations in girder lengths are due to the difference in skew in the pier and south abutment. Each span is constructed of three plate girders, 22'-0" on centers, which support the floor system. The main girders, approximately 302'-6" in length, span the 200'-0" across the river and provide cantilever extensions into the adjacent spans.<sup>191</sup>

The size and weight of the girders, together with the challenging location and desire to complete the project as quickly as possible, prompted the builders to import an 85-ton stiff-leg traveler derrick from the East Coast to raise the main girders 100'-0" above the river. The derrick, whose longer leg was pivoted, lifted sections of the main girders directly from freight cars, lowered them to the river bottom for cleaning, and turned them when required. The derrick's mast, which operated on a monorail track, was then shifted into position and the girders, weighing between 56 and 72 tons, were hoisted into place, pinned, and bolted. The three south-end girders, out of reach of the derrick on the river channel, had to be brought to the site with heavy house-moving equipment. They were then hoisted and swung into place with 40- and 60-ton crawler cranes. Finally, the placing of the floor beams, stringers, and stiffening trusses was done by a truck crane operated from a runway constructed on top of the girders.<sup>192</sup>

Construction of the Southerly Extension required the demolition of numerous buildings housing many residents. Backed by the 1939 state legislative passage of the "freeway law" that gave the state the authority to purchase or condemn property in its path, the Division of Highways condemned a number of houses and apartments along the right-of-way. Many of these were destroyed to make way for the expansion of an existing Los Angeles Department of Water and Power reservoir. While a *Los Angeles Evening Herald* article overestimated the extent to which

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<sup>188</sup> Griffin, "Proposed Arroyo Seco Parkway Extension," 14.

<sup>189</sup> *Southwest Builder and Contractor*, "Spectacular Highway Construction Job Through Elysian Park Hills on Parkway Extension," (4 July 1941): 17.

<sup>190</sup> The W.P.A. graded and built the substructures of the Los Angeles River and Solano Avenue Bridges at a cost of \$270,000 and \$30,000, respectively. Contracts let by the state called for the following bridges: Castelar Street, \$65,600; Amador Street, \$25,000; Bishops Road, \$60,000; and Park Row, \$30,000.

<sup>191</sup> P.R. Watson, "Spectacular Steel Erection Job on Arroyo Seco Extension Bridge," *California Highways and Public Works*, 21, nos. 11, 12 (November-December 1943): 4-5.

<sup>192</sup> Watson, "Spectacular Steel Erection," 5.

the new road and expansion of the existing dam would require the condemnation and removal of property in nearby Tehachi Canyon, approximately eighty-nine parcels of land were condemned, many of which were multiple-unit dwellings with as many as fifteen to twenty tenants each. Residents were required to leave the premises within a maximum of twenty days from the close of the transaction.<sup>193</sup>

Because of the road's high-speed nature and its ability to rapidly transport soldiers and equipment to ports of embarkation, the United States War Department declared the Southerly Extension project part of the National Strategic System of Roads by mid-1941. This allowed for federal funding, W.P.A. labor, and priority use of scarce materials like steel and concrete.<sup>194</sup> That the federal government considered the extension important is manifest in the fact that the stiff-legged derrick, having just performed work on the George Washington Bridge connecting New York City and the New Jersey suburbs, was transported, by rail, from the East Coast to hoist steel for the new viaduct. During construction, a large sign indicating that the construction was being carried out in the interests of national defense was plainly visible at the project site.<sup>195</sup>

Because W.P.A. and P.W.A. funding assisted the initial six miles of the Arroyo Seco Parkway, the Division of Highways saved some money that the California Highway Commission made available for the Southerly Extension. W.P.A. forces were used to complete much of the preliminary work, such as the right-of-way clearing, reconstruction of various Elysian Park facilities, roadway grading, the construction of rubble retaining walls, and the careful boxing of "desirable" pre-existing trees for their later replanting along the roadway.<sup>196</sup> Construction then proceeded with the destruction of a large hill in Elysian Park to make the 100'-0"-high or more cuts for the roadway. Explosives were used to perform much of the initial work. Much of the approximately 750,000 cubic yards of excess earth and rock was transported to a depression in the park's western edge.<sup>197</sup> Riverside Drive between North Figueroa Street and the old Dayton Avenue Bridge was shut down for months as work proceeded on the Southerly Extension.<sup>198</sup>

The slope cuts were made at a 1:1 angle with a width of 60'-0" at the bottom. The maximum center depth was 70'-0" in the cut through the hill at the north bank of the Los Angeles River. Using leading scrapers, shovels, sheepsfoot tamping rollers, clamshells, cranes, tractors, carryall scrapers, skip loaders, and concrete mixers, approximately 2,000 laborers worked day and night to complete the work.<sup>199</sup> Other work included the completion of the earth-filled, 60'-0" dam for

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<sup>193</sup> See Frank C. Balfour to C. H. Purcell, 29 April 1941, in Highways file, District VII, 1941-44, F3790: 43, California State Archives, Sacramento. See also *Los Angeles Evening Herald*, "Los Angeles High Speed Rd. Extension to Port Planned," 16 November 1940.

<sup>194</sup> Robert J. Hatfield, "Arroyo Seco Freeway Extension Becomes a \$4,000,000 Defense Highway Project," *California Highways and Public Works* 19, no. 9 (September 1941): 6-9+.

<sup>195</sup> See photograph in *Los Angeles Times*, "Figueroa Road Project Moves Toward Finish," 6 December 1942.

<sup>196</sup> Griffin, "Proposed Arroyo Seco Parkway Extension," 14-15.

<sup>197</sup> John G. Meyer, "Extending Arroyo Seco Parkway into Los Angeles Business Center," *California Highways and Public Works* 19, no. 4 (April 1941): 8; *Southwest Builder and Contractor*, "Spectacular Highway Construction Job," 16-19.

<sup>198</sup> *Los Angeles News*, "One Road Closed, Another Opened in L. A. Area," 10 March 1941.

<sup>199</sup> Robert J. Hatfield, "Arroyo Seco Freeway Extension," 6.

the Los Angeles Department of Water and Power, 38'-0" of which was intended to extend above the roadway and serve as a highway embankment. This approximately \$300,000 dam was funded in part by the W.P.A. financing of the Southerly Extension, but the Los Angeles Department of Water and Power picked up nearly half its cost.

Ultimately, the notions of beautification and landscaping took a back seat to the apparently dire need to construct this stretch of road as quickly and economically as possible. Highway officials considered the need for expediency in construction as part of a "wartime retrenchment" against "nonessentials" like landscaping and roadside plantings.<sup>200</sup> Even the decorative rubble walls, made from 30,000 cubic yards of broken and discarded concrete sidewalks, curbs, and gutters were considered an "economical substitute" for more costly reinforced concrete retaining walls.<sup>201</sup> As in the original stretch, safety features played an important role for this four-lane extension. Engineers noted that additional safety features might be needed after observing traffic behavior.

Despite the project's construction as a defense measure, a steel shortage prevented its completion in a timely manner.<sup>202</sup> By the time the second Los Angeles River Bridge was ready for completion, the federal government had shut down its W.P.A. program. Furthermore, workers hired by the state had to wait until after March because the Los Angeles River Flood Control Channel could not be blocked by any construction during the rainy season when it was needed to serve as a flood control device.<sup>203</sup>

Nevertheless, enough of the work on the Southerly Extension was completed by December 1943 to allow for another opening ceremony on December 30, just in time for the anticipated New Year's Day traffic crush.<sup>204</sup> With the completion of the Southerly Extension, the total cost of the Arroyo Seco Parkway had mounted to \$10,639,427, excluding the original cost to the various cities of park lands later donated for the roadway but including right-of-way purchasing, the Figueroa Street Tunnels, the moving of railroads and sewers, and part of the cost of the Arroyo Seco Flood Control Project.<sup>205</sup>

## **XII. Parkway Into Freeway: To the Four-Level Interchange**

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<sup>200</sup> For the relatively low importance of landscaping vis-à-vis the completion of the roadway for national defense, see George, "Arroyo Seco Freeway Extension," 4, or Division of Highways, *Fourteenth Biennial Report*, (section on landscaping). The Los Angeles Parks Department, W.P.A., and the state of California, however, did jointly undertake a landscaping program along the extension that included the development of parklands adjacent to and visible from the road.

<sup>201</sup> Hatfield, "Arroyo Seco Freeway Extension," 8.

<sup>202</sup> A. N. George, "Arroyo Seco Parkway Extension Adds Four Southbound Traffic Lanes," *California Highways and Public Works* 22, nos. 1, 2 (January-February 1944): 2.

<sup>203</sup> *Los Angeles Times*, "Figueroa Road Project Moves Toward Finish," (6 December 1942).

<sup>204</sup> George, "Arroyo Seco Parkway Extension," 4. Remaining work to be done on the Southerly Extension following its opening included the completion of an acceleration lane near Bernard Street, some channelizing for inlets at Castelar and Solano Streets, the surfacing of some city streets disrupted by the construction, and some landscaping.

<sup>205</sup> This figure from George, "Arroyo Seco Freeway Extension," 4.

In late 1943, the Arroyo Seco Parkway stretched from Glenarm Street in Pasadena to Adobe Street in Los Angeles, an approximately eight-mile distance. The Southerly Extension brought southbound traffic much closer to downtown Los Angeles, achieving the long-standing objective of linking the business centers of Los Angeles and Pasadena with a commuter road. Yet the extension by itself did little to link the Arroyo Seco Parkway with the larger system of high-speed roads throughout the Los Angeles basin – a goal that had been envisioned since the 1921 Automobile Club of Southern California's "Report on Los Angeles Traffic Problems."

This connection came when an additional half-mile Arroyo Seco Parkway was extended south from Adobe Street to the recently completed Four-Level Interchange in the vicinity of 5<sup>th</sup> Street. The project was completed on September 22, 1953. Approved for construction by 1946 and begun by late 1947, this section of road was much like the Southerly Extension in that it provided for two four-lane highways in either direction and emphasized utilitarian rather than aesthetic values. Assistant State Highway Engineer P. O. Harding considered this stretch of road a crucial piece in the freeway system.<sup>206</sup> Its completion marked the conclusion of a fifteen-year construction history for the parkway, a fact that was noted by the *Los Angeles Times* shortly before its completion.<sup>207</sup>

Construction had been proceeding on other high-speed roads elsewhere in the region, some of which would meet at the Four-Level Interchange to comprise the world's first integrated freeway system by 1953. The Cahuenga (Hollywood) Freeway (State Route 2) was the first of these to begin construction. Workers began building this road from the San Fernando Valley through Cahuenga Pass towards Hollywood as early as the late 1930s. The first one and a half-mile stretch of the Hollywood Freeway, in fact, was opened in early 1940.<sup>208</sup> Shortly thereafter, construction began on a \$22 million project to transform a portion of State Route 165 from the

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<sup>206</sup> Regarding the authorization of this stretch of road, see H. F. Holley, "Motorways for Metropolitan Areas," 4 March 1946, manuscript, Ernest E. East collection, Automobile Club of Southern California Archives, Los Angeles. For Harding's quote, see Griffin, "Arroyo Seco," 1.

<sup>207</sup> *Los Angeles Times*, "Last Arroyo Seco Freeway Link Done," 5 August 1953. It is unclear why this project took six years to complete. It is our suspicion that once the Four-Level Interchange was begun in 1947, it became logical to attach the uppermost road – the Cahuenga (Hollywood) Freeway -- before connecting the lower roads. It may have been determined to be more difficult to build the upper portion of the Four-Level with the road already completed beneath it.

<sup>208</sup> If one argues that "freeways" did not exist in Los Angeles or elsewhere in the West until they were linked with a larger freeway network, it could be argued that the Hollywood Freeway, not the Arroyo Seco Parkway, was the first freeway in the West. Although it was begun after the Arroyo Seco Parkway, the Hollywood Freeway was completed to the Four-Level Interchange by December 27, 1950, more than two-and-a-half years before the final piece of the Arroyo Seco Parkway was put into place. For a brief construction history of the Hollywood Freeway, see Harrison R. Baker, "Hollywood Freeway: Third Unit of Construction Between Grand Avenue and Silver Lake Boulevard Dedicated and Opened to Public Traffic," *California Highways and Public Works* 29, nos. 1, 2 (January-February 1951): 12+.

harbor in San Pedro to downtown Los Angeles into a modern freeway. This road was to link eventually with the northern section of Route 165 – the Arroyo Seco Parkway.<sup>209</sup>

The crucial connecting piece was the approximately \$1.5 million four-level “Stack” interchange, referred to by highway engineers as the “hub” of the freeway system by 1952 and now popularly known as the “Four-Level.”<sup>210</sup> Completed in 1949, it was the world’s first freeway-to-freeway connector, and the first local example of the type of traffic interchanges advocated by the Auto Club’s 1937 *Traffic Survey*.<sup>211</sup> Unlike those projected in the *Traffic Survey*, however, the Four-Level allowed for a freeway-to-freeway transfer without the 270-degree turns of traditional cloverleaf interchanges.<sup>212</sup>

The 65’-0”-high reinforced-concrete interchange was paid for by the state and built by the James I. Barnes construction company of Santa Monica. Its design, under the direction of Assistant State Highway Engineer F.W. Panhorst (who was also involved with bridges along the Arroyo Seco Parkway), State Bridge Designer Henry Kuphal, and Los Angeles City Bridge Engineer H. R. Lendecke, included two one-way connector ramps from the Harbor-Arroyo Seco Parkway to the Hollywood Freeway on the lowest level, the Harbor-Arroyo Seco Parkway on the second level, two 26’-0”-wide one-way roadways handling transfers from the Hollywood Freeway to the Harbor-Arroyo Seco Parkway on the third level, and the Hollywood Freeway at the top.

An entire neighborhood was condemned and removed to build the interchange, but park-like embankments, including palms and hedges between the curving lanes of the parkway approaches, were intended to soften the interchange’s overall appearance. Details of the interchange, its role as a centerpiece for the Los Angeles freeway system, and its place in the history and lore of the Los Angeles region are beyond the scope of this report, but the structure’s completion was crucial in order for the Arroyo Seco Parkway to be finally linked with the Los Angeles freeway system.<sup>213</sup>

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<sup>209</sup> For more general information about the move from parkways into freeways in the Los Angeles region, see David W. Jones, Jr., *California’s Freeway Era in Historical Perspective* (Berkeley: Institute of Transportation Studies, University of California, Berkeley, 1989).

<sup>210</sup> *California Highways and Public Works*, “The Four Level Grade Separation Structure on Los Angeles Metropolitan Freeway System,” 29, nos. 9, 10 (September-October 1951): 22.

<sup>211</sup> See editor’s note in “Unique Project: Four-Level Grade Separation in Los Angeles First of Kind,” *California Highways and Public Works* 26, nos. 11, 12 (November-December 1948): 20.

<sup>212</sup> S. V. Courtelyou, “Four Level Grade Separation for Los Angeles Parkways Intersection,” *California Highways and Public Works* 22 nos. 5, 6 (May-June 1944): 9.

<sup>213</sup> The Four-Level Interchange was featured in the 1950s movie *War of the Worlds*, and has more recently been mentioned in 1990s movies like *Falling Down* and *Escape From L.A.* Shortly following completion, it was featured in *National Geographic*, *Newsweek*, *Business Week*, *Fortune*, and *The New York Times*. The interchange is handled more comprehensively in Arthur Krim, “The Four-Level ‘Stack’ as Los Angeles Icon,” paper presented at Society for Commercial Archaeology, Los Angeles, 1994. See also Arthur Krim, “Los Angeles and the Anti-Tradition of the Suburban City,” *Journal of Historical Geography* 18, no. 1 (1992): 121-38. Reference to Henry Kuphal’s role as one of the principal designers of the Four-Level comes from correspondence between Krim and Gloria Scott, California Department of Transportation architectural historian, in Library, California Department of Transportation, Sacramento.

For some time, however, the Arroyo Seco Parkway had become known, at least popularly, as the “Arroyo Seco Freeway.” Few references in the journals and newspapers of the time referred to the road by its official name, and the “parkway” nomenclature was apparently so anachronistic by 1953 that the *Los Angeles Times* matter-of-factly recalled that “they” used to call it the “Arroyo Seco Parkway” back in 1938.<sup>214</sup> Although its name was never officially changed to “Arroyo Seco Freeway,” a huge freeway sign, just south of the Four-Level Interchange, directed drivers to that road for at least a few years.<sup>215</sup>

Once the Arroyo Seco Parkway was linked to the Four-Level (and, hence, to the Harbor, Hollywood, and Santa Ana Freeways), the California Highway Commission found it imperative to rename certain State Highway routes with names that would clearly denote the routing and termini.<sup>216</sup> In addition to officially changing the names of the “Ramona Freeway” to the “San Bernardino Freeway,” the “Los Angeles River Freeway” to the “Long Beach Freeway,” and the “Sepulveda Freeway” to the “San Diego Freeway,” on November 16, 1954 the commission also officially changed the unofficial Route 205 name of “Arroyo Seco Freeway” to the “Pasadena Freeway.”<sup>217</sup> As a bona fide member of this new freeway system, it could be argued that the Arroyo Seco Parkway was now officially complete.

### XIII. Arroyo Seco Parkway Through the Years

Although the road was finished in 1953, the Arroyo Seco Parkway story was far from finished. It would be impossible to detail all the changes that occurred to the road since that time, but a few deserve specific mention. The most significant and visible alterations were those made in conjunction with the construction of Dodger Stadium in Elysian Park, the connections made to Interstate 5, and the construction of the first pre-stressed concrete bridge in the West. Most of the changes occurred on the Southerly Extension; the original stretch of road from Glenarm to Avenue 22, with some minor exceptions, remains much as it was when constructed.<sup>218</sup> Motorists using the original six miles of road are still compelled to tackle the compressed cloverleafs (now with posted five-mile-per-hour speed limit signs for motorists exiting from the parkway), narrow

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<sup>214</sup> *Los Angeles Times*, “Last Arroyo Seco Freeway Link Done,” 5 August 1953.

<sup>215</sup> Evidence of this sign comes from a photograph reprinted in Frank J. Taylor, “The World’s Worst Traffic Tangle,” *Saturday Evening Post* (13 March 1954): 43.

<sup>216</sup> When opened, the stretch of freeway to the east of the Four-Level, linking to the Hollywood Freeway, was officially part of the new Santa Ana Freeway heading southeast toward Santa Ana in Orange County. When Interstate Five was completed in the 1960s, the Santa Ana Freeway became a part of that route. The stretch originally built east of the Four-Level Interchange today comprises the final section of the Hollywood Freeway (101), which feeds into Interstate Five.

<sup>217</sup> State Highway Commission, “Assigning Names to Certain Freeways,” 18 November 1954, Library, California Department of Transportation, Sacramento.

<sup>218</sup> The Arroyo Seco Parkway has also increasingly held a greater volume of traffic. The road carried nearly 30,000 automobiles per day in its first years, nearly 70,000 by 1960, and more than 120,000 in 1999. Figures from *Los Angeles Times*, “Freeway Holds Bright Promise for Drivers,” 4 March 1956; Charles J. O’Connell, engineer, District VII, California Department of Transportation, personal communication; and Griffin, “Arroyo Seco,” 63. Griffin’s article also includes a list of sixteen-hour average traffic volumes on Sundays and Mondays in mid-July from the years 1941 through 1960.

lanes, 55-mile-per-hour speed limits, and acceleration lanes accompanied by stop signs. Many of these features strike modern drivers as dangerous, inefficient, and infuriating, though they were considered state-of-the-art developments at the time of completion.

Indeed, Division of Highways engineers noted how the Arroyo Seco Parkway was serving as a model for future highway projects. In many cases, the parkway's status as a "model" was positive. Engineers frequently pointed out that it had a remarkable safety record, noting that it was better in preventing accidents relative to other streets in Los Angeles carrying similar volumes of traffic. In January 1943, the state assembly adopted a bill that prohibited all trucks and buses on the parkway, and engineers frequently pointed to that legislation as crucial in the maintenance of safe driving conditions. The ban on commercial traffic and large vehicles also helped keep the roadway reasonably good condition.<sup>219</sup>

Engineers and other officials also touted the economic advantages of the Arroyo Seco Parkway. For example, a 1940s Automobile Club of Southern California survey indicated that driving the parkway saved motorists twelve cents per round trip over what they would have spent driving the same distance prior to its completion. Drivers lost those twelve cents, the Auto Club argued, through gasoline wasted and tire wear caused by stop-and-go traffic and traffic lights on Figueroa Street.<sup>220</sup>

In 1951, engineers could point to the Arroyo Seco Pedestrian Bridge as yet another "first" in the West. The 110'-8"-long narrow bridge over the Arroyo Seco Flood Control Channel near Avenue 58 was the West's first pre-stressed concrete bridge. The bridge was constructed of reinforced concrete using wires rather than bars for reinforcing. The concrete girders were stressed in advance of being subjected to passing loads to counteract bending stresses. This new method of construction reduced the amount of on-site labor, concrete, and reinforcing steel and permitted a light overall appearance.<sup>221</sup>

In 1960, a variety of agencies put together a dedication ceremony for the parkway's twentieth anniversary, hailing the road as the "West's First Freeway" and asserting that it had "provided an inspiration for all who have since worked toward the creation of a comprehensive freeway system for the entire State of California."<sup>222</sup> At that time, the parkway was said to have saved motorists \$54,000,000 – four and one-half times the cost of the 8.2-mile route.<sup>223</sup>

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<sup>219</sup> Buses were eventually permitted to use the parkway, but never trucks. Following the completion of the parkway to the Four-Level, in September of 1953, a Los Angeles city ordinance banned all commercial vehicles weighing 6,000 pounds or more on the 8.2-mile stretch of road from the Four-Level to Glenarm Street in Pasadena.

<sup>220</sup> See *Los Angeles Times*, "Parkway Will Pay for Itself," 2 November 1941; *California Highways and Public Works*, "Expressways Save on Consumption of Gasoline," 25, nos. 3, 4 (March-April 1947): 32.

<sup>221</sup> "California Builds A Prestressed Bridge," *California Highways and Public Works* 29, nos. 1, 2 (January-February 1951): 8. The journal noted that the beams were being constructed on site, where they would be prestressed before installation. Upon the completion of these operations and a seasoning period, the beams were to be lifted into final position by two cranes. The prestressed method saved the expense of formwork, and avoided the potential loss of that formwork should the channel be flooded during construction.

<sup>222</sup> "Arroyo Seco Parkway: Recognizing the Twentieth Anniversary of the Dedication of the Pasadena Freeway," program, 29 December 1960, Automobile Club of Southern California Archives, Los Angeles. The ceremonies

It has become popular to refer to the Arroyo Seco Parkway as a “test bed” for later freeways, but engineers never intended the road to be experimental. They designed and built it with all the safety know-how they could incorporate, and did what they could with the difficult topographical and right-of-way conditions with which they were confronted. As a fully functioning high-speed road providing a necessary service from Pasadena to Los Angeles and back, drivers would hardly tolerate a road built for experimental purposes. Letters written by members of the Automobile Club of Southern California to its engineering department shortly after the parkway’s completion indicate that drivers were attuned to potential and actual safety hazards that demanded attention. The club’s chief engineer, Ernest East, synthesized these letters and made recommendations to the Division of Highways.<sup>224</sup>

The parkway was not always regarded positively by engineers, either. In many cases, it served as a model of what to avoid because many of its features proved inadequate for modern high-speed road design. It did not take long before engineers claimed that the parkway was no longer adequate for handling the needs of modern-day traffic. A common complaint was the lack of shoulder lanes for disabled vehicles in the travel ways – something recognized as a problem almost. By 1945, this had apparently become enough of a hazard that authorities began to construct small pull-out spaces where the topography and right-of-way allowed. Workers installed approximately fifty of what they called “safety bays” or “refuge areas” into the parkway between 1949 and 1950.<sup>225</sup> These pull-outs, not much more than 40’-0” in length, still provide the only shoulder sections along the parkway.

An arguably more serious problem concerned the on- and off-ramps. Within the first seven years, there were 300 accidents, six of which were fatalities. At least one of these was caused when a motorist attempted to enter the parkway after heading the wrong direction down an off-ramp or deceleration lane, presumably because of a lack of effective signage or clearly demarcated lanes for ingress and egress at single intersections that combined compressed cloverleafs with longer on- or off-ramps.<sup>226</sup>

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occurred at the parkway’s intersection with Sunset Boulevard – a part of the road that was *not* actually opened in 1940. Nevertheless, this indicates that officials considered this stretch of road integral to the Arroyo Seco Parkway story.

<sup>223</sup> Neil Petree, “Two Decades of Freeway Progress,” address delivered at Twentieth Anniversary Celebration for Pasadena Freeway, Huntington Hotel, Pasadena, 29 December 1960, in “Dedication of the Pasadena Freeway,” Automobile Club of Southern California Archives, Los Angeles. Petree also explained that the “real” importance of the parkway was that it marked “the beginning of California’s magnificent freeway system.” It was, he said, “a significant milestone in transportation history.”

<sup>224</sup> A number of these letters exist in Ernest E. East Collection, Automobile of Southern California Archives, Los Angeles.

<sup>225</sup> The titles “safety bays” and “refuge areas” comes from Griffin, “Arroyo Seco,” 57. In Olmsted, et. al., *Major Traffic Street Plan*, 52, the authors recommended the incorporation of “refuge areas” as necessary for a proposed continuous elevated roadway.

<sup>226</sup> Reese, “New Barriers,” 22. Accident statistics from “Traffic Safeguards,” *California Highways and Public Works*, 21.

On November 18, 1941, representatives from the Division of Highways, the Auto Club, and the cities of Los Angeles, Pasadena, and South Pasadena inspected the Arroyo Seco Parkway's entrances and exits. At intersections where on- and off-ramps ran parallel with each other with no divider, they recommended the construction of more traffic islands. Where those islands already existed, they proposed the addition of 8"-high curbs to separate oncoming traffic from entering traffic. In both cases, they suggested the installation of more conspicuous directional signs to warn motorists about entering in the wrong direction. They also encouraged a greater police presence to enforce safety and speed measures.<sup>227</sup>

Other changes that occurred around this time included the spraying of spherical glass reflective beads onto the island curbs. The "boulevard stop" signs at the ends of the lanes created by these islands and at the bottom of on-ramps may have also been added after the parkway was opened to traffic. These stop signs were envisioned as somewhat innovative traffic safety devices, for the confluence of major and minor streets in busy Los Angeles frequently lacked them.<sup>228</sup>

There were other problems as well. The frequency with which motorists had been driving the wrong way one of the original Fair Oaks Avenue deceleration ramps with the intent of entering the parkway necessitated its replacement by 1948.<sup>229</sup> By 1951, it was questioned whether the differently colored types of concrete to distinguish the so-called "higher speed" lanes from others was actually having any effect.<sup>230</sup> By 1960, highway officials pointed out that some of the original signage installed by the Auto Club -- with its four-inch lettering on porcelain-enameled signs -- proved too small for the higher speeds of vehicles using the parkway. The shrubs in the center median, having failed to grow because of passing traffic, were replaced first by chain-link fences and, as of 1961, by a steel guard rail. The parkway's relatively circuitous alignment was also cause for concern. On December 31, 1960, a *Los Angeles Times* editorial noted that the Pasadena Freeway had "bends in it that would get a present-day highway engineer burned for heresy."<sup>231</sup> In summarizing the parkway at the time of its twentieth anniversary, District VII Engineer A. L. Himelhoch noted that its 4'-0" median was too narrow, the superelevation of the curves was done to one-half of the modern-day standard, and the much-ballyhooed "acceleration"

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<sup>227</sup> *Highland Park News-Herald*, "Patrol of Parkway Proposed," 19 December 1941; *Los Angeles Examiner*, "Experts Discuss Curbs for Wrong Way Driving Along Arroyo Seco," 19 November 1941; *Los Angeles News*, "Measures Drafted to Cut Auto Crash Rate on Arroyo Parkway," 10 December 1941.

<sup>228</sup> In the 1924 *Major Traffic Street Plan*, the L.A. Traffic Commission recommended "boulevard stop" signs to prevent automobiles from dashing out from minor streets onto major ones -- apparently a major cause of accidents in 1910s and 1920s Los Angeles. See L.A. Traffic Commission, *Major Traffic Street Plan*, 19.

<sup>229</sup> *California Highways and Public Works*, "Traffic Safeguards," 8. The story of the Fair Oaks Avenue ramps is confusing. As early as January, 1941, South Pasadena Mayor Andrew O. Porter pressed State Highway Commissioner Amerigo Bozzani to install an eastbound on-ramp at Fair Oaks so that South Pasadena motorists would have an easier time getting into downtown Pasadena. Apparently, such a ramp was built initially, but was eliminated when the parkway opened west of Fair Oaks. Bozzani opposed the on-ramp, he said, because it would be a hazard. *South Pasadena Review*, "Resolution to Ask Highway Commission for Parkway Entrance," 21 February 1941; *South Pasadena Review*, "Opening of Parkway Ramp is Urged Here," 31 January 1941.

<sup>230</sup> Helwer, "Traffic Interchange Design," 52.

<sup>231</sup> Editorial, *Los Angeles Times*, 31 December 1960, as reprinted in *California Highways and Public Works* 40, nos. 1, 2 (January-February 1961), inside title page.

and “deceleration” lanes, which were built only at the on- and off-ramps at Fair Oaks and Orange Grove avenues, were “conspicuous by their absence.”<sup>232</sup>

The first substantial changes to the parkway, however, did not come until the early 1960s.<sup>233</sup> The first of these alterations involved the construction of on- and off-ramps leading to and from the Golden State Freeway (Interstate 5) in the vicinity of the Cypress Avenue pedestrian bridge on the original stretch of the parkway, and near Bishop’s Road along the Southerly Extension. These ramps, part of the “Elysian Viaduct,” carried traffic between the two high-speed roads over the Los Angeles River, the Arroyo Seco Flood Control Channel, city streets, and the Southern Pacific railroad tracks.

Designing the ramps connecting to the parkway near the Cypress structure provided a formidable challenge to engineers. Because the ramps had to be built on a curving alignment, it was necessary to build the mostly eight-lane viaduct with pre-stressed steel girders curved to fit a 400’-0” radius curve and a sharp skew angle over the channel. This made it the first curved steel girder bridge in California and possibly the first of its kind in the world.<sup>234</sup>

This nearly \$10 million project, completed in early 1962, included the installation of a steel guard rail in the median the entire length of the parkway from the Four-Level, and new lighting in the Figueroa Street Tunnels. State gas tax funds paid for the project. The work was carried out under contract by the Vinnell Corporation, Vinnell Constructors, and A. S. Vinnell Company.<sup>235</sup>

Other major alterations to the parkway included those associated with the new \$16 million Dodger Stadium built for the new major league baseball franchise in Los Angeles, which had been playing its home games in the Los Angeles Memorial Coliseum since its 1958 move from Brooklyn. These changes principally involved alterations to parkway access for the purposes of handling considerably larger volumes of traffic. Because construction of stadium infrastructure was financed by the City of Los Angeles, the city also agreed to help fund the improvements to the Pasadena Freeway.<sup>236</sup>

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<sup>232</sup> Griffin, “Arroyo Seco,” 61-63.

<sup>233</sup> More routine changes included the replacement of the original light standards by the current “breakaway” lights (the originals were thought to be too closely placed to the lanes), the serration of the pavement to improve skid resistance in wet conditions and to prevent hydroplaning, the installation of raised pavement markers to replace the painted lane stripes, and the erection of the prestressed concrete pedestrian bridge. See Charles Gustafson, “First California Freeway ... and Traffic Moved,” *State Public Works Bulletin* (January-February 1971): 10-12. Although it was never approved, a substantial change to the parkway would have occurred if a 1941 proposal for an extension, eastward from the vicinity of Fair Oaks Avenue towards the Santa Anita Racetrack in Arcadia, had been approved. See *Pasadena Post*, “Parkway Link Eastward to be Requested,” 5 March 1941.

<sup>234</sup> Albert P. Bezzone, Jr. and Gordon Morse, “Elysian Viaduct: Key Structure in Complex L.A. Interchange Nears Completion,” *California Highways and Public Works* 40, nos. 9, 10 (September 1961): 11-14.

<sup>235</sup> E. T. Telford, “District VII: Freeway Completions, Current Construction Add Up to Encouraging Progress Picture,” *California Highways and Public Works* 40, nos. 3, 4 (March-April 1961): 15.

<sup>236</sup> In conjunction with Dodger Stadium, planned (but never built) was the City of Los Angeles “World Zoo” and other recreational facilities in Elysian Park.

These changes did little to change the overall character of the Arroyo Seco Parkway, which for most of its length remained a six-lane road with features representing its pioneer role in an early stage of high-speed freeway design. Despite the fact that engineers and planners deemed many of these features inadequate shortly after construction, and considered them glaringly so by the late 1960s when Los Angeles City Councilman Art Snyder led an effort to “upgrade” the parkway, engineers felt no need to apologize for the overall design.<sup>237</sup>

Many of these features, such as the difficult-to-negotiate access ramps, the narrow lanes and median, and the frustratingly tight curves, were still in place at the end of the twentieth century. Whatever its faults, the Arroyo Seco Parkway – the first link in the world’s first integrated metropolitan freeway system and a remarkable example of a transitional moment in modern roadway design -- continues to service drivers in the Los Angeles metropolitan region.

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<sup>237</sup> See, for example, Griffin, “Arroyo Seco,” 72, or Pat Reid, “Pioneers,” California Department of Transportation, District VII, Public Affairs Department. Regarding Snyder’s effort to “upgrade” the parkway, see James Timmermann, “50 Years on the 110,” *Pasadena Star-News*, 16 December 1990.

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