The Journal of San Diego History

Founded in 1928 as the San Diego Historical Society, today’s San Diego History Center is one of the largest and oldest historical organizations on the West Coast. It houses vast regionally significant collections of objects, photographs, documents, films, oral histories, historic clothing, paintings, and other works of art. The San Diego History Center operates two major facilities in national historic landmark districts: The Research Library and History Museum in Balboa Park and the Serra Museum in Presidio Park. The San Diego History Center presents dynamic changing exhibitions that tell the diverse stories of San Diego’s past, present, and future, and it provides educational programs for K-12 schoolchildren as well as adults and families.

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One Hundred Years of Civil Engineering Excellence in San Diego

Timothy M. Shell, P.E., M.ASCE
2013 President, ASCE San Diego Section

Have you ever considered the impact that civil engineers have in our community and throughout the world? I hope this special edition of The Journal of San Diego History will provide a window into the world of civil engineering for those who peruse its pages. This edition is the second of its kind, being the sequel to an earlier edition published in Winter 2002 to commemorate the 150th anniversary of the American Society of Civil Engineers (ASCE). At that time the local San Diego Chapter of ASCE partnered with the San Diego Historical Society to publish a series of articles under the title “A Legacy of Civil Engineering.” In his Director’s Statement, Robert Witty, Executive Director of the Society in 2002 lamented that no article on the bridges of San Diego was included. Now the ASCE San Diego Section has finally fulfilled Mr. Witty’s wish by featuring the bridges of San Diego in this edition.

Although many people may not understand all of the work done by civil engineers, it is my hope that the readers of this edition of the Journal will gain a greater understanding and appreciation for the role that they play in shaping our world and improving our quality of life. The reader will also discover a wealth of

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historical information about the impact of civil engineers on our local systems of transportation, our local water supply, and the developments where we find places to live our lives. Civil engineers of San Diego have been striving for excellence for more than 100 years, and will continue to do so for many years in the future.

The American Society of Civil Engineers (ASCE) is a professional membership organization representing more than 150,000 civil engineers nationally and internationally. It began when twelve founding members met at the Croton Aqueduct in New York City on November 5, 1852, and agreed to incorporate as the American Society of Civil Engineers and Architects. ASCE is now the worldwide leader for excellence in civil engineering, which is the goal of the civil engineers in San Diego. ASCE’s mission is to “provide essential value to our members and partners, advance civil engineering, and serve the public good.”

The San Diego Section of ASCE was formed in 1915 when Edwin M. Capps, a civil engineer, was serving his second term as mayor of the City of San Diego. Mr. George Butler was the first president of the ASCE San Diego Section, and although Mayor Capps never served as ASCE President, he played an important role in the founding of this organization. I am honored to have served the organization and the public during my term as President of the ASCE San Diego Section in 2013, and I hope you will find this edition of the Journal enlightening.

In 2015 the San Diego Section of ASCE celebrated its Centennial Anniversary along with one of San Diego’s iconic bridges, the Cabrillo Bridge, which carries Laurel Street into Balboa Park. These 100th Anniversaries happened to coincide with the 100th birthday of one of the civil engineers who played an important role in the development of San Diego’s transportation system, Jacob Dekema, who served as the Director of Caltrans District 11 from 1955 to 1980, and who was affectionately known locally as the father of San Diego’s freeway system. Mr. Dekema also served as the President of the ASCE San Diego Section in 1974. A portion of Interstate 805 is named in his honor. This special edition of the Journal includes more about these two centenarians—the Cabrillo Bridge and Jacob Dekema—and other accomplishments of civil engineers throughout the history of San Diego.

The purpose of this special edition of the The Journal of San Diego History is threefold:

1. To commemorate the Centennial Anniversary of the San Diego Section of the American Society of Civil Engineers, and
2. To inform the public about the important leadership role of civil engineers in the planning, design, construction, maintenance, and operation of infrastructure
necessary for providing public health and safety and improving the quality of life in our community throughout our history.

3. To encourage young people to consider a future career in civil engineering.

It is my hope that these goals will be accomplished.

Civil engineers are always looking for challenges that they can overcome, and this special edition of the Journal was quite a challenge. I would like to acknowledge and thank the following for their support in this effort, without which this project would not have been possible:

Iris Engstrand, PhD, Professor of History at the University of San Diego, co-editor of The Journal of San Diego History and member of the Advisory Board at the San Diego History Center, for her assistance during this project,

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• The ASCE San Diego Section Board of Directors, members, and Centennial Committee,
• The authors who put forth the effort to research and write the articles.
• My wife, Kim Shell, who encouraged me while I was working on this project.
The Bridges of San Diego County:
The Art of Civil Engineering

Christine Robbins

Every bridge represents a problem solved, a challenge overcome, a connection made. San Diego, with its abundance of hills, mesas, and canyons, showcases the art of bridge building. Civil engineers took on the task and were lauded for their work in this poem:

They have built magnificent bridges where the nation’s highways go;
O’er perilous mountain ridges and where great rivers flow.
Wherever a link was needed between the new and the known
They have left their marks of Progress, in iron and steel and stone.
There was never a land too distant nor ever a way too wide,
But some man’s mind, insistent, reached out to the other side.
They cleared the way, these heroes, for the march of future years.
The march of Civilization—and they were its Pioneers.

—Portion of “The Bridge Builders,” a poem by Evelyn Simms

The American Society of Civil Engineers (ASCE) considers bridges an important aspect of civil engineering. According to the organization’s policy statement; “Bridges are a visible icon of the Civil Engineer’s art. Historic bridges are important links to our past, serve as safe and vital transportation routes in the

Author Christine Robbins acknowledges contributions by Civil Engineers Tim Shell, PE, of the City of Vista and Wade Durant, PE, Pete Smith, PE, ENV SP, and Clark Feron, PE, of T.Y. Lin International. The author wishes to acknowledge all those who generously shared their recollections of working on some of the bridges discussed in the article. Thanks are also owed to staff at Caltrans and the San Diego Association of Governments (SANDAG) for research assistance they provided and to all of the photographers who allowed use of their work.
present, and can continue to serve as important elements of our transportation systems in the future.”¹ Former president of the San Diego Section of ASCE, Art McDaniel, P.E., F.ASCE, noted, “Since wheeled transportation began, Civil Engineers have been upfront in the creation of its elements, especially bridges.”²

San Diego engineers have been building bridges for more than one hundred years. In fact, the San Diego ASCE celebrated its centennial anniversary at the same time as Cabrillo Bridge in Balboa Park, one of the most iconic structures in the city. McDaniel Engineering served as a training ground for many San Diego civil and structural engineers. One of those engineers, Mark Ashley, P.E. M.ASCE, was ASCE San Diego President in 1994. He became Senior Vice President/West Region Director at T.Y. Lin International, a world-class structural engineering firm that acquired McDaniel Engineering and has had a major role in designing and constructing many San Diego bridges. He commented on the local bridges that he has worked on:

> As readers can see, and many Civil Engineers and others already know, there are a wealth of remarkable bridges in the San Diego area that were carefully designed and constructed to overcome unique engineering challenges in an environmentally responsible way while managing to be iconic in their own right. It has been extremely gratifying to have a hand in several of them, and I’ve been very fortunate to have worked with clients that demonstrated the vision for excellent projects.³

Another San Diego company well known for their bridge work was Simon Wong Engineering. In 1993, Mark Creveling, P.E., M.ASCE, a product of McDaniel Engineering and a former President and Governor for ASCE, opened a bridge engineering group with Simon Wong. The Simon Wong firm joined Kleinfelder in 2012 and has continued to provide engineering, construction management, and inspection of bridges, with several hundred bridges to their credit.⁴ One of the firm’s senior bridge engineers, Jim Frost, P.E., M.ASCE, Vice President/Western Region Structures Manager at Kleinfelder and the 2012 ASCE San Diego President, suggests that bridges represent something special to his profession: “Civil Engineers are often overlooked in our society because their work is hidden or taken for granted. Bridges provide a visual reminder of the importance of the Civil Engineer, and San Diego is a beautiful canvas for our work.”⁵

This brief history and description of some of the bridges built in San Diego County honors civil and structural engineers, past and present, whose art has improved our way of life and contributed beauty to the man-made environment.
The Bridges of San Diego County

Graceful Concrete Arches

Georgia Street Bridge – 1914

In the second decade of the twentieth century, San Diego began to expand. Roads, railways, and electric streetcars reached out from the city’s core and helped to suburbanize once-rural areas like North Park. The Georgia Street Bridge made many of these developments possible. Historian Don Covington wrote, “More than any other man-made feature, the Georgia Street Bridge stands as a landmark and symbol of the event that opened the northeast mesa to urban development. Mr. [James R.] Comly’s masterwork still stands today as the western gateway to the Greater North Park community.”

As the population grew along University Avenue between Hillcrest and City Heights, so too did the demand for public transportation along this important regional corridor. In 1913, there existed only a narrow roadway and a single streetcar track. Accommodating an additional track, as well as a road for the increasingly popular automobile, presented a challenge to city engineer James Comly. The existing passage between Park Boulevard and Florida Street consisted of a narrow grade separation cut with bare sides sloping upward to the top of the ridge where Georgia Street was located. Traffic on Georgia Street crossed the

Georgia Street Bridge, c. 2014. Photograph by Patrici Foust-Rezig, c. 2014.
cut via a small redwood bridge. But widening the University Avenue cut meant that a new, longer bridge would be needed, and that its now steep perpendicular walls would need support.

Comly’s solution was a reinforced-concrete bridge that would be both more permanent than steel, and more aesthetically pleasing. As such, it reflected the ideals of the City Beautiful movement, a planning philosophy characterized by the idea that beauty and utility are not mutually exclusive. It held that creating a beautiful, livable space would encourage patriotism and pride in community. This, in turn, would enhance city function and worker productivity. The movement was supported in San Diego by civic and business leaders who saw it as a way of attracting tourists to the city.8

The resulting reinforced concrete arch bridge reaches 69 feet across University Avenue and supports interrelated 680-foot-long retaining walls that structurally reinforce the cut, providing safe passage for vehicles and pedestrians.9 One century later, the City of San Diego and Kleinfelder, its prime consultant for the project, are preparing to structurally retrofit the bridge using funds from the Federal Highway Administration (FHWA). The project will replace the deck and supporting spandrels, rehabilitate the existing arch, stabilize the abutments and retaining walls, and lower University Avenue 2.5 feet to bring vertical clearance up to current code.10 In addition to ensuring the structural integrity of the bridge, the project will also restore its original appearance by opening up the railing balustrades and replacing the light posts that were removed in the 1940s.

While the Georgia Street Bridge’s integrated retaining walls make it relatively

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*Black Canyon Road Bridge. Photograph by Wade Durant, c. 2015.*
unusual among San Diego bridges, its open-spandrel concrete arch design was a popular style of bridge throughout the county.\textsuperscript{11}

**Black Canyon Road Bridge – 1913**

Built in 1913 over the Santa Ysabel Creek between Ramona and Santa Ysabel, the Black Canyon Road Bridge is one of two remaining Thomas System arch bridges in California. Designed by William M. Thomas of the Los Angeles engineering firm Thomas & Post, Thomas System bridges used precast concrete construction, three-hinge arches, and open spandrels.\textsuperscript{12}

The Black Canyon Road Bridge was closed to motorized vehicles in 2011 when the road was re-routed around the historic bridge. It remains in place as a pedestrian and bicycle crossing in a relatively unspoiled setting that provides a glimpse into San Diego’s rural past.

**Bonsall Bridge – 1925**

The Bonsall Bridge (also known as the Old Bonsall Bridge and the San Luis Rey Bridge) was built during a boom in bridge construction around the state.\textsuperscript{13} An impressive 672 feet long, it includes five open-spandrel arches flanked by two
smaller arches at either end.\textsuperscript{14} It carried US Highway 395 and, later, State Route 76 across the San Luis Rey River just west of Bonsall from 1925 to 1990, when it became a bike path and popular photography location.\textsuperscript{15}

**Los Peñasquitos Creek Arch Bridge – 1949**

Located just south of Poway Road and east of Interstate 15, this 434-foot bridge was built in 1949 and became part of a realigned US Highway 395.\textsuperscript{16} Its single arch spans Peñasquitos Creek and the Trans County Trail. In 1965, separate southbound lanes were built for the highway. The bridge carried only northbound traffic until 1977 when it was closed to motorized vehicles.\textsuperscript{17} It is now a popular bike path. The bridge is also accessible from Scripps Poway Parkway via Cara Way, which provides a somewhat obstructed view of the bridge's 220-foot arch.

**Laurel Street Overcrossing/Cabrillo Bridge – 1915**

The Laurel Street Overcrossing at State Route 163, also known as the Cabrillo Bridge, is a reinforced concrete cantilevered hollow arch structure that resembles a Roman aqueduct.\textsuperscript{18} It has a total length of 769 feet, a width of 41 feet, and a maximum height of 129 feet. At one time spanning a man-made lagoon at the western edge of Balboa Park, it is one of the earliest examples of a Spanish Colonial Style closed-spandrel arch bridge in the United States. A City, State, and National Historic Landmark, the bridge is owned by the City of San Diego. The
portion over the state right-of-way is maintained by the California Department of Transportation (Caltrans).

Cabrillo Bridge was named for Spanish explorer Juan Rodríguez Cabrillo who, in 1542, was the first European to land on California’s shore. In the early twentieth century, San Diego’s city leaders initiated ambitious plans to mark the anticipated completion of the Panama Canal—and San Diego’s position as the first U.S. port for ships making the journey west—with the Panama-California Exposition. Once a site was determined, an appropriately grand bridge was needed to provide access from Laurel Street across Cabrillo Canyon to the Exposition grounds.

Bertram Goodhue, the park’s supervisory architect, was initially slated to design the bridge. In the end, however, the Exposition’s Director of Works, architect/engineer Frank P. Allen, and engineer Thomas B. Hunter were responsible for the final design. The City of San Diego constructed the bridge at a cost of $225,155. It consists of seven 56-foot-wide semicircular arches supported on twelve hollow rectangular piers and a hollow abutment structure at each end. The span from the center of one pier to the next is 68 feet. In 1950, wrought iron fencing was added to one section of the bridge to enhance safety, but care was taken to ensure that its design was complementary to the bridge, its original iron streetlamps, and nearby structures. The bridge has two vehicular lanes and sidewalks and is a vital link for pedestrians, cyclists, and vehicles to access the park over Cabrillo Canyon and SR 163.

In 2004, deterioration of the bridge’s concrete surface necessitated emergency
repairs of the bridge spans over the freeway. One evening during construction, a fire started at the base of one of the piers and ignited internal wood formwork that was part of the original construction. Firefighters had to close the freeway and bridge and jackhammer holes in the bridge deck so that water and foam could be sprayed into the piers to extinguish the fire.

In 2013, Caltrans administered the seismic retrofitting and rehabilitation of the entire bridge, with construction costs of $22.4 million. In order to maintain the bridge’s historic character, the seismic retrofitting, which included horizontal and vertical post-tensioning, was constructed on the inside of the bridge, hidden from view. Deteriorated concrete was repaired to match the existing color and texture of the bridge. Additional improvements included repair of the drainage; new access doors, internal lighting, and inspection ladders and catwalks; and the addition of exterior up-lighting (designed by CH2M Hill) that illuminates the arches at night. All of these repairs and upgrades were expedited in order to be ready for the centennial celebration of Balboa Park in 2015.

Bankers Hill Commuter Bridges

The existence of the First Avenue Bridge over Maple Canyon can be attributed
The Bridges of San Diego County

to the growing popularity of private automobiles among residents of San Diego's Uptown district following World War I. The area's canyons limited the possible routes downtown to only a few streets until uptown residents demanded—and helped pay for—a more direct route for commuters.

The First Avenue Bridge and associated improvements provided that route. Also known as "The People's Bridge," it carries First Avenue 463 feet across Maple Canyon in the Bankers Hill area north of downtown. Local civil engineer Tom Johnson Allen of Allen & Rowe Engineering designed the steel truss arch bridge. Standard Iron Works fabricated the structure, and local highway development giant R.E. Hazard Company built it in 1931.

Nearly seventy-five years later, the City of San Diego submitted a plan for a seismic retrofit and painting of the bridge. The award-winning retrofit was designed by T.Y. Lin International and constructed by Reyes Construction. Because the bridge is recognized as a historical resource, the appearance of the bridge needed to maintain its historic character while the structure was brought into compliance with Caltrans seismic safety standards. The project took nearly fifteen months to complete and included improvements to the deck, abutments, columns, and footings. Workers also resurfaced the bridge deck; replaced the missing historic light standards; and returned the bridge to its original color, "Mannered Gold," which was determined only after the careful removal of seven newer layers of environmentally hazardous lead paint.

Two older bridges in the Bankers Hill area were also built for commuters. In the days before private vehicle ownership became widespread, these pedestrian...
bridges connected residents of San Diego’s suburbs with public transportation on Fourth and Fifth Avenues.

**Quince Street Bridge – 1905**

A 236-foot long wooden trestle, the Quince Street Bridge, rises 60 feet above Maple Canyon between Third and Fourth Avenues. This City of San Diego landmark was designed by City Engineer George d’Hemecourt and built in 1905 for less than $1,000. Although some repairs were done over the years, termite damage and wood rot threatened the bridge with demolition in 1987. Public outcry resulted in its historic designation based on its design, age, and usefulness to the community. The bridge was retrofitted in 1990 at a cost of $250,000, paid from the city’s capital improvements budget.

**Bridges Breaking the Concrete Mold**

![Spruce Street Bridge, c. 1921. ©SDHC #80: 2436.](image)

**Spruce Street Suspension Bridge – 1912**

This steel, cable-stayed pedestrian bridge spans 375 feet across and 70 feet above Kate Sessions (Arroyo) Canyon along the Spruce Street alignment between Brant and Front Streets. Designed by City engineer Edwin Capps between his two terms as San Diego mayor, this may be the oldest suspension bridge in the county. Burkett & Wong Engineers designed the mid-1980s renovation. San
Diego County is home to at least two other unusual bridges that made important connections.

**Steele Canyon Bridge/Sweetwater River Bridge – 1929**

Built in 1929 on Campo Road (now SR 94), once the main route from San Diego to Yuma, this 150-foot steel Parker through truss (the only one in the county) spans the Sweetwater River between Rancho San Diego and Jamul. A “through truss” bridge has a cross-braced truss structure above the road deck, so traffic passes through the truss. Closed to vehicular traffic in 1986, it is now a pedestrian, bicycle, and equestrian bridge at the entrance to the San Diego National Wildlife Refuge.

**Goat Canyon Railroad Trestle – 1932**

The Goat Canyon Railroad Trestle in Carrizo Gorge is the epitome of “a problem solved” and “a challenge overcome.” Carrizo Gorge lies in the path of a 140-mile freight railway that travels across incredibly rough terrain to connect San Diego to Plaster City (20 miles west of El Centro) via Tijuana, Campo, and Jacumba. The trestle was built in the gorge in 1932 to reroute San Diego and Arizona Eastern Railway line trains around a collapsed tunnel. The railway has closed periodically since 1976 when tropical storm Kathleen damaged sections of the line. Metropolitan Transit System (MTS) purchased the line in 1979 and has had agreements with various freight operators, but its future operation is unclear. At 630-feet long and 186-feet tall, the trestle is one of the largest in the world.
The Bridges of San Diego County

Picturesque Bridges

The Sorrento Overhead, also known as the North Torrey Pines Bridge, sits on North Torrey Pines Road at the boundary between the cities of Del Mar and San Diego. It overlooks the mouth of Los Peñasquitos Lagoon, adjacent to Torrey Pines State Beach and just north of Torrey Pines State Natural Reserve. The bridge, while not part of the natural landscape, nonetheless appears perfectly suited to this scenic location, so much so, that the City of Del Mar designated it a historic landmark in 1996.33

In the early twentieth century, the road between Del Mar and San Diego was winding and dangerous. Flooding regularly damaged the wooden trestles that allowed vehicles to pass under the railroad tracks. As the region developed and traffic increased, it became clear that this coast highway—which was also the main route between Los Angeles and San Diego—needed to be realigned and widened. After years of planning, the highway was rerouted to eliminate steep grades and hairpin turns. M.J. Dwyer, an Assistant Bridge Design Engineer at the Division of Highways in Sacramento, designed a new bridge to replace the railroad underpass just south of the new location.34 Completed in 1933 by Los Angeles builder Byerts and Dunn, the Sorrento Overhead was a reinforced concrete T-beam girder structure with ornamental balustrade railings and soffit bracketing; peaked arches between the central columns suggest a Gothic influence on the design. Together, its 13 spans were 553-feet long and rose 22 feet above

Sorrento Overhead/North Torrey Pines Bridge, c. 2015. Photograph by Wade Durant.

Sorrento Overhead/North Torrey Pines Bridge – 1933

The Sorrento Overhead, also known as the North Torrey Pines Bridge, sits on North Torrey Pines Road at the boundary between the cities of Del Mar and San Diego. It overlooks the mouth of Los Peñasquitos Lagoon, adjacent to Torrey Pines State Beach and just north of Torrey Pines State Natural Reserve. The bridge, while not part of the natural landscape, nonetheless appears perfectly suited to this scenic location, so much so, that the City of Del Mar designated it a historic landmark in 1996.33

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Sorrento Overhead/North Torrey Pines Bridge, c. 2015. Photograph by Wade Durant.
the railroad right-of-way and over 50 feet above the adjacent wetland. The State of California paid $117,000 for the new bridge, double the anticipated budget.35

In the decades that followed, the Sorrento Overhead carried traffic across a state preserve wetland and over busy railroad tracks. Users of the bridge included locals commuting between Del Mar and La Jolla or San Diego; tourists in vehicles or on bicycles travelling along the coastal road; and pedestrians accessing the popular beach and the state park on the bluffs above it.

Due to its age, heavy use, and proximity to the sea, the concrete bridge’s structural integrity eventually became severely compromised. In similar circumstances, other bridges in the vicinity were substantially altered (primarily by retrofitting and widening) or even replaced. However, the City of Del Mar, owning one-half of the bridge, resisted the City of San Diego’s proposal to replace the structure altogether. After gaining full ownership of the bridge, the city committed to retrofit it in order to retain the structure and appearance of the 1930s original. The retrofit designed by Simon Wong Engineering (now Kleinfelder) was constructed by Flatiron under contract with the City of Del Mar. Work commenced in 2011 and entailed building temporary bridges to re-route traffic in stages while new precast, prestressed, and post-tensioned girders matching the original architecture were installed, the column concrete and rebar replaced, and a cathodic protection system installed.36 The project also required coordinating with the North County Transit District to meet the railroad’s strict requirements for work in its right-of-way; monitoring by biologists to ensure protection for local wildlife, including bats and endangered California gnatcatchers; and working with nearby residents to minimize disruptions made inevitable by night work and temporary road re-alignments. The project was completed in early 2014.

North Torrey Pines Road Bridge over Los Peñasquitos Creek – 2005

Just south of the historic Sorrento Overhead/North Torrey Pines Bridge sits a much more recent—but no less fitting—addition to this picturesque location. Like its much older counterpart to the north, the 2005 North Torrey Pines Road Bridge carries pedestrians, cyclists, and thousands of vehicles across an environmentally sensitive area, in this case, the outlet of Los Peñasquitos Creek and Lagoon. Therefore, its design and construction had to meet the strict requirements of both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The haunched, three-span, cast-in-place, prestressed box girder won multiple awards, including the ASCE San Diego Section’s Award of Excellence.37
Scenic Water Crossings

North Torrey Pines Road Bridge over Los Peñasquitos Creek. Photograph by Vince Streano.

San Diego–Coronado Bridge – 1969

San Diego-Coronado Bridge. Photograph by Thuan Ton.

“It’s an iconic piece of public art in one of the world’s most beautiful cities,” commented Port Commissioner Lee Burdick in 2010. Engineered by a team at
the California Department of Public Works, Division of Bay Toll Crossings, the 2.12-mile long San Diego-Coronado Bridge sweeps dramatically out into the bay, its blue superstructure in harmony with the surrounding water and sky.38 Lew Dominy, an associate in architect Robert Mosher’s office in the years following the latter’s work on the bridge, wrote:

Bob determined the plan with the large radius graceful curve, conceived of the arched columns to recall the mission architecture of our region, and selected the blue color for the steel (which was his favorite color perhaps because he loved to sail). At his office, we always called this royal blue color “Mosher Blue” because it was always a safe choice if we were seeking his approval. He also was the driving force to keep it so simple and pure in form—a large reason for its enduring beauty.39

This bridge is the main means for traveling by vehicle across the San Diego Bay between San Diego and Coronado, a popular tourist destination and home to the North Island Naval Air Station and Naval Amphibious Base. Before the bridge was constructed, Coronado was accessible via ferry service or by driving around the southern end of San Diego Bay, then north on the Silver Strand, a trip of approximately 20 miles. The bridge superstructure consists of steel I-girders and steel box girders that were fabricated in the San Francisco Bay Area and brought to San Diego by barge.40 The substructure’s 30 towers rest on 487 prestressed reinforced concrete piles that were driven up to 100 feet into the floor of the bay, then filled with concrete.41 Clearance over the bay is 200 feet to allow for the passage of large ships, as requested by the U.S. Navy.42

The Coronado Bridge officially opened in 1969 during the celebration of San Diego’s bicentennial. Daily traffic grew from nearly 25,000 vehicles per day in 1971 to nearly 75,000 per day in 2009.43 It has been retrofitted twice, each time after an earthquake elsewhere resulted in updated seismic standards.44 The latest retrofit was designed by a McDaniel Engineering/J. Mueller International joint venture and implemented in 1999.45 Under prime contractor Traylor Pacific, the work included adding lead-rubber seismic isolation bearings at the tops of some piers and large viscous dampers (like shocks on a vehicle) at the ends of the steel box girder that spans the main channel openings.46 The retrofit team also worked with the community to preserve the historically and culturally significant Chicano Park murals.
David Kreitzer Lake Hodges Bicycle Pedestrian Bridge – 2009

When San Diego is not experiencing a record drought, the world’s longest stress ribbon bridge is reflected in the waters of Lake Hodges, just south of Escondido. The David Kreitzer Lake Hodges Bicycle Pedestrian Bridge allows active San Diegans to enjoy the mild climate. Designed to minimize impacts on sensitive habitats, the 990-foot bridge has only two supports within the lake. Part of the San Dieguito River Park’s trail system, it not only connects trails on the north and south shores of the lake, but also provides access to the Coast to Crest Trail, which reaches from Del Mar to Volcan Mountain near Julian.
Mike Gotch Memorial Bridge over Rose Creek (Mission Bay) – 2012

With an overall length of 260 feet, this elegant bridge is one of the longest single-span pedestrian bridges of its type in the United States.\textsuperscript{50} It also completes the northeast section of the path circling Mission Bay, giving pedestrians and other non-motorized traffic a safer alternative to busy surface streets. It is fitting that this bridge honors Mike Gotch, a former member of the City Council and the State Assembly, and a committed environmentalist who worked to ensure public access to Mission Bay.\textsuperscript{51}

Cantilever Bridges

Pine Valley Creek Bridge – 1974

In the early 1970s, the old US 80 highway connecting San Diego to points east was gradually giving way to the new Interstate 8. Sixty miles east of the city, Caltrans bridge designers were faced with the formidable task of crossing a 450-foot wide, 440-foot deep canyon. The result was one of the tallest bridges in California and the first long-span segmental bridge in the United States: the Pine Valley Creek Bridge.\textsuperscript{52}

The Caltrans design (under project engineer Bert Bezzoni) consisted of approximately 15 drawings, but once the project was awarded to a joint venture
of SJ Groves and Dyckerhoff & Widman, it was subjected to a Value Engineering Redesign under chief engineer Man-Chung Tang. Involving more than 500 drawings, it was a complex and exciting project. According to Tang, “At that time, no one had experience in cantilever construction in the U.S.” Because it was such a new method of construction, Tang “also designed all formwork, form travelers, and the moveable truss used for trucks to transport people and material from pier to pier.” The hard work was well worth it, though. “Most long span concrete bridges, worldwide, have deflection problem. The PVCB is an exception. It is perfectly straight after over 40 years of service.”

**Otay River Bridge – 2007**

More than 30 years later, another world-class segmental cantilever bridge was built in the county. The 2007 completion of the Otay River Bridge on the South Bay Expressway, a toll road between SR 905 near the US/Mexico border and SR 54, provided inland south county residents and cross-border traffic with a convenient connection to the regional highway system, allowing them to avoid the busier I-805.

Like the Pine Valley Creek Bridge, this 3,320-foot long, 180-foot high bridge uses segmental cantilever design. The older bridge was entirely cast in place, however. The Otay River Bridge uses cast-in-place piers, but they support a superstructure of precast segmental box girders that were made by Pomeroy Corporation in Perris, California; shipped to the bridge site; and installed using...
an overhead gantry. Recipient of numerous awards, the bridge was designed and built by Otay River Constructors (a Washington Group/Fluor joint venture), with design consulting by International Bridge Technologies and Washington Infrastructure Services. Parsons Transportation Group provided construction supervision.55

Freeway Crossings

West Lilac Road Overcrossing – 1978

Nearly 700-feet long and rising 122 feet above the Interstate-15 north of Escondido, the West Lilac Road Overcrossing provides a dramatic connection between the communities surrounding Valley Center and Bonsall. It may be one of the best known bridges in the county, but it often provokes the question: Why was a structure of this magnitude built in such a sparsely populated, semi-rural location? The answer is “Mr. Caltrans.” Engineer Jon Mehtlan explains, “A more typical slab bridge built a half mile north or south could have accomplished the same task for much less money. But then-Director of Caltrans District 11, Jacob Dekema, liked to do something iconic every once in a while.”56 Dekema, often referred to as the father of San Diego’s highway system, brought great vision and direction to the region. And in the 1970s highway funding was available to support the resulting projects.57

During the construction of West Lilac Road Bridge, Mehtlan was an Assistant
Bridge Engineer at Caltrans doing fieldwork under Structure Representative John Day. He recalls that the West Lilac Road overcrossing was a complicated undertaking. A product of the Caltrans Bridge Department, it was designed by engineers Fred G. Michaels and John Suwada (with architecture consulting by William Wells) in 1973. Mehtlan recalls that the project sat on the shelf for a few years, during which time Michaels and Suwada left Caltrans, taking their notes with them. This left the field engineers to their own devices and many engineering calculations were worked out onsite. Nothing on the bridge was symmetrical; the arch, the sloping girders all varied lineally from one end to the other, so calculations had to be made inch-by-inch the entire length of the bridge, all before the computer age.

While the location of the bridge enhances its visual impact, the terrain presented its own challenges, requiring three times the effort to manage lines and grade. One contractor employee found the project so frustrating that he left the business entirely. Prior to construction of the bridge, the hill existed with a cut for the new Interstate-15 travel lanes. Then 11 million cubic yards of rock had to be excavated to prepare the slopes for the installation of the bridge. Because the bridge was cast in place, the falsework had to be installed according to very precise field calculations that took weeks to do.

The bridge has three spans. One, the arch, is conventionally reinforced with interior rebar. The two approach spans, however, were post-tensioned. When the cables in the superstructure were pulled tight on the day before Thanksgiving, the bridge’s weight was transferred onto the arch, which was still being supported by falsework. Field calculations indicated that transferring this load would cause the falsework at the center of the arch to move an acceptable 1-3/8 inches. When the crew returned from the four-day holiday, however, they found that the falsework had become so tightly compacted and mangled that it had to be removed with cutting torches. In all, the project took nearly two years and $1.5 million to complete. It opened in 1978 and has been fascinating people ever since.

Adams Avenue Overcrossing/Roscoe E. Hazard Memorial Bridge – 1970

A number of well-known bridges were built while Dekema was at the helm of Caltrans District 11, including the Adams Avenue Overcrossing. This graceful 439-foot bridge spanning Interstate 805 is a haunched, three-span box girder supported by tapered piers. Connecting the communities of University Heights and Normal Heights, it was named for Roscoe E. “Pappy” Hazard (1881-1975), also known as “Mr. San Diego.” Hazard was a prominent builder of highways and ardent supporter of San Diego history.
Eastgate Mall Road Overcrossing/Henry G. Fenton Bridge – 1971

It is often suggested that this bridge over I-805 between the Golden Triangle and Miramar is a twin of the West Lilac Road Overcrossing. Caltrans engineer Fred Michaels was involved in the design of both bridges and they are visually similar, but they are not quite identical. The Eastgate Mall Road Overcrossing is
smaller and its arch is flanked on each side by an inclined column. Also known as the Old Miramar Road Overcrossing, in 1982 the bridge received its third designation when it was named the Henry G. Fenton Bridge in honor of the local contractor and rancher.66

I-805 Viaduct over Mission Valley – 1973

Once an agricultural area with a highly unpredictable river and a history of flooding, Mission Valley entered the modern era in the 1950s with development in the form of hotels, shopping centers, and recreational amenities, indoors and out.67 Office buildings, the San Diego Stadium, and Interstate 8 soon followed.68 Planning for an inland north-south freeway mirrored the valley’s development, and construction of Interstate 805 began in 1967. It would need to cross both the I-8 and the San Diego River.

The solution was the 3,900-foot Mission Valley Viaduct, at one time the longest concrete box girder bridge in the world. The Viaduct is the top stack of the Jack
Schrade Interchange, a four-level symmetrical stack interchange that allows a smooth flow of traffic between the I-805 and I-8 freeways. In addition to being visually appealing, the viaduct also serves an important purpose in carrying traffic across Mission Valley. In fact, this portion of the I-805 is part of the Intermodal Corridors of Economic Significance (ICES) system—corridors essential to the state’s economy. Anticipated development along the I-805 presents a challenge for future planners to accommodate increasing traffic across this vital structure.

Trolley Bridges

Whereas the Viaduct carries large numbers of travelers across the busy Mission Valley corridor, people also need to travel along it and now have an option to do so via public transportation. While the last of San Diego’s early trolley lines ceased operation in 1949, public light rail projects resurfaced a quarter century later. In 1976, State Senator James R. Mills from San Diego sponsored legislation to create the Metropolitan Transit Development Board (MTDB). By the mid-1990s, the MTDB’s trolley system included lines running from San Ysidro and Santee to downtown. Work was underway on a north-south line from downtown to Old Town, and plans were in motion to extend service through Mission Valley, which had become a multi-use urban transportation corridor, albeit, one in a flood plain.
Over the ensuing decade, that plan would bear fruit. The line developed eastward from Old Town, with many segments elevated to reduce flooding hazard and clear existing structures.

**Qualcomm Station – 1997**

Opened just in time for Super Bowl XXXII in January 1998, this imposing concrete station complements the Brutalist architectural design of Qualcomm stadium, formerly named for Jack Murphy in 1969. On average, it is not the most-used station on the line. Trolley ridership during games, however, is very high, taking thousands of vehicles off the surrounding roads on game days. The platforms and rail line are raised, allowing parking beneath. This station provides the most parking of any in the system: 5,000 free spaces are available when the stadium isn’t hosting a major event. This is particularly useful since the green line began offering direct service to another special-event draw, the convention center.

**Grantville Station – 2005**

*Grantville Station. Photograph by Vince Streano.*
Grantville Station is a substantial concrete structure located two stops east of Qualcomm Station. It appears somewhat more ethereal than the latter due to its green mesh screens and steel canopies. While both stations serve riders travelling to entertainment venues, Grantville also serves the busy Mission Gorge Road commercial district, as well as nearby residential areas.

Mission Valley East Light Rail Transit Extension – 1999-2005

This $506 million project completed the Green Line through Mission Valley. It closed the nearly six-mile gap that had existed between Mission San Diego and La Mesa and added stops at Grantville, San Diego State University, Alvarado Hospital, and 70th Street on its way to Grossmont Center. Many local design and construction firms were involved in this project, which received an ASCE Award of Merit in 2008.
A century ago, San Diego’s oldest suspension bridge helped neighborhood residents to easily reach trolley lines. The city’s newest such bridge, however, was a matter of public safety as it provided access for pedestrians and cyclists over busy Harbor Drive and the six train and trolley tracks crossing the southern end of Park Boulevard. But the Harbor Drive Pedestrian Bridge is also the realization of a goal first expressed in 1908—connecting two of the city’s renowned and important regional assets.\textsuperscript{81} With the opening of this bridge in 2011, it became possible to travel along Park Boulevard from Balboa Park all the way to the San Diego Bay.

Designed by T.Y. Lin International and Safdie Rabines Architects, and built by Reyes Construction, this multiple-award winning structure is one of the longest self-anchored suspension bridges in the world. And while many bridges require distance viewing to achieve their full aesthetic impact, this bridge is visually...
striking from all angles, including from atop the curved deck suspended along its inside edge from a single 131-foot pylon. Only a few years old, the Harbor Drive Pedestrian Bridge is recognized as the latest in a long list of extraordinary bridges in the San Diego region.

From the early 20th century, when San Diego was a small coastal town, its residents—and engineers—have built bridges to solve problems, overcome challenges, make connections, and provide artistic vision to inspire the imagination. These vital structures have helped the region to grow, flourish, and become the vibrant and diverse metropolitan area that it is today.

NOTES

3. Mark Ashley, email exchange with Clark Fernon, December 2, 2015.
5. Jim Frost, email exchange with Clark Fernon, December 03, 2015.
7. Comly also designed the concrete girder bridge that carries Market Street over 24th Street in the Grant Hill neighborhood. Alexander D. Bevil, National Register of Historic Places Continuation Sheet (University Heights Historical Society, June 5, 1998), Section 8, page 3.
9. The Georgia Street Bridge’s builder was Edward T. Hale. Bevil, National Register of Historic Places Registration Form, 3.
11. An arch bridge’s “spandrels” are the roughly triangular areas formed on each end of the bridge between the arch, the abutments, and the roadway (deck). An “open-spandrel” bridge has visible supporting vertical members within that triangular area.
12. Precast concrete construction means that portions of the structure are made separately, either on site or elsewhere, and then attached to the structure. California Department of Transportation, Historic Highway Bridges of California ([Sacramento]: California Department of Transportation, 1990), 104.
13. “Plans for $2,000,000 in New Bridges are Approved,” California Highways 1, no. 7 (July 1924), 10, https://archive.org/stream/california192427highwacalirich#page/n45/mode/2up (accessed June 29, 2015).


18. A “cantilever” is a horizontal “structural member that projects beyond a supporting column or wall and is counterbalanced and/or supported at only one end.” Communities of Practice: Center for Environmental Excellence by AASHTO (American Association of State Highway and Transportation Officials), “Glossary,” http://environment.transportation.org/cop/groups/historic_bridges/pages/glossary.aspx (accessed April 15, 2015).


21. “Post tensioning” is a type of what is typically called “prestressing,” wherein steel cables are placed inside of ducts that run through a concrete structure. The cables are tensioned after the concrete has hardened, putting the concrete into compression and strengthening the overall structure.

22. The historic Uptown District was bounded by A Street to the south, Balboa Park to the east, and Hillcrest to the north. City of San Diego Planning Department, IS Architecture, and Walter Enterprises, Uptown Historic Context and Oral History Report, City of San Diego (November 24, 2003), 2.

23. The cost to build the bridge was $113,708.33, and it was paid for by assessments on property owners along First Avenue. Historical Resources Evaluation Report for the First Avenue Bridge, 6.

24. Ibid., 7.


29. The bridge builder was Knight & Hale Construction Company. Photo, San Diego Historical Society #80:2432 (c. 1911-12).


34. Ibid., 9.

35. Ibid., 8.

36. “Precast” is defined in note 12. “Prestressed” means that interior cables providing strength to the bridge are pulled to the appropriate tension before concrete is poured around them. With “post tensioning” tightening takes place after the concrete has hardened. “Cathodic protection systems” run an electrical current through a structure to prevent corrosion of the structure’s interior steel.

37. “Haunched” bridges have beams that are enlarged near their supported ends (i.e., at the columns) to increase strength, and so appear as shallow arches. “Cast in place” means that concrete was placed into formwork at the site in its ultimate location.

38. “Superstructure” refers to the part of the bridge that spans whatever obstacle the bridge is designed to cross (in this case, the San Diego Bay).

39. Lewis Dominy, AIA (Principal, Domusstudio Architecture), emails to Richard Chavez (SANDAG), August 24, 2015, and Christine Robbins, September 27, 2015. Dominy and Chavez are working on the Coronado Bridge Bike/Ped Tube study to determine how to incorporate bicycle and pedestrian access to the bridge while preserving its structural and visual integrity.

40. Contrary to a persistent urban rumor, no part of the bridge was designed to float. California Department of Transportation, San Diego-Coronado Bridge Fact Sheet (August 2009), 1-2.

41. The prime contractor on the bridge was Murphy Pacific Corporation. Per the bridge’s final construction reports, Murphy Pacific Bridge Builders built the superstructure (the structural steel, the roadway deck, and the exterior paint) and Guy F. Atkinson Company the substructure (piers, footings, towers, and dredging). H.D. Reilich was the project’s Resident Engineer.


43. San Diego-Coronado Bridge Fact Sheet, 2.


45. McDaniel Engineering is now T.Y. Lin International.
46. Mark Ashley (McDaniel Engineering’s Senior Project Engineer on the 1999 retrofit), email exchange with Wade Durant, May 05, 2015. Tomás Kompfner was Senior Project Engineer for J. Mueller International on the retrofit. 


50. The bridge was designed by T.Y. Lin International.


52. A much shorter span, precast segmental bridge in Texas pre-dated the cast-in-place Pine Valley Creek Bridge. In 2007, the California State Senate issued a resolution naming the PVC Bridge in honor of the project engineer during its construction, Nello Irwin Greer.


54. “Cantilever” is explained in note 18. Cantilevers are a useful construction method for building a long span over a deep canyon when placing supports in the canyon is impractical.

55. Ben Soule, P.E., and Daniel Tassin, P.E., “The Otay River Bridge,” *Structure Magazine* (July 2007), 44. Soule was the Engineer of Record for this project, and Tassin its Technical Director. The Resident Engineer during construction was Melanie Estes. Washington Group, one of the joint venture partners, is now part of AECOM.

56. Jon Mehtlan (Area Structures Construction Manager, Caltrans Districts 8 and 11, retired), telephone conversation with Christine Robbins, April 08, 2015.

57. Jacob “Jake” Dekema was District 11’s highly respected District Engineer and Director for a quarter-century (surpassing his predecessor’s tenure by three years). He held the position from 1955 to 1980, shaping much of the region’s modern freeway system and earning him the nickname, “Mr. Caltrans.” Ron Main, *District 11 August 1935–August 1988: 53 Years & 5000 Miles* ([Sacramento]: California Department of Transportation, 1988), 3.

58. Mehtlan. The project’s prime contractor was Granite Construction. The bridge’s official name, The Walter F. Maxwell Memorial Bridge, honors the founder of its structure subcontractor, W.F. Maxwell Construction. The bridge is also known as the Lilac Bridge and the Rainbow Bridge.


60. Mehtlan. Traffic remained on the old U.S. Route 395 until construction was completed.


62. “Cast in place” is explained in note 38.

63. “Post-tensioned” is explained in note 21.


70. California Department of Transportation Planning Division, District 11, Draft 2020 I-805 Transportation Concept Summary, (February 2010), 14.

71. Ibid., 8.


78. “Mission Valley Over Time.”


81. Planner John Nolan’s idea was to create a block-wide landscaped walkway from the southwest entrance of Balboa Park (then named City Park) twelve blocks east between Date and Elm Streets to the Bay. Gregory Montes, “San Diego’s City Park 1902–1910 From Parsons to Balboa.” JSDH 25, no. 1 (Winter 1979), http://www.sandiegohistory.org/journal/79winter/citypark.htm (accessed April 30, 2015).

History of Caltrans District 11

Cathryne Bruce-Johnson and Carmen Sandoval

Caltrans History

The California Department of Transportation, known as Caltrans, began in 1895 as the Bureau of Highways. Governor James H. Budd appointed R. C. Irvine of Sacramento, Marston Mansow of San Francisco, and J. L. Maude of Riverside as Commissioners of the new agency. They were charged with surveying 8,000 miles of California roads and creating a map of proposed roads for the state’s highway system. The task was accomplished in a fringe-topped buckboard buggy pulled by horses.¹

The first recommendation from the three-commissioner Bureau was to build a highway spanning the state from Yreka, California, and Ashland, Oregon, at the north, to San Diego, California/Tijuana, Mexico at the south.² In 1897, the Bureau of Highways became the California Department of Highways. Proposed roads required separate legislative approval and funding until 1902, when a constitutional amendment was adopted allowing the legislature to create a single highway system funded and administered as a whole.

In 1907, the Department of Engineering replaced the Bureau of Highways and became the new agency in charge of building and maintaining the state’s roads. The agency’s role was financially reinforced by the voter-approved Road Bond Act of 1909 that provided $18 million for state highway system construction. Two years later, the state legislature created the California Highway Commission within the California Department of Engineering to take charge of building the highway system. The Commission divided the state into seven divisions, originally noted

³

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by roman numerals. Each division was led by an engineer who was responsible for conducting surveys, constructing roads, and overseeing road maintenance.3

Below is the 1911 list of California Highway Commission divisions:4

<table>
<thead>
<tr>
<th>Div. I</th>
<th>Willits</th>
<th>Northeastern California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Div. II</td>
<td>Redding</td>
<td>Northwestern California</td>
</tr>
<tr>
<td>Div. III</td>
<td>Sacramento</td>
<td>North Central Valley and Sacramento Valley</td>
</tr>
<tr>
<td>Div. IV</td>
<td>San Francisco</td>
<td>Bay Area</td>
</tr>
<tr>
<td>Div. V</td>
<td>San Luis Obispo</td>
<td>Central Coast</td>
</tr>
<tr>
<td>Div. VI</td>
<td>Fresno</td>
<td>Central Valley</td>
</tr>
<tr>
<td>Div. VII</td>
<td>Los Angeles</td>
<td>Southern California</td>
</tr>
</tbody>
</table>

The seven divisions were eventually restructured into 12 districts to accommodate needed highway expansion and maintenance spurred by population growth and development.5 The Commission marked the first state highway construction contract in 1912. Crews began work on Highway 1, El Camino Real, Pacific Coast route. 6 In 1921, the Department of Engineering became the Department of Public Works, which presided over the Division of Highways. The Director of Public Works held a dual role as Division Chief of Highways and was required to be a state highway engineer. The California Highway Commission remained intact within the new department until 1923, when it was pulled out of Public Works to allow the Chief of the Division of Highways to focus on building and maintaining highways.

Another important event in 1923 was the first state gasoline tax, charging two cents a gallon. Also enacted was legislation for a “Motor Vehicle Fuel Fund” that dispensed money directly to counties and into the “State Highway Maintenance Fund” for maintenance, repair and improvements of state highways and roads and highways in state parks.7 New legislation in 1927 reorganized the Public Works Department reinstating the Highway Commission within it and recreating the office of the Department of Engineering to oversee the Division of Highways.

In 1934, the California Division of Highways assigned route numbers to state highways.8 Even numbered highways primarily go east and west while odd numbered highways go north and south. The Division of Highways continued to report to Public Works until the next major reorganization in 1937, when the Director of the Public Works became the Chair of the California Highway Commission. The year 1973 marked the end of the Division of Highways and the beginning of the California Department of Transportation. Senator Wadie P. Deddeh, then California Assembly Member, introduced and helped pass
legislation to create the California Department of Transportation.9

Caltrans today reports to the California State Transportation Agency, which was established on July 1, 2013, as a new state agency focused solely on transportation. The Agency is also home to the California Highway Patrol, Department of Motor Vehicles, Office of Traffic Safety, California High Speed Rail Authority, and California Transportation Commission.10

District 11

The eleventh district of the California Division of Highways was created on August 21, 1933, from portions of District 7 in Los Angeles and District 8 in San Bernardino.11 It comprised San Diego, Imperial, and east Riverside counties.12 The District 11 boundary was revised in the mid-1990s when responsibility for all of Riverside County was placed under District 8.13

The new District 11 headquarters, denoted by Roman numeral XI at the time, was established in 1933 at 1365 Harbor Street, across from the Star of India (temporary location) and the County of San Diego’s Administrative Offices on Harbor Drive. It was built in the Spanish/Mediterranean architectural design, typically used for state buildings pre-world War II.14 A dedication luncheon ceremony for the new District Office was held at the high class San Diego Hotel on August 3, 1935. The cost to attend was 75 cents.15 In that year, San Diego County boasted a population of 210,00016 residents compared to a count of 3.3 million people in 2015.17
A Spanish Revival Maintenance Building was built on Juan Street in Old Town in 1938, followed by a new district office building in the 1950s. The Division of Highways strived to meet infrastructure needs of a post-World War II economic boom. Plans for modernization were set in motion in 1950 when the California State Division of Architecture, Department of Public Works, in cooperation with the Division of Highways, hired architects C. Paderewski, Mitchell & Dean, and Adrian Wilson to begin design of the new District 11 office complex. The site was selected for its convenient and central location to downtown San Diego.
Below is a description of the proposed office complex according to the Department of Public Works, Division of Highways Order No. 2380SC issued on December 26, 1951 (as cited in Supernowicz and Calpo, 2011):

District XI Office Building, San Diego-Construct a new reinforced concrete office building having a three-story center section and three two-story wing sections; a new addition to a cafeteria building and remodeling of an existing building; a covered carport; a covered walk between office buildings and the cafeteria building; and site work, grading paving, fencing, electrical and mechanical services.

Construction on the new San Diego headquarters began in 1951 and cost about $975,000. In 1953, seventy employees moved from Harbor Street to the newly constructed complex at 2829 Juan Street in Old Town, San Diego. The new structure replaced the Old Mission Olive Factory built in 1915. The factory had been built by businessman R. S. Truffley in the Spanish Mission Style that matched the Old Town and some Panama-California Exposition structures. The Harbor Street property was used by the Port Authority until the property was sold for construction of a hotel in 1956.

The District 11 Office Complex at Juan Street was expanded in 1958 and again in 1964. It covered an entire city block bordered by Taylor, Juan, Calhoun and Wallace streets and across from the Old Town San Diego State Historic Park. By the early 1990s, it was apparent that district staffing would soon exceed the space limitations in the aging building and maintenance and rehabilitation costs were escalating. About $7.1 million was needed for repairs according to the 1991 study by The Office
of the State Architect. The study estimated that an additional $10 million would be needed for the required seismic retrofit of the main office building.

The lack of space and the prohibitive repair and rehabilitation costs prompted Caltrans to find a new district headquarters. In February 2004, the Department of General Services awarded the contract for the new District 11 Office Complex Project to Clark Construction Group Inc. of Costa Mesa. Caltrans property across from the Juan Street complex was cleared and a groundbreaking event took place in May. The new complex featured three connected buildings of three, four and five stories totaling 301,000 square feet. The cost was slightly more than $72.5 million. Construction finished eight weeks ahead of schedule in April 2006 and District 11 had a new address—4050 Taylor Street.

Some of the stand out features were a “Town Square” and “Grand Trellis” between the two main buildings offering a shaded courtyard for employee gatherings. The design includes a childcare center with an outdoor playground. It also has showers and locker facilities for bicycle commuters and at least one kitchenette on every floor. The landscaping was coordinated with Old Town Planning group and plants were selected to conform to the established landscape in surrounding Old Town. Approximately 300 trees, 1,000 shrubs and 12 types of ground covers were planted. The new complex can house 950 employees, and has 850 parking spaces including motor pool parking.

Public Art works displayed on the property are the eucalyptus sculpture hanging from the Grand Trellis by artist Roman DeSalvo and the five transportation-themed carved cantera stone and glass wheels by brothers Einar and Jamex De La Torre. A ceremony was held on April 5, 2006, dedicating the new District 11 Caltrans Office Complex as the Wadie P. Deddeh State Office Building. State Senator Deddeh, known as the “Father of modern-day Caltrans,” authored 1972 legislation that created the California Department of Transportation, formerly Division of Highways, California Department of Public Works. Staff moved to the new building over the next few months from across the street and from leased office space in five separate buildings in Mission Valley, downtown and Kearny Mesa. This saved the state about $3.4 million a year.

Then came the question of what to do with the vacated building that was costing in excess of $150,000 annually to maintain. It could not be given away, even to another state agency. Caltrans was bound by state law to auction the state property at fair market price. Meanwhile, the space was occasionally used for law enforcement training exercises and as a set for television filming. The former district headquarters was finally transferred to the state parks system in November 2013 through Legislative Joint Budget Committee approval advocated by Assembly Majority Leader Toni Atkins.
E. E. Wallace

E. E. Wallace was the first District Engineer for District XI and served from September 1933 until his retirement in September 1955. A brief biography found in district records indicated that he was best known for accomplishments during WWII for “supervision of planning and construction of important access roads, developed by the state for the Federal Government that served aircraft plants, shipyards and military establishments.”

Wallace began his career with the Division of Highways in 1913 at San Luis Obispo in District V. Within six years he had become Assistant District Engineer. While in San Luis Obispo he worked on the Carmel-San Simeon Highway known at the time as State Route 1. He went on to become District Engineer for Fresno’s District VI in 1926 until his appointment to the newly formed District XI.

Wallace was born in Harlan, Iowa, and had also lived in Alabama and Tennessee. He completed civil engineering studies at University of Alabama before securing a civilian job with the U.S. Corps of Engineers in lock and dam construction in 1908. He worked the next year with the Southern Pacific Railroad in Los Angeles and Bakersfield. In 1911, he was hired by Associated Oil Company in its Bakersfield engineering department and worked there two years.

Wallace was honored with a retirement dinner hosted by the San Diego Chamber of Commerce at the El Cortez Hotel on August 26, 1955. The 562 attendees included engineers and Division of Highway employees from across the state as well as members of the California Highway Commission, state legislators, and city and county officials throughout San Diego, Imperial, San Bernardino, and Riverside counties. He was married with two children, Donald and Janet.

Completion of the Cabrillo Freeway (U.S. 395 and later State Route 163 through
Balboa Park) shortly after the war was a significant achievement as one of the state’s first full freeways. Other major projects were portions of U.S. 10—known then as the Oceanside-Carlsbad Freeway and Montgomery Freeway—connecting National City to the border with Mexico. Some of the projects completed during his leadership at District VI included the Grapevine Grade Section of U.S. 99 south of Bakersfield and initial groundwork for mountain roads leading into Kings Canyon National Park.

**Jacob Dekema**

Jacob “Jake” Dekema was known as “Mr. Caltrans” in San Diego during his quarter century heading District 11. He followed E. E. Wallace in 1955 as District Engineer. In 1962, Dekema petitioned the San Diego Highway Development Association (SDHDA) to submit a resolution to Caltrans elevating his position in parity with his counterparts in the San Francisco and Los Angeles districts. The resolution passed and Dekema became Assistant State Highway Engineer that year. In 1977, his title changed to District Director when the Division of Highways became the Department of Transportation.

The region boasted 25 miles of freeway in 1955 consisting of the old Route 395 now State Route 163 in Balboa Park, Chula Vista and Oceanside sections of route 101. Dekema’s tenure as District 11 Director saw more than 480 miles added to the state highway system. He worked with the city of San Diego planning department and the County Road Commissioner to lay out the future freeway system for San Diego County. Almost 95 percent of the total freeway miles in San Diego, Imperial and East Riverside counties was constructed during his tenure.

Some milestone accomplishments include the opening of the San Diego-Coronado Bridge in 1969 with then Governor Ronald Reagan, and the district’s first non-motorized roadway (where bicyclists and pedestrians were allowed on the shoulder of the highway) located on State Route 94 between Kelton Road and Federal Boulevard which was completed the same year.

According to an oral history interview, conducted on July, 9 2001, by George Gray titled “Highway Recollections of Jake Dekema.” Dekema was born in 1915 in the Dutch East Indies, now known as Indonesia. His father was an agent for several steamship companies and Lloyd’s Insurance. The family lived in San Francisco, Holland, and British Columbia before settling in Los Angeles where he graduated from high school in 1933. Dekema earned a Bachelor of Science degree in Engineering from the University of Southern California, graduating with top honors in 1937. He held a summer job in Fresno District VI in 1936 and then worked briefly for District VII in Los Angeles after graduation. He took
a job with Los Angeles County and then became interested in becoming a bridge engineer with the Division of Highways where he found himself in 1938.

Dekema’s career was interrupted for three years by World War II and his service with the U.S. Navy, specializing in aviation ordinance. He met his wife Shirley and finished his tour of duty in 1946. They had two children, Pamela and Douglas. He returned to the Division of Highways and eventually became District Construction Engineer in District IX (Bishop), Assistant Construction Engineer at the Sacramento headquarters office and Assistant District Engineer of Administration at District VIII in San Bernardino before his appointment to head District XI. Dekema retired from a distinguished 42-year career on December 29, 1980. A surprise testimonial dinner was held for him on January 16, 1981, at the Bahia Motor Hotel. The guest list included more than 300 state and local officials.

In 1981, the state legislature passed a bill sponsored by State Senator Jim Ellis to name Interstate 805 as the Jacob Dekema Freeway. The San Diego Highway Development Association presented Caltrans with a bronze plaque at a dedication luncheon in honor of the freeway naming. The plaque stands at the Park & Ride at I-805 and Governor Drive. Other honors to Dekema include one of the American Public Works’ Association’s Top Ten Public Works Men of the Year Award in 1972, the Distinguished Civil Engineering Alumni Award from USC in 1973. He has received many proclamations and awards, has been presented keys to many cities and has a street named for him in the City of Blythe. He is also listed in the Who’s Who. Dekema wrote many transportation related articles over his career including “Transportation Trends, Can Some of the Cures be Worse than the Diseases?” and “The Ecology of Transportation.” Dekema celebrated his centennial birthday on July 22, 2015, and was honored in person the following day during a Dekema Scholarships Presentation.
Russell O. Lightcap

Russell O. Lightcap was well known for his quiet, steadfast leadership and held many positions with Caltrans. In the early 1970s, he took over responsibilities for the state’s entire fleet of Caltrans vehicles, everything from the bright orange maintenance trucks to the snowplows in the Sierra. Those were the days of the oil crisis, and Lightcap had to prove himself adept at stretching what fuel was available to power the work vehicles.

Lightcap’s experience in Sacramento served him well. He was highly regarded as someone who could cut through the bureaucracy and deliver projects. He served as the District Director of District 6 (Fresno) before being appointed to succeed Jake Dekema in April 1981. He led District 11 for two years before moving back to Sacramento. In 1990, he was sought out to again serve as District Director in District 12 (Orange County) until 1993 when he retired after 45 years with Caltrans.

William “Bill” Dotson

Caltrans records indicate that Bill Dotson served as Caltrans District Director for San Diego, Imperial and east Riverside counties from 1983 through 1988. The Caltrans 11 News Bulletin from May 18, 1983, announced that Dotson had been permanently appointed as the new District Director as of 4:45 p.m. the previous day. According to an interview with Dotson in the June 9, 1983, edition of the newsletter, he had been awarded the promotion after two stints as Acting District Director. Dotson was born in Texas but had lived most of his life in southern California. He attended high school in Brawley, California, and graduated from the California Institute of Technology with a Bachelor of Science degree in Civil Engineering.

Notes in Caltrans files indicate that Dotson served as an Ensign in the U.S. Navy toward the end of World War II. He had been sent to the South Pacific and Marshall Islands and the island of Kwajalein. Released from the Navy, Dotson began his 41-year career with the state of California in 1947 as a Junior Civil Engineer with the Division of Highways. Dotson achieved several milestones in 1973. He graduated from a professional program in Urban Transportation at
Carnegie-Mellon University. The program included travel to Europe and major U.S. East Coast cities where he learned about world-wide transportation practices. He became a licensed civil engineer and was promoted to Principal Transportation Engineer.

Advancements continued in following years through various assignments in District 11 including serving as Deputy District Director for Project Development. One document from the Caltrans archives conveyed that Dotson’s tenure as District Director came with challenge and opportunity. The total five-year budget at his appointment was about $600 million—a $200 million increase from the previous year, with an anticipated fifty-percent increase the following year. District 11 was project ready but short on people. Dotson was tasked with reorganizing the district to develop the projects and hire staff to fill the needs—65 in the first year. About 40 percent of the new hires would be entry level Junior Civil Engineers requiring training. The plan was to bring in a broad range of experience for the remaining openings, including promotional opportunities for seasoned civil engineers.

Much of the construction work covered rehabilitation and reconstruction of interchanges to bring them up to current design standards for the time. He focused on replacing highway lanes and adding shoulders. At the same time, costs were rising to maintain the roads already in place. Funding was allocated to both highway maintenance and traffic operations. On-ramp metering projects were implemented as a permanent feature to allow cars to enter the roadway in a slower, more uniform pace, so that traffic flow could continue on the main lanes. Design on San Diego highways—Interstates 5, 8 and State Route 163— took place under Dotson’s supervision. Construction on State Route 52 from the Interstate 805 separation to San Clemente Creek was completed in 1987. The portion of State Route 52 from Convoy Street to Santo Road opened in May 1988. This new segment completed a 9-mile long link from Interstate 5 to Santo Road. That same month, construction began on the first of several projects totaling 18 miles to widen State Route 78 from four to six lanes between Oceanside and Escondido.

A retirement dinner was held for Dotson at the U.S. Grant Hotel on August 27, 1988. According to notes attributed to the Caltrans archives.
to then Caltrans District 11 Public Information Chief Jim Larson, participants included elected local and state officials such as City of San Marcos Mayor Lee Thibadeau, City of Oceanside Mayor Lawrence Bagley, County of San Diego Supervisor George Bailey, California Transportation Commission Chairman Tom Hawthorne, and Senator Wadie Deddeh. Larson was quoted to say that Bill Dotson was “a universally respected engineer and administrator running what is generally regarded as the most efficient and trouble-free of the Caltrans’ 12 districts.” Bill and his wife Dorothy continued to live in the San Diego region after his retirement. They remain close to their two grown children, Janet and James, spouses and grandchildren.

**Jesus Garcia**

Jesus Garcia served as the District Director for Caltrans District 11 from September 1988 to October 1993. During that time, he directed 1,400 employees and administered an annual transportation budget of more than $400 million. He previously served as District 3 Director (Marysville) from 1987-1988 and District 5 Director (San Luis Obispo) from 1980-1986. His career foundation was formed shortly after serving as a U.S. Navy Officer, graduating in the top five percent of his class at Officer Candidate School in Newport Rhode Island. He earned his Bachelor of Science in Civil Engineering from the University of Arizona and followed with a Master’s Degree in Transportation Planning from the University of California, Davis.

Recognized as one of the top transportation experts in the state, Garcia served on countless professional boards and advisory groups, including the San Diego Association of Governments and the Sacramento Council of Governments. He also played key roles as chairman of the Caltrans Management Style Task Force.
and member of the department’s Executive Development Advisory Committee and the Executive Management Workshop. Garcia’s expertise stretched beyond department boundaries and brought benefits to the state and local regions. He was a member of the American Association of State Highway and Transportation Officials, Western Association of State Highway and Transportation Officials, American Public Transit Association, the Transportation Research Board and the San Diego County Transit General Manager’s Group.\(^{47}\)

In 1991, the American Public Works Association (APWA) recognized Garcia as one of the Top Ten Public Works Leaders that year. The prestigious national award, established in 1960, recognizes the contributions of APWA members to the public works profession in public, private sectors and academic institutions.\(^{48}\)

During his career, he was the Chairman of the Metropolitan Transportation Development Board Finance Task Force, the Tri-Agency Grants Committee and the Rotary Club Group Study Exchange. He was also a Board member with the Centro Cultural de la Raza in Balboa Park and served as Chair of the Implementation Subcommittee, Independent Citizen’s Committee for the San Diego School District and a member of the city of San Diego’s Task Force on locating financing for the Padres’ baseball stadium.

Contributions during his tenure included reducing freeway fatalities of migrants at the border and in Camp Pendleton, initiating the high-tech Traffic Operations Center, opening the original Interstate 15 Express Lanes, and portions of State Routes 52, 54, 56, 78 and 125. Garcia implemented ramp metering on Interstates 5 and 15—now a permanent feature on nearly every highway—to control the flow of traffic entering the highway. He is credited with working tirelessly to diversify the workforce and build strong binational relationships with transportation and government officials in Mexico. Garcia led by example and dedicated himself to being an effective department liaison with government agencies and the public while working on sensitive and complex transportation issues.\(^{49}\) The Garcia Conference Room located at the Caltrans District 11 Office Complex in Old Town San Diego is named in his honor, as is the Conference Room in Caltrans District 3 (Marysville).\(^{50}\) He passed away on October 19, 2015, at the age of 87.\(^{51}\)

**Gary Gallegos**

Gary Gallegos is a nationally recognized expert in transportation, land use, regional public policy-making, and bi-national planning and diplomacy. He served as the District Director from 1994 until 2001 when he became the Executive Director of the San Diego Association of Governments (SANDAG).\(^{52}\) During his tenure with
Caltrans, Gallegos was instrumental in developing a number of transportation policy initiatives resulting in public/private strategies which attracted more than $300 million in additional funding for San Diego and Imperial counties. He recognized that the regional transportation system was adequate, but did not efficiently serve the International Border with Mexico. Gallegos became involved in what would be termed the “North American Free-Trade Agreement (NAFTA) Network.” This included identifying more than a billion dollars of infrastructure needs at the International Border. State highway improvements under the NAFTA Network included work on State Routes 7, 78, 86, 111, 905, and the Route 125 Toll Road.53

Gallegos adopted state-of-the-art outreach techniques and strategies to shape effective partnerships with regional community, business, elected officials and transportation stakeholders and build consensus on transportation needs for District 11. He also further developed working relationships with transportation officials in Mexico and often represented Caltrans at bi-national forums relating to cross-border issues. Other key responsibilities with Caltrans prior to joining District 11 included some of the department’s most sensitive and difficult issues at the time—the emergency reconstruction of the Interstate 5 bridge over the American River in Sacramento, serving as the resident engineer for construction of the Potato Slough Bridge in the Sacramento River Delta and spearheading the department’s response to record snows and flooding during the winter of 1993.34

After serving as District Director for seven years, Gallegos was named the third Executive Director of the San Diego Association of Governments (SANDAG)—the leading research, planning, and transportation agency for the San Diego region. The agency builds consensus; makes strategic plans; obtains and allocates resources; plans, engineers, and builds public transportation; and provides information on a broad range of topics pertinent to the region’s quality of life. Agency policymakers are elected officials from each of the area’s 18 cities and the county. Gallegos’ recent accomplishments at SANDAG include spearheading the acquisition of the State Route 125 toll road, also known as the South Bay Expressway, for $341.5 million.

In 2004, Gallegos led the charge to extend TransNet, a regional half-cent sales
tax for transportation. Administered by SANDAG, the original 20-year TransNet program generated $3.3 billion to fund highway, transit, and local road projects. The 40-year TransNet extension will raise another $14 billion for similar improvements. Gallegos also led the effort to create the TransNet Early Action Program, which focuses on jump-starting construction of top priority transportation projects identified in the Regional Transportation Plan. Gallegos holds a Bachelor of Science in Civil Engineering from the University of New Mexico.55

Pedro Orso-Delgado

Pedro Orso-Delgado served as the Caltrans District 11 Director for nearly nine years, leaving in 2009 to become the Deputy City Manager of Santee.56 During his tenure as District Director, Orso-Delgado worked determinedly to secure a Presidential Permit to enable the new port of entry at Otay Mesa East to continue to move forward. He forged strong partnerships with local community and business stakeholders, as well as federal transportation partners, who have all provided critical support to this ongoing, pioneering project.57 When California voters approved the $40 billion Proposition 1B infrastructure improvement bond in 2006, Orso-Delgado led the charge to enable San Diego to become the first county in the state to break ground on a bond-funded transportation project. The Interstate 5/Lomas Santa Fe Project, which opened in February 2009, was also the first major bond-funded project to be completed in the state.58

Orso-Delgado was tasked with implementing the seismic retrofit program in the region that led to a very innovative partnership with University of California San Diego. He was instrumental in working with community stakeholders in Barrio Logan where residents, artists, and activists were alarmed about the potential loss of the Chicano Park murals. Working in collaboration, an innovative solution was found and the art preserved.59 The San Diego native attended schools in both San Diego and Tijuana, Mexico, graduating from San Diego State University in 1983 with a Bachelor of Science in Civil Engineering and began his career with Caltrans in 1984 as a Junior Civil Engineer, working his way up to Senior Transportation Engineer.

Orso-Delgado served as the Deputy District Director of Maintenance and Deputy District Director of Program Project Management prior to being selected...
as the District Director. He sought to reduce bureaucracy and worked to position District 11 as a transportation innovator in the state.60

Laurie Berman

Laurie Berman was appointed as District Director in November 2009, becoming the eighth district director for the region and the first woman to hold this prestigious post. Berman is responsible for the daily operation of 1,200 employees and more than 1,000 centerline miles of highway. Under her leadership and in collaboration with regional stakeholders, a record level of investment in Imperial County infrastructure is underway with over $544 million in improvements for the area’s highways and roads.61

Recruited by then-District Director Gary Gallegos to work on an innovative seismic retrofit program, Berman was charged with implementing a new structural design group in District 11, which had previously only been done in headquarters. Additional career accomplishments include extensive work on SR-125 South – Toll Road Segment in a variety of roles including design of the project and Project Manager. The project was the district’s first public-private partnership, the first design-build project, and presented a different way to deliver the work.62

Berman’s top priority for motorists and Caltrans employees is safety. In 2013, District 11 launched a pilot project to enhance work zone safety through additional warning signs, reduced and enforced speed limits and an extra buffer lane between highway workers and live traffic. Caltrans partnered with other agencies for the Move Over Law public awareness campaign, urging motorists to slow down and enable highway workers to safely perform their vital duties.63

Berman understands the value community partnerships and stakeholder collaborations bring to projects such as the retrofit of the iconic Cabrillo Bridge in Balboa Park and the creation of the Martin Luther King Jr. mural on State Route 94. She was also the ultimate key to the historic restoration of the Chicano Park murals, now designated in the National Register of Historic Places. Working with a federal grant, she was tenacious in bringing the restoration to fruition. She strongly believes these and other infrastructure projects contribute to a sense of place and help to build and shape communities. In 2012, Berman served on special assignment for an intensive department program review. She is an integral part of a statewide leadership team that is working to ensure Caltrans will effectively meet growing
transportation demands. She shares the vision for a future state transportation system infused with innovation and new technologies that will provide truly multi-modal options to efficiently move people and goods across California.64

In 2011, Berman was honored as the Women’s Transportation Seminar (WTS) San Diego’s “Woman of the Year.” She serves on the United Way of San Diego County Board of Directors and as an ex officio member of the San Diego County Regional Airport Authority, San Diego Association of Governments and the Imperial County Transportation Commission. She is a member of WTS and the American Society of Civil Engineers (ASCE). Berman began her career as a Junior Civil Engineer in bridge construction in Santa Barbara after earning her Bachelor of Science degree in Civil Engineering at Michigan State University in 1983 and has more than 30 years of experience with Caltrans.65
NOTES


13. According to Main, “53 Years & 5000 Miles.” The District 11 Map was to remain intact for the next 55 years until the addition of District 12, headquartered in Santa Ana. This information was found to be incorrect, and the error has been corrected.

14. Supernowicz and Calpo. 2011 (pg. i, 18)


25. Ibid.


35. Gray, “Introductions.”

36. Caltrans District 11. “It Was Jake’s Turn.”


62. Laurie Berman, interview by Carmen Sandoval, Caltrans District 11 District Director, January 6, 2016.

63. Caltrans District 11 Public Information Office. “Biography Laurie Berman District 11 Director, California Department of Transportation.” San Diego, February 2015.

64. Berman, interview by Carmen Sandoval.

The Rick Legacy: Planning, Designing and Engineering in San Diego Since 1927
Brian F. Mooney

As a city and region, San Diego comprises a variety of unique, individual communities and neighborhoods. Located in a natural environment with a strong physical connection to Mexico, this blend of values and culture defines its identity as “Paradise.” Many communities and the region’s most iconic development projects have been planned, designed, and engineered by the Rick family and the engineering and planning firm they started in 1955. These communities include Scripps Ranch, La Costa, Rancho Bernardo, Rancho Peñasquitos, Loma Santa Fe, Liberty Station, Fairbanks Ranch, Carmel Valley (then known as North City West), Warner Springs Ranch, Black Mountain Ranch and high-profile developments including Qualcomm Stadium, numerous buildings on San Diego State University (SDSU) and the University of California San Diego (UCSD) campuses, the Chula Vista Bayfront, tribal lands, and downtown hotels.

Brian F Mooney AICP, is the Managing Principal of the Rick Engineering Company, Community Planning and Sustainable Development Division. Brian received a Master of Arts in History from the Universality of San Diego, with a special focus on city planning in the 20th century and a Bachelor of Arts in Anthropology from San Diego State University.
Glenn Rick: Planning San Diego

Glenn Rick came to San Diego from Cedar Rapids Iowa in 1927. Trained as a civil engineer at the University of Iowa and his father’s home building business, he moved to San Diego to build houses. Shortly after arriving, he learned that the homes he was scheduled to build could not be financed due to the decline in the housing market during the late 1920s.  

Rick became the Assistant City Planning Engineer to Kenneth Gardner, the City Planning Engineer in the newly formed City of San Diego’s City Planning Department. Gardner, an associate of John Nolen, who prepared the first City of San Diego Comprehensive Plan in 1907, had been retained to update the plan in 1926. The San Diego City Council approved the update in 1927 and the new City Planning Department worked to implement the plan including a new Zoning Ordinance that divided the City into residential zones R-1, R-2 and R-4, commercial zones C-1 and C-2, and manufacturing zones of M-1 and M-2. The process was controversial and took several years to complete but eventually covered all neighborhoods.

Over time, Glenn Rick was promoted to City Planning Engineer and in 1928 was named City Planning Director. He was responsible for the implementation of Nolen’s 1927 vision throughout San Diego, including land use and transportation issues. In a local newspaper article published in 1936 and titled, “What Will San Diego Be Like in 1950? Planning Engineer Rick Sees Better Streets, More Civic Buildings, Park and Harbor Programs,” Rick identified key issues for the city such as completing the Harbor Development Plan, extending the park system into densely populated neighborhoods, securing a sustainable water supply, developing a modern sanitation system, and solving the city’s traffic and parking problems.
The Rick Engineering Company Legacy

Rick was known for promoting the planning growth of San Diego in a responsible and comprehensive way. In 1939, he hosted a radio show titled “Know Your San Diego.” During the radio hour, Rick emphasized that San Diegans had always made up an enterprising community by balancing beauty with lifestyle and industry. He announced that the Consolidated Aircraft Corporation, under the direction of Major Reuben H. Fleet, would be creating additions to their factory along the Pacific Coast Highway that would be built with the intention of improving the corridor, so the City Planning Commission could readily approve the development. Rick also spoke about the importance of beautifying the waterfront and the development of Harbor Drive:

The plans for the development of this natural asset call for the continuation of Harbor Drive from Market Street around the Bay to Playa in Point Loma. The proper development of this 200-foot-wide waterfront drive will result in the most beautiful and practical asset this city has. Balboa Park is indeed a wonderful exhibit, with 1,400-acres filled with such things as a splendid zoo, golf courses, art gallery, and other cultural and recreational attractions. But what other city in the United States has the opportunity of developing waterfront drive such as San Diego has?5

World War II and The Rise of Mission Bay

Everything changed with the onset of World War II as the City and all planning functions focused on the war effort. Lucinda Eddy summarized the immediate impact of the war:

Almost overnight San Diego was transformed from a sleepy border town to a teeming wartime metropolis. Life Magazine and other national publications referred to San Diego as a “boom-town,” but the Saturday Evening Post best described the tremendous changes taking place as the “Blitz-Boom.” San Diego’s major defense industry, aircraft, met the challenges of expanded production and began 24-hour, 7-day a week operations. . . . San Diego claimed the Navy’s largest air base and the city’s harbor housed the repair and operations base for many of the Navy’s major aircraft carriers. U. S. Army and Marine Corps camps sprang up throughout the county to train the large numbers of incoming soldiers. The influx of civilian and military personnel caused the city’s population to soar. By summer, 1941, the population had increased from 203,000, to more than 300,000, surpassing in little more than a year the projected growth for the next two decades.6
Near the end of the war, the San Diego City Council feared that the Great Depression would return and attempted to identify ways the city could bolster its identity as a tourist destination. After two successful expositions in Balboa Park (1915 and 1935), San Diego needed a new attraction and identified Mission Bay.

Glenn Rick is probably best known as the “Father of Mission Bay.” The project was formally integrated into the city budget in 1944 and the San Diego City Council designated Rick to “supervise the work of converting Mission Bay State Park into a top-notch municipal playground.” The program came under significant scrutiny in a news article in the *New York Herald Tribune* (October 5, 1947) as well as in articles in Los Angeles and San Francisco claiming that San Diego was turning a “mud-hole into Coney Island at the cost of $14,000,000.” Rick quickly challenged the inaccurate identification and degrading connection with a “recreation slum” like Coney Island with “lunch stands, beer gardens and hot dog stands.” Instead, the project called for the design of a natural looking bay oriented around swimming, sailing and water sports, complimented by exclusive, luxury hotels. Under his direction, Mission Bay came to fruition and remains as one of San Diego’s prized attractions.
Rick served as Planning Director until 1955 when he retired from the City and opened Glenn A. Rick and Sons (later renamed Rick Engineering Company) with his sons Wallace and William (Bill) Rick. While Glenn focused on planning, Bill led the civil engineering services and Wally managed the survey division.

Rick Family Ties

Glenn's two sons carried on the family company. Wally Rick, born in 1928 in San Diego, attended Point Loma High School and San Diego State University, before joining Glenn A. Rick and Sons. Through his professional dedication and his efforts as head of the land surveying and mapping division, many of the standards Wally set into place are still in practice today throughout the county. In 1972 Wally became President of the newly formed Mission Aerial also housed in the Rick offices to provide Aerial Mapping to the engineering firm and Bill became President of the renamed Rick Engineering Company. Wally served as a Vice President of the Rick Engineering Company.

The Career of William (Bill) Rick

Bill played an integral role in the development of San Diego much like his father. Originally enrolled at the Naval Academy in Annapolis, Bill received a Bachelor's Degree in Civil Engineering from UCLA in 1949 and enlisted in the Air Force where he became a Second Lieutenant in the “Sanitary Engineering Division.” He went on to become active in both civil engineering and planning organizations, and served on the Port of San Diego Board of Port Commissioners and Coastal Commission as an appointee of Mayor and later Governor Pete Wilson. In 1987, the California Society of Professional Engineers named Bill “Engineer of the Year” for his contributions in developing San Diego.

As president of Rick Engineering, Bill Rick became heavily involved in public service. He was appointed to the Board of Review for Land Development, City of San Diego; the Historical Sites Board; Park and Recreation Board; California Coastal Commission; San Diego Energy Advisory Board; and the Senate Advisory Committee on California/Mexico Business Relations. In the civic arena he was a director, trustee or officer for the American Cancer Society San Diego Chapter, Bishops School, Sharp Hospital Foundation, LEAD San Diego, UCSD Cancer Foundation, KPBS Advisory Board, Mission Bay Association, Maritime Association of San Diego, San Diego Yacht Club, Cuyamaca Club, University Club, Fronteras de las Californias, San Diego Dialogue, UCSD Board of Overseers, Hubbs-SeaWorld Research Institute and the Urban League. Bill
also wrote “Planning and Developing Waterfront Property” for the Urban Institute’s *Technical Bulletin* 49 in 1964.

One of Bill’s greatest contributions during his time of public service was his work with the Port Commission to build the San Diego Bay Convention Center. By the late 1970s, the City of San Diego had embarked on a major redevelopment of the downtown area. One key piece to that redevelopment would be a new convention center. There was one in Mission Valley at the Town and Country Hotel and another at Civic Center Plaza downtown. It became clear that there was a great opportunity for the City of San Diego to compete nationally for large conventions if they had a large and dramatic convention center.

After extensive debate and passage of a construction measure in 1983, a site was chosen along Harbor Drive and an architecture competition was established to choose the most unique and appropriate design. The firm of Canadian Architect Arthur Erickson was chosen and developed a concept of a ship along the harbor. Upon construction, however, commencement of the unique design uncovered major issues with water leaking into the sub-basement. Bill, who had been appointed to the Port Commission in 1981 by Mayor Pete Wilson, became chairman of the Port Convention Center Building committee. He identified a practical solution that put the project back on schedule to open in 1989. He commented...
for an article in *San Diego Magazine* at the opening ceremonies; “I’ve had so many occasions in the last eight years where the world was going to come to an end on this job, that this is no great shakes of a problem to me. Having lived through the day when we thought we’d lost the whole foundation, plus a few other first order calamities, I’m not too panicky.”

**Community Developments**

While Rick Engineering Company has a long history of collaborating on high-profile projects, they are perhaps best known for their legacy of planning San Diego’s iconic community developments.

**Rancho Peñasquitos**

In 1962, real estate developer and San Diego attorney Irvin Kahn acquired the 14,000-acre parcel known as Rancho Peñasquitos with the intent of building a 150,000-resident planned community. He retained Rick Engineering Company to develop a Master Plan. The community plan included a golf course, open space (what has become Peñasquitos Canyon Regional Park), commercial centers and numerous distinctive residential neighborhoods.
Scripps Ranch

In 1968, Macco Corporation and its subsidiary, Leadership Homes, purchased the 1,180-acre Miramar Ranch from Margaret Scripps Hawkins. The Master Plan was approved by the City Council in 1970 and in 1975, the ranch was sold to the Corky McMillan Company. The newly developed Scripps Ranch community petitioned the City of San Diego to form the Scripps Miramar Ranch Community Planning Group in 1977 and retained Rick Engineering Company to prepare a comprehensive Community Plan. The City Council officially adopted the Rick’s Community Plan in 1978, which included extensive preservation of canyons, numerous parks, schools, and the eucalyptus forest.

La Costa

In the mid 1970s, Rick Engineering was retained to help plan the community of La Costa in Carlsbad. Originally established in 1960, La Costa was one of the first resorts to provide a full-service spa in association with La Costa Inn and championship golf course and tennis facilities. The original resort was developed by real estate entrepreneur Allard Roen who was involved with the Desert Inn in Las Vegas through Moe Dalitz. The firm’s role was to plan and develop a residential and commercial component including more than 20,000 homes in a variety of neighborhoods.
Fairbanks Ranch

In 1977, Ray Watt began assembling portions of the original Douglas Fairbanks Rancho located southwest of Rancho Santa Fe. Fairbanks and his wife, Mary Pickford, were famous silent movie stars in the early 1900s. Fairbanks is best known for his roles as Zorro and Robin Hood while Pickford was identified as “America’s sweetheart.” Watt hired Rick Engineering Company, in association with Mooney Lettieri and Associates, to complete the Master Plan, including residential homes and a commercial center in association with the country club. Per an agreement with the City of San Diego, the plan included equestrian facilities to hold events for the 1984 Olympics held in Los Angeles.

Chula Vista Bayfront

In 1986, Rick Engineering Company began preliminary engineering for the Chula Vista Bayfront, one of the last high-profile development opportunities to create a distinctive destination for the public on San Diego Bay. This 400-acre federal preserve, commercial, residential and resort development required decades of master planning, along with Coastal Commission and neighboring jurisdictional coordination. Rick Engineering Company continues to provide multiple services including planning and engineering to the City of Chula Vista, the San Diego Unified Port District, and private developers of the bayfront.

Liberty Station

In 1993, the U.S. Navy announced its intention to close the Naval Training Center (NTC) under the 1990 Base Closure Act. NTC, originally built in 1921, served as the major training facility for the navy through World War II, the Korean War, and the Vietnam War. In 1997, the City of San Diego retained Rick Engineering Company to prepare a Master Plan that would preserve the historical integrity of the property while establishing new residential, commercial, and open space. A special focus of the Master Plan for what would become known as Liberty Station, included preservation of the parade grounds, historic buildings, and architectural guidelines that were integral to the property’s history. The resulting
redevelopment yielded the creation of 350 dwelling units, 500,000 square feet of office/research and development area, over 100,000 square feet of mixed-use area, two hotels with 1,000-room capacity, and a Metropolitan Wastewater Laboratory.

Beyond communities that Glenn, Bill, and Wally Rick personally served, the Rick family legacy also lives on through the next generation of their company. No longer run by a Rick family member, but still showing the family name on its door, Rick Engineering Company continues to expand throughout California, Arizona, and Colorado.

NOTES

3. Ibid., 48.
4. Ibid., 116.
The Mountain Springs Grade:
Conquering San Diego’s Mountain Barrier to Commerce with the East

Joe Streetman

Except for an inconvenient accident of geography, the all-weather harbor of San Diego would have been a bustling hub of commerce in 1849-1861 linking the Southwest to the booming gold fields of northern California. San Diego lay only 170 miles almost due west of Fort Yuma, located at the only practicable crossing of the Colorado River within 200 miles. During the US-Mexican War and the Gold Rush that soon followed, San Diego’s harbor should have been crowded with the flood of troops, gold-rushers, emigrants, and military supplies passing through Yuma, to connect with steamships from the East bound for San Francisco and the gold fields.

During this time, however, San Diego’s residents slumbered on beside an empty bay because of that one inconvenient geographic fact—about 80 miles to the east there was a then-impenetrable mountain barrier to wagon travel. That

Joe Streetman is a retired Aerospace Engineer and an instrument rated private pilot. A graduate of Texas A&M College, he came to San Diego in 1956 to work for the Convair Division of General Dynamics. He worked on many United States missile and space programs over the next 36 years, retiring in 1991. One of his major interests has been research in San Diego history. He published “The Lindberghs Soar in San Diego” in 2001.
The Journal of San Diego History

The modern route over Jacumba Pass. Author’s collection.

barrier made it much easier for horse or wagon travelers from the east to go to Los Angeles and its fair-weather San Pedro harbor than to San Diego.¹ San Pedro, moreover, was 120 miles closer to San Francisco and the gold fields.

Today, Interstate 8 penetrates the barrier over the Mountain Springs Grade in the Jacumba Pass. The federal government built Interstate 8 grade in the 1970s at a cost of about one million dollars per mile. Its goal was to connect all major cities with high-speed freeways. But in the mid-1800s, there were no federal or state charters to build roads. If San Diego wanted a road, it had to build one out of its own resources.

The first stagecoach roads over the barrier were built past Mountain Springs in 1865-70. The residents of San Diego planned, financed by public subscription, and built the roads, as they were the only people vitally interested in San Diego’s commerce with the east. The first automobile road over the barrier was built in 1912-13, entirely financed by residents of San Diego. This is the story of the building of those roads, and the circumstances that led the people of San Diego to rise to the challenge presented to them.

The First Routes from Yuma to San Diego

The mountains to the east of San Diego rise from the Pacific shoreline in gentle stages through well-watered valleys to the summit of the Main Peninsular
Mountain Springs Grade

Mountain Range. At its eastern approach to the desert, the escarpment is reached, "a steep and rocky declivity, the jumping off place." There, the terrain plummets precipitously from the rim of the escarpment to the desert down the slope of near solid rock mountains covered with enormous boulders and often choked with thick brush and cactus. For wagons, this barrier was impenetrable with the resources and technology of the 1849-61 period, so the tide of commerce swept to the northeast of San Diego.

The earliest trails circumvented the barrier between Yuma and San Diego by following northwesterly trending valleys that led in relatively easy stages to the Los Angeles area. The best known of these natural routes, later to be known as the Southern Emigrant Trail, was pioneered by the small horseback army of General Stephen W. Kearny in 1846 and further developed by the Mormon Battalion traveling behind Kearny in wagons in 1846-47. During the US-Mexican War of 1846-48, both of these small armies came from New Mexico to occupy California for the United States. The trail ran westward from Yuma, dipping into Mexico to go around the sand dunes, past the sites of the future towns of Calexico and Plaster City, into the “Carrizo Corridor,” past Vallecito, Warner’s Pass and Ranch, then on to Los Angeles. The famous Butterfield Overland Stage used the trail from 1858 to 1861. The route to San Diego was a side trip southwest from the Southern Emigrant Trail across the grain of the mountains. Kearny’s army went south from Warner’s Ranch to Santa Isabel, then to San Pasqual and Mule Hill, where battles with the Mexicans were fought, then on to San Diego.

The Mormon Battalion, with their wagons following behind Kearny as an

The earliest routes to San Diego went around the barrier. Author’s collection.
army of occupation, continued past Warner’s to Temecula, then followed an existing wagon road to San Diego. Today, the most prominent side route across the mountains is the one now commonly referred to as the “Jackass Mail” trail, which left the Emigrant Trail near the mouth of Box Canyon to go over the barrier on mule-back on a narrow foot trail that led to Cuyamaca. Wagons then carried passengers and mail to San Diego.

These roads or trails, however, were at best 50 or more miles longer than the more direct route past Mountain Springs. The Mountain Springs route was unknown to all but local Indians until 1851.

The Discovery of Jacumba Pass

The first known pioneer of the Jacumba Pass route was Captain Nathaniel Lyon, quartermaster of the US Army post in San Diego in 1851. He was looking for a more direct route than the Mormon Battalion Road from San Diego to Fort Yuma. He set out due east from San Diego and found his way to a kind of basin, or large valley surrounded by mountains, called by Indians living in it “Jacum.” An Indian from Jacum guided him along a very steep Indian trail directly down from the summit of the mountain ridge to Mountain Springs, then down Devil’s Canyon to the desert. Captain Lyon claimed his route “shortens the present wagon road about 80 miles, and with a small amount of manual labor can be made an easy route for pack mules; wagon route cannot be obtained short of much labor previously bestowed.”

Five weeks after the above report, the San Diego Herald reported that 6,000 sheep driven by a party of Mexicans from Yuma “are coming by the new route recently discovered by Capt. Lyon, U.S.A., and will pass by this place, on their way to Los Angeles.” Over the next five years, there were several reports of very large flocks traveling this route. The rock corrals, whose ruins can still be seen to the west of Interstate 8 at Mountain Springs, were built by the sheepherders at that time.

General Williston’s Wagon Road

The first documented traveler over the Mountain Springs grade with wheeled vehicles was Lieutenant E.B. Williston. The San Diego Tribune, citing an interview in 1916 with then-aged General Williston, reported that he “believes he was the first white man to break a trail to Yuma with wagons, if not the first under any conditions.” In or shortly after 1856, Williston was a lieutenant in the light artillery stationed in San Diego when he was ordered to take a battery of artillery,
including six-horse teams and wagons, to Yuma. For reasons not stated in the article, he did not take one of the existing wagon roads over to the Emigrant Trail. Instead he followed a route through the South Bay, crossing the border into Mexico, back into the U.S. through Campo to “Jacumba Canyon, Coyote Well, Indian Well, and from there by the old trail to Yuma.” He states, “In covering that part of the trip between Jacumba and Mountain Springs we encountered the worst grades in our experience, and in addition to locking the wheels we cut down oak trees and dragged them behind the wagons.” Williston’s unit stayed in Yuma several months, then returned to San Diego. The article does not state by which route or with what equipment they returned. Inspection of the route makes it appear unlikely he returned up the grade with wagons.

San Diego did not have a newspaper from 1860, when the *Herald* stopped publication, to October 1868, when *The San Diego Union* began publication of a Weekly. The first wagon road past Mountain Springs was built during this period,\(^{11}\) and the circumstances and dates of construction are unknown.\(^{12}\) The first documented and dated proof of the actual existence of a road past Mountain Springs is found in a petition for a school district for Milquatay (Campo) dated January 26, 1867. The eastern boundary of the school district was defined as being at “Coyote Wells on the newly opened road from San Diego to Fort Yuma and known as the Jacumba Route.”\(^{13}\) So far as known, the circumstances of the building of this road are lost to history. However, its route over the mountain to Mountain Springs and along Devil’s Canyon is known, and the mountain portion

*The first wagon road rises steeply above Mountain Springs and Interstate. Author’s collection.*
can be traveled by high clearance, four-wheel drive vehicles today.

Above Mountain Springs, the road climbed over 800 feet in elevation in less than a mile, an average grade of 18.3 percent, with sections of over 30 percent grade. Below Mountain Springs, the road went along the bottom of Devil’s Canyon to the desert near current Ocotillo on Interstate 8. Settlers mostly from Texas used the new road in 1868-69 to settle the Milquatay Valley (later called Texas Camp, and now Campo). Using the new route, Milquatay was only about 50 miles from the Mormon Battalion Road at a point near today’s Plaster City, but 240 miles by the roundabout route along the Mormon Battalion Road to San Diego, then back east along the Mexican border to Campo.

Several well-known pioneer families left accounts of travel up Devil’s Canyon and the steep mountain grade sometime in 1868-69 in wagons that were “double-teamed,” pulled by 12-oxen teams, up the mountain.

The Stagecoach Road

After the Central Pacific Transcontinental Railroad was completed in 1869, there was a boom in travel between Fort Yuma and the Eastern States via San Francisco. The Indian Wars in Arizona were in progress, and the military based in Fort Yuma created much traffic in passengers and supplies. Before 1868, this
traffic traveled by steamboat via the Isthmus of Panama route. Ocean steamers brought them from Panama to the north end of the Gulf of California (Sea of Cortez), where they were transferred to river steamers for the 135-mile run up the Colorado River to Fort Yuma. After the transcontinental railroad opened in 1869, passengers and supplies from the East came by rail to the San Francisco Bay. From San Francisco, there were two possible routes to Fort Yuma: (1) by steamship around the tip of Baja California, then up the Sea of Cortez to the mouth of the Colorado River, then by river steamer to Fort Yuma; (2) by steamship to San Pedro, then stagecoach or wagon to Fort Yuma over an established wagon road. A third option, by steamship to San Diego, then over the Jacumba Pass road to Fort Yuma, would be a week faster than the all-steamer route and three days faster than the San Pedro route. But this option was not practicable because of the difficulties with the existing Jacumba Pass road.

There was a popular movement by the citizens and the business community of San Diego to improve the Jacumba Pass road and establish stagecoach and freight lines over the Pass to Yuma. The San Diego Union, which started publication in October 1868, became the enthusiastic booster and cheerleader of this effort. Two prominent local entrepreneurs made what appear to have been serious attempts to “stage the line.” The first known attempt was by “M.M. Price, Esq.” who, according to the newspaper, would by November 4 start to “run a line of stages between this place and Fort Yuma.” After much announcement and two more Union articles, Mr. Price’s plan to operate a stage line disappeared from the pages of the Union without explanation, never to be mentioned again. Approximately a month later, on November 21, 1868, the Union, stated that “Day begins to dawn, at last, upon our Fort Yuma road” because Seeley and Co. were purchasing stock and equipment “with which they intend to stage the line.” After this optimistic article, Seeley’s stage line to Yuma also disappears from the newspaper. The Union was apparently in the business of promoting a stage line, not dwelling on the difficulties of doing it.

In the late nineteenth century, the federal government indirectly encouraged the building of roads by awarding contracts for carrying mail between certain cities along defined
routes. If the winning mail contractor needed a new road to fulfill his contract, it was his responsibility to get it built. The contractor was expected to help cities along his line by carrying passengers and light freight, in addition to mail. A road suitable for a small, light buckboard might not accommodate a tall, heavy stagecoach designed to carry passengers and freight. If a city was particularly interested, it could help the mail contractor in building a road suitable for a stagecoach that he alone might not be able to afford.

J.C. Capron of Tucson, Arizona, received the contract to carry the mail between Los Angeles and Tucson via San Diego sometime in late 1868. The San Diego Union reported on January 2, 1869: “J. C. Capron, Esq., of Tucson, the mail contractor for this route, is in the City.” The contract value to Capron was $84,000 per annum (about $1.5 million in 2015). On the San Diego to Yuma segment, mail was carried by buckboard. Sometimes it went via the Jacumba Pass, at other times by a route below the border with Mexico. Capron took up residence in San Diego to work on solving the manifest problems with the Jacumba Pass Road and establishing a heavy stage line.

A week after Capron’s arrival in San Diego, a public meeting was held on how to improve the road to Yuma. Capron stated that the principal difficulty was “a rough steep hill, which needs to be graded around.” This is the first direct
mention in the *Union* of the problem. A road committee was appointed and about $2000 in pledges for road improvement was obtained. About ten days later, the *Union* reported “Sixteen men are now busily engaged upon the Fort Yuma road . . . and they intend to have it in perfect condition for the spring trade.”

From February through May 1869, there were ten articles in the *Union* about road construction, mail lines, and related matters. In April, the *Union* reported “our streets were filled with teams, recently arrived, for the purpose of conveying freight from this place to Fort Yuma.” On June 2, 1869, the *Union* carried an advertisement by Capron stating, “A Weekly Line of Four-Horse coaches will commence running between San Diego and Fort Yuma on and after Wed. next.”

A week later, an article in the *Union* stated, “The good day has come at last. Fort Yuma, the hottest place in America, is connected with San Diego, the best climate on the continent.” Two months later, the newspaper announced, “The stages from here to Fort Yuma are running full.” According to the *Union* “Every old croaker in the county” had predicted that Capron’s line would fail, but it had paid from the start. Capron’s improved road down the mountain and through the canyon to the desert appeared to be a success.
The New Turnpike Road

Although the newspaper reports sounded cheerful about the Yuma stage line, something was plaguing the operation. Capron had left for the East in early November 1869, where he was married. When he returned to San Diego with his bride about January 19, 1870, he found his stagecoach operation in crisis. About two days after his return, there was an emergency meeting for the formation of a joint stock company to build a toll road. The Union reported “…our road to Fort Yuma…we must do something now, to meet the present emergency.” This meeting was attended by city leaders including Alonzo Horton, Judge Swift, and Supervisor G.W. McDonald. A committee of five was appointed “to mature a plan of action” to be presented at a future meeting, held three days later. A resolution “in favor of the county giving a franchise to a joint stock company to build the road” was adopted. Civil Engineer C.J. Fox, Capron, and a railroad engineer gave estimates ranging from $20,000 to $30,000 for the cost of building the road.

Road building plans continued over the next several months. A meeting of the “San Diego and Fort Yuma Turnpike Road Company” was held in March 1870. The Company organized with a capital stock of $50,000; share price was $25 each. The newspaper reported that Fox “was appointed to make a survey of the road and report at the next meeting as to grades, cost of work, etc.” Three weeks
The engineer had completed his survey and gave his report. The Devil’s Canyon road would be completely rebuilt, including two new bypasses along the canyon walls, one 500-feet and one 700-feet long, with maximum grades to be 12 percent. The mountain road would be abandoned, and a new road would be built. The average grade would be 12 percent with a maximum of about 15-16 percent. Gpc estimated the cost as $3,000 for the Canyon and $3,000 to $4,000 for the mountain. Fox’s report was accepted, and a superintendent of roadwork was appointed. Company officers were elected, with Capron one of the directors. Within five days, work on the road began.

No more newspaper articles appeared on the progress of the road building. About six months later, however, there is a letter giving a traveler’s report of a trip over the new road by stage, starting at San Diego on October 1, 1870. The route was through Milquatay, Jacumba, and down the new road to Mountain Springs, with “Vet” the stage driver. A traveler wrote:

…I took a slight snooze, but was recalled to the world by Vet’s voice, “Now is the time to keep your eyes open if you want to see some good made road.” The moon was just going down and the road before us seemed to strike directly into the mountains: this was the old road. The new road was plainly visible, winding round and round
the mountainside, almost beneath us. “That’s our road,” said Vet, pointing at the same time with his whip where the road went wending downward. “Get up,” and the whip snapped, and away we went down the hill, at a good round lively trot, without jolting or jarring, as smoothly as if on a racecourse. We reached Mountain Springs in 20 minutes after we got on the new road; going over in these few minutes, what was formerly a dangerous day’s drive for teams. The only way to appreciate it [the new road] properly was to have traveled over it [the old road] in the past two or three times, and have received about as many upsets.38

This letter reveals what the main problem with the old road had been: it had taken a whole day to make the descent of less than a mile to Mountain Springs with coaches often being “upset.”

Both the old and the new roads are today intact, if somewhat eroded, and plainly visible on aerial and satellite photos. The old road over the mountain to Mountain Springs was abandoned. It ran southward from Mountain Springs to climb to the summit of the mountain with one switchback, gaining 900 feet of elevation in 0.8 miles. The new road went around rather than over the mountain.
ran northward from Mountain Springs, and rounded the shoulder of the mountain to head southwest along the wall of a canyon to intersect the old road beyond the old road summit, reducing elevation gain by 90 feet. The new road made the climb in about 1.7 miles, at an average grade of about 9 percent, nearly constant, with no steep switchbacks or pitches.

On April 13, 1871, the San Diego Union offered a fact-filled account of the first annual meeting of stockholders in the Turnpike Company. The first annual report summarized the past year’s effort. Road building had started about March 26, 1870. The road from the “Desert to Jacumba Valley” was completed September 5, after 5 months and 10 days work and a cost of $13,691.81. The estimated cost had been $6000 to $7000. The cost overrun was attributed to the “rocky character of the canyon, the great amount of blasting required, and (chiefly) the difficulty of disposing of the rock after it was broken.” A tollgate was erected mid-September at the foot of the mountain grade near Mountain Springs. Toll collections were about $180 per month.

Further newspaper references to the roads or stagecoach operations are infrequent and indicate only that Capron purchased new horses and equipment for the line, suggesting that the line was prospering.

On October 24, 1870, twenty-year-old George White Marston arrived in San Diego by steamer from San Francisco. That same day, he got a job as clerk at the Horton House hotel. One of his duties was to dust off the travelers who arrived by stage from Yuma, including Major General George Crook who
A young George Marston. Editor’s collection.

traveled over the stage route in June 1871. There is little comment about the trip in Crook’s autobiography, save a note that the first 100 miles from San Diego was very mountainous, and that the desert heat was unbearable.

In 1874, Capron sold his stage line to Kerens and Mitchell whose intention was to extend their line of Concord coaches from El Paso to San Diego. The Union speculated that this would afford “a safe and speedy means of crossing the continent during the season when the Union Pacific is blockaded by snow.” Under Kerens and Mitchell, the stage line continued to prosper. The mail service was increased in the spring of 1877 from three times per week to daily delivery. Traffic over the line was especially heavy in the winter of 1876-77.

The Railroad Comes to Fort Yuma

During the 1870s, the railway from San Francisco was building its way south to Los Angeles and on towards Fort Yuma. The railroad finally reached the west side of the Colorado River near Yuma on May 21, 1877. The last article in the Union about passengers departing on the stage for Yuma was on February 10, 1877. Operation of the passenger stage may have ended at that time, though San Diego could have lost its stage traffic earlier. It would have been faster to stage from the still building railroad’s “end of track” to Fort Yuma than to use the San Diego route.

The last reference to the stage line is an advertisement in the Union on August 23, 1877: “Four-Horse Concord coaches leave Yuma daily immediately after arrival at Yuma of [railroad] cars.” Kerens is last mentioned on November 3 as “one of the proprietors of the Southern Overland Mail” who was stopping at the Horton House. There are no further articles about the Fort Yuma stage line after 1877 in The San Diego Union.

Little is known of use of the Jacumba Pass road through Mountain Springs after the railroad closed the stage line. Rather than driving his own rig over the desolate road to the Imperial Valley, or Yuma, a private traveler from San Diego almost certainly would have taken the stage to Los Angeles, then the train to Yuma. Any traffic must have been limited to locals, miners (if any), the occasional
excursionist, or the adventurer. By the turn of the century, the old stagecoach road lay largely abandoned and neglected.

**The Imperial Valley and the Automobile**

The development of the Imperial Valley and the advent of the automobile demanded that Jacumba Pass be used once again. Imperial Valley development began in 1901 when a system of canals brought water about 50 miles from the Colorado River into the Valley to create one of the richest farming areas in the United States. Almost overnight, what had been barren, unoccupied desert was developed into about 1,000 square miles of rich farms and several new towns. The center of the Imperial Valley is about 50 miles west Yuma and about 120 miles from San Diego via the Jacumba Pass.

The automobile and the truck opened the possibility of private and commercial travel in a day or less between San Diego and the Imperial Valley, even with the primitive vehicles of the time. In 1903, San Diego county road supervisor James Jasper and Bryon Naylor, an early auto dealer, drove a single-cylinder Cadillac from San Diego to Jacumba via the Jamul-Campo route in 7 hours and 45 minutes driving time “including all stops for teams.”

When we reached the summit of Jacumba Pass, I paused and I gazed wistfully out over the surrounding country to the east, floating in the fascinating mirage, lay the great Imperial Valley, an empire in itself – “so near and yet so far,” our heritage: lost for want
of transportation...An auto road to Imperial would be one of the best investments the people of San Diego could make....The auto is the coming vehicle. In fact, it is already here, and it’s come to stay: best we welcome it, and in the future build our roads with an eye to its requirements.

It was only 50 miles further to Imperial, but the route down the mountain and in Devil’s Canyon was all but impassable. Ed Fletcher traveled the old stage road from Jacumba to the desert in about 1910: “It took us two days. Going down the thirty percent grade into Mountains Springs, we had to jack-up our car a number of times and rebuild sections of the highway to make it passable. This went for Devil’s Canyon, too.”

Given the growing economic importance of the Imperial Valley, public pressure mounted for a real “auto road” over the Pass. This would result in the building of a new road that abandoned both the mountain and the Devil’s Canyon routes.

The First Automobile Route

Ed Fletcher, after whom Fletcher Hills and Fletcher Parkway and other San Diego places were named, was the guiding spirit behind the movement for the

![Devil’s Canyon Road. ©SDHC #91: 18564-1199.](image-url)
new road. He pulled the ropes, greased the skids, and raised the funds for a new road, on which construction began in late 1911 or early 1912, using Fletcher’s grading machines.

The first automobile route is known as the Boulder Canyon Route. The new road abandoned the mountain route of the old stage road 4 to 5 miles east of Jacumba, then ran eastward over In-Ko-Pa summit (where Interstate 8 currently runs) and along Boulder Creek canyon to Mountain Springs. The road did not run along the canyon bottom, but ran in a “notch” cut in the very rocky canyon walls well above flash flood waters. The road was still under construction but passable in April 1912 when the Union’s “pathfinder” car, a Chalmers 40, used it then passed through Devil’s Canyon to

Mountain Springs Grade

The Mountain from the summit of the barrier to Mountain Springs. Author’s collection.

Mountain Springs automobile route. ©SDHC #12155.18.
On April 25, an “Automobile Stage,” a seven-passenger six-cylinder Franklin, completed its first round trip from San Diego to El Centro and back. The return trip took 11 hours, 2 minutes, and the “trip was enjoyed by each of the six passengers.” Apparently these auto stage “buses” began running as soon as the new road was passable.

The next road to be built was the Myer Canyon Route. After completion of the Boulder Canyon segment, the road over the barrier was serviceable, but the Devil’s Canyon section left much to be desired. The road was rough, tortuous, and slow even in the best of condition. Most of the road was in the canyon bottom, subject to washout or rock slides with every heavy rain and requiring frequent closures and expensive repairs. The decision was made to abandon Devil’s Canyon for a new, all-weather road running along Myer Canyon (also called In-Ko-Pa canyon or gorge). Although the entire road was in Imperial County, it was built by San Diego County and largely, if not completely, funded by San Diego. Imperial County gave enthusiastic support, but their financial contribution was not significant. San Diego’s cost was $70,000.

On April 10, 1913, The San Diego Union reported, “Construction was begun...
November 3, 1912. Road completed yesterday.”54 This new road did not run along
the bottom of the wash, as in Devil’s Canyon, but along the steep walls of the
canyon at a relatively constant grade. The roadbed was “dirt,” appearing to be
rather coarse decomposed granite. It followed every convexity and concavity
in the canyon walls along which it passed. It therefore had almost continuous
curves, some of very short radius. A large bridge had to be built across the mouth
of Myer Canyon at its entry to the desert. The new road was 6.5 miles in length,
with a maximum grade of 7 percent.

A gala opening ceremony was held at Mountain Springs on April 9, 1913. “San
Diego and Imperial Valley Celebrating Opening of Highway Cut Along Rocky
Canyon’s Sides,” reported the Union, and “Devil’s Canyon exists no more.”55 At the
opening, there were 175 cars from San Diego, and 55 from various Valley cities.
After the ceremony, the entourage went down to the desert on the new Myer
Canyon road, then back to Mountain Springs on the old Devil’s Canyon road.
This was done so that the achievement of the new road could be fully appreciated.
The Devil’s Canyon route was then officially closed to traffic.

**Roads in the 1920s and 1930s**

In 1926-27, both the mountain and canyon sections of the 1913 road were
paved with concrete 20-feet wide. According to the newspaper, the road was
“practically the same climb as it was before paving, except that the dangerous curves have been eliminated.”56 At about the same time, the wooden plank road over the infamous sand dunes west of Yuma was replaced by a paved road: “Dreaded Barrier Converted to Splendid Highway,” reported the Union.57 San Diego was now within six hours of the Colorado River.

The newly paved road, however, had many curves, some of very short radius. This made for slow and dangerous going, both up and down grade, especially for trucks. Many truckers preferred hauling Imperial Valley produce to San Pedro, even though it required an extra 100 miles of desert travel, rather than risk the hazards of the Mountain Springs grade. The cost for hauling cotton to San Pedro was $3.50 per ton compared with $4.00 to San Diego. The Union commented that the problem was “the barrier of the Mountain Springs Grade.”58

In late 1938, the city began the “Mountain Springs grade realignment project.”59 The first construction unit of 255 miles from near the summit down to Mountain Springs was completed by January 1940.60 The new road eliminated all of older road’s sharp curves. It was 30-feet wide while the old road was 20 feet, and the minimum curve radius was 600 feet compared to 128 feet on the old.

The new road stayed lower in Myer Canyon in the upper two miles below Mountain Springs and separated from the old 1926 road by as much as a half mile. The cut-off section of the 1926 road has therefore survived, since it was not obliterated by the new construction. This road is accessible by high clearance vehicles today.
Interstate 8

Interstate 8 was built from the 1960s to early 1970s. It has an average grade from Coyote Wells to the In-Ko-Pa summit of 4.2 percent with a maximum of about 7.5 percent just above Mountain Springs. Modern automobiles can maintain the legal 70 mph or higher both up and down grade without slowing. Older cars with marginal cooling or less efficient fuel systems can have problems because of the 11-mile sustained climb and high temperatures. Temperatures at the foot of the grade often top 110 degrees Fahrenheit in the summer, and still be 100 degrees at the summit. To assist drivers with overheating problems, there are 25 pull-outs with radiator water reservoirs on the up-grade side, placed about every half-mile.

Drivers of heavy big rigs manage their speed carefully on the downgrade. A runaway truck ramp is located 5 miles below the summit. The last 3.2 miles before the ramp averages over 6 percent grade. The ramp is located to stop runaway trucks before they enter the narrow and winding Myer Canyon. The truck driver’s challenge continues for about 5 miles in Myer Canyon, where the grade averages 5 percent, there are numerous curves, and sight lines in the twisty canyon are short.

In September 1976, much of the Myer Canyon downgrade washed away in the Hurricane Kathleen flood. Over 10 inches of rain fell in about 6 hours in the Mountain Springs basin and Myer Canyon. The flood that raced down Myer Creek also washed away the bridge over which the westbound lanes of Interstate 8 crossed Myer Creek wash. Interstate 8 was completely closed for 7 days, until a temporary road across Myer Creek wash was built and the former uphill only lanes were converted to two-way traffic. It took about a year to rebuild the downhill lanes and the washed out bridges and to restore full freeway operation.
At this time, almost all traces of the old Devil’s Canyon roads vanished. A popular jeep road ran along the bottom of the Canyon before the flood, but it disappeared and has not been rebuilt.

The summit of Jacumba Pass is one of the windiest places in Southern California. Superheated air rising up from the vast below-sea-level Colorado Desert to the east induces a strong flow of cooler air from the Pacific coastal area near San Diego. The wind whistles eastbound through the peaks of Jacumba Pass, down across the Mountain Springs basin, and down Devil’s and Myer Canyons. The interaction of vehicles and wind speeds produce strong side forces that buffet and can overturn tall vehicles. Several times each year, Interstate 8 is temporarily closed to “high profile” vehicles by the California Highway Patrol and includes most 18-wheelers and motor homes. Wind fences have been built at three locations where the wind problem is at its worst.

Over a period of almost one hundred years, the development of six versions of the road from the summit of Jacumba Pass down the mountain and through the canyons to the desert illustrates San Diego’s commitment to infrastructure and communications. The success of Interstate 8 has been made possible through a remarkable series of engineering innovations that continue until the present time.
NOTES

1. Before its artificial harbor was developed after 1909 by dredging and building rock breakwaters, San Pedro harbor was completely exposed to winds from the south. In the mid-1800s, when southwestern storms blew, ships had to leave the harbor and ride out the storm in the open ocean.

2. San Diego Herald, June 2, 1851.

3. San Diego Union, October 17, 1868.

4. Officially the San Antonio and San Diego Mail Line. The initial contractor was James E. Birch who carried the mail (and passengers, if any) over the barrier by pack mule over the “Jackass Trail” (exact route now lost) to Cuyamaca, then by wagon into San Diego. See also Ellen L. Sweet and Lynne Newell, Historic Stage Routes of San Diego Count., Charleston: Arcadia Publishing, 2011.

5. H.M.T. Powell is often said to have been the first traveler past Mountain Springs to leave a record of his journey (San Diego Tribune, October 6, 1934). Analysis of a detailed mileage log in his journal of his journey in late 1849 proves that he went along the Emigrant Trail to Carrizo, a watering place, where he spent the night near the stream. He then went four miles further west, and turned south to climb the barrier in the vicinity of Bow Willow Canyon, then past the vicinity of Live Oak Springs and into Mexico. He followed the border into the South Bay and on to San Diego. Curiously, his journal clearly states that he went by “Carrisa Creek,” so it is difficult to understand how the misconception that he went by Mountain Springs began. H.M.T. Powell, The Santa Fe Trail to California, 1849-1852, Wangenheim Collection, San Diego Public Library, Central.


7. Ibid., July 17, 1851, 2:3

8. Ibid., April 11, 1857. The article stated that San Diego County had a flock of 28,000 sheep, but that “this isn’t a sprinkling (compared) to some droves that cross the Colorado, and are driven directly up the country.”

9. Robert L. Sperry, “The Old Stone Corrals,” High Country 42 (Autumn 19xx), 35. Sperry writes “it is said that lambing ewes were held in the corrals at night to protect them from coyotes.”

10. San Diego Tribune, October 6, 1938

11. Richard F. Pourade, The History of San Diego: Vol. 4, The Glory Years (San Diego: San Diego Union-Tribune Publishing Company, 1964), 9. Pourade gives a very brief account of this period, without specific dates that appears to confuse the activities of several different individuals over a wide period of time. The “Smith-Groom route” of c. 1858 is sometimes erroneously shown on old maps as going past Mountain Springs. It actually went northward from the vicinity of Live Oak Springs over the barrier to Carrizo. In any case, it was only a planned “route,” never an actual road.

12. A historical monument placed adjacent to the Desert View Tower commemorates the “Mountain Springs Station Site.” The documentation required to obtain recognition as an historic site is contained in San Diego Public Library RCC 979.498/Chamberlin, “Mountain Springs Station Site,” by Eugene K. Chamberlin, typewritten manuscript, 1991. Contained on the monument plaque is the statement, “In 1862-70 about a mile north of here [at Mountain Springs] Peter Larkin and Joe Stancliff used a stone house as a store from which ox teams pulled wagons up a 30% grade.”


14. Interstate 8 gains this same 820 feet in 3.3 miles, with an average grade of 4.6 percent and maximum grade of 7.7 percent.

16. Pourade states that J.J. Tomlinson and Co. operated “stages” from San Diego over the grade to Yuma sometime after 1866. Tomlinson did operate from Los Angeles to Tucson, but he went via San Bernardino and the Desert. His contract was for mail, and it is not stated whether he operated stagecoaches or buckboards. The mail contract was modified in mid-1868 to specify that the mail had to go through San Diego. Tomlinson, who had lost $12,000 in four months operation, refused to come on the San Diego route, and discontinued his line. Pourade, The History of San Diego: Vol. 4, The Glory Years, 9; San Diego Union, October 24, 1868, 2, col. 2.

17. San Diego Union, October 10, 1868.

18. Ibid., October 24, 1868, October 17, 1868.

19. Ibid., November 21, 1868.

20. Alfred L. Seeley owned the Cosmopolitan Hotel in San Diego’s Old Town and was the operator of mail and stage lines around San Diego from 1869 through 1874.

21. A buckboard was a light wagon with a spring-mounted seat for two, and a small bed for light freight, normally pulled by two horses.

22. The first major mail contracts in this area were for the San Antonio and San Diego Mail of 1857-60, and the Butterfield Overland Mail of 1858-61, which ran from Saint Joseph, Missouri to San Francisco via El Paso, Yuma and Los Angeles.

23. San Diego Union, October 24, 1868.

24. Ibid., January 2, 1869.

25. Measuring Worth, https://www.measuringworth.com/uscompare/ (accessed January 22, 2016); William E. Smythe, History of San Diego, 1542-1908: Volume I, Old Town (San Diego: The San Diego History Company, 1908), 254. Smythe says that Capron went to Washington “and secured the contract,” actually a subcontract. He adds that Capron started operating the line in 1867 (actual date mid- to late 1868 (buckboard mail only).


27. Ibid., January 9, 1869.

28. Ibid., February 20, 1869.

29. Ibid., April 21, 1869. Freight ing apparently didn’t have the glamour of stage coaching. There are no freighting entries in the Union index, but occasionally freighting is mentioned in the stage indices. The last article indexed was in the Union, February 19, 1876, for a fast freight to any part of Arizona operated by F. Piazza.

30. San Diego Union, June 2, 1869.

31. Ibid., June 9, 1869.

32. Ibid., August 11, 1869.

33. Ibid., January 20, 1870.

34. Ibid., January 27, 1870.

35. Ibid., March 3, 1870.

36. Ibid., March 24, 1870.

37. Ibid., October 27, 1870.

38. Ibid.

39. Ibid., April 13, 1871.
40. Bertram B. Moore, “History of Road Development in San Diego County,” in Carl H. Heilbron, ed., History of San Diego County, Part II (San Diego: The San Diego Press Club, 1936), 381. Moore states that the turnpike road, which went into service in late 1870, was built in or shortly after 1900. This clearly an error as proven by several contemporary documents, including a detailed survey map of 1895 showing the road exactly where it is today. Survey Number 99, Field Book 19, Third Road District, 1895, by R.M. Vail, Co. Surveyor.

41. This is the first known mention of blasting associated with road building in this area.


44. San Diego Union, April 28, 1874.

45. At this time, the Union Pacific had not yet solved the problem of deep snow in the Sierra Nevada, which stopped their trains, by building many miles of snow sheds.

46. San Diego Union, April 13, 1877.

47. Warfield, Fort Yuma on the Colorado River.

48. Contracts for stages from “end of track” to some destination were common. The last contract for stages between the two ends of track on the transcontinental railway was for an initial 110 miles, awarded in April 1869. San Diego Union, April 14, 1869.


50. Ibid., August 13, 1903


52. San Diego Union, April 24, 1912.

53. Ibid., April 26, 1912.

54. Ibid., April 10, 1913.

55. Ibid. For unknown reasons, the date of this celebration is almost universally dated incorrectly as “April 1912.” This oft repeated error might have started as a typographical error in the August 14, 1938, issue of the Union. It showed a photograph of the 1913 ceremony and gave the date as April 1912 in the caption. A photo on the wall of the Desert View Tower museum in April 2000 repeats the error.

56. San Diego Union, June 12, 1927.

57. Ibid., June 26, 1927.

58. Ibid., January 11, 1936.

59. Ibid., October 23, 1938.

60. Ibid., January 31, 1940.
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BOOK REVIEWS


Reviewed by Nicolas G. Rosenthal, Associate Professor, Department of History, Loyola Marymount University.

This second edition of George Harwood Phillips’s pioneering work on Southern California Indian ethnohistory was first published by the University of California Press in 1975 (and reviewed in The Journal of San Diego History 22:1 (March 1976)). Drawing on almost forty years of subsequent scholarship and additional research, Phillips has substantially revised many chapters, extended the narrative timeline, and added several detailed maps. With these updates, Phillips has ensured that Chiefs and Challengers will remain essential reading for scholars and teachers of nineteenth-century California and American Indian history for many years to come.

Phillips’s focus is on the actions taken by Southern California Indian peoples in response to Spanish, Mexican, and early American colonization, particularly the ways that Luiseño, Cahuilla, and Cupéño leaders negotiated their rapidly changing worlds. Generally, these leaders responded to colonial authority at different times through resistance, withdrawal, and/or cooperation, but always with the goals of preserving political sovereignty, corporate unity, and cultural integrity. After a chapter on pre-contact political organization, culture, warfare, and trade, Phillips provides a basic account of California Indian experience in the Spanish missions, focusing on San Diego, San Juan Capistrano, and San Luis Rey. The main story picks up beginning with Chapter Three, which details how centralized Indian leadership emerged during the 1830s and 1840s in the context of Mexican rule and mission secularization. Some leaders oversaw the creation of new agricultural settlements, while others regarded Mexican ranchos as targets for regular raids. With the shift to American rule, many leaders struggled to maintain a degree of autonomy, especially after a major Indian uprising in 1851 led to new systems of Indian administration. When President Ulysses S. Grant established reservations for Southern California Indians in 1875, some Indian leaders complied with orders to move and adapted to reservation life, while others sought to retain their independence by remaining in their villages. These leaders, too, were eventually forced to relocate, marking an end to a period characterized by political centralization and a “dogged activism within the larger society being
created around them” (p. 337). Overall, Southern California Indian peoples came out of this era as both victims and survivors. They lost most of their land and much of their autonomy, while what they retained was due to their creative responses to such dramatic change imposed upon them.

This focus on the agency of Southern California Indians and their role in shaping the history of the region was pathbreaking when it was first put forth by Phillips as part of a wave of scholarship often referred to as the “New Indian History.” Decades later, it remains a vital way of understanding Southern California Indian experience, although specialists in the field would benefit from a historiographical discussion situating the work in the context of ensuing scholarship. Phillips also relegates much of his analysis to the book’s introduction and conclusion except for a brief statement at the end of each chapter that suggests the topic of the next. This strategy has risks, in that less tenacious readers may get lost in the details and fail to grasp the larger ideas. The persistent, however, will be rewarded with an informative narrative that reflects the author’s remarkable ability to locate and synthesize hundreds of documents and secondary sources on this crucial period in Southern California history.

Ensenada as a Birthplace of Mexican Democracy: A Political History of Baja California.

Reviewed by Christine Moore, Department of History and Chicano Studies, Palomar College and Department of History, MiraCosta College.

When Vicente Fox won election as president of Mexico in 2000, many observers were stunned, as the victory of this PAN (National Action Party) candidate broke the decades-long grip of the PRI (Institutional Revolutionary Party) over the nation’s political economy. James Michael Winkelman argues that a groundbreaking election in 1989 in Ensenada, Baja California, gave birth to Mexican democracy and helped set in motion forces that would lead to Fox’s 2000 victory. The author contends that the historical development of Baja California created a culture of local rule and made the state different from the rest of Mexico. Baja California built an economy linked to the United States and Great Britain rather than Mexico City. Also different from mainland Mexico was the immigrant labor force that built a middle class.
The book has three purposes: 1) to prove democratic tendencies in Baja California led to the election and circumstances of the 1990s; 2) to provide evidence of the fact that Baja California has long been a population isolated by geography and subject to international influences very different than mainland Mexico; and 3) to provide an English language historical analysis of Baja California. The author relies heavily on secondary sources, which can be problematic for historical analysis. Primary sources such as newspaper articles, however, are the mainstay of the last chapters. Most of the book concerns the historical and political foundations of an independent Baja California and the subsequent trajectory of its development. This character was born of a lack of control from the Spanish and Mexican governments leading to an American and British capitalist financial structure that caused fierce resistance to federal power.

The heart of the book is the history of the indigenous peoples and the Spaniards. Mainland Mexico became a mestizo nation with the first generation of Spanish invaders. This was not so in Baja California. There was no empire in the area to use as a massive labor force, and while there were attempts at missionizing the local Indians, the endeavor failed. The result was an indigenous population consisting of a few acculturated mission Indians and those who managed to keep clear or who fled and established separate isolated areas. The Spanish soldiers of early years became the elite ranchero landholders. This group formed business alliances with Americans and the British, which created a need for immigrant labor.

Immigrants became the preferred labor source. Unlike immigration patterns in the rest of Mexico, in Baja California newcomers arrived from China, Russia, and Japan. These people added to the financial and political landscape of land as they eventually became agriculturists, business owners, and part of the local political and economic systems. While not entirely equal, immigrant laborers in Baja California created a middle class. The landed ranchers and middle class were also geographically isolated, and so were able to join the market capitalist system of the United States and Britain. From these groups emerged Compañía de México, receiving land in return for promotion of business and real estate. The Chamber of Commerce was eventually formed out of this company and over time became the main source of political resistance to any attempts to usurp local control.

Local economic control led eventually to local elections until the 1920s when General Abelardo Rodríguez was appointed as military commander and then governor of Baja California as part of the federal government’s effort to control the border area. This shift away from local control contributed to the emergence of Baja California’s vice economy as well as some popular reforms including workers’ rights. Winkelman contends that the foundation of an international capitalist interest created an atmosphere in which Rodríguez was accepted locally
until Mexico City recalled him.

The thread that continues through the history of Baja California is that the capitalist middle class and the international financial influence created in Ensenada gave birth to democracy there, and later to the rest of Mexico. While scholars continue to debate the extent to which Fox’s victory in 2000 brought genuine democracy, Winkelman’s book does achieve its three goals and presents a convincing case that Baja California was the birthplace of Mexican democracy.


Reviewed by Theodore A. Strathman, Lecturer, Department of History, California State University, San Marcos.

Whether prompted by the current California drought or the recent commemoration of the centennial of the Los Angeles Aqueduct, a handful of writers have recently revisited the life and career of William Mulholland. Les Standiford’s Water to the Angels is a well-written addition to the already vast literature on the topic, and while his volume will not resolve controversies surrounding Mulholland’s legacy, it does provide an engaging account of his rise from ditch digger to designer of an audacious feat of engineering.

The book opens with a dramatic account of the 1928 collapse of the St. Francis Dam, a catastrophe that killed somewhere between 400 and 600 people. Standiford is at his best here and in similar passages in the book, where his novelist’s sense of description and pace grasp the reader’s attention and convey the depth of human loss. While Standiford may have chosen to begin at this point to pull in the reader, by the end of the first chapter another reason for this choice becomes clear: the author is struck especially by Mulholland’s willingness to accept responsibility for the disaster, since he selected the site and designed the dam. Here Standiford gives the first indication of his admiration of Mulholland, an appreciation that resurfaces throughout the book. His intention is not to promote “any political agenda” (p. 279), but Standiford clearly wishes to defend Mulholland’s reputation against those who have presented him as one of the villains in the “rape of the Owens Valley” or as a hubristic figure who took on more responsibility than he should have.

The Mulholland of Standiford’s telling is a dedicated public servant, a self-
made man, and an engineering innovator. Clearly he was all these things, and Standiford’s painstaking account of the building of the aqueduct impresses the reader with what a challenging feat—in terms not just of engineering but of the financing and politics—it was. Mulholland not only designed a project that brought water to Los Angeles by gravity, but he found ways to cut costs and pioneer techniques that became standard practice in the industry. The chapters on the construction of the aqueduct are fascinating in their own right, and also remind us that the aqueduct was not a fait accompli once water rights were secured and voters approved the project.

The book is indeed a good read, but it is not without its flaws. To begin with, there are several factual errors that editors should have caught. (The Reclamation Service was created in 1902, not 1899. California recognizes the legal doctrine of prior appropriation in addition to riparian rights.) Beyond this, academic historians may desire more historiographic grounding than Standiford supplies. For instance, Standiford treats Mulholland as a Gilded Age figure, given his Horatio Alger-esque rise from humble origins. (The back cover of the book likewise refers to Mulholland’s tale as a “story of Gilded Age ambition, hubris, [and] greed.”) But perhaps it is just as apt to see Mulholland’s story as representative of the Progressive Era. After all, here was a man who strove for efficiency (he introduced water meters to prevent waste), who was a civil servant working for a classic Progressive-style bureaucracy, and who supported the principle of the greatest good for the greatest number. Yet Mulholland never received more than a grade-school education. He embodied, then, both the Gilded Age and the Progressive Era. He was an expert but not a professional.

Readers might also question Standiford’s speculation that modern-day Los Angeles would not be what it is if not for Mulholland. Undoubtedly the Owens Valley project paved the way for L.A.’s remarkable growth, but Standiford perhaps overreaches when we writes, “Before Mulholland, there was next to nothing in the basins that hold 10 million or so people today, and there seemed little chance that there ever would be anything much until he went to work” (p. xviii). Surely the fin de siècle boosters of Los Angeles would not have held such a pessimistic view of the city’s future. They had, after all, met Collis Huntington’s terms to bring the Southern Pacific Railroad to the city and then defeated Huntington in the “free harbor” fight to secure federal support for improving the port at San Pedro. They had, in short, begun to fulfill some grand ambitions at a time when Mulholland was only beginning his rise to fame. Moreover, as Standiford himself explains, it was former mayor Fred Eaton who conceived of the aqueduct, and it was the water commissioners who approved the initial purchases of Owens Valley land and water rights. While these commissioners were fortunate to have
at their disposal a public servant who had the drive, intelligence, and shrewdness to finish the aqueduct on time and under budget, one wonders if there weren’t other engineers around who could have steered the project to completion.

None of this is to deny Mulholland’s genius, nor is it meant to suggest that Standiford has not produced a lively account of his life and work. Those unfamiliar with this saga will find this book an excellent investigation of a fascinating figure, while those well versed in the subject will discover a number of rewarding new anecdotes and facts about Mulholland and his aqueduct.


Reviewed by Daniel S. Elkin, Ph.D. Candidate in History, University of Arkansas, Fayetteville.

In The Frontier of Leisure, historian Lawrence Culver argues that Southern California’s unique regional history influenced a model of urban development that reshaped the entire United States. Central to this model was the promotion of leisure and recreational activity. By the early twentieth century, locations such as Florida and New Orleans were promoting leisure and recreation to attract tourists, but only in Southern California were such activities depicted as a permanent way of life. In this way, the life of leisure became a consumer item like any other and was marketed and “sold” in mass. For better and for worse, this served to reshape the culture of the United States’ emerging middle class into one that mirrored the values of Southern California.

Culver’s opening chapters outline the visions of Los Angeles’s boosters in the early decades of the twentieth century. For scholars of the American Southwest, the discussion of Anglo romanticism of the Hispanic and indigenous past is familiar, but it is an important element of this work because it showcases the foundational flaws of the region’s culture of leisure. Inherent to this model’s viability was the selective use of the past and a reliance on people of color for low-wage labor. Additionally, both boosters and consumers of leisure viewed it as a culturally white affair, and this led to confrontations over public spaces like parks and beaches. Yet Culver does not believe that is the end of the story. While the culture of leisure possessed its “negative effects,” Culver suggests that it also “offered economic, social, and cultural opportunities, however circumscribed, to
the working class and peoples of color” (p. 8). This is most aptly demonstrated in his chapters on Catalina and Palm Springs. For those who grew up in Southern California, these chapters are particularly entertaining as Culver traces the history of these resort communities and outlines their break from vacation destinations of the elites to more accessible hot spots for the region’s middle class.

Lastly, Culver uses the popularity of the ranch style home as his end point to suggest that the distinct regional culture of Southern California had indeed gone national by the middle of the twentieth century. With its architectural design, the single-story ranch home blended southwestern romanticism with modern suburban sensibilities. Yet, the ranch home also represented the “closing of the frontier of leisure” (p. 233). Moving forward from the 1960s, the priorities of American suburbanites were less concerned with leisure and luxury and more focused on withdrawal into white-only enclaves. Additionally, the ranch style had become ubiquitous, which made it increasingly undesirable. Yet the culture of leisure did not disappear with the ranch home. Instead, it became an engrained, if not always identified, influence across a wide spectrum of social movements from environmentalism to modern conservatism.

Those interested in the history of San Diego might come away disappointed by this book. Culver’s Southern California is almost exclusively limited to Los Angeles and its satellites. This is not a fatal flaw by any means, as the lessons he draws from Catalina and Palm Springs could ostensibly be applied to many of San Diego’s tourist destinations. In the end, his argument is ambitious and farther-reaching than the reader initially suspects. A deeper understanding of Southern California’s booster history, and the unique vision of urbanism it represented, has the potential to complicate our understanding of the “new” social movements in the second half of the twentieth century which are often represented as a distinct break from the social thought in the decades that preceded them. The Frontier of Leisure is a thought-provoking page turner that is accessible to specialist and non-specialist alike, and is a crucial work for scholars of the American Southwest.
BOOK NOTES

Americans Recaptured: Progressive Era Memory of Frontier Captivity. By Molly K. Varley. Norman: University of Oklahoma Press, 2014. Appendix, notes, bibliography, and index. ix + 230 pp. $34.95 cloth. Narratives of white captives held by Native Americans have been staples of American literature since the publication of Puritan Mary Rowlandson’s account of her seizure during Metacom’s War. Molly Varley’s work explores how Progressive Era editions of these narratives recast the meaning of Indian captivity to reflect contemporary concerns about the fate of Native Americans, the “closing” of the frontier, and cultural/ethnic consequences of European immigration.

The Army Surveys of Gold Rush California: Reports of the Topographical Engineers, 1849–1851. Edited by Gary Clayton Anderson and Laura Lee Anderson. Norman: Arthur H. Clark, 2015. Maps, notes, bibliography, and index. 256 pp. $34.95 cloth. The Arthur H. Clark Company has published this edited collection of the reports of George Horatio Derby and other engineers operating in California. While earlier explorers like John C. Frémont had crafted rudimentary maps and reports of the area, the Army’s work proved to be more extensive and accurate, thus offering present-day readers rich accounts of the landforms, resources, and people of mid-nineteenth-century California.

Creating the American West: Boundaries and Borderlands. By Derek R. Everett. Norman: University of Oklahoma Press, 2014. Illustrations, maps, appendix, notes, bibliography, and index. xv + 302 pp. $29.95 cloth. In this monograph, historian Derek Everett examines the process of creating state boundaries in the American West. After two introductory chapters, Everett provides six case studies of state border creation. A concluding paragraph follows, summarizing the author’s contention that the lines drafted to divide states in the past continue to exert a powerful influence over a host of issues, from local identities to water disputes to taxation.

Downwind: A People’s History of the Nuclear West. By Sarah Alisabeth Fox. Lincoln: University of Nebraska Press, 2014. Illustrations, maps, notes, bibliography, and index. xiv + 285 pp. $29.95 cloth. Downwind is a recent addition to the growing body of scholarship on the nuclear West. In it Sarah Alisabeth Fox uses oral history to examine aspects of the region’s connection to atomic energy and weaponry and explores themes such as uranium mining, atmospheric testing, agriculture in downwind communities, and civil defense preparations.
From Acorns to Warehouses: Historical Political Economy of Southern California’s Inland Empire. By Thomas C. Patterson. Walnut Creek, CA: Left Coast Press, 2015. Illustrations, maps, table, notes, bibliography, and index. 283 pp. $94.00 cloth, $32.95 paper; $32.95 e-book. Thomas Patterson, professor of anthropology at the University of California Riverside has produced this study of economic change in the Inland Empire. The book explains how political change--from Spanish colonization to Mexican rule to the American takeover--altered production, labor relations, and trade, as the indigenous economy was supplanted by the mission system before American settlers began to introduce changes in advance of the American conquest in 1848. Patterson carries the story to the present day, as the decline of Cold War-related defense manufacturing--itself part of a broader pattern of deindustrialization--helped set the stage for the emergence of the area as a major site for warehousing and distribution operations.

The Rising Tide of Color: Race, State Violence, and Radical Movements across the Pacific. Emil and Kathleen Sick Series in Western History and Biography. Edited by Moon-Ho Jung. Seattle: University of Washington Press, 2014. Illustrations, notes, and index. x + 308 pp. $50.00 cloth. This edited collection takes a transnational approach to its investigation of radical movements among people of color. While some of the nine chapters--such as Emily Hobson’s essay on the Los Angeles Police Department’s surveillance of gay communities--tell ultimately local stories, a common thread in the volume is how movement of people across the Pacific contributed to the evolution of radical politics in the American We
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