YOSEMITE NATIONAL PARK ROADS AND BRIDGES
Yosemite National Park
Mariposa County
California

HAER No. CA-117

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA
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HISTORIC AMERICAN ENGINEERING RECORD
NATIONAL PARK SERVICE
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Yosemite National Park
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LOCATION:	Yosemite National Park, Mariposa and Tuolumne counties, California
DATES OF CONSTRUCTION:	1870s-1960s
ORIGINAL OWNERS:	Private turnpike companies, Yosemite Board of Commissioners.
PRESENT OWNER:	National Park Service, Yosemite National Park
ORIGINAL USE:	Private toll roads, park roads.
PRESENT USE:	Park road system.
SIGNIFICANCE:	A variety of themes are represented in the story of Yosemite's roads. The earliest routes were toll trails and roads constructed by private turnpike companies. Some roads in Yosemite Valley were constructed under the auspices of the Yosemite Board of Commissioners or the U.S. Cavalry. Some work, most notably the El Portal Road, was done by the National Park Service Engineering Division, but most of the park roads were reconstructed by the Bureau of Public Roads after 1925. Most of the park roads reflect careful attention to landscape concerns; they were designed not only to carry required traffic loads but also to integrate with their natural settings.
PROJECT INFORMATION:	Documentation of the Yosemite National Park Roads and Bridges is part of the NPS Roads and Bridges Recording Project, conducted in summer 1991 by the Historic American Engineering Record of the National Park Service.

Richard H. Quin, HAER Historian, 1991

INTRODUCTION

In summer 1849, gold-seeking prospectors toiled up the valley of the Merced River as part of the fabled California Gold Rush. They ranged into lands long used by native peoples, and conflict invariably arose. The prospectors exploited some Indians as laborers in exchange for small goods and food. Before long, the resentful natives began to raid the stores that white traders established for the newly-established mines. One of these was a trading post on the Fresno River owned by James D. Savage, who maintained an extensive trade with both the Indians and the prospectors. Savage's post was plundered and his men in charge were murdered. In response, the white men of the neighborhood appealed to the Governor, who authorized the organization of a volunteer militia, the "Mariposa Battalion." Savage was elected Major and the Mariposa Indian War was on.[1]

Although federal commissioners were able to intervene and convince most of the Indians to give up hostilities. However, some refused to come in, and Savage was ordered to seek them out. Rumors were that a band called the "Yosemites" were hiding in a remote valley at the head of the Merced. Savage's force met a group of the Yosemite and their chief, Teneiya, on the South Fork of the Merced. Teneiya agreed to lead Savage to the valley, and on 27 March 1851, they came into view of Yosemite Valley. A doctor with A company, Lafayette Bunnell, recommended that it be given the name "Yosemity" after the tribe;[2] the Indians called it Ahwahnee, meaning something like "deep grassy valley."

It was, a Bunnell described it, "one of the most remarkable of the geographic wonders of the world." The 7-square mile Valley, was bounded by mile-high granite walls and glaciated domes and was floored in luxurious meadows. The tallest waterfalls in North America leaped from the towering cliffs. The militiamen were entranced at the scene.

The Mariposa Battalion was unable to round up all of the Yosemite, but news about the marvelous Yosemite Valley got out, and before long, groups began seeking out the Valley and its wonders.

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[1] Francis P. Farquhar, *History of the Sierra Nevada* (Berkeley: University of California Press, 1965), 71-72.

[2] *Ibid.*.

CHAPTER ONE

SCENES OF WONDER AND CURIOSITY

> Yo Semite is the crowding of a multitude of romantic, peculiar and grand scenes within a very small space.
> --John S. Hittell's *Guide Book*[3]

The earliest routes in the Yosemite area were Indian trails, at times improved by wandering cattlemen and sheepherders, by miners, and by pack traders who carried goods to supply the mines. One of the first trails approximated the route of the later road from the Wawona area to Yosemite Valley.[4]

The first tourists to see the valley--James Mason Hutchings, Thomas A. Ayers, Wesley Millard and Alexander Stair, accompanied by two Indian guides--came in 1855, spending five days in "luxurious scenic banqueting" on the valley floor. Hutchings, a young English emigrant who had come to California during the Gold Rush, was an entrepreneur planning the publication of *Hutchings' Illustrated California Magazine*. Intrigued by reports of a 1,000' waterfall in the area, he engaged Ayers, a San Francisco artist, to prepare sketches of the phenomenon. On Hutchings' return to Mariposa, he was requested to prepare a short article on the find for the *Mariposa Gazette* by editor L. H. Holmes. This was the first published article on the Yosemite country and launched the interest of other tourists in the incomparable beauty of the place.[5]

Inspired by Hutching's account of the scenery, tourists began to enter the Yosemite country by August of the same year, making use of the old Indian paths. Soon, the first "improvements" appeared. Two of the August visitors,

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[3] Quoted in James M. Hutchings, *In the Heart of the Sierras, the Yo Semite Valley, Both Historical and Descriptive, and Scenes by the Way; the Big Tree Groves, the High Sierra, with its Magnificent Scenery, Ancient and Modern Glaciers, and Other Points of Interest, with Tables of Distances and Altitudes, Maps, Etc., Profusely Illustrated* (Oakland, CA: Pacific Press Publishing House, 1886; reprint, Lafayette, CA: Great West Books, 1990), 15.

[4] Linda Wedel Greene, *Yosemite, The Park and Its Resources: A History of the Discovery, Management and Physical Development of Yosemite National Park, California*, 3 vols. (Denver, CO: National Park Service, Denver Service Center, 1987), I:31.

[5] C. Frank Brockman, "Development of Transportation to Yosemite," *Yosemite Nature Notes* XXII (June 1943), 49, 52. No copy of the Hutchings article apparently survives, but it was picked up and republished by the *Daily Alta Californian*.

Milton and Houston Mann, saw an opportunity for profit in providing better access to the valley and with their brother Andrew undertook construction of a toll trail between Mormon Bar (below Mariposa) and Yosemite Valley. Their saddle route used existing Indian trails as far as present Wawona, then followed Alder Creek a short distance, reached the rim of the valley at or near Old Inspiration Point, and then dropped to the valley floor near the base of Bridalveil Fall. This indirect routing, higher than the Indian trails, was selected because it passed through several meadows that could be utilized for feeding stock. The route was known for a while as the "Mariposa Trail." The Manns engaged an artist named Claveau to paint scenes of the Yosemite country in order to promote travel on their trail. Claveau turned out to be a fraud, overcharging the brothers for a series of "wretched daubs."[6]

The high meadows along the route soon attracted sheepherders, and two camps were established, Westfall's and Ostrander's. The sheepherder camps were occasionally put into service as hostels and lunch-rooms for travelers on the trail. In 1868, a guidebook stated that the sites could be "easily recognized from the number of empty tin cans lying about."[7] The sheep had appeared in the Sierra as early as 1856, and were driven to the mountain meadows in great numbers after the severe drought of 1864. The mountain grazing of sheep was a California version of the "long drive" which varied with markets, wintering grounds and railheads.

Also settling along the trail was Galen Clark (1814-1910), who had visited the Valley in 1855 with one of the first tourist parties. Clark was so impressed with the country that he returned in 1857 and established a camp on the South Fork of the Merced River at what the Indians came to call "Pallachun," meaning "a good place to stop;" the site now known as Wawona. Clark sought out the high country in an apparently successful attempt to recover from a diagnosis of terminal tuberculosis, and would come to play a pivotal role in the Yosemite story. His camp evolved from a primitive hospice to become the forerunner of the Wawona Hotel. Clark became involved in road-building schemes in order to draw more visitors into the area, hoping to gain their patronage. Although his road projects never reached completion and ultimately forced him into arrears, he became a powerful advocate for Yosemite. In 1857, Clark and Milton Mann located a large grove of more than two hundred giant sequoias. (This grove had previously been seen by a man named Ogg, but had drawn no visitors.) They soon began promoting this "Mariposa" Big Tree Grove in order to draw more visitors.[8]

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[6] Brockman, 53-54.

[7] *Ibid.*.

[8] Idem, "Principal Administrative Officers of Yosemite," *Yosemite Nature Notes* XXVI (March 1947), 54; Margaret Sanborn, *Yosemite: Its Discovery, Its Wonders, and its People* (New York: Random House, 1981), 88.

Some time later, Charles Peregoy built a "public house" at the mid-way point on the trail in the meadows which today bear his name. Peregoy and his wife operated the stand until 1875, when it was bypassed by a new road from the South Fork.[9] A spur trail departed the new road at Chinquapin for Glacier Point, but traffic was not sufficient to support Peregoy's business.

The Mariposa County Board of Supervisors authorized toll charges of $2 each way for a horse and rider, $2 per pack mule, and $1 for hikers. Nonetheless, the Manns failed to gain a return on their $700 investment. After several years, the route was purchased by Mariposa County for $200 and made into a free trail. Galen Clark was appointed as director for the road, but was paid no salary. This was no political plum, and the "Road Overseer" frequently had to make repairs himself with a shovel, ax or pry-bar.[10]

Another milestone occurred in 1856 when the first white woman visited the Valley, a Madame Gautier from Mariposa. More visitors soon followed, and by the end of the 1850s much attention was being given to the scenic wonders of Yosemite. The first issue of *Hutchings' Illustrated California Magazine* was published in 1856; the lead article on Yosemite illustrated with Ayers' drawings attracted considerable interest.[11]

The hope of drawing tourists seeking out the Yosemite Valley induced citizens in the mining town of Coulterville to the northwest to construct a route into the area. Lafayette H. Bunnell, a veteran of the Mariposa Battalion's expedition, was a chief advocate of this venture. The "Coulterville Free Trail" was built in 1856 by a cartel consisting of Bunnell, George W. Coulter, and several others. They engaged Jean-Nicholas Perlot, a Belgian miner familiar with the approaches to the Valley, to construct the trail. Perlot used ten Indians as laborers. The route utilized an existing 17-mile mining road from Coulterville to Black's Ranch on Bull Creek, but the remainder of the 48-mile route was new construction. The road ran from Black's to Deer Creek, then east to Hazel Green, Crane Flat, Tamarack Flat and Gentry's, from which it dropped in a steep descent into the Yosemite Valley. Artist Thomas Ayers, who made a second visit to Yosemite in 1856, described the new route as "a good though very steep trail." Dr. Bunnell also blazed a somewhat longer but comparatively snow-free alternative route down Crane Creek from Crane Flat, joining the main trail at its Cascade Creek crossing.[12] This trail reached

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[9] Brockman, "Development of Transportation," 54.

[10] Court of Sessions, Mariposa County, Book C, 129; Hank Johnston, *Yosemite Yesterdays*, 2 vols. (Yosemite, CA: Flying Spur Press, 1989), I:31-32; Brockman, "Development of Transportation," 53-54; Shirley Sargent, *Galen Clark, Yosemite Guardian* (Yosemite, CA: Flying Spur Press, 1981), 17-18.

[11] Brockman, "Development of Transportation," 54; Sanborn, 81.

[12] *Ibid.*, 55; Farquhar, 118; Johnston, I:34; Greene, I:43*n*.

the Valley between the present powerhouse dam and Pohono Bridge. The connecting trail was located roughly at Crane Creek.

Not far north of the Coulterville route, the "Big Oak Flat Trail," which also included a stretch of existing road, was constructed at about the same time. Tom McGee, a pack operator and saloon keeper from Big Oak Flat, another mining town ten miles north of Coulterville, reopened the western portion of the old trans-Sierran Mono Indian trail which crossed the Sierra divide to the east. McGee's portion connected Big Oak Flat via the South Fork of the Tuolumne River with the Coulterville route at Crane Flat. This route received less use than the parallel trail from Coulterville, although it did draw a number of visitors from Stockton, to which it was conveniently situated. The two trails shared a common route from Crane Flat down into the Valley.[13]

Another important early route was the main track of the "Mono Trail," which climbed Bloody Canyon to cross the Sierra Crest at Mono Pass and then followed the Dana Fork of the Tuolumne River to Tuolumne Meadows. From this point it followed the route of the present Tioga Road west as far as Porcupine Flat before dropping west-southwest to Ribbon and Big Meadows via Yosemite and Bluejay creeks. At Big Meadow, it connected with other trails to Big Oak Flat, the Merced River, and the San Joaquin Valley. Tom McGee blazed the trail and connected it with the Big Oak Flat Trail in 1857; his aim was to improve passage to the mining areas on the eastern slope. A southern branch of the trail left Tuolumne Meadows, crossed Cathedral Pass, passed behind Cloud's Rest and Half Dome to Little Yosemite Valley, then over to Alder Creek and a connection with the Wawona Trail.[14]

North of Yosemite Valley, the Hetch Hetchy valley, later described as a "little Yosemite," had been entered even earlier than Yosemite Valley. A trail was opened into the area in 1850 or shortly afterwards. By the late 1850s, the route ran roughly from the Big Oak Flat Trail at Hardin's Ranch, across the Middle Fork of the Tuolumne River to Hog Ranch (now Mather) and then up the divide between the Middle Fork and the Tuolumne River proper to a small ranch called "the Cañon" before dropping 6 miles into the valley (now flooded by the Hetch Hetchy Reservoir).[15]

In 1860, George W. Chase staked a claim for the "Sheepherder Mine" on Tioga Hill near Gaylor Lake. Chase, a dentist, did not open the mine. A little later, the California Geological Survey, under the direction of professor Josiah Dwight Whitney, conducted field work in the area. Whitney noticed the Tioga Pass (which he named MacLane's) and suggested it as a potential route across the mountains. He reckoned its elevation as 600' lower than Mono Pass,

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[13] Brockman, "Development of Transportation," 55; Johnston, I:34.

[14] Greene, I:37; additional information provide by Yosemite National Park Historian Jim Snyder.

[15] Greene, I:43-44.

which carried the existing trail. A survey for a route over Tioga Pass was run in 1862 by civil engineer J. T. Haines, who recommended a line running by Yosemite Creek, Tenaya Lake, and Tuolumne Meadows.[16] Although nothing resulted from Haines' efforts, his proposed route was roughly the same as that followed by the present Tioga Road.

More attention was now being directed to the "incomparable" Yosemite Valley. In 1856, the *Country Gentleman* of Albany, New York reprinted an article on "Yo-ham-i-ty" from the *California Christian Advocate*, along with some of Thomas Ayers' illustrations. This was the first piece on Yosemite to appear in an Eastern publication. More stories soon appeared, and following them more visitors. The Rev. Thomas Starr King wrote a series of letters on his visits to Yosemite in the *Boston Evening Transcript* in 1860-61, further raising the level of interest. Even with the outbreak of the Civil War, visitors still came, including "literary tourists" like Horace Greeley of the *New York Tribune*, editor Samuel Bowles of the *Springfield* (Mass.) *Republican*, and essayist Bayard Taylor. Brilliant artists like Albert Bierstadt and Thomas Moran, as well as others far less capable, attempted to capture the grandeur of Yosemite on paper and canvas. Photographer Charles L. Weed arrived with his bulky equipment in 1859 and produced the first photographs of the valley.[17]

Before long, citizens began expressing concern about the preservation of the unique Yosemite Valley and its landscape, especially after a few homestead claims were filed and some rudimentary developments were established on the valley floor. The unique valley landscape was recognized as something very special, too important to be risked to private interests. By the early 1860s, a movement was underway to place the valley in the care of the state. Israel W. Raymond (1811-1887) of the Central American Steamship Transit Company of New York and other influential businessmen persuaded Senator John Conness to introduce legislation that would place control of the Yosemite Valley and the discontiguous Mariposa Big Tree Grove under state administration. This action was supported by noted landscape architect Frederick Law Olmsted (1822-1903). Olmsted came to the area in 1863 to manage the Las Mariposas Estate, formerly the fief of John Charles Frémont, and was impressed by his visits to the nearby Yosemite. After seeing the Valley and the big trees, he became concerned by the threats posed by potential development, and discussed means for protecting the resources with Raymond. Influenced largely by these two men, Conness pushed for Congress to cede the land for the purposes of preservation. In the summer of 1864 his bill passed through Congress, and was signed by President Lincoln on 30 June 1864. The Yosemite Valley and the

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[16] Keith A. Trexler, *The Tioga Road: A History*, 1883-1961, revised edition (Yosemite, CA: Yosemite Association, 1980), 2; [Sonora, CA] *Union Democrat*, 10 January 1863.

[17] Peter J. Blodgett, "Visiting 'The Realm of Wonder': Yosemite and the Business of Tourism, 1855-1966," *California History* LXIX (Summer 1990), 118-120; Greene, I:35.

Mariposa Grove were to be managed by the state through the governor and an appointed board of commissioners. The 60 square miles set aside by the federal government for the preservation of nature was in essence the first nationally-designated park. The transfer was contingent on approval by the state legislature, which was out of session until 1866. On 2 April of that year, the state legislature and Governor Frederick F. Low approved the act of acceptance, and the areas came under state control.[18]

Tourist interest grew considerably following the designation of the Yosemite Grant. In 1864, visitation totalled only 502 persons, but by the end of the decade had more than doubled to 1,122. Already, the crowds were beginning to impact the Valley landscape, where tourists and residents both sought fodder for their horses. Meadows were fenced or sown in exotic grasses. Dairy herds were introduced, and more hotels and other structures appeared. Over the years, grazing would pose serious problems to the Valley floor.[19] The reason for the encroachments was that the tourists required supplies, and milk, eggs, and produce could not be brought in over the rough saddle trails. The Valley continued to be used as farmland until later roads and the Yosemite Valley Rail Road made it possible to supply concessions from outside the park. Milk cows for the bakeries and restaurants remained in the Valley until the 1920s.

Frederick Law Olmsted was appointed as one of the first members of the Board of Commissioners. In this capacity, he proved a staunch defender of the Yosemite landscape, urging that all developments be subjected to the closest scrutiny and that the preservation of the Yosemite environment should be the Commission's first priority. Olmsted promoted additional use and awareness of the area, but warned that drawing more visitors would require better means of access. In August 1865, he presented a report on preliminary developments for the grant to his fellow commissioners.

Olmsted saw the difficult journey reguired to reach the Yosemite Valley as a serious detriment to increased visitation, and one that would likely inhibit the required attention necessary to encourage development and preservation, not yet distinguished as conflicting interests. In his report, he described predicaments faced by the average traveler:

> A man travelling from Stockton to Yosemite or the Mariposa Grove is commonly three or four days on the road at an expense of from thirty to forty dollars, and arrives in the majority of cases quite overcome with the fatigue and unaccustomed hardships of the journey. Few persons, especially women, are able to enjoy or profit from the scenery and air for days afterwards. Meantime they remain at an expense of from $3 to $12 per day for themselves, their guide and horses, and many leave before they have

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[18] Blodgett, 120; Farquhar, 123; Alfred Runte, *Yosemite: The Embattled Wilderness*. (Lincoln: University of Nebraska Press, 1990), 22.

[19] Johnston, I:34; Runte, 40-41.

> recovered from their first exhaustion and return home jaded and ill.[20]

Olmsted urged the Board of Commissioners to improve roads and trails in the reservation, and to request a $25,000 appropriation to upgrade access roads to the Valley and the Big Tree Grove. In his opinion, improving the roads was "the first necessity" for the commission's attention. In addition to helping increase tourist visitation, he described other advantages that a better road would bring:

> . . . it would also serve the important purpose of making it practicable to convey timber and other articles necessary for the accommodation of visitors into the Yo Semite from without, and thus the necessity, or the temptation, to cut down its groves and to prepare its surface for tillage would be avoided. Until a road is made it must be very difficult to prevent this.[21]

The roads could showcase the Valley's stunning scenery. Olmsted proposed a loop road that would "enable visitors to make a complete circuit of all the broader parts of the valley and to cross the meadows at certain points, reaching all the finer points of view." In addition to the road into the Valley, he also urged that a road be constructed to and completely around the Mariposa Big Tree Grove, both to improve access and to serve as a fire barrier. The road would be wide enough only for a single vehicle, so as to "reduce the necessity for artificial construction within the narrowest possible limits." Visitors would, he suggested, drive up one side of the Valley and back down the other, taking advantage of "suitable resting places" at frequent intervals. Several small bridges would also be required. The roads should be built in the shade close the Valley walls. Such routing would not only be more picturesque, but would also be less prone to dust. Olmsted also supported the construction of a road from Stockton through the Sierra foothills to Clark's Station on the South Fork, with the road built so as to offer the "best views" of the scenery.[22]

But Olmsted's recommendations were seen by fellow commissioner Josiah D. Whitney as a threat to funding for his California Geological Survey, and the report was suppressed. The state did nothing to improve access to Yosemite, leaving road improvements to the localities and commercial interests. In 1867, the Yosemite Board of Commissioners stated in its biennial report: "We

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[20] Frederick Law Olmsted, "Preliminary Report upon the Yosemite and Big Tree Grove," in Victoria Post Raney *et al*, editors, *The Papers of Frederick Law Olmsted*, Vol. V: *The California Frontier*, 1864-1869 (Baltimore, MD: The John Hopkins University Press, 1990), 508.

[21] *Ibid.*, V:509.

[22] *Ibid.*; Frederick Law Olmsted to Clarence King, 23 October 1864, in *Ibid.*, V:466.

do not consider it any part of our duty to improve the approaches to the Valley or Big Trees. This may be left to the competition of the counties, towns, and individuals interested in securing the travel." However, the board did offer to grant franchises for road and trail construction. The builders would be required to pay for the cost of all improvements, and in return could charge tolls for the use of the routes. The board stipulated that the roads and trails would revert to the state when monies were eventually appropriated for their purchase.[23]

Unfortunately, Olmsted's associations with Yosemite were drawing to an end. Only three days after delivering his report, he left Yosemite Valley and never returned. He went back to New York City to resume work on Central Park and resigned from the Yosemite Board of Commissioners on 23 October 1866.[24] Although he occasionally corresponded with the board and submitted a deposition when the commission was later sued over property rights, he never visited Yosemite again.

The Board of Commissioners made some improvements to trails and erected several bridges in the Valley to provide for the sightseers. The first improvement was the construction of the Mist Trail to Vernal Fall about 1858. This was followed by the construction of a trail to Mirror Lake in 1864. For the construction of other trails, the board awarded franchises to private parties; several entrepreneurs invested in these ventures, building toll trails to various points on the Valley rim.[25]

An important early toll trail was the Four-Mile Trail, which connected the Valley floor with Glacier Point, a vista with a most dramatic view of the heart of the Yosemite Valley. Glacier Point had been a point of interest since about 1860, and in 1869 Charles Peregoy built the rustic Mountain View House hotel in nearby Peregoy Meadow. The Four-Mile Trail was constructed three years later by John Conway for James MacCauley for $3,000. Peregoy started a hotel at Glacier Point but soon disposed of the property to MacCauley, who built the Mountain House on the promontory. The trail was sold to the state in 1878.[26]

The Board appointed Galen Clark as the first Guardian or resident superintendent of the Yosemite Grant. Continuing to take in Yosemite-bound travelers at his crude lodgings, over the next few years built up a small development on

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[23] Runte, 39; Johnston, I:34-35.

[24] Runte, 31.

[25] Greene, I:80.

[26] Harlan D. Unrau, *Historical Overview and Assessment of Significance of Stone Walls and Rock Work along Glacier Point Road in Yosemite National Park* (Denver, CO: National Park Service, Western Team, Denver Service Center, January 1990), 1-2.

the South Fork, called "Clark's Station." To encourage more visitors, he began to promote the construction of a new road to the Valley, which would of course pass by his hostel. Clark was Guardian until 1880, and served again from 1889 to 1896.[27]

Clark and several partners formed a road company in 1862 with the aim of developing a 16-mile wagon route into the South Fork area, but the party apparently completed little construction. Following a flood in 1862, Mariposa Countians subscribed $300 for trail maintenance, and Clark himself rebuilt two bridges the following year. Despite the lack of a substantial appropriation for major road construction, Clark made some other improvements to access to his simple lodgings. He replaced early foot logs and crude bridges across the South Fork with an open pony-truss wooden bridge in 1868. Though later covered and altered or reconstructed several times, it survives [HAER No. CA-106] and is the oldest bridge in Yosemite National Park. That same year, Clark was instrumental in the organization of another road company, "The Mariposa and Big Tree Grove Turnpike Company," which intended to build a toll route between Mariposa and Clark's (now Wawona) and eventually on to the Yosemite Valley.[28]

Another trail into Yosemite Valley was constructed in the early 1870s. This was a more difficult route but passable in winter, and followed the South Fork of the Merced north to connect with an even rougher trail up the canyon of the main branch of the Merced River above the South Fork. The route was called the "Hite's Cove Trail," after the John Hite Mine which it passed. Travelers could travel by wagon for 18 miles from Mariposa before having to switch to saddle horses. The Yosemite Falls Trail had been built by this time, and James M. Hutchings opened a competing trail up Indian Canyon. Another saddle trail climbed out of the east end of Yosemite Valley up the Vernal and Nevada Falls gorge of the Merced River.[29] Early visitors had a number of travel options, but were charged tolls at every opportunity. No road reached Yosemite Valley; the only access was by saddle trail.

By this time, some operators were providing saddle train services for park visitors. James M. Hutchings began conveying visitors into the Valley from Crane Flat in 1866. Washburn & Cook were advertising Yosemite trips from Mariposa by their "Mammoth Big Tree Livery" in 1867. A competitor, Fred

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[27] Brockman, "Principal Administrative Officers," 53.

[28] Sargent, *Galen Clark*, 64-65; Brockman, "Principal Administrative Officers," 53-54; Greene, I:92, 94.

[29] Carl Parcher Russell, *One Hundred Years in Yosemite* (Berkeley: University of California Press, 1947), 52; Greene, I:36; additional information provided by Yosemite National Park Historian James B. Snyder.

Brightman, was active by 1870, and another firm, Fisher & Company, was running stages from Mariposa to Clark's in 1873.[30]

The rough trails to the Valley limited the number of early visitors. Most travelers of the period were wealthy Easterners or Europeans who could afford the expense and leisure time for the pursuit, but these tourists were rarely accustomed to the difficulties of traveling on mountain trails. John Muir, then living in Yosemite, noted that they clung to their horses like "overgrown toads."[31]

The most difficult part of a Yosemite trip was the vertiginous descent from the Valley rim, often a drop of three thousand feet or more. J. H. Beadle, who visited Yosemite in 1871, described his terrifying trip down into the Valley from Tamarack Flat:

> We turn again to the left into a sort of stairway in the mountain side, and cautiously tread the stony defile downward; at places over loose boulders, at others around or over the points of shelving rock, where one false step would send horse and rider a mangled mess two thousand feet below, and more rarely over ground covered with bushes and grade moderate enough to afford a brief rest. It is impossible to repress fear. Every nerve is tense; the muscles involuntarily make room for a spring, and even the bravest lean timorously toward the mountain side and away from the cliff, with foot loose in stirrup and eye alert, ready for a spring in case of peril. The thought is vain; should the horse go, the rider would invariably go with him. . . We learn with wonder that of the five thousand who have made this perilous passage not one has been injured--if injured be the word, for the only injury here would be certain death. One false step and we are gone bounding over rocks, ricocheting from cliffs, till all semblance of humanity is lost upon the flat rock below.[32]

Women's rights activist Elizabeth Cady Stanton refused to ride down the same trail. Despite her guide's assurances that hundreds had ridden safely down,

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[30] "Yo Semite Travel," *Mariposa* [CA] *Gazette*, 13 June 1873, 3; Washburn & Cook advertisement in *Mariposa Gazette*, 13 March 1867, 2. The two had added John Bruce as a partner by 27 March 1868, when Bruce's name begins to appear in advertisements.

[31] Anne F. Hyde, "From Stagecoach to Packard Twin Six: Yosemite and the Changing Face of Tourism, 1880-1930" *California History* LXIX (Summer 1990), 158.

[32] Quoted in Russell, 54-55.

she walked the remaining distance, equal to twenty miles on level ground, rather than trust her horse on the "fearful incline."[33]

Apart from the dangers, the most irritating aspect of travel to and in the Yosemite Valley was the choking dust, commented on by many a visitor. To some, it nearly spoiled the trip, as one recounted: "You are coated with dust, your eyes are smarting, your tongue is clogged, your hair is caked, your limbs are sore, your flesh is inflamed, you want to go home." An English traveler in 1871 remarked "Two-hundred and fifty miles of staging upon the Rocky Sierras, beneath an August sun and half the time enveloped in red dust, are enough to make one seriously ask, Does it pay to visit Yosemite?"[34]

Charles T. Leidig, a Valley resident who in 1898 became one of the first civilian park rangers, recalled that the dust from a six-horse team took six minutes to settle.[35] Galen Clark, Guardian of the Yosemite Grant, also recognized the dust as a major problem. He noted that it was caused by carriages and wagons cutting into the roads

> until the roadbed has become a deep channel of volatile earth dust, which rises in great clouds, enveloping stage coaches and passengers, obscuring vision, penetrating ears, eyes, nose and mouth if not kept closely shut, and covering the whole body with a dusty pall so that as stages arrive at the Hotel they appear to be loaded with human images carved in brown stone.[36]

The long, dusty and sometimes dangerous travel would be a memorable point of any Yosemite visit; it certainly required plenty of time. An early guide suggested "Ten days is the minimum a traveler should allow for the journey from San Francisco, and of this three days could be spent in the valley, one in the Big Trees, the remaining six spent in transit."[37]

Once in Yosemite Valley, visitors had to follow a very rough trail along the north side of the Valley and cross a crude log bridge erected by early hotelier Gustavus Adolphus Hite, or its later replacement, another log bridge built by entrepreneur James Mason Hutchings before 1865, in order to reach their lodgings. The lack of a good bridge led the Yosemite Board of Commissioners to finally build a "substantial bridge at the foot of Bridal Vale Valley," at about the point where the trails from the north and south

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[33] Sanborn, 83.

[34] Quoted in Hyde, 158.

[35] "Notes taken by M.E.S. [Margaret E. Shlichtmann] at Mr. Charles Leidig's, Hayward [CA]. 1952." MSS, Yosemite Research Library.

[36] Quoted in Greene, I:272-73.

[37] *Ibid.*, I:94-95.

entered the Valley. This free bridge enabled the visitors to make a full circuit of the Valley if they desired. Another small bridge was built by Hutchings across Yosemite Creek near the base of Yosemite Falls, mainly as a convenience for guests at his hotel.[38]

The commissioners hoped to make other limited improvements to aid accessibility to points of interest in the Valley. By 1867, they were considering the erection of a bridge across the Merced River at the upper end of the Valley and another across Tenaya Creek on the drive to Mirror Lake, but a major flood just before Christmas wrecked these plans. The flood carried off all the bridges across the Merced River. Hutchings' wooden bridge was carried off its foundations but was deposited on the bank a short distance below. His Yosemite Creek bridge was wrecked but partially intact. Of the new bridge built over the Merced by the commissioners, nothing remained but the abutments. Hutchings soon replaced his log bridge with one of finished lumber; it remained in use until the commissioners built the "Upper Iron Bridge" on the spot in 1878.[39]

In 1868, the Mariposa County Board of Supervisors issued a franchise to Phillip Coulter to operate a ferry across the Merced River in the Yosemite Valley. He was authorized to collect tolls (man and horse, $1; footman, 50¢; loose horse or mule, 25¢). Coulter soon had a ferry, listed as a $300 investment, in operation. By 1870, Coulter had replaced the ferry with a bridge, valued at $1,000. But he apparently overextended himself and his business was mortgaged two years later. In 1873, the *Mariposa Gazette* noted that Ira Folsom had acquired the "good, substantial bridge just below Leidig's." Stephen Cunningham also operated a ferry on the river.[40]

Despite the many inconveniences, tourists continued to come, inspired by the ever-increasing number of published accounts about the wondrous attractions of the Valley and the Big Trees. In 1870, less than twenty years after the "discovery" of Yosemite, some 1,735 travelers endured the difficult trek to the Valley.[41]

Tourism increased rapidly after 1870, when the Central Pacific Railroad built its "short line" from Stockton to Milton in Calaveras County, and extended a branch south into the San Joaquin Valley. Stage roads connected the railway

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[38] *Ibid.*, I:67; "Yo Semite Valley," *Mariposa Gazette*, 11 January 1868, 2; "The Matters of Yosemite--Memorial of J .M. Hutchings and J. C. Lamon," *Mariposa Gazette*, 18 January 1868, 1; Hutchings, 133.

[39] Greene, I:67-68, 68*n*.

[40] Homer W. Robinson, "The Folsom Bridge," *Yosemite Nature Notes* XXXIII (February 1954), 16; Sanborn, 89; "Improvements in the Valley," *Mariposa Gazette*, 2 May 1873, 3.

[41] Hutchings, 130.

termini with Yosemite, and larger numbers of tourists began to appear. Many of these were again upper-class Easterners, who came across the country on the new transcontinental railway, completed in 1869. More than a thousand tourists were now visiting Yosemite each year, and they demanded new roads, hotels, and other services.[42]

At about this time, the first carriage made its rounds about the Valley. Galen Clark had a small wagon packed into the Valley and reassembled. Clark guided visitors around the Valley in the wagon for a small fee. James Hutchings brought in another wagon in August 1871.[43]

Ira Folsom established a cable ferry across the Merced River in 1871 near the base of Eagle Peak, about halfway between the present El Capitan and Sentinel bridges by 1871. Old maps show this location as "Ferry Bend." Folsom later acquired Phillip Coulter's bridge, valued at $500, a little further downstream. This "big long wooden structure with a span of 110 feet" was located just below a famous giant yellow pine. In 1874, The state bought out the "improvements" in the Valley, including Folsom's bridge, saloon and other property, for which he was paid $6,000.[44]

The first true road in the Yosemite country was a wagon road constructed around the north side of the Valley by John Conway in 1872. James Hutchings then began conducting tours over the road in his carriage. In 1874, Conway built a road along the south side of the Valley for hauling wood from Hutchings' property; however, the roads were not connecting, and there was still no opportunity to make a circuit trip around the Valley.[45]

Development in the Yosemite Valley was a matter of concern to at least one early observer, who remarked to the *San Francisco Bulletin* in 1871 that "Carriage roads and carved billiard tables, warm baths, fancy saloons, hotels and like conveniences are the necessary attendants of city life, but I hate them here."[46]

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[42] Blodgett, 122.

[43] Sargent, *Galen Clark*, 113.

[44] Greene, I:151; Robinson, "Folsom Bridge," 16.

[45] "Yosemite Valley--History of the Trails, Business Enterprises, State Relations, Etc.," *Mariposa Gazette*, 28 May 1881, 2; Sargent, *Galen Clark*, 113; Greene, I:110.

[46] *San Francisco Bulletin*, 19 July 1871.

CHAPTER TWO

THE ERA OF THE TOLL ROADS

> The road to Yo Semite, like the way of life, is narrow and difficult, but the end, like the end of a well-spent life, is glorious beyond the highest anticipation.
>
> --James Vick[47]

By the mid-1860s, the communities surrounding the new Yosemite Grant were agitating for the construction of roads into the Yosemite Valley, and began berating the Yosemite Commissioners for failing to make "improvements." The *Mariposa Gazette* took the Commissioners to task in January 1868:

> No bridges, nor structures, nor any other improvements to the Valley, can help open up the Valley for public use, nor in any way can atone for the lack of access to it. The mountaineers of Mariposa may be able to ride wherever a mule may climb, and may care comparatively little for the length or quality of the trail, but they do not assume to be "the public" for whose use and recreation the State accepted the grant. A great majority of that portion of the public able and desirous to enjoy the peace, freshness, beauty and sublimity of the great park and affered [*sic*] for their use by the State, are unaccustomed to the saddle, and even to great fatigue, and will be excluded therefrom so long as it is understood that the heat and dust of the route through the plains is to be added to the unaccustomed trial of a long and weary bridle path over the mountains.[48]

However, at its winter meeting, the commissioners determined that the making of roads and other improvements should be left to the parties interested in their construction.[49] The development of roads therefore proceeded in a haphazard manner as private investors built roads to serve their own business interests. A great road race ensued, as interests from the north and south of Yosemite sought to complete the first road to the Valley.

Coulterville and Big Oak Flat Roads

The "Chinese Camp and Yo Semite Company" obtained a state franchise to construct a turnpike road from the mining towns of Chinese Camp and Big Oak Flat

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[47] Quoted in Hutchings, 15.

[48] "Yo Semite Valley," *Mariposa Gazette*, 18 January 1868, 2.

[49] "Report of the Commissioners of the Yosemite Grant and the Big Tree Grove," *Mariposa Gazette*, 4 January 1868, 1.

Coulterville and Big Oak Flat Roads
The "Chinese Camp and Yo Semite Company" obtained a state franchise to construct a turnpike road from the mining towns of Chinese Camp and Big Oak Flat northwest of Yosemite in Tuolumne County to Yosemite Valley. At the same time, newspapers mentioned plans by the "Mariposa and Big Tree" and "Yo Semite and Big Tree Grove" companies to extend roads from the south towards the Valley. The *Stockton Record* cautioned that the proposed roads were not fully funded, and that their completion remained something of an uncertainty. The paper stated its lack of confidence in the endeavors:

> There is in Mariposa, perhaps in Tuolumne, a slight difference between designs and facts, and between capital stock and capital. [If a] Company, shall get $20,000 in cash and spend it in the actual making of a road to Yo Semite, then we shall confess our unworthiness, acknowledge the corn, throw in the sponge, and sit in ashes. We can hold our own in gay and festive companies and designs, but as to investing money in the proposed road, we have not attained to that.[50]

In September, George E. Sprague, Leo E. Stuart and John B. Smith, directors of the Chinese Camp & Yosemite Turnpike Company, persuaded the Yosemite Grant commissioners to award their company an exclusive franchise to construct a wagon road entering the Yosemite Grant from the north side of the Merced River, with the stipulation that the new road was to be opened by 1 July 1871. The turnpike company estimated the cost for the road as far as the Valley rim at $10,000; a wire suspension bridge across the Tuolumne River at Deering's Ferry would cost an additional $10,000. The company employed a "great army" of Chinese workers which started construction in the spring of 1869.[51] By June 1870, construction crews had pushed the road from Big Oak Flat east as far as Crane Flat. The enterprise reorganized as the Yosemite Turnpike Road Company, a joint stock concern, on 20 January 1871. However, by this point the project was running out of money and the state deadline for completion was rapidly approaching. When the deadline arrived in July, the road had been built only as far as Gentry's Station, located at the top of the cliff on the

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[50] "The Yo Semite Roads," *Stockton Gazette*, 1 February 1869, reprinted in *Mariposa Gazette*, 12 February 1869, 2.

[51] *Laws and Judicial Decisions Relating to the Yosemite Valley and the Mariposa Big Tree Grove; Opinion of Hon. John Currey that the Legislature Cannot Legally Interfere with the Management of the Commissioners of the Territory within the Above-Named Grants; Also, a History of the Action of the Commissioners in Relation to the Wagon Road Leading into the Yosemite Valley, on the North Side of the Merced River; and a Statement of Progress Made by the Coulterville and Yosemite Turnpike Company in Building its Road into and upon the Level of the Yosemite Valley* (San Francisco: Currey & Co., Book and Job Printers, 1874) 2; "The Yo Semite Roads," 2.

edge of the Yosemite Grant.[52] The state awarded the company an extension to the end of the year, but the road was built no further, as the remaining section of the route required an extraordinarily expensive road down the cliffs to the valley floor. On 1 January 1872 the company forfeited its exclusive rights to construct a road into the Valley.[53]

Business interests in the northern Mariposa County mining town of Coulterville also sought to entice Yosemite-bound tourists by building their own road to the Valley. Local citizens formed a company in December 1869, intending to construct a road to the Yosemite Valley. James Shimer was president of the new company, George W. Coulter the secretary and a Dr. Cody treasurer. Shareholders subscribed $4,000 to run a survey from Coulterville to the Valley. The company was reorganized in February 1870, with capital stock of $20,000. Five miles of the road were immediately placed under contract, and the entire 40 miles from Coulterville to Yosemite was to be open by May. Workers were paid forty dollars a month and board, half in cash and half in company stock. The road began at Bower Cave (the existing road terminus 12 miles southwest of Coulterville on the North Fork of the Merced River), then crossed the southern flank of Pilot Peak to Hazel Green, where it met an existing horse trail in preparation for the final descent to the Valley floor. The road company was reorganized again in October as the "Coulterville and Yosemite Turnpike Company." The new concern intended to complete the road to the boundary of the Yosemite Grant, where travelers would saddle up for the descent on the existing trail. The $20,000 in capital stock was divided into 800 shares at $25 each; one quarter of the stock was "paid in" at the start. In May 1870, the *Stockton Weekly Independent* noted that the company had forty men at work grading their new road, which the paper reported had a 12 percent grade.[54]

In July, the *Stockton Weekly Independent* remarked that the "Yosemite Turnpike Road from Chinese Camp is completed to the boundary of the grant, leaving 7 miles horseback to the Valley." The Yosemite Turnpike Road Company had no real incentive to incur the costs of extending their road down the steep grade below Gentry's, as they could collect tolls on the section already completed. Therefore, they made no immediate plans to build the final link of their road to the Valley floor. From Gentry's, travelers could descend the existing saddle trail into the Valley. Early Yosemite pioneer and entrepreneur James

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[52] Col. E. S. Gentry had a small stand atop the cliff where he entertained Yosemite-bound travelers. Gentry had planned to construct a hotel here, but found the site "too windy." (Paul Morris, "The Big Oak Flat Road," typed MSS, n.d., 4. Yosemite Research Library.)

[53] Johnston, I:35-36.

[54] "Road Company," *Mariposa Gazette*, 10 December 1869, 2; "Coulterville Road Company," *Mariposa Gazette*, 18 February 1870, 2; Catherine Coffin Phillips, *Coulterville Chronicle: The Annals of a Mother Lode Mining Town* (San Francisco: The Grabhorn Press, 1942), 179; Johnston, II:36; "Yosemite Road," *Stockton Weekly Independent*, 14 May 1870.

M. Hutchings ran the first pack trains down this trail to his holdings, eventually maintaining 100 pack animals for the route.[55] By May 1873, Simon Shoup, Johnny Hardin and Jerry Hodgdon were running stages over the road, carrying passengers as far as Gentry's Station; the Nevada Stage Line later entered the trade.[56]

At the same time as the first roads were being pushed, several important toll trails were opened up from the Valley. In 1871, John Conway built the Four Mile Trail to Glacier Point for James MacCauley. Other private routes were constructed for James M. Hutchings, Henry Washburn and Albert Snow. These trails were taken over by the state in 1882.[57]

On 14 May 1871, the *Weekly Independent* reported, "Coulterville people are pushing forward their road to Yosemite with great energy. Cash assessments have been promptly paid and the company has money on hand to pay all expenses to date." The road was expected to reach Hazel Green at the end of the month and by 1 June would reach Crane Flat, only nine miles from the Valley rim; from Crane Flat, the Coulterville Road Company apparently intended for its patrons to continue on to the Valley *via* the Big Oak Flat trail.[58]

But by 1872, the Coulterville and Yosemite Turnpike Company had nearly exhausted its funds, and the road had only reached the vicinity of Crane Flat, still short of the Valley rim. Only a skeleton construction crew was still employed. At this point, Dr. John Taylor McLean, a San Francisco surgeon, began taking options on the outstanding company stock. After the Yosemite Turnpike Road Company had missed its deadline, Dr. McLean in July applied for and received an exclusive franchise from the Yosemite Board of Commissioners to extend the toll road from Coulterville to the Yosemite Valley. The franchise gave the Coulterville Road group exclusive rights to construct a road to the Yosemite Valley from the north side of the Merced River.

The commissioners justified the exclusivity clause because construction of the road would be so expensive as to require its builder to have the assurance of collecting tolls for its use from all who might wish to enter the park from the north. No toll was to be charged for horses carrying hay, grain or lumber. The road was to be finished by the end of 1873. Dr. McLean quickly

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[55] "Yosemite Valley," *Stockton Weekly Independent*, 8 July 1871; Wayne Bryant, Ranger-Naturalist, and John Adams, Landscape Architect, "Notes taken on a tour conducted by Mr. and Mrs. E. Schichtmann and Bob [Robert A.] Curtin, typed MSS, 23 May 1953, 5. Yosemite Research Library.

[56] "Yosemite Valley," *Stockton Weekly Independent*, 8 July 1871; Bryant and Adams, 5; *Union Democrat*, 10 May 1873, 2; Celia Crocker Thompson to Cosie Hutchings Mills, n.d. Yosemite Research Library.

[57] Robinson, "History of Business Concessions," 90.

[58] Johnston, II:36.

gained control of 796 of the 800 original shares for $15,000; this also gave him the completed 19-mile section of road from Bower Cave to Crane Flat.[59]

The monopoly franchise awarded to Dr. McLean alarmed the Tuolumne County interests, who saw that the Coulterville Road would decimate tourist travel over their Big Oak Flat route at a time when the area's mines were declining. No traveler would want to take a road that ended at the top of a cliff when an alternate route existed, and their potential for lucrative tolls would be lost. Accordingly, they rededicated efforts at construction of their own turnpike. On 29 August 1872, the Yosemite Turnpike Road Company asked the Yosemite Board of Commissioners for equal but non-exclusive rights to extend their road to the Valley floor, but were refused. The commissioners upheld the franchise they had awarded to Dr. McLean, reminding the Tuolumne County group that they had already forfeited a similar franchise.[60]

Although the roads still ended some distance from the Valley, it was much easier to reach Yosemite in the early 1870s than it had been a decade earlier. Travelers on the Coulterville Road had to go only 13 miles in the saddle from the road's terminus at Crane Flat, and users of the Big Oak Flat Road could come by carriage to within 8 miles at Gentry's. From Mariposa, another wagon road could take visitors as far as Clark & Moore's, some 26 miles from the Valley. However, the remaining stretches in the saddle were still arduous for most visitors. Some writers complained of the significant expense of the trip; in 1873, a writer to *Scribner's* magazine warned "the Yo-Semite excursion is an extremely costly one," and that travelers should expect to spend at least $150 and ten days on the trip, a significant cost in money and time even for well-to-do travelers. However, work was progressing steadily on the new approach roads, which promised to draw far more people to Yosemite. Clem Studebaker was rumored to have claimed that he would build 200 wagons for the Yosemite trade as soon as the roads were completed.[61]

The *Mariposa Gazette* reported in January 1873 that Dr. McLean's survey for the Coulterville Road's final approach to Yosemite Valley was completed. The road would be rerouted to pass through the Merced Big Tree Grove, which McLean saw as a potential attraction for his new route. He rumored that he might build a hotel in the grove. In June, the *Gazette* noted that the road was approaching Hazel Green, near the Valley rim.[62]

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[59] *Ibid.*, II:38-39; Greene, I:97.

[60] Johnston, II:49.

[61] Greene, I:94; Hyde, 157; Ben C. Tarnutzer, "Motoring in Yosemite--Then and Now," *Motor Land*, May 1940, 10.

[62] "The Proposed Coulterville Route to Yosemite," *Mariposa Gazette*, 24 June 1873, 3; "Coulterville Correspondence," *Mariposa Gazette*, 13 June 1873. The hotel was never built.

Despite being refused a franchise by the Yosemite Board of Commissioners, the Yosemite Turnpike Road Company persisted in its plans to extend the Big Oak Flat Road to the Valley. By the summer of 1873, the company had survey parties at work on the section between Gentry's and the Valley floor. The surveyors estimated that the cost for the remaining section would not exceed $15,000. In November 1873, the company again asked for road rights with no better results. Another petition was submitted to the commission's executive committee, with the proviso that the road down the grade would be "forever free of tolls," but Dr. McLean's franchise was upheld and the Yosemite Turnpike Road Company was again rebuffed.[63]

Dr. McLean had expected that the cost of construction of the segment of his Coulterville Road between Hazel Green and the Valley floor would not exceed $20,000. As it turned out, this difficult section cost a full $56,000, mainly due to the blasting required to bring the road down the cliff from the valley rim. McLean's total costs for the road ran to $71,000, nearly exhausting his personal fortune. Construction was hampered by heavy snows in early 1873, and Governor Booth extended McLean's deadline to 31 December 1874.[64]

The competing Yosemite Turnpike Road Company now realized that their only hope was to have the California state legislature overturn the commissioners' rulings and pass a special act allowing them to complete their road. The legislature, however, was out of session and would not convene again until 1874. As an interim measure, the company turned to Yosemite Guardian Galen Clark, requesting permission to "improve" their horse trail down the grade. Clark sympathized with the Tuolumne County group and granted their request. By the end of the year, John Conway was surveying the extension of the Big Oak Flat Road from Gentry's to the Valley floor. He laid out the difficult section along the talus slopes between Gentry's and the base of El Capitan. Conway reported in December that work on the other parts of the stretch was already half-completed, but had been suspended until spring due to weather. Crews under the direction of George E. Sprague, the company secretary and a surveyor by trade, built the new trail down the cliff-side from Gentry's. The route was so steep that Sprague sometimes had to lower his chainman on a windlass in order to take his readings. Road foreman Dan Newhall had twenty men at work by fall. The "improved trail" was constructed suspiciously like a road, with wide turns and switchbacks.[65] This was clearly a subterfuge to allow the work to continue.

The Hon. John Currey issued an opinion in favor of maintaining the exclusive privileges for the Coulterville road company. He held that the Yosemite

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[63] [Virginia City, NV] *Territorial Enterprise*, 29 July 1873, 3; Johnston, II:49; [Sonora] *Union Democrat*, 29 November 1873.

[64] Johnston, II:40; *Laws and Judicial Decisions*, 7-10.

[65] Johnston, II:41; "Yo Semite," *Mariposa Gazette*, 5 December 1873, 3; [Sonora, CA] *Union Democrat*, 13 September 1873, 2.

Turnpike Road bill awaiting action by the legislature was unconstitutional, as it violated the section forbidding the states to pass laws impairing the obligation of contracts, and the act would adversely affect the contract between the Board of Commissioners and the Coulterville & Yosemite Turnpike Road Company.[66]

When the state legislature reconvened in 1874, Tuolumne County representatives introduced a bill that would allow the Yosemite Turnpike Road Company to build its road on into the Valley. The argument was made that the Yosemite Commissioners had no right to grant exclusive rights to any company. Despite objections from McLean and his backers, on 17 February 1874 the Yosemite Turnpike Road Company won approval to complete the turnpike. The company immediately began plans to extend the wagon road down from Gentry's, following the "improved" trail. The construction workers were housed at "Camp Andross," two miles below Gentry's and the mid-point of the final section. The company engaged five Italian wall-builders, who had offered to construct the cliff-side stretch for $16,000 plus $5,000 worth of materials. The $16,000 was loaned by Andrew Rocca of Big Oak Flat, and the new phase of work began. The skilled Italians built the required stone retaining walls without mortar, wedging the stones into place. The final part of the road, which utilized a number of sharp switchbacks, had a grade in places of 16 percent. This troublesome 3-mile stretch, including a major switchback known as "the Zigzag," was constructed in five months.[67]

Throughout the spring of 1874, the *Mariposa Gazette* reported on the final race to completion of the Coulterville and Big Oak Flat roads. In its 2 April issue, the *Gazette* noted that Dr. McLean was rushing his road ahead with a large force of 150 workers, and was forwarding additional men and tools. McLean claimed the road would open by 1 June, or in mid-May if the weather proved cooperative. The same issue published a letter from John Conway, overseeing the construction of the Big Oak Flat Road down to the Valley from Gentry's. Conway called the route the "Anti-monopoly road of the Tuolumnites" in reference to the political questions under which the road was authorized. Conway predicted that the road would be completed by the time snow had been removed from the section above Gentry's.[68]

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[66] *Laws and Judicial Decisions*, 34.

[67] Yosemite: Meeting of the Commission--Action in Relation to Wagon Road," [Sonora, CA] *Union Democrat*, 15 November 1873, 2; 25 July 1874, 2; Johnston, II:41-42; Celia Crocker Thompson to Cosie Hutchings Mills; Irene Paden and Margaret E. Schlichtmann, *The Big Oak Flat Road, an Account of Freighting from Stockton to Yosemite* (Yosemite, CA: Yosemite Natural History Association, 1959), 251.

[68] "Coulterville Letter," John Conway, "Letter from Yo Semite," and "The Coulterville and Yo Semite Turnpike," *Mariposa Gazette*, 2 April 1874, 2-3.

John Ferguson, who had established a mill and small settlement off the Merced River, sought to have the Coulterville Road built through his establishment, and offered McLean $5,000 to reroute the road. His proposal was denied. Ferguson then began construction of the "Ferguson Mill & Yosemite Valley" toll road. The route followed an old trail built by A. W. Bolton from Ferguson's Mill to Big Meadow, then crossed Remorse Creek to reach Hazel Green and a connection with the Coulterville Road. The Mariposa County Board of Supervisors authorized Ferguson to collect tolls on his route, but the road received little use and the "turnpike" was abandoned.[69]

While the final work on the Coulterville Road was being finished in May 1874, the Mariposa County Board of Supervisors authorized tolls McLean could charge for the portion of the road between Bower Cave and the boundary of the Yosemite Grant.[70] As noted, under the terms of his franchise from the Yosemite Board of Commissioners, McLean was not allowed to collect tolls within the boundaries of the reservation.

The Coulterville Road was completed on 17 June 1874, the first road to reach Yosemite Valley. Dr. McLean described the momentous day:

> . . . stage coaches and carriages, filled with passengers, first passed from the towns on the railroad in the San Joaquin Valley, and from the foothill towns of the Sierra Nevada over this road into the Yosemite Valley. The completion of this road made access to Yosemite easy, speedy and comfortable, by wheeled vehicles, instead of tiresome, difficult and dangerous, on horseback and over trails; and was celebrated in the valley by bonfires, firing of cannon, a procession, a public meeting, and general rejoicing; the press of the State and of the United States noticing the event as one in which not only California but the Nation was interested and to be congratulated.[71]

Dr. McLean's monopoly on the Yosemite travel lasted less than a month. The Yosemite Turnpike Road Company renewed their efforts to finish the Big Oak Flat Road, which was completed 29 days later on 17 July 1874. To mark the occasion, a "grand jollification" was held with 600 participants, speeches and music by the Sonora Band.[72]

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[69] "Ferguson Mill & Yo Semite Turnpike Company," *Mariposa Gazette*, 15 May 1874, 2; "Trip to the Yo Semite," *Mariposa Gazette*, 22 May 1874, 2.

[70] Mariposa County Board of Supervisors minutes, 4 May 1874, *Supervisor's Book B*, 705-06.

[71] Quoted in Greene, I:97.

[72] Johnston, II:41, 43; "Road Opening to Yo Semite," *Mariposa Gazette*, 17 July 1874, 3; "Opening of the Big Oak Flat and Yo Semite Road," *Mariposa Gazette*, 24 July 1873, 3.

The Coulterville Road was realigned between Merced Falls and Coulterville in 1874 between Coulterville and Bower Cave in 1875, in both cases shortening the distance to Yosemite. However, the Coulterville correspondent to the *Mariposa Gazette* wrote that "travel to the valley, by the way of this place, is very light so far."[73]

Wawona Road

By the mid 1860s, Galen Clark and his partners had made little progress on their road approaching Yosemite from the south. Clark and his supporters had hoped that, since the Mariposa Grove of Giant Sequoias was an important part of the Yosemite Grant, the California legislature would purchase their route, but the state refused to appropriate the funds. This dampened enthusiasm among the road's backers. Nevertheless, the completion of a wagon road from Mariposa to White & Hatch's ranch, twelve miles from Clark's, in 1866 encouraged the group to push for the construction of a road onto the Big Tree Grove and into the Yosemite Valley.[74]

Clark told the *Mariposa Gazette* that his road company was somewhat "demoralized" because the state would not take on the construction. He stated that "new arrangements" were necessary, and that his company would ask the Mariposa County Board of Supervisors for a franchise for a toll road. Clark stressed that the road should be approved and built immediately. "The road must be made as far as the South Fork of the Merced next Spring, or Mariposa will lose her share of the travel." Perhaps Clark had reckoned that his investments on the South Fork would be the loser if another one of the rumored roads was constructed first. Clark was overextended by this point, and on 7 December 1869 conveyed a half-interest in his properties on the South Fork to Edwin "Deacon" Moore and Henry S. Rockwell. The toll road company was reorganized again in 1870 as the "Mariposa Big Trees and Yo Semite Turnpike Company" with the backing of some additional Mariposa County investors. John Wilcox, a Mariposa businessman was president; Moore was secretary and Clark treasurer.[75]

From the south, the "Chowchilla Mountain Road" was completed from Mariposa via White & Hatch's Ranch to Clark & Moore's in the summer of 1870. The road had cost $12,000, half being put up by Clark himself and $2,000 by Edwin Moore, with the balance coming from a mortgage on their holdings. On 10 June 1870,

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[73] "The New Road Between Coulterville and Merced Falls," *Mariposa Gazette*, 22 May 1874, 2; "Letter from Coulterville" and "Yo Semite Items," *Mariposa Gazette*, 22 May 1875, 2.

[74] Sargent, *Yosemite's Historic Wawona* (Yosemite, CA: Flying Spur Press, 1979), 14.

[75] "New Road Company," *Mariposa Gazette*, 12 March 1869; *Mariposa Gazette*, 17 December 1869, 2; Sargent, *Yosemite's Historic Wawona*, 14; Idem, *Galen Clark*, 88-89.

the Mariposa County Board of Supervisors authorized the builders to collect tolls from travelers. Stagecoaches, owned by Henry Washburn of Mariposa and two partners, began carrying passengers over the route.[76]

The road company engaged John Conway to survey a route for the wagon road from Clark & Moore's to the Yosemite Valley in the summer of 1873. Conway was an ex-miner and a surveyor who had built the circuit road around the Valley for James Hutchings; he also built the Four-Mile Trail and several other major trails in the east end of the Valley. His survey was completed on 12 August. Conway selected a line with a reported maximum grade of 5 percent, less than had been expected. Clark was also interested in having a wagon road constructed from the South Fork to the Mariposa Big Tree Grove, roughly following the route of his old saddle trail. In December 1873, R. B. Thomas of Mariposa provided Clark with a $3,500 estimate for a road connecting the South Fork with the west boundary of the Mariposa Grove grant. An extension of the road through the grove would cost another $2,500.[77]

Galen Clark and some other road investors supported a bill introduced in the state legislature in 1874 to "provide for the construction of wagon roads within the limits and between the Yo Semite and Mariposa Big Tree Parks." The bill would have established a commission consisting of the governor, the attorney general and surveyor general to build a series of "first-class" wagon roads and the necessary bridges. The act would have provided funding for the extension of the Big Oak Flat Road from Gentry's to the foot of El Capitan and for the completion of Clark's road from the Mariposa Grove and Clark & Moore's to the Yosemite Valley, which it was to enter between the Cathedral Spires and the river, west of Bridalveil Creek. The Coulterville & Yo Semite Turnpike and the Yo Semite Turnpike Company were to be indemnified and reimbursed for their portions of the road within the Valley grant. The act would have established a tax of eight mils per hundred dollars in taxable property to be placed in the "Yo Semite and Mariposa Big Tree Grove Park Wagon Road Fund." However, the bill was defeated in the legislature on 13 March 1874. Already severely in debt, Clark and Moore were forced to sell out to the firm of Washburn, Coffman & Chapman in December.[78] After putting so much into the road and to the properties on the South Fork, Galen Clark must have had mixed feelings when the turnpike, forerunner of the present Wawona Road, was completed a year later.

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[76] Sargent, *Galen Clark*, 90-91, 122.

[77] "South Fork and Yo Semite," *Mariposa Gazette*, 8 August 1873, 3; "Survey Completed," *Mariposa Gazette*, 22 August 1873, 3; R. B. Thomas to Galen Clark, 27 December 1873. Yosemite Research Library.

[78] "The Yo Semite Road Bill," *Mariposa Gazette*, 30 June 1874, 3; "The Wagon Road Bill Fizzled," *Mariposa Gazette*, 20 March 1874, 2; "Sale of the Clark & Moore Property," *Mariposa Gazette*, 26 December 1874, 3.

Washburn, Coffman and Chapman, the firm that purchased the Clark properties, had been running stages over the Chowchilla Mountain Road as far as Clark & Moore's, and stood to much additional business if the road were extended to the Valley. When it became apparent that Clark's road group was abandoning its efforts, Washburn and his partners undertook the survey of a wagon road from "Clark's Bridge" (Galen Clark's wooden span over the South Fork, not the present Clark's Bridge in Yosemite Valley) and the south boundary of the Yosemite Grant. The Mariposa County Board of Supervisors appointed John Conway and Joseph Ridgeway as commissioners to review the survey.[79]

The "Henness Trail" was constructed from Hite's Cove on the South Fork of the Merced to the Yosemite Valley. It followed the ridge between the South Fork and the main Merced River for six miles, then went up the Merced valley to Hennessey's Ranch, where it diverged from the river to intersect with the old Mariposa Trail (from Wawona) near Grouse Creek. The toll trail had the advantage of being free from the heavy snows that blocked routes passing over the Valley rim, and was therefore open to earlier travel than its competitors. Subscriptions for the trail were taken in 1871, and the work was complete and the trail open by 1874. Hite's Cove was connected to Mariposa by 18 miles; the remaining 20 miles into the valley was a horse trail.[80] Traffic declined when the turnpikes were completed a little later.

The Washburn cartel continued work on the road to the Yosemite Valley from Clark & Moore's, which they renamed "Big Tree Station." Washburn and his partners sought to secure a controlled route (and monopoly) for stage lines from Mariposa and Merced, as well as the tolls which could be collected from travelers from the south. The group had the backing of the Southern Pacific Railroad, which soon built a connecting rail line to Raymond. The owners were Albert Henry Washburn, a native of Putney, Vermont with considerable business interests in Mariposa that included stage lines carrying passengers into the Yosemite area; William F. Coffman of Princeton, the Mariposa County Assessor; and Emery W. "Wash" Chapman, a prominent Merced businessman. The company contracted with John Conway and Edwin Moore for the construction of 15 miles from the South Fork to "the Hermitage," 4 miles from the Valley. Conway and Moore were to receive $10,000, with the Washburns providing supplies and doing the hauling. The work was to be completed by 1 May 1875. Construction began on 4 December. The contractors employed Chinese workers to construct the road, dividing them into gangs based at Alder Creek on the south end and at Yosemite Valley on the north. Conway was overall engineer and contractor.[81]

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[79] "Proceedings of the Board of Supervisors," *Mariposa Gazette*, 2 November 1874.

[80] Brockman, "Development of Transportation," 55; Russell, "The Henness Trail to Yosemite Valley," *Yosemite Nature Notes* XXXVIII (April 1958), 48.

[81] Sargent, *Yosemite's Historic Wawona*, 22-23; "Sale of the McCready Property: A New Firm and a New Road," *Mariposa Gazette*, 12 December 1874, 3; "The New Road Contract," *Mariposa Gazette*, 19 December 1874, 3; Richard P. Ditton and

The *Mariposa Gazette* remarked on 9 January 1875 that "The new road from the South Fork to Yosemite Valley is being pushed forward with determined zeal by men of indomitable energy possessed of ample means." Unseasonably warm weather allowed construction to proceed through most of the winter. By February, the contractors had some 200 men at work. On 20 March, the *Gazette* reported that 13 miles had been completed from Big Tree Station, and that Yosemite-bound tourists were already traveling as far as the terminus. By April 1875, the group had spent $35,000 on construction. A month later, the road was complete to the Hermitage, and workers were finishing the section up from the base of Bridalveil Fall.[82]

On 24 June 1875, the Washburn road from Big Tree Station and the south was completed to the Yosemite Valley, roughly one year after the Coulterville and Big Oak Flat roads. A grand celebration for the new road was held on 22 July, with the Merced Band, artillery salutes, festive drinking and a ball. Construction of the route was a major achievement, considering the technology of the period, when only draft animals, brute manpower and black powder could be employed. The route was difficult, with a width of only 12'-15' and grades as steep as 12 percent.[83] It featured the steepest descent to the Valley of all the roads, the quick drop from the "New" Inspiration Point.

Great Sierra Wagon Road [Tioga Road]
Northeast of Yosemite Valley, a sheepherder named William Brusky (or Brosky) came upon the tin location marker for the abandoned "Sheepherder Mine" on Tioga Hill. Brusky did some prospecting and located a rich vein of silver ore. By 1878, he had filed four claims on the site.[84] Although Brusky was unable to develop the site himself, his find laid the basis for a large gold and silver mining boom a few years later.

Brusky was unable to finance a mining operation, and the claims were acquired by a consortium of businessmen from Boston and New Bedford, Massachusetts, who organized the Great Sierra Consolidated Silver Company in December 1881. The company engaged an English surveyor, who reported the value of the surface ore at $12 million. In 1882, the company began drilling the "Great Sierra" tunnel to reach the elusive Sheepherder lode. Mining machinery was hauled with brute force up the east slope of the Sierra, and the new mining town of Bennettville

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Donald E. McHenry, "Self-Guiding Auto Tour of Yosemite National Park," *Yosemite Nature Notes* XXXV (June 1956), 81-82; Johnston, I:45; Greene, I:108.

[82] Sargent, *Yosemite's Historic Wawona*, 23; "That Road Again," *Mariposa Gazette*, 27 February 1875, 3; *Mariposa Gazette*, 20 March 1875, 2; "Yo Semite Items," *Mariposa Gazette*, 22 May 1875, 3.

[83] Johnston, II:45.

[84] Trexler, 2.

(after the company president, Thomas Bennett, later Tioga P.O.) was established. To the south of the Great Sierra Mine, other claims were opened up and the mining town of Dana was built. By 1880, the Tioga Mining District had been organized and hundreds of claims had been entered. Most operations produced nothing, but a few did very well, like the May Lundy Claim in Lundy Canyon which yielded $3 million of ore.[85]

The mining settlements near Tioga Pass had a difficult time getting supplies up the east slope of the Sierra range. To deal with the problem, and to provide a more direct route for the gold and silver ore they soon hoped to be shipping, the proprietors of the Great Sierra Consolidated Silver Company undertook the construction of a new road to the mines from the west. The new road would connect the mines with the Big Oak Flat Road at Crocker's Station, and provide access to the railway at Copperopolis. The company hoped to ship its ore over the new road to the railway, which would carry it to the lucrative San Francisco market. Ultimately, the proprietors hoped to construct a railway along the entire route and on to the Mono Valley. To this end they incorporated the "California and Yosemite Short Line Railroad." They then used funds from the sale of railway stock to construct the road.[86]

The location survey for the new road began in the fall of 1882 at Crocker's, and by heavy snow had reached White Wolf. Construction began at the same time, and by year's end the road had reached the Carl Inn area. The survey resumed in the spring and was completed to Bennettville in July 1883. The construction work was done under the supervision of W. C. Priest, who was also president of the Big Oak Flat and Yosemite Turnpike Company. When work resumed in April, the *Mariposa Gazette* noted that he was putting together a crew of 200 workers, which would include "mountain Chinamen" but none from San Francisco. The company also contemplated the construction of branch roads to Mount Gibbs and the head of Bloody Canyon, but these may have never been completed. Total distance of the main road, from Crocker's Station to the Tioga mines, was 56 miles.[87]

In less than six months, the road was complete to the Tioga mines. One hundred blasters followed gangs who had roughed out the route with axes, picks and shovels. The road was finished on 4 September 1883; construction cost $64,000. The road left the Big Oak Flat Road at Crocker's, crossed the South and Middle Forks of the Tuolumne River to reach White Wolf, near which it crossed Yosemite Creek to continue through Porcupine Flat and Snow Flat to Tenaya Lake. The roadbed was blasted from the granite shelf on the lake's

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[85] Fran Hubbard, "Road to Rusting Dream," *Yosemite Nature Notes* XXXIV (June 1955), 87; Greene, I:244-47. The Lundy Claim was later re-registered in the Homer Mining District.

[86] Greene, I:250.

[87] John V. Ferretti, "Surveying the Tioga Road," *Yosemite Nature Notes* XXVII (September 1948), 109, 112.

north shore. From there, the road crossed the Tenaya Summit, then passed through Tuolumne Meadows and on to Bennettville. The company did not extend the road down the eastern slope of the Sierra.[88]

By mid-summer 1884, miners for the Great Sierra Consolidated Silver Company had forced the Sheepherder lode tunnel 1,784' into the mountain, and it was felt that the lauded vein would be reached in a few more feet. But the New England backers had expended their funds, and on 3 July the company secretary wired the superintendent, ordering him to halt operations. No ore had been recovered. The workers abandoned the site, leaving their tools behind in the tunnel. The venture had been a disaster for the absentee owners, whose losses were estimated at $300,000. One of the investors, William Swift, acquired all the assets, including the road, in 1888. Swift made an effort to reopen the mine but his attempt also failed.[89] The road received little use over the next few decades.

The Era of the Toll Roads

The *Mariposa Gazette* was partisan in its reporting of the toll roads, and heralded the merits of the Coulterville and Wawona roads The paper urged travelers to enter Yosemite by one of the county's two roads and to exit by the other. The amenities of the two roads were extolled:

> The two routes to Yosemite from Merced, which run through our county by Coulterville and Merced, are the most comfortable and convenient by which to make this Yosemite trip. . . The stages by each route are well equipped and have careful drivers. Good meals are provided at the dinner stations on both roads, and there are excellent hotels at Coulterville and Dudley's on the Coulterville Road and at Big Tree Station on the Mariposa Road, where tourists are well cared for."[90]

With the completion of the new turnpikes, a number of stagecoach companies were formed to provide transportation for visitors. In 1875, Fred Brightman joined in partnership with George Kenney to provide stagecoach service. Brightman then left to work for a new stage line formed by the Washburn interests after the completion of their Wawona Road in 1875. The Washburn stage business was incorporated as the "Yosemite Stage and Turnpike Company" in 1877 with a capital stock of $200,000. Directors were Albert Henry Washburn, William Ashburner and A. G. Warfield. In addition to the business on the Wawona Road, the company also ran a few stages over the Hite's Cove

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[88] *Homer Mining Index*, 11 August 1883, Yosemite Research Library; Greene, I:251, 254; Ronald E. Bainbridge, "The Story of the Tioga Road," *Yosemite Nature Notes* XXXVI (October 1953), 95.

[89] Greene, I:256-57; Hubbard, 89-90.

[90] "The Yosemite Travel--A Round Trip," *Mariposa Gazette*, 21 April 1877, 2.

route in early spring before the Wawona Road could open. McClenathan's stage company was running this year on the Coulterville Road. In 1878, William T. Coffman purchased James M. Hutchings' stables and stocks. By 1885, Coffman and Kenney had formed a new partnership and held a near monopoly on stage transportation in the Valley; their stables were located at "Kenneyville," roughly the site of the present Ahwahnee Hotel.[91]

Travel by saddle train was now largely a thing of the past, but the journey by stage remained uncomfortable. Many travelers might have empathized with the comment of an 1878 tourist: "We were thankful to rest our weary battered bones, ere starting again to complete our twelve hours of violent shaking and jolting over loose stones and roads not yet repaired after their winter's wear." A British nobleman wrote his driver drove "furiously and always fast," never going "an inch farther than necessary to save us from perdition."[92]

The tolls were an annoyance to most users, who had no alternatives but the rough old saddle trails, which were in most cases no longer maintained. One visitor warned that "in the ears of the awe-struck traveler will be shrieked the cry of the toll-gatherers, who stand at every possible point where there is a foothold, bawling for amounts from twenty-five cents to two dollars and a half, or that indefinite sum unknown in figures--'whatever you please to give, gentlemen.'"[93] Anger over the charges prompted some citizens to press for the roads to be made free. The *Mariposa Gazette* recorded a resolution passed by some local parties in 1875:

> Resolved, By the tourists from the different states here assembled, that in justice to the people of the United States, who are devoted to this beautiful and wondrous valley to the State of California, in trust for the purpose of pleasure and recreation, to be free to visitors from all parts of the world, and in consideration of the large amount of money left in the State of California by tourists to this world renowned natural curiosity, it is the duty of the State of California to expend some portion of the money so left within the State in making good roads to the valley and to all the different points of interest in and adjacent thereto. . ."[94]

Galen Clark added his own criticisms to the toll road system in 1878:

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91 *Ibid.*; Robinson, "History of Business Concessions in Yosemite," 89; "Incorporated," *Mariposa Gazette*, 3 November 1877, 3; "Hite's Cove and Yo Semite," *Mariposa Gazette*, 15 April 1876, 2.

92 Blodgett, 127; Sanborn, 201.

93 "Yo Semite Wagon Road," *Mariposa Gazette*, 13 February 1874, 2.

94 *Mariposa Gazette*, 29 May 1875, 3.

> The sudden transit from celestial to terrestrial, from the sublime to the ridiculous, enough to make a Saint curse worse than Christ did when he drove the money speculators from Solomon's temple. . . Californians should be proud of Yosemite and no longer withhold with such miserly grasp, the small amount of money necessary to make improvements and every road and trail within its limits free from tolls.[95]

The dust, the rocky roads, and the long journey were bad enough, but travelers also faced a risk of being robbed after all their efforts. Robbers frequently held up stages (and later automobiles) on the Big Oak Flat and Wawona roads in the late nineteenth and early twentieth centuries. The hold-up of a Yosemite-bound stage was photographed by Austrian consul Anton Veith in August 1905. The last robbery took place the next year near Ahwahnee, on the Wawona Road south of the park.[96]

A little work was done by the state during this period. The Folsom Bridge was acquired in the 1874 purchase of the Valley improvements and remained in use for a while. The Board of Commissioners instructed the Guardian to make repairs to the bridge in 1881. The structure was still standing in 1883 but impassible, and washed out some time later. The Sentinel Bridge was condemned by the commissioners at their spring meeting in 1878 and replaced with iron truss spans. The El Capitan Bridge was destroyed by heavy snow loads over the winter of 1878-79 and was replaced by a wooden truss bridge, with low sides so as not to impede the view.[97]

On the Valley floor, a toll road was built in 1875 from Mirror Lake to the hotels below by W. J. Howard. In 1879, the Commissioners purchased it and freed the road from tolls. The "principal street" in Yosemite Village, the main cluster of hotels and other services, was improved by the removal of boulders in 1877.[98]

The toll roads competed for the limited tourist market through advertising and other promotions, introduction of new and better conveyances, and by opening the roads for as long a season as possible. In 1876, Dr. McLean had a

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[95] Sargent, *Galen Clark*, 129.

[96] William B. Secrest, *The Great Yosemite Hold-Ups* (Fresno, CA: Saga-West Publishing Company, 1968, reprint 1980), 6-13, 32.

[97] "Yosemite Valley--Interesting Proceedings of the Commission," *Mariposa Gazette*, 18 June 1881, 2; Robinson, "Folsom Bridge," 16; "Yosemite Commissioners," *Mariposa Gazette*, 18 May 1878, 3; Sargent, *Galen Clark*, 127; Lawrence V. Degnan to Douglas H. Hubbard, Park Naturalist, 8 August 1957, 2; Greene, I:69*n*.

[98] "Letter from Mirror Lake," *Mariposa Gazette*, 12 June 1875, 2; "Yo Semite Correspondence," *Mariposa Gazette*, 3 June 1876, 3; Sargent, *Galen Clark*, 129.

"considerable force" at work clearing the road in mid-April, and the Washburns introduced the first snow-plow on the Wawona Road.[99]

The heavy snows of the Yosemite country not only closed the toll roads, but called for other measures as well. Lawrence V. Degnan, a civil engineer raised in Yosemite Valley, recalled that the wooden decks of some bridges were removed each winter.

> To guard against the destruction of bridges by heavy snow loads, it was the practice for some years to rip up the flooring of some of the bridges just before the snow fell, and leave the floor timbers open until spring. If I remember correctly, the Pohono, the El Capitan, Happy Isles and the Clark Bridges were so treated; also the Tenaya Creek bridge just above the Lamon orchard. The Yosemite winter traffic, except for the mail carrier and ice hauling, was practically zero, and the one or two lanes that remained served by bridges sufficed until spring.[100]

Galen Clark's open-span bridge over the South Fork of the Merced was covered over at about this time, possibly to protect the deck from heavy snow loads, or perhaps, as is popularly stated, at Albert Washburn's direction as a reminder of his native Vermont. John Conway did the work, using lumber cut from Washburn's sawmill at Wawona.

The Washburn-controlled Yo Semite Stage and Turnpike Company began construction of a new road from Big Tree Station to Madera, where the Southern Pacific railroad planned to extend a branch line. More Chinese workers were engaged to construct the new road, which entered the South Fork area through Fresno Flats (now Oakhurst) and Fish Camp. The *Mariposa Gazette* was alarmed that the Mariposa stage line would be abandoned by the Washburns and the town bypassed. Indeed, the McClenathan stage company, providing service on the Coulterville Road, announced in November 1877 that it would begin running stages through Mariposa when the Washburns pulled out. However, the following spring the Washburn & Bruce and McClenathan & Coffman stage lines were consolidated, and an agreement was reached by which stages would be run over both routes. The Madera road was opened by 1881 at a cost of $60,000.[101]

In 1878, the Yosemite Board of Commissioners authorized the Washburns to construct a branch road to the Mariposa Big Tree Grove. The road was completed and opened the next year; construction of the 2-mile section to the

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[99] "Coulterville Correspondence" and "Through to Yo Semite," *Mariposa Gazette*, 29 April 1876, 2-3.

[100] Degnan to Hubbard, 8 August 1957.

[101] "A Welcome Enterprise," *Mariposa Gazette*, 17 November 1877, 3; "Consolidated," *Mariposa Gazette*, 20 April 1878, 3; "Yosemite Travel via Mariposa," *Mariposa Gazette*, 2 July 1881, 3.

Big Tree grant boundary cost $1,250. The branch left the main road 4 miles south of present Wawona, near the location of the present south entrance. The Washburns had been operating saddle trains over this road from Big Tree Station; after it was improved they began running stages over it. By this time, the company had opened a saddle route from Elevenmile Station on the Wawona Road via Glacier Point to the Valley; this route proved popular with many visitors. The Washburns soon hired John Conway to rebuild the trail as a wagon road from Chinquapin Flat as far as Glacier Point. Conway did the work in 1882 at a cost of $8,000. In 1881, the *Mariposa Gazette* reported "a great army of tourists are now going to Glacier Point via Elevenmile Station."[102]

As an added inducement to travelers, the backers of the Big Oak Flat Road in 1878 engaged David and James Lumsden to bore a hole through a massive dead tree in the Tuolumne Big Tree Grove. Stages and travelers could then ride through one of the great sequoias. A large part of the slab, said to weigh one-half ton, was taken to Priest's Hotel west of the park as an attraction. In 1881, Henry Washburn and John Bruce hired Lyman, Otis and Ben Scribner to cut a hole through a giant sequoia at the Mariposa Grove. The "Wawona Tree" became one of the main attractions of the grove. Some time later, a second of the grove's sequoias, the California Tree, was bored through as well. Dr. John T. McLean, owner of the Coulterville Road, later sought permission to tunnel a tree in the smaller Merced Grove. In 1897, McLean requested authorization "to allow me to open a way for stage coaches and other passenger teams through the body at the base of one of these big trees." However, Acting Superintendent S. B. M. Young denied the request, noting that "one of the purposes of the Government in setting aside large areas of the public domain as national parks was to preserve in their natural condition such marvels as the Big Trees of California." Young added that he could not allow the tree to be tunneled "merely to gratify the very questionable taste of tourists who may be ambitious to report that they have gone through a tree while riding on top of a stage coach."[103] To the good fortune of the giant sequoias, the craze soon passed, and no more Yosemite trees were tunneled.

Beset with constant criticisms of the private road system, the Yosemite Board of Commissioners in 1880 resolved to purchase the toll roads and trails within the boundaries of the Yosemite Grant and make them free for public travel.

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[102] "Notes from Big Tree Station," *Mariposa Gazette*, 16 August 1879, 3; "New Saddle Train Route," *Mariposa Gazette*, 12 April 1879, 3; Greene, I:60-61, 108-109; Unrau, 2; "Glacier Point," *Mariposa Gazette*, 13 August 1881, 3.

[103] Ferretti, "The Dead Giant of Tuolumne Grove," typed MSS, n.d. Yosemite Research Library; Sargent, *Yosemite's Historic Wawona*, 35; Yosemite Collections (Museum), Accession #19655, Register of Letters Received, June 2, 1891-Feb. 26, 1901: Jno. T. McLean to Secretary of the Interior David R. Frances, 22 February 1897; Yosemite Collections (Museum), Accession #19650, Records of Letters Sent, May 19, 1891-Oct. 15, 1900: Acting Superintendent S. B. M. Young to Jno. McLean, President Coulterville and Yosemite Road, 29 March 1897.

James M. Hutchings, now Guardian, favored the policy, claiming that visitors protested at having to pay tolls to use the roads and trails. The board secured $25,000 from the state legislature to purchase the toll trails and build needed roads and bridges.[104]

With the funds, the state commenced building a "Grand Carriage Drive" around the Valley floor, completing it in 1882. The road was surfaced with macadam. Hutchings supervised the work, calling it a "decided improvement over the old way of getting in an out of the Valley." Realizing that the 4-mile section of the Coulterville Road on the north side of the Valley was an important link, the commissioners asked the legislature in December 1882 to purchase the section of the Coulterville Road on the Valley floor. An act was passed in 1885 giving another $25,000 for road projects, with $10,000 earmarked for the purchase of the section of the Coulterville Road within the grant boundaries. Another $3,500 was spent to acquire the 3-mile section of the Big Oak Flat Road that carried that road down to the Valley from Gentry's In 1886, the 7 miles of the Wawona Road within the grant, extending from Fort Monroe to the Valley floor, was purchased. Toll trails were bought out as well, and the roads and trails within the grant proper were now free.[105]

Big Tree Station was renamed "Wawona" in 1882 at Mrs. Henry Washburn's suggestion. The name was believed to be an Indian name for the giant seguoia, taken from the hoot of the great owl that was the guardian spirit for the tree. Some etymologists question this interpretation, but the name has persisted.[106] The Washburns continued the development of the hotel, adding a large and rambling main structure in 1879. Although excluded from the park until the 1930s, from its inception Wawona was the main center of tourist concessions outside the Yosemite area.

Within a few years, the commissioners established a ring road around the Valley floor. In 1886, James M. Hutchings described it in his characteristic flowery prose as "a broad and excellent carriage road throughout the entire circumference of the Valley; and which, including that to Mirror Lake and the Cascade Falls, opens up a drive of over twenty-one miles, that has not its egual in scenic grandeur and beauty anywhere else on earth."[107] In its biennial report to the state, the Board described the improvements:

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[104] Greene, I:110.

[105] "Yosemite Improvements Ordered," *Mariposa Gazette*, 22 October 1881, 3; Greene, I:111.

[106] Sargent, *Yosemite's Historic Wawona*, 11, 39; Ditton and McHenry, *Yosemite Road Guide* (rev. ed., El Portal, CA: Yosemite Association, 1989), 36.

[107] "The Yosemite Commissioners--Meeting in the Valley," *Mariposa Gazette*, 11 June 1881, 2; Hutchings, 349.

> A broad and excellent carriageway has been completed from the Upper Iron Bridge, at Barnard's, up the west side of the Merced River about ten miles to the highest practicable point for a carriage bridge. At this point, a substantial bridge of red fir or Douglas spruce [*sic*], is thrown across. The work in bridge and abutments is of the most solid and lasting character, and the structure is entirely above any stage of water, which has left its marks on the banks of the stream.[108]

By the 1880s, travelers had a choice of roads into the Yosemite Valley. Hutchings described seven routes in his 1886 book, *In the Heart of the Sierras*. These were the "Milton and Calaveras Big Tree Route" and the "Milton and Big Oak Flat Route," both from Stockton and entering the grant on the Big Oak Flat Road; the "Berenda Route *via* Grant's Sulphur Springs," the "Madera Route *via* Fresno Flats" and the "Mariposa Route," all of which used the Wawona Road; and the "Coulterville Route *via* Modesto" and the "Coulterville Route *via* Merced," both of which obviously used the Coulterville Road. Hutchings recommended that travelers go in by one route and exit by another, so as to enjoy a change of scenery.[109]

Due to disputes over leased lands, culminating in lawsuits filed by James M. Hutchings and James Lamon, the original Board of Commissioners of the Yosemite Grant was increasingly criticized for mismanagement, corruption, and graft. The state legislature responded by removing the original board and appointing new commissioners in 1880.[110]

The new Board of Commissioners in 1881 engaged State Engineer William Hammond Hall to visit Yosemite Valley and make recommendations for its management. Hall provided a comprehensive study with numerous recommendations for actions to preserve the Yosemite Valley landscape and to develop increased but compatible uses.[111]

Among his recommendations, Hall suggested a new series of scenic drives in the Valley so visitors might be better able to take in the scenic views. These would include a main drive following the valley walls, branches up the slopes to prominent vista points, and spurs up the main canyons to the base of waterfalls. The Valley roads should not disturb the meadows, but rather keep to the edges of even the smallest glades. Above all, Hall urged that a first-class wagon road, with easy grades and smooth surfaces, be provided. Straight

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108 *Biennial Report of the Commission to Manage the Yosemite Valley and the Mariposa Big Tree Grove* (Sacramento, CA: State Printing Office, 1882), 4.

109 Hutchings, 166-67.

110 Greene, I:259.

111 *Ibid.*.

roads and open macadamized surfaces should be avoided, and roads should be built in a manner harmonious with the landscape.[112]

Hall stressed that any bridges built be of a solid and massive character. Stone should be employed in the construction of bridges over streams with rocky beds and banks. Rough heavy timber spans could be used in forest areas. Iron trusses should be employed only in open areas away from rock formations or forested lands. He found the upper iron bridge acceptable, but the lower iron bridge looked out of place, as it was particularly visible, being the first artificial structure encountered on reaching the Valley. He suggested that it be moved to the crossing of Yosemite Creek below the falls or to a location across the river above the Upper Bridge, and a new stone arch bridge be built to replace it. Culverts, said Hall, should be of stone construction, and solid stone retaining walls, 1'-2' high, should be built along roads in high or narrow places.[113]

A Mr. Murphy made a proposal at the Board's 1881 summer meeting at Yosemite to construct a road up Indian Canyon to the Tioga mines and Bodie.[114] Although this road was not built, other proposals surfaced over the years for the construction of roads climbing out of the east end of the Valley towards the high country around Tioga Pass.

The first rumors of a new form of competition for the toll roads surfaced in May 1881. The *Mariposa Gazette* reported

> We are almost certain of a railroad which will cross the mountains through the Mammoth Pass and come near the Mariposa Grove of "Big Trees" which will bring visitors within seven hours stage ride to Yo Semite. Then the number of visitors will doubtless be doubled.[115]

Later in the year, the Southern Pacific Railroad completed its short line to Madera, and the Washburn stages began meeting the trains and transporting visitors through Fresno Flats and Wawona to the Valley. The Washburns were now carrying the greater part of the Yosemite traffic, and kept the Wawona Road in good order. They asked the government to make improvements to roads within the grant boundary, and applied for rights to construct stables at

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112 *Ibid.*, I:263-64.

113 *Ibid.*, I:265.

114 "Yosemite Valley--Interesting Proceedings, 2."

115 "From Yosemite," *Mariposa Gazette*, 21 May 1881, 2. The railway over Mammoth Pass would have connected the mines around Mammoth with Fresno. Failure of the mines ended hopes for the railway, but proposals for a road across the Sierra by the San Joaquin River and Mammoth were made as late as the 1970s.

Inspiration Point. Saddle train operators in the Valley at this time were Stegman, Coffey and Kenney, and Leonard and Harris, with roughly 100 horses between them. Most carriages were provided by a Mr. Hedges.[116]

Even though competing stage lines offered visitors a choice of routes, travel to the Yosemite country remained expensive. An 1884 tourist warned that the cost of a trip from San Francisco to Yosemite, spending ten days or so in the Valley, would cost about $150, and that unscrupulous concessionaires might try to strand the visitor at their lodgings in an attempt to extract even more. Another visitor recorded that the trip itself might be an adventure, describing a mad ride on one of the stages: "On we dashed--our rattling driver, with a wild look in his eye, a wide-brimmed hat and a pointed beard, reckless of the discomforts of male passengers and evidently enjoying the nervous excitement of the females. . . The road was absolutely awful; and at times the four wheels were off the ground and in the air together."[117]

The Yosemite Board of Commissioners erected the four-story Stoneman House hotel in 1886-88 on the south side of the Merced River a mile east of the Sentinel Bridge. The large, 150-room hotel was the most pretentious hotel yet built in the Valley, though it was poorly designed and constructed. To provide easy access between the new hotel and points of interest, the commissioners built a number of pedestrian promenades radiating from the hotel, and over the next few years made a number of improvements to the Valley roads. These included the construction of a broad footpath or minor road from the Stoneman House east along the side of the south Lamon orchard to the river, which it crossed on a new 61' wooden truss bridge, called the "Moraine Bridge" (now the location of Clark's Bridge). Another new road from the orchard's southeast corner was built towards the southeast where it crossed the river in the vicinity of Happy Isles on the new "Tis-a-ack Bridge," from which point it continued northeast to a crossing of Tenaya Creek and on to a junction with the Mirror Lake Road. The Commissioners also ordered the construction of "Royal Arch Avenue" north from the Stoneman House across the river on the new 76' wooden-truss Royal Arch Bridge and on to meet the north carriage road below the Royal Arches, and a spur road from Glacier Avenue (the south Valley road east of Sentinel Bridge) to the new Royal Arch Avenue. The new bridges were designed with low trusses so as not to obstruct the view of travelers seated in their carriages.[118]

In their 1887 report, the Yosemite Board of Commissioners listed the major improvements made by the state in the Valley up to this time. These included the purchase for $10,000 of the section of the Coulterville Road within the

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[116] "Stages, Railroads, Travel, Etc.," *Mariposa Gazette*, 12 March 1881, 3; "The Yosemite Valley--The Board of Commissioners Hold a Two-Day Meeting," *Mariposa Gazette*, 2 April 1881, 2; "From Yosemite," 2.

[117] Hyde, 157; Quoted in Blodgett, 127.

[118] Greene, I:283-286.

Valley, $6,000 for the erection of the Upper and Lower Iron bridges, and $18,000 for the erection of the Tisaack, Bridalveil, and Pohono bridges and the purchase of several trails.[119] The state had constructed only minor stretches of roads, most having been built by the turnpike companies.

That same year, the California state legislature entertained a proposal to construct a "passenger lift" from Yosemite Valley to Glacier Point. A year later, Governor Robert W. Waterman authorized the state engineer to spend $1,000 on a preliminary survey for the conveyance. The governor told the state senate's Committee on Forestry and the Yosemite Valley "It can be done, and it would be a delightful thing. Fifteen minutes on a tramway instead of a dangerous two-hour mule ride would be a real convenience for visitors." No further action was apparently taken, and with the creation two years later of the new Yosemite National Park surrounding the state's Valley grant, the state government lost interest in the enterprise.[120] Nevertheless, proposals for tramways in the park persisted into the 1970s.

By the late 1880s, business interests in southern Mariposa County were angry at the perceived monopoly on transportation to the Valley stemming from the Washburn group's control of the Wawona toll road. A special election was held, and the county voters passed a bond resolution for $75,000 to build a free road from Mariposa to Yosemite Valley, and a route to Coulterville, which was already connected to Yosemite by Dr. McLean's turnpike. The Washburn cartel, which stood to lose its profitable business, challenged the holding of the special election and gained an injunction from the state supreme court. The court later upheld the Washburns, and the new Mariposa road was forestalled.[121]

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[119] *Ibid.*, I:282.

[120] Johnston, II:37.

[121] *Ibid.*, I:114.

CHAPTER THREE

YOSEMITE NATIONAL PARK

By the late 1880s, devotees of the Valley had become disenchanted with the state's management of the Yosemite Grant and were concerned about threats to the surrounding country. Conservationists began a concerted campaign for the designation of the area as a national park. The Yosemite Act was passed in 1890 and signed by President Benjamin Harrison. It created a tract of "reserved forest lands," which was soon renamed by Secretary of the Interior John W. Noble as "Yosemite National Park." As the Interior Department, in whose trust it was placed, had no administrative personnel to supervise the new park, the War Department was contacted for assistance. The Secretary of War responded by dispatching a troop of cavalry.[122] Over the next twenty-four years, the horse soldiers managed park affairs. The original Yosemite Grant, comprising Yosemite Valley proper and the Mariposa Big Tree Grove, remained under state administration.

Captain Abram Epperson Wood of Company I, Fourth Cavalry, commanded troops in Yosemite from 1891 to 1894 and was first Acting Superintendent of the Yosemite National Park. On arrival at the new park, he established headquarters at Wawona, a site later known as Camp A. E. Wood. At the time, the Yosemite Valley and the Mariposa Big Tree Grove remained under state administration, and the army was denied space there for their encampment.[123]

The troops immediately began work on park roads and trails. The old Indian and mine supply trails were in many cases improved and blazed. In some cases older routes were changed to avoid steep grades, to avoid slides, and to shorten distances. In most cases army engineers and troops did the work, but private contractors were increasingly used in later years. A survey of existing roads was soon ordered by the Interior Department, and proposals for new roads soon started coming in.[124]

The status of the toll roads remained a vexing issue. Visitors continued to complain vociferously about being forced to pay exorbitant tolls to view a public park, and communicated these concerns to the new military administration. The military relayed the complaints to the Interior Department, along with continual recommendations that the roads be bought up by the government and freed. In response, Secretary of the Interior Noble asked A. G. Speer of the Department's General Land Office to meet with Captain Wood and to

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[122] Blodgett, 128; Farquhar, 203-204.

[123] Greene, I:325.

[124] *Ibid.*, I:325; Farquhar, 207.

report on the condition and use of toll roads to the park. Noble was directed to contact the owners of the roads and to allow them to enter statements.

Speer was in Yosemite by summer, at which point he was joined by Captain John S. Stidger of the General Land Office and Major Eugene F. Wiedel. The latter two, along with Acting Superintendent Wood, took over the work on 24 September when Speer was relieved. On 21 October, the group met with representatives of the four toll roads and were presented with statements concerning the roads' lengths, rates of tolls, franchise rights and so on. Captain Stidger on 15 September filed a report on the investigation in which he urged the government to purchase the sections of the toll roads that lay within the national park, in the same way that the state had already purchased the roads within the boundaries of the Yosemite Grant. Stidger's recommendations were endorsed by the executive committee of the Yosemite Board of Commissioners and by California's congressional delegation, who pointed out that federal funds had already been expended on park roads at Yellowstone and at the Chickamauga and Chattanooga battlefield park. Legislation for the purchase of the four toll roads was introduced in the Fifty-fifth Congress as a result, but the bills languished in committees and between the two chambers, and Congress went into recess before they could be passed.[125]

Captain Wood's successor as Acting Superintendent, Lt. Col. S. B. M. Young of the Fourth Cavalry, opposed plans by the Yosemite Valley & Merced Railway Company to build a railroad line to El Portal, and ordered his men to pull up stakes set by the railway company's surveyors.[126] At this point, El Portal and the area immediately southwest of the present boundaries was included in the park.

In 1895, the old Tioga mine property and the connecting wagon road passed to Rudolphus Swift, the brother of William Swift. Acting Superintendent Young noted in his 1896 annual report that the "Tioga Road," as the old Great Sierra Wagon Road was commonly called, had been poorly maintained and was no longer passable by wagons. He urged that the road be repaired, as it passed through some of the park's finest mountain scenery.[127]

In the early 1890s, Dr. John T. McLean brought suit against the state for damages incurred by the action of the legislature in allowing the construction of the Big Oak Flat Road after having granted him a monopoly for the Coulterville Road. The suit, which he carried to the state supreme court, proved unsuccessful. His investment in the road had been a most unprofitable venture. The total cost of the road and improvements had been $71,000, but

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[125] Greene, I:342-43.

[126] S. B. M. Young, Lt. Col., Fourth Cavalry, "Report of the Acting Superintendent of the Yosemite National Park, 1896" (Washington, D.C.: Government Printing Office, 1896), 10.

[127] *Ibid.*, 8-9.

tolls through 1899 brought in only $33,923.71. McLean then attempted to sell the road to the federal government; the state had purchased the section on the Valley floor in 1885, but the federal government refused to make an offer on the remaining section.[128]

Traffic on the Big Oak Flat Road increased in 1897 when the Sierra Railway built a new branch railway line from Oakdale to Chinese Camp Station, reducing the stagecoach portion of the road to 60 miles.[129] Increasing numbers of tourists took advantage of the rail links to central California in order to reach the park.

Captain Alex Rodgers, who replaced Young as Acting Superintendent, described the status of the park road system in his 1897 annual report to the Secretary of the Interior:

> There are in the park four principal roads, the only ones really worthy of the name. These are the road of the Yosemite Stage and turnpike Company, from Wawona to the Yosemite Valley; the Big Oak Flat road, which enters the park about 3 miles west of Crocker's and runs into the Yosemite Valley at the foot of El Capitan; the Coulterville road, which crosses the park line about three miles south of the Big Oak Flat road and runs to the lower end of the Yosemite Valley; the Tioga road, built by the Great Sierra Wagon Road Company, running from Crocker's to the eastern part of the park, about 50 miles. All these roads are toll roads, and all are kept up by the companies running them, except the Tioga road, which has been allowed, through disuse, to become entirely out of repair. The three first-named roads are the routes by which nearly all tourists and campers enter the park, the number coming in on horseback by trail constituting only a very small percentage of the total number. The roughness of the country and the many difficulties of construction to be overcome made the first cost of these roads very great; the severe winter, with a very heavy snowfall, makes necessary the expenditure of considerable sums annually to put them in repair in the spring. The consequence is that the companies, to get a fair return on their investments, have to charge high rates of toll. Now that the Government has established a national park, it seems only right that it should buy and maintain all these roads, including the Tioga road. The last-named road was fully described in Colonel Young's report in 1896. There is nothing to add to his remarks, except to call

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[128] Sargent, *Yosemite's Rustic Outpost*, 22; Johnston, II:57-58.

[129] Johnston, II:49.

> attention to the fact that the condition of this road grows worse from year to year.[130]

Captain Rodgers noted that, in addition to the tourists who entered the park on stage lines, another three or four thousand came in their own or hired wagons, and were thus subject not only to the high tolls but also to exorbitant prices charged for hay by the Valley concessionaires. He suggested that if the Tioga Road were taken over and repaired, many good meadows for grazing would be opened in the high country, providing an alternative to the already congested Yosemite Valley. Rodgers estimated that the costs of repairing the Tioga Road "would probably be not less than $10,000."[131]

In Yosemite Valley, the Board of Commissioners at a meeting in 1897 again called for the federal purchase of the toll roads. Vice-chairman Abbot Kinney suggested that the four private roads (Coulterville, Big Oak Flat, Wawona and Tioga) should be purchased by the federal government and freed from charges, in the same manner in which the state had freed the roads within the Yosemite Grant boundary. Kinney criticized the toll system, claiming that visitors were severely annoyed and inconvenienced, and that tolls prohibited thousands of travelers from visiting Yosemite. The commissioners called for the federal government to appoint a special investigative panel to study the existing roads arrangement.[132]

The cavalry troops were pulled from the park during the Spanish-American War in 1898, and a civilian special inspector for the Department of the Interior, J. W. Zevely, was appointed as acting superintendent. Zevely immediately appointed eleven forest agents to patrol the park; these were the forerunners of Yosemite's park rangers. The forest agents were supplemented by four agents from the General Land Office of the Department of the Interior. When the troops returned in September, Archie M. Leonard and Charles T. Leidig, were appointed to continue as the first official rangers for the park, and served in a year-round capacity. Zevely rejected his predecessor's requests to purchase the Tioga Road, stating that the owner's rights had already been extinguished by abandonment.[133]

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[130] Capt. Alex Rodgers, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1897 (Washington, D.C.: Government Printing Office, 1897), 5-6.

[131] *Ibid.*, 6.

[132] "Free Access Wanted to Yosemite Valley," (San Francisco) *Chronicle*, 10 August 1897; "To Abolish Toll Roads," *The* (San Francisco) *Call*, 12 August 1897.

[133] J. W. Zevely, Special Inspector, "Report of the Acting Superintendent of the Yosemite National Park" in *Report of the Secretary of the Interior*, 1898 (Washington, D.C.: Government Printing Office, 1899), 1055-56.

The California Department of Highways in 1897 studied the construction of a road up the east slope of the Sierra to meet with the Tioga Road. Three routes were studied, and a route up Lee Vining Creek Canyon was selected. The surveyors estimated that the road could be built for $30,000. Marsden Manson and W. L. Ashe of the Department of Highways urged that the federal government take over the abandoned Tioga Road through the park so as to open a transmontane route.[134]

Congress appropriated $4,000 for roads, trails and other improvements in 1899. The military immediately contracted out for the construction of a new bridge across the Merced River. A new road was built to Mirror Lake under the supervision of Galen Clark.[135]

Also in 1899, the requested special commission to investigate the toll roads was appointed by Secretary of War Russell A. Alger. Members were Col. S. M. Mansfield of the U.S. Army Corps of Engineers, Captain Harry C. Benson of the Fourth Cavalry (the troops then serving in the park), and J. R. Price of the California Department of Highways. [Price, however, retired from the highway department soon after his appointment and was replaced by highway commissioner Joseph L. Maude.] The commission was charged not only with looking into the toll road situation, but also with recommending a new route to Merced following the Merced River, a wagon road to the Hetch Hetchy Valley, and a road to connect the eastern terminus of the Tioga Road with the east side of the Sierra Nevada, providing for a transmontane route through the park.[136]

When the commission inspected the Tioga Road, the members had to clear the route in order to get over it. They found most of the culverts and all bridges intact, except for one over Yosemite Creek which had been washed away that year. To provide an easier connection with the high country from the Yosemite Valley, and to avoid the deep snows common at Snow Flat, a route up the Tenaya Creek canyon to Tenaya Lake was inspected; however, this steep valley was determined unsuitable even for a trail.[137] The commission urged

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[134] Marsden Manson and W. L. Ashe to Zevely, Appendix B in *Ibid.*, 1058; *Biennial Report of the Department of Highways of the State of California*, 1898 (Sacramento, CA: A. J. Johnston, Supervisor State Printing, 1905), 17. Manson, later City Engineer for San Francisco, was a major proponent of the forthcoming Hetch Hetchy Project.

[135] Greene, I:329; Sargent, *Galen Clark*, 138.

[136] *Report of the Commission on Roads in Yosemite National Park, California* (Washington, D.C.: U.S.Senate Document #155, 56th Congress 1st Session, 1899), 1; Greene, I:344.

[137] H. C. Benson, Major, 14th Cavalry, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1905 (Washington, D.C.: Government Printing Office, 1905), 15; *Report of the Commission on Roads*, 3.

that a new route be constructed from Tuolumne Soda Springs along the Lyell Fork of the Tuolumne River to the foot of the Lyell Glacier, and another from the Tioga Road down into the Mono Basin *via* Mill Creek, Lee Vining or Bloody canyons. [California Highway 120 now follows the Lee Vining Canyon route.] On the west side of the park, they pushed for a new road to be constructed from the Valley down the Merced River canyon[138] [now the route of the All-Year Highway, California 140].

Owners of the four existing toll roads were invited to submit depositions. Dr. John McLean, the principal owner of the Coulterville Road, described his road as an excellent route with 19.5 miles in the national park, along with a 4.76-mile branch road from Hazel Green to Crane Flat; an additional 4 miles on the Valley floor had already been purchased by the state's commissioners and freed from tolls. McLean estimated the cost of construction of the Coulterville Road at $71,000, and stated that he had invested a further $15,000 in maintenance. As he had sold the 4-mile Valley section to the state for $10,000, he reckoned the road had a value of about $75,000. He did admit that costs of construction had been greater in the 1870s, mainly due to the higher cost of blasting powder. The commission, however, believing the road could be built for $50,000, would not recommend a higher price to be offered for its purchase. McLean stated that revenue from the road to this date was $33,932.71, and the road was open from April to November, a longer season than the roads on the north side of the Merced due to its southern exposure. He believed more than 30,000 travelers had used his route.[139]

W. C. Priest of the Big Oak Flat and Yosemite Turnpike Company filed a report listing the length of the Big Oak Flat Road within the park as 19.03 miles; an additional 4.37-mile section within the boundaries of the Yosemite Grant had already been purchased by the state. The road was open from about 15 May till 1 November, with stage traffic was conducted over the road from 1 June to 15 August. Priest estimated the value of the road at $45,000.[140]

A deposition on the Wawona Road was submitted by Albert Henry Washburn of the Yosemite Stage and Turnpike Company. He stated that 26 miles of the road lay entirely within Yosemite National Park, 7 of which were in the Yosemite Grant. The road was open from April through December. Maintenance costs were reckoned at $2,465.20 annually.[141]

Attorneys for Capt. Rudolphus N. Swift of Acushnet, Massachusetts, owner of the Tioga Road, reported that 51 miles of that road lay within the park boundaries. The road had a maximum grade of 10 percent, with most of the road

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138 Greene, I:345.

139 *Report of the Commission on Roads*, 5-6.

140 *Ibid.*, 3-4.

141 *Ibid.*, 7.

on a 3 percent grade, 10'-20' wide, and "skillfully laid out." Bridges had "fine" stone abutments. The lawyers reckoned that the road had cost $62,000 to build. The road had had a good surface originally, but no longer, and most of the timbers in the bridges were rotten. Little traffic had used the road since the mines had been closed.[142]

In its final report filed with the Secretary of the Interior on 4 December, the commission stated the tolls placed a significant restriction on travel to the park. As the park was a public treasure, they suggested that the government should either purchase the roads and free them from toll or construct new toll-free roads into the park. The commission leaned toward the first recommendation, believing that even if the government were to build new roads, the owners of the existing roads would have to be compensated, as travel would be diverted to the new free roads. Such an action would represent an effective taking of the owners' property rights without due process. As for the proposed road to the Hetch Hetchy Valley, they recommended that an improved 13 1/2-mile route could be constructed from Hodgdon's at a cost of $52,000.[143]

The Commission on Roads filed a recommendation that the roads be purchased anyway, to provide the government control of all entrances to the park, though they suggested purchase prices far lower than the owners' estimates of value.[144] However, no action was taken on the report, and it would be several more years before the government began purchasing the roads. By that time, a railway offered serious competition to the turnpikes, and the owners of the roads were eager to settle at lower prices.

In 1903, Lt. Col. Joseph Garrard, Acting Superintendent, again called for the Government to take over the toll roads and make them free to the public. He stated, "The fact that toll is demanded of the ordinary visitor on all the roads now in use, which lead through the park and to the Yosemite Valley, is very objectionable. I understand that the full toll for a two-horse conveyance from Ahwahnee to Yosemite Valley, about 50 miles, is $6.75. This is deemed excessive." Maj. John Bigelow, Jr. succeeded Bigelow in 1904. He concurred in the criticism of the toll road system, claiming, "each of the principal entrances to the park is closed and opened by a toll gate guarded by a toll collector, suggesting the sally port of a medieval castle with its drawbridge, portcullis, and a man at arms."[145]

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[142] *Ibid.*, 10.

[143] Greene, I:344; *Report of the Commission on Roads*, 15.

[144] *Report of the Commission on Roads*, 20-21.

[145] Joseph Garrard, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1903 (Washington, D.C.: Government Printing Office, 1903) 6-7; John Bigelow, Jr., *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1904 (Washington, D.C.: Government Printing Office, 1904), 13.

The state commissioners, still in control of the Yosemite Valley and the Mariposa Big Tree Grove, had been continually assailed for their management of affairs. Pressed by concessionaires and speculators, barely provided with an inadequate budget, and at times over-ruled by the state legislature, the board had become embroiled in various disputes and lost much control over developments in the Yosemite Grant. Criticism of their mismanagement led to the recession of the state grant and the transfer of the two areas to federal control as parts of the surrounding national park.

On 2 March 1905, the State of California receded the Yosemite Valley and the Mariposa Big Tree Grove to the United States Government for inclusion in Yosemite National Park. Congress accepted the recession on the following day and appropriated $20,000 for management of the newly-added territory. On 11 June 1906, President Roosevelt signed Joint Resolution 118, reconveying the Yosemite Valley and the Mariposa Grove to federal control. However, some of the state commissioners for the Yosemite Grant challenged the recession, and it was not until 1 August that the grant was surrendered.[146] At about the same time, there was a large boundary change removing some 500 square miles from Yosemite National Park. Following the changes, the Interior Department began contracting for additional engineering work, establishing new roads and bridges on the Valley floor.

While the Department of the Interior was planning new roads and bridges in Yosemite Valley, the City of San Francisco was planning a reservoir in Hetch Hetchy Valley to the north. The city had been looking for a larger, more dependable water supply for decades. The disastrous earthquake and fire in San Francisco in 1906 made the need critical, the city's political machinery moved into high gear to establish Hetch Hetchy as a reservoir site so construction could begin. That year, the city gained the support of Gifford Pinchot, chief of the U.S. Forest Service, for their project. The project at first attracted little publicity, and no one testified against the proposal in hearings held in San Francisco by Secretary of the Interior James R. Garfield in 1907. In 1908, Garfield issued a preliminary permit for the project, and a national debate ensued.[147]

When the full scope of the plan became apparent, conservationists, principally members of the Sierra Club, questioned the proposal and began a campaign against the reservoir project. A committee, made up of John Muir, William E.

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[146] Benson, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1905 (Washington, D.C.: Government Printing Office, 1905), 5-6; *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1906 (Washington, D.C.: Government Printing Office, 1906), 7-8; *Congressional Record*, 59th Congress, 1st Session, 19 June 1906, 8740.

[147] Michael P. Cohen, *The History of the Sierra Club*, 1892-1970 (San Francisco: Sierra Club Books, 1988), 22-24.

Colby, Joseph LeConte, Jr., William Frederick Badè and Edward Taylor Parsons, promoted the tourist opportunities the "little Yosemite" had to offer. They called for extended trail construction in the Tuolumne River watershed and a road into Hetch Hetchy Valley. The valley should not be used for a reservoir, but as an alternative destination to the crowded Yosemite Valley.[148]

Maj. Harry C. Benson, acting superintendent in 1907, tried to deter the city's surveys in the Hetch Hetchy valley. He also urged the Department of the Interior to devote more attention to the Valley roads, reporting:

> The roads on the floor of the Valley are in a deplorable condition. For the most part they consist simply of clearings over the natural ground without any attempt to furnish a surface or smooth running road. In places where they are not rough the sand varies in depth from 4 to 8 inches, making it impossible to do much more than walk over roads which are practically level. All of these roads should be macadamized or carefully oiled.[149]

Benson noted that the choking dust remained one of the chief drawbacks of a trip on the roads into the Valley. He called attention to this problem in his next report, stating "The one great drawback to the visitor's pleasure is that he is driven over rough roads so dusty that when he arrives at his destination his best friend could not recognize him." Benson suggested that the roads surfacing the roads with oil or macadam in order to reduce the problem.[150]

The dust was, to the park's travelers, one of the great wonders of Yosemite. The granite sand-based soil which formed the base of the roads was sometimes covered with granite gravel, but the gravel crumbled quickly into fine sand, and in the dry summer seasons when most visitors were in the park, the roiling dust cloaked everything and everyone. William E. Colby reminisced about the problem:

> We were impressed by the fact that the dust from the road, stirred up by travel and carried by the winds, had covered all the foliage on both sides of the road for considerable distances. Fern, bushes and trees were all a monotonous dust color. Very few visitors will appreciate the terrible dust problem which caused such discomfort in those days. If a conveyance passed by on the road on which a person was hiking, he would be enveloped in a

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[148] *Ibid.*, 25-26.

[149] Benson, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1907 (Washington, D.C.: Government Printing Office, 1907), 9.

[150] Greene, I:429; Allen Kress Fitzsimmons, "The Effect of the Automobile on the Cultural Elements of the Yosemite Valley" (Master's Thesis, San Fernando Valley State College, January 1969), 31.

> cloud of choking dust, and if he rode in the vehicle itself, it was impossible to escape from the accompanying affliction and get any relief. The first greeting for a stagecoach passenger upon arrival at his destination was to be met with feather bridges and whisk brooms for removing as much of the impalpable coating before he shed the long "duster" which everyone wore in those days.[151]

By this time, concerns were again being expressed that road reconstruction or the building of new roads should be carefully planned so that the features would impact the park's matchless landscape as little as possible. John Muir and the Sierra Club submitted a general plan for road building and other "needed improvements" in Yosemite National Park to the Secretary of the Interior in 1907. The Sierra Club was, in its early years, a promoter of park road projects, believing roads would enable more people to visit the park, and that increased awareness of the Sierra range would help with its preservation. The group was concerned about the appearance of the roads and their effect on the natural landscape, and called for road improvements to be planned with care to preserve park wilderness and to take advantage of scenic and natural elements. The proposal urged

> That a general plan for the treatment of the floor of Yosemite Valley be made by a competent landscape architect & carried out under his supervision at a cost of about one hundred and fifty thousand dollars. This would include the thinning & clearing of undergrowth jungles; the building of a permanent system of roads located with reference to scenery aesthetic effects, etc., instead of the present haphazard dust sand & mud ruts called roads; & the restoration of the downtrodden vegetation to something like the beauty of the wilderness, etc.[152]

Acting Superintendent Benson agreed with the Sierra Club's general principles, stating that

> The roads should be carefully laid out with a view to having them placed in the best locations for artistic effects, and a general plan for the location of these roads should be adopted at once before any great amount of work is put upon any of them. There is ample material of easy access for the construction of excellent roads throughout the valley, so that there is every reason why roads of the highest class should be built....All roads should be laid out according to a plan fully worked out by a competent

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[151] William E. Colby, "Yosemite--Then and Now, 1894-1953," *Yosemite Nature Notes* XXXII (March 1953), 23-24.

[152] John Muir to Richard A. Ballinger, Secretary of the Interior, 1907, in Colby, "Yosemite Then and Now," 28. The "thinning and clearing" would have had to be done by hand, as the club at this point supported the suppression of fire.

> landscape gardener, and nothing should be done in the way of expending money which does not tend to carry out these ideas."

Benson also called for the replacement of existing bridges with ones of stone or concrete,[153] reiterating the earlier recommendations made by William Hammond Hall.

Benson noted that the Tioga Road, which ran through the heart of the park, had deteriorated severely and was closed to most travel. He urged the government to declare the toll road franchise invalid and take over the road. In his 1907 annual report, he laid the matter before Secretary Garfield:

> Either the alleged owners of this road should be required to put it in a state of repair which will permit the passage of wagons, or it should be recognized that the alleged owners have no claim whatever to the road, as they certainly have not, no title ever having been acquired to the road except under the general law authorizing the construction of highways over public lands. After the road was built and the mine salted and sold together with the road, no work was done on it for many years, and no tolls were ever collected; therefore, the franchise as a toll road lapsed many years ago. It is recommended that the Government put this road in a condition for travel.[154]

In 1907, Louis C. Hill, Supervising Engineer of the United States Reclamation Service, U.S. Department of the Interior, recommended that a new road be constructed from the Valley up the Merced River, and across the south rim of the Valley to Glacier Point. After this road was built, he suggested that similar road be constructed along the north rim of the Valley to the tops of El Capitan and Yosemite Falls. In 1909, park engineer Lt. A. R. Ehrnbeck, U.S. Army Corps of Engineers, again proposed the construction of the new roads, specifying the route of the upper Merced route from Happy Isles up along Vernal and Nevada falls, thence following the Valley rim via Illilouette Fall to Glacier Point, roughly the route of the Mist and Panorama trails. This would connect with another proposed road following the south rim from Glacier Point west to Fort Monroe. The engineer also called for a route from Yosemite Valley up past Mirror Lake to Tenaya Lake.[155] Fortunately, none of

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[153] Benson, *Report of the Acting Superintendent*, 1907, 9-10.

[154] *Ibid.*, 8-9.

[155] Louis C. Hill, Supervising Engineer, U.S. Reclamation Service, to Hon. James R. Garfield, Secretary of the Interior, in *Ibid.*, Appendix A, 19; A. R. Ehrnbeck, Lt., U.S. Army Corps of Engineers, "Report of the Park Engineer," in William W. Forsyth, Major, Sixth Cavalry, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1909 (Washington, D.C.: Government Printing Office, 1909), Appendix A, 16-18.

these roads were built, as the effect on some of the park's most magnificent scenery would have been devastating.

Ehrnbeck also recommended replacement of the existing steel and wood bridges with stone arch structures, stating "A stone bridge would be practically indestructible and would be both appropriate and beautiful, and would be an adequate monument to represent the American Government in architectural work in its National Park." In lieu of stone, bridges of reinforced concrete might be employed; either would be more satisfactory that wooden or iron structures in terms of maintenance.[156]

Unlike Yellowstone, Glacier, Grand Canyon and several other major national parks and monuments, Yosemite was not reached by a railroad in its early years. The other parks benefitted from their association with the railroads, as the powerful companies provided easy access and noticeable publicity, and in many cases established railway hotels and other support facilities in the parks. Yosemite lacked these connections, and the government turned to small and under-capitalized concessionaires to provide lodging, meals and other services, often poorly implemented.[157] As the new century opened, the first tourists began to arrive by automobiles, and the park would soon find itself beset with tremendous demands from vastly increased numbers of visitors.

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[156] Ehrnbeck, Appendix A, 18-19.

[157] Hyde, 157-58.

CHAPTER FOUR

NEW MODES OF TRANSIT

> Before we know it, they will be dropping into Yosemite by airship.
>
> --Secretary of the Interior
> Franklin K. Lane, 1913[158]

On 22 June 1900, Oliver Lippincott drove a steam-powered Locomobile from Raymond to Wawona. People were amazed that the machine had reached the area, and that evening Lippincott took a number of the Wawona Hotel guests for a ride around the hotel drive. The next day, Lippincott drove to the Valley, covering the thirty miles in three hours flat. Lippincott spend the next few days "keeping the roads of the Valley warm." Lippincott related that he was master of the road at night: ". . . the mere sight of the Locomobile's two headlights and the sound of its shrill electric bell, were sufficient to secure it right-of-way of every other vehicle, for horses were willing to jump over the bank or climb a tree to make way for us." The Locomobile was driven out to Glacier Point and pushed out on the overhanging rock, where it was photographed. Just over a month later, Frank H. and Arthur E. Holmes drove the second car, a Stanley Steamer, into the Valley.[159]

The first automobiles to enter the Valley on the Big Oak Flat Road were Locomobile steam cars driven in July 1901 by a Mr. and Mrs. Baird and a Mr. and Mrs. Aiken. They were followed the same month by Dr. and Mrs. W.A. Clark of San Leandro, who wrote of an arduous journey over granite dust "inches thick." Few other cars made it over the Big Oak Flat Road in the next few years; indeed, the *Yosemite Tourist* stated that cars could be "bought for a song at the foot of Priest's Hill" on the rough road. When Dr. Clark returned in 1905, he called the grades "almost insurmountable," and his trip "an adventure of some magnitude." He urged other drivers to carry extra parts such as drive shafts and springs.[160]

Soon after the first automobiles arrived, Acting Superintendent Harry C. Benson placed strict rules on their operation in the park. However, these regulations were flaunted by a few drivers, and Major Benson complained to Secretary of the Interior Garfield. When members of an Oakland automobile

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158 "Lane Opens up Yosemite Park to Automobiles," *Fresno Republican*, 30 April 1913.

159 Oliver Lippincott, "The First Locomobile to Reach Yosemite," *San Francisco Chronicle*, 22 July 1900; Johnston, I:7-9, 11.

160 *Ibid.*, I:11-12, 14.

club announced plans for an excursion to the Valley in 1907, Benson issued a decree banning automobiles and motorcycles from entering the park. "By Order of the Secretary of the Interior, automobiles will not be permitted to enter the Yosemite Valley or the Mariposa Big Tree Grove."[161]

San Francisco and Oakland businessmen incorporated the Yosemite Valley Railroad in 1902. Their planned route was to connect Merced with the national park. Grading work began in 1905, and the line was completed in May 1907. The railway was constructed up the Merced River gorge, long considered nearly impassible for travel. El Portal, which since the 1905 park boundary adjustment had been excluded from the park, was the terminus, as the Interior Department still refused the railway permission to enter the park proper. Construction of the railway brought a substantial increase in the number of visitors, and decimated the business of the toll roads and stage lines. By 1910, the Yosemite Valley Railroad was running Pullman sleeper cars from Oakland. Logging operations began around El Portal about 1912, and the YVRR began carrying substantial loads of freight, mostly lumber, in addition to the majority of park visitors.[162]

The railway constructed a wagon road [HAER No. CA-150] from El Portal along the Merced River to a junction with the Coulterville Road at the west end of Yosemite Valley at a cost of $87,000. The rail company was evidently under the impression that the government would reimburse them for the cost of the road. Congress authorized no funds for this purpose, but the Department of the Interior allotted $8,000 to improve the Valley roads from the juncture with the new road.[163] A traveler could now take a train all the way to the gateway of the park, and had only a 90-minute ride over the new wagon road constructed by the railway to reach the park. Even so, the road was an extremely rough and narrow one, replete with the choking dust that characterized the other stage roads.

The Yosemite Valley Rail Road controlled the Yosemite Transportation Company, a new stage line which carried most rail passengers into the park. The railway operated year-round, providing another advantage over the toll roads. The Washburn's Yosemite Stage & Turnpike Company business was severely affected. In 1910, the Southern Pacific discontinued operations to Raymond, and use of the Wawona Road declined even further. Eventually, the Washburn group made

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[161] Robert C. Pavlik, "In Harmony with the Landscape: A History of the Built Environment of the Yosemite National Park" (Master's Thesis, University of California at Santa Barbara, 1986), 27*n*; "Opening of Yosemite Park Roads to Automobiles Will Furnish Added Attraction for Tourists," *Los Angeles Real Estate Bulletin and Building News*, June 1913, n.p.

[162] George H. Drury, compiler, *The Historical Guide to North American Railroads* (Milwaukee, WI: Kalmbach Books, 1985), 360.

[163] Mary S. Corcoran, in *Merced County Sun*, 4 February 1916; Greene, I:429.

arrangements to run stages from El Portal to the Valley and on to Wawona. El Portal became the main point of entry to Yosemite National Park.[164]

On 25 June 1908, the Coulterville and Yosemite Turnpike Company turned over the section of its road between Bower Cave and Hazel Green to Mariposa County, which made it a free road. Three years later, the county took over the remaining portion of the route, claiming that the company had failed to pay its taxes after 1906 and thus forfeited title to the road. Mary Helen McLean, daughter of the late Dr. McLean, had her ownership reinstated by the courts in 1917, albeit without compensation, but when the corporate franchise expired in 1920, the road passed back to the county.[165]

The army continued to administer the park, and part of its responsibility included overseeing maintenance of the park road system. As few new roads or structures had been built since the creation of the national park, the existing system was in generally poor repair. Many of the bridges were barely capable of bearing the existing traffic, which was steadily increasing due to the new visitors who arrived by rail. Major William W. Forsyth of the Sixth Cavalry, Acting Superintendent of the park in 1909, listed in his annual report to the Secretary of the Interior seven main bridges crossing the Merced River and Tenaya Creek in the Yosemite Valley; these were:

<u>Merced River</u>
Pohono Bridge (steel).....100 feet
Sentinel Hotel Bridge (steel).....96 feet
El Capitan Bridge (wood) .....100 feet
Stoneman Bridge (wood) .....92 feet
Upper Bridge (wood).....100 feet
Power House Bridge (wood).....86 feet
<u>Tenaya Creek</u>
Tenaya Creek Bridge (wood) .....85 feet[166]

[The Sentinel Hotel Bridge was probably of iron construction rather than steel, as it was built 1868 when iron still was the most common material used for metal trusses. The 1908 Pohono Bridge was likely steel.]

The California state legislature in 1909 passed a bond resolution to extend the Merced-to-Mariposa highway, then under construction, from Mariposa to El Portal.[167] However, it would be another eight years before this work would commence.

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164 Sargent, *Yosemite's Historic Wawona*, 55.

165 Johnston, II:60.

166 Ehrnbeck, 17.

167 Hazen H. Hunkins to Douglass H. Hubbard, Park Naturalist, 12 July 1961, 1. Yosemite Research Library.

Automobile interests protested the ban against access to the park, and motorists' organizations agitated to have the restrictions lifted. In 1909, Rufus P. Jennings of the California Promotions Committee urged Secretary of the Interior Richard A. Ballinger to open the park again to motorists. Ballinger rejected the request, giving reasons for the Department's decision to close park roads to autos:

> . . . after a personal inspection on the ground during the last summer, I am impressed with the belief that to favorably consider the petition would be to limit the travel by stage in the park, the condition of the roads being such that it would be dangerous for teams and automobiles to meet.
>
> Considering the inaccessibility of the Park, it is not believed that the use of automobiles would result in the accommodation of but a very few people, but would operate to the annoyance of stage passengers, as well as probably result in endangering the lives of such passengers, in consequence of which I am constrained to deny said petition.[168]

Secretary Ballinger added that he thought the only solution was for the construction of independent roads for automobile traffic.[169] However, his department had no resources to devote to this option.

The fleets of horse-drawn stages were not yet obsolete. Even if permitted into the parks again, numbers of automobiles would be limited for some years. Most people could not afford one, and the early cars were poorly suited for travel in mountainous terrain. So for several more years the venerable stagecoaches met the trains and carried passengers on to the Valley.

The automobile groups felt that they would eventually be able to win access to the park. O.K. Parker, engineer of the Automobile Club of Southern California, inspected the park roads in 1907 at the club's behest, and recommended that the Coulterville Road be the first to be opened to cars. He predicted that auto stages and cars would use the cut-off from El Portal to Hazel Green and the Coulterville Road in order to take advantage of the scenery.[170]

Funds were finally appropriated for the replacement of several dilapidated bridges. In Yosemite Valley, a new bridge over the Merced River at the Happy

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[168] R. A. Ballinger, Secretary of the Interior, to Rufus P. Jennings, California Promotions Committee, San Francisco, 29 October 1904, in *Yosemite Nature Notes* XXXIV (July 1955), 86.

[169] *Ibid.*.

[170] "Opening of Yosemite Park Roads."

Isles power plant was built in 1910. A new bridge over Cascade Creek on the El Portal Road was built a little later. By this point, some of the bridges had new names. The Upper Bridge was now called "Clark's Bridge" after Galen Clark, the first Guardian of the Yosemite Grant, the name for the Sentinel Hotel Bridge was shortened to "Sentinel Bridge," and the bridge at Happy Isles was called the "Power House Bridge." The wooden bridge over Yosemite Creek near Camp Yosemite was replaced in the fall of 1911. The Tenaya Creek Bridge was replaced in 1913. Acting Superintendent William W. Forsyth in 1912 reported that "the El Capitan Bridge over the Merced River is now in a precarious condition and if not replaced soon by a new one will have to be closed for travel." However, the replacement was not built until 1915.[171]

The first modern improvement to the Valley roads was the macadamizing of the road on the south side of the Merced River between the El Capitan Bridge and the Sentinel Bridge in 1909. This was the first pavement laid in the park. In 1910, sprinkling equipment was purchased for the new road between El Portal and the Old Village, and two 5,000-gallon water tanks to supply the sprinklers were constructed between Camp Ahwahnee and the El Capitan Bridge. The paving and the sprinkling equipment was a response to the continuing dust problem.[172]

Despite receiving the conditional permit from Interior Secretary Garfield in 1908, the Hetch Hetchy Project had again been delayed. Garfield's successor, R. A. Ballinger, opposed the project and demanded that the city clarify its need for the area. President Howard Taft appointed a three-man commission to investigate the project. In July 1912, the City of San Francisco published a proposal for the use of the Hetch Hetchy, Eleanor and Cherry valleys in the northwest portion of the park and in the Stanislaus National Forest Reserve just outside the park. The study was prepared by civil engineer John R. Freeman of Providence, Rhode Island. Freeman outlined a vast project involving construction of three large storage dams, the inundation of three large valleys, construction of an aqueduct to carry water to San Francisco, and the erection of a large hydroelectric power plant at Moccasin in Tuolumne County.[173] The study was presented to the Taft commission.

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[171] Forsyth, *Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior*, 1911 (Washington, D.C.: Government Printing Office, 1911), 11; "Report of the Acting Superintendent of the Yosemite National Park, 1912" (Washington, D.C.: Government Printing Office, 1912), 8; Greene, I:417-418;

[172] Greene, I:429; Fitzsimmons, 31.

[173] Ted Wurm, *Hetch Hetchy and its Dam Railroad: The Story of the Uniquely Equipped Railroad that Serviced the Camps, Dams, Tunnels and Penstocks of the 20-Year Construction Project to Bring Water from the Sierra to San Francisco* (Berkeley, CA: Howell-North Books, 1973), 21-25; John R. Freeman, *On the Proposed Use of a Portion of the Hetch Hetchy, Eleanor and Cherry Valleys Within and Near to the Boundaries of the Stanislaus U.S. National Forest Reserve and the Yosemite National Park as Reservoirs for Impounding Tuolumne*

As part of the proposal, Freeman stated that the city would make improvements at the main storage reservoir at the Hetch Hetchy Valley. As part of the project, new access roads would be provided. General specifications for the roads were outlined in the report:

> (2) The City proposes to build a first-class well-surfaced wagon road with frequent turnouts such that teams could pass and upon a gradient nowhere exceeding 8 per cent and commonly much less, into the Hetch Hetchy Valley from the old Yosemite stage road near Smith's Station, a distance of 23 miles approximately; and to forever maintain the same in good order, open to the public save when obstructed by snow or by washouts during the winter months. The quality of roadbed to equal that of the State highways. The city also proposes to either improve existing roads, or build new roads so far as may be necessary for obtaining easy grades and good quality of roadbed, westerly from Smith's Station to a point near the crossing of the main Tuolumne River near Moffat Bridge, Jacksonville, doing this improvement of line, grade and surface at the city's expense, but in co-operation with the State or county authorities.[174]

The city reserved rights to lay a railway line along half the width of the roadbed during the construction period for the dam and aqueduct and to construct telephone and electrical power lines to the dam sites. In addition to the right-of-way for the road, the city also stated its desire to take nearby gravel, stone and timber for construction of the road. As justification, the proposal cited "The betterment of transportation for the federal service should be deemed proper compensation for such material taken for road building and for other parts of the construction."

In addition to the main access road, the city also proposed to build a scenic drive around the Hetch Hetchy Valley "as a means for adding to the pleasure of the its citizens, their California neighbors and their friends." The road would pass behind Wapama Falls and make a loop around the reservoir. Title to the roadway and all the land between it and the reservoir was requested for purposes of maintenance.[175]

River Flood Waters and Appurtenant Works for the Water Supply of San Francisco, California, and Neighboring Cities (San Francisco: Board of Supervisors, 1912), 4-14.

[174] *Ibid.*, 14. Note that the specifications were for a wagon road. San Francisco later maintained that it had only obligated itself to build to this road standards, rather than provide modern roads suitable for automobile traffic. Automobiles were reintroduced into the park only a year later.

[175] *Ibid.*, 15. The notion of a loop road continued into the 1930s.

The report was provided with a series of doctored photographs, in which the proposed loop road was drawn in, complete with bridges and other structures. Some of the photographs superimposed existing roads on Norwegian fjords with Hetch Hetchy landmarks, such as Wapama Falls and Kolana Rock. Ballinger's successor as Secretary of the Interior, Walter A. Fisher, was unwilling to respond to the report and stated that action of Congress would be required to resolve the issue.[176]

In 1912, Major Forsyth reported that park roads were in need of considerable improvement in order to carry the ever-increasing numbers of travelers. In his annual submission to the Secretary of the Interior, he called special attention to the road from the railroad terminus at El Portal to the park: "The Yosemite-El Portal Road is the main highway into the park. The portion of this road between Pohono Bridge and the park boundary, about 10 miles, is still rocky, narrow and torturous, and it should be widened, straightened, regulated in grade, and metaled." He also recommended that the Valley roads be metaled, and in places relocated to afford more attractive vistas to users. He urged that the section between the [Old] Village and Happy Isles be improved first, as it was carrying very heavy traffic. Forsyth warned that the El Capitan Bridge was in a "precarious state" and would have to be replaced or closed to travel; the Tenaya Creek bridge was also in terrible condition. Some improvements had been made during the year, notably the replacement of the Yosemite Creek Bridge during the fall.[177]

Forsyth's recommendations achieved quick results. Valley roads between Pohono Bridge and the village were graded and macadamized in the fall of 1912, followed in the spring of 1913 by sections around Camp Ahwahnee. In May 1913, work commenced on widening the El Portal Road. An experimental section of hard-surface paving was tested near Pohono Bridge, where a half-mile stretch was paved with a top coat of hot bituminous paving. The road from El Portal was widened, and some dangerous curves were eliminated. Cost of the project ran almost $15,000 per mile due to the difficult construction through the Merced gorge and the need for blasting.[178]

Three small reinforced concrete bridges were constructed over Bridalveil Creek at the base of Bridalveil Fall in 1913 by Oscar Parlier of Tulare, California. Although the structures [HAER Nos. CA-91, CA-92,and CA-93], built at a

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[176] Wurm, 25.

[177] Forsyth, "Report of the Acting Superintendent. . ." (1912), I:662.

[178] David A. Shurfey, "Report of the Resident Engineer," 15 October 1913, in William T. Littebrandt, Major, 1st Cavalry, "Report of the Acting Superintendent of the Yosemite National Park," in *Reports of the Department of the Interior*, 1913, 2 vols. (Washington, D.C.: Government Printing Office, 1914), I:736-37; Pavlik, 42.

combined cost of $4,046,[179] were minor bridges bearing a carriage road which provided access to the base of the waterfall, they are significant as being the first road structures built of reinforced concrete in the park. The absence of earlier masonry bridges may in part be due to the lack of limestone (and consequently lime) in the area. Lime was probably not available in the park in any sizeable quantities until after the Yosemite Valley Railroad was constructed.

Like his predecessor, Major Forsyth opposed admitting automobiles into the park. In August 1912, he assured Secretary of the Interior Walter L. Fisher that the Yosemite roads were too steep and narrow for cars. However, the park did have an official automobile for park business; in 1912 it was an Overland Touring Car.[180]

Automobile clubs and motorists continued to press for access. The park administration remained opposed to their reintroduction, fearing accidents between automobiles and horse-drawn conveyances. Naturalist John Muir at first supported access for automobiles to the parks, recognizing that they would soon become the primary form of transportation.[181] Muir was rather ambivalent about the issue, however, observing:

> Doubtless under certain precautionary conditions, these useful, progressive, blunt-nosed mechanical beetles will hereafter be allowed to puff their way into the park and mingle their gas-breath with the breath of the pines and waterfalls and from the mountaineer's standpoint, with but little harm or good.[182]

The 1912 National Parks Conference was held at Yosemite, and the major topic of discussion was whether or not automobiles should be allowed in the park. State Senator John Curtin, long an adversary of the Yosemite administration, blasted the ban, putting his protest in allegorical terms: "My friend spoke of Christ riding a jackass through Jerusalem. I do not believe he would have done it if he had had an automobile." Frank Flint of the Automobile Club of Southern California urged that a new motor road be built from the southwest corner of the park to the Valley. Flint presented data on projected use and the estimated cost of such a road. Flint suggested that the road would end somewhere around Inspiration Point, as it would be too costly to build a road down the cliffs. This was challenged by delegate Clarence Matson, who argued "there is not a man here who is going to be satisfied to drive his machine [to

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[179] Park Engineer's Report, 15 October 1913, in Littebrandt, 29.

[180] "Gates Remain Closed," *Mariposa Gazette*, 3 August 1912; Wurm, 25.

[181] Colby, "Last Trip of John Muir to Yosemite (1912)," *Yosemite Nature Notes* XXXVI (September 1957), 94.

[182] Paul C. Johnson, "The Turn of the Wheel: The Motor Car Vs. Yosemite," *California Historical Quarterly* LI (Fall 1972), 205.

Yosemite] and then a ride down the trail with a burro." William E. Colby, secretary of the Sierra Club, also supported the return of cars to park, claiming the "automobile adds a great zest to travel." He recommended that a motor road be constructed along the south rim of the Valley to Glacier Point. Secretary of the Interior Walter L. Fisher was in attendance, but would not immediately lift the restrictions.[183]

Other Yosemite enthusiasts were not so sure that automobiles should be let back into the park, and urged the Park Service to maintain the ban. James Bryce, the former British ambassador to the United States, made a speech to business interests in which he issued another allegorical warning: "If Adam had known what harm the serpent was going to work, he would have tried to prevent him from finding lodgement in Eden; and if you were to realize what the result of the automobile will be in that wonderful, that incomparable valley, you will keep it out." Others argued that automobiles were not capable of safe mountain driving, or protested that noise and pollution would degrade the park experience. At this time, no one was expressing concerns about the spatial requirements for roads, garages, parking areas, and the increased accommodations that automobile access would inevitably require.[184]

Motoring enthusiasts were encouraged in the spring of 1913 when Major Forsyth was replaced by William T. Littebrandt, who was thought to be more favorable towards automobiles. Littebrandt promised to make a personal inspection by car of the park roads on arrival.[185]

The ban was lifted soon afterwards. In April 1913, Secretary of the Interior Franklin K. Lane relented his earlier opposition and announced "I have decided to allow automobiles to enter the Yosemite Valley."[186] In a statement to the press, he offered this rationale:

> This form of transportation has come to stay, and to close the park against automobiles would be as absurd as the fight for many years made by old naval men against the adoption of steam in the

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[183] Richard G. Lillard, "The Siege and Conquest of a National Park," *American West*, January 1968, 28, 30.

[184] Runte, *National Parks: The American Experience* (Lincoln: University of Nebraska Press, 1978), 158; Fitzsimmons, 5.

[185] Leon J. Pinkston, "Honk, Honk of Motor Car May Soon Echo through Yosemite Valley," *San Francisco Call*, 20 April 1913, 1.

[186] Franklin R. Lane, Secretary of the Interior, "Memorandum to the Press," 30 April 1913. Yosemite Research Library.

> navy. Before we know it, they will be dropping into Yosemite by airship.[187]

The Coulterville Road was the first route chosen for the entry of automobiles, and was quickly put back in shape for motorists' use. The *Modesto Mining Herald* extolled the road for its many beauties, including the Merced Grove of Giant Sequoias, and for its access to the new resort development at Foresta.[188] On 23 August 1913, the road was formally opened to automobile traffic.

In a reprise of the earlier competition between the toll road factions, the choice of the Coulterville Road as the sole route for automobiles was blasted by adherents of the other roads. The interests backing the Wawona Road claimed that the Yosemite Valley Rail Road had influenced the Park Service to open the worst of the roads, so as to discourage motorists from driving to the park. In the *Madera Tribune*, they charged that YVRR had wined and dined the officials that inspected the park roads, and convinced them to choose the Coulterville Road, which the article claimed had a "29 percent grade." The state and federal governments were charged with duplicity in the matter.

> It is intimated and stated as a positive fact that the Yosemite Valley railroad by the use of the machinery of the old Southern Pacific political machine of California--and by insidious influence with underlings in the department of the Interior has sought to prevent the opening of any automobile road to the Valley, or if any of them must be opened that the poorest road shall be opened, and the poorest of course is the Coulterville.[189]

In June 1913, the *Fresno Republican* complained that motorists from areas to the south of the park were put at a disadvantage as long as the Wawona Road was to automobiles. It stated "the resorts of Wawona and Miami are filled to overflowing with automobilists whose only reason for not going further is the fact that the government authorities will not permit."[190]

Along with the reintroduction of cars to the park in 1913 came a new proposal for a tramway to Glacier Point. W. H. Hendricks, a San Francisco developer, applied to the Department of the Interior for permission to construct an electric elevator from Camp Curry to Glacier Point. Hendricks proposed that his "accident-proof" double-compartment steel shaft would be bolted to the

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187 "Lane Opens up Yosemite Park to Automobiles," *Fresno Republican*, 30 April 1913.

188 "Strong Boost for Coulterville Road," *Modesto Mining Herald*, 7 May 1913. Yosemite Research Library.

189 "This Sounds Like a Voice from the Tomb," *Madera Tribune*, 31 August 1913.

190 "Open Wawona Road," *Fresno Republican*, 27 June 1913.

face of the cliff. Newspapers hailed the idea, and predicted little opposition. "A long, slender, graceful ribbon of steel will not lessen the grandeur of the titanic precipice. Instead, the wonderful view as beheld from the lookout ledge will be appreciated by thousands of visitors who otherwise would be unable to make the present arduous ascent."[191] Secretary Lane did not authorize the project, but more proposals would soon be forthcoming.

In May 1914, P. J. Walker, president of the California State Automobile Association, prevailed upon Acting Superintendent Littebrandt and national parks supervisor Mark Daniels to tour the other roads in the park with an eye towards opening them to motorists.[192] The park then began to improve the other roads. The government then spent $2,500 on repairs before the Wawona Road and its branch to the Mariposa Big Tree Grove and reopened them on 8 August 1914. Automobiles were allowed to use the Big Oak Flat road on 16 September. The Glacier Point Road was opened to automobiles as well. This year, the Desmond Park Service Company completed its imposing Glacier Point Hotel (to which MacCauley's Mountain House was joined as an annex), and the road received heavy use.[193]

J. R. Wilson, who ran some of the early auto stages, spent $40,000 to construct a steep road between El Portal and the Merced and Tuolumne groves of giant sequoias. The road, which had an 8 percent grade for much of its length, was an extremely scenic route. Wilson promoted it as the "Triangle Route;" visitors could depart El Portal, see the big trees, then travel on to the Valley before returning to El Portal. In 1914, A. B. Davis, who later had a permit to run auto stages over the road, constructed the 4-mile "Davis Cut-Off" from Foresta to Crane Flat.[194]

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[191] Johnston, II:37-38.

[192] "More Yosemite Roads for Cars," *San Francisco Examiner*, 9 May 1914. Mark Daniels, a young San Francisco architect, was hired by Assistant Secretary of the Interior Adolph C. Miller as "General Superintendent and Landscape Engineer" for the national parks. Daniels set up an office at San Francisco, where he was allowed to maintain his private practice on the side. Daniels served as parks superintendent until November 1917. [Horace M. Albright with Robert Cahn, *The Birth of the National Park Service: The Founding Years*, 1913-33 (Salt Lake City, UT: Howe Brothers, 1985), 9, 29.]

[193] Greene, I:435; Unrau, 5.

[194] Greene, I:436-37; Sargent, *Yosemite's Rustic Outpost*, 22. Although the cut-off and the portion of the Wilson road through the big tree groves are now gated and closed, the rough and rocky road between El Portal and Foresta remains open for local use. A trip over the road, which leads along steep cliff sides with no guard rails, is still a true "white-knuckle" motoring experience, and passes through magnificent (albeit burned-over) scenery dominated by Foresta Falls and other cascades.

Even though the automobiles had been readmitted, they were subject to additional fees and numerous, often petty regulations. Cruising around the Valley was prohibited, and motorists were at first required to chain their cars to logs and to turn over the keys to the park office. Automobiles were charged an additional $5 fee over the regular entrance charge, and motorists were subject to additional charges if they wished to visit Glacier Point or the Mariposa Grove of Giant Sequoias. A speed limit of 10 mph was imposed, later reduced to 6 mph because 10 mph had proved excessive for the park roads. Horse teams had the right of way, and motorists were required to sound their horn at every turn or sharp curve; this must have seriously degraded the wilderness experience for other users.[195]

While the automobiles had been banned, many of the roads were poorly maintained. As a result, much work had to be done before they could be opened to traffic. Completion of the Yosemite Valley Rail Road had taken away most of the turnpikes' business, and their owners could no longer afford to do maintenance work. The roads had also been constructed and maintained for lighter carriage traffic operating at lower speeds. Automobiles had much different requirements than horses or wagons. The Coulterville Road and the Big Oak Flat roads now saw little use, the Tioga Road remained abandoned, and only the Wawona Road, which still carried a fair amount of traffic from the south, was kept in good repair.

The year 1913 also witnessed the passage in Congress of the Raker Act which finally authorized San Francisco to construct a dam across the Tuolumne River at Hetch Hetchy, flooding the beautiful valley. President Woodrow Wilson signed the bill on 19 December. Among its provisions were requirements that the city construct a series of roads and trails to serve the project, and that these routes were to be open to park visitors.

Early motorists encountered many of the same challenges faced by early pack train and stage passengers. Dust remained inches thick on the roads, and the new vehicles raised tremendous clouds. The narrow roads were poorly suited for automobile travel. One driver recounted a visit to the park soon after the automobile ban was lifted:

> As we were coming in from Fresno, a motor bus was coming out. Frankly, I couldn't see how we could pass on such a narrow rutted road. But evidently the bus driver had had some practice. Several men on the bus, at the suggestion of the driver, got out and lifted my Ford off the road against a tree. Then the bus continued cautiously, but not without taking some paint off the fenders. Then the men lifted my car back onto the road and we went merrily on our way.[196]

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[195] Hyde, 163; Johnson, I:46.

[196] E. W. Blew, "Out of Yosemite's Past," *Yosemite Nature Notes* XXXIX (September 1960), 249.

The park in 1913 had 147 miles of roads, 46 under government control. Of the remaining 101 miles, the Tioga Road accounted for 52 miles. Of the roads entering the park, only the Coulterville Road was open to automobiles. An auto campground was established in the Valley in 1914.[197]

Increased road use, principally by automobiles, caused Park Superintendent George V. Bell to issue a warning to the Secretary Lane in 1915:

> The Yosemite National Park is greatly in need of better roads. All the State roads connecting with the park are being macadamized and are of a much higher quality and much better kept than the roads within the park and it becomes a point of continuous criticism from the visitors to the national park. It is, therefore, especially urged that an appropriation, available until expended, be made for the construction of first-class highways throughout the park, and the necessary steps should be taken, where the maps have not already been made, to relocate these roads on proper grades so that this work might be carried on at once. From a financial standpoint the building of new roads would in many ways be of great saving to the Government in the future from maintenance and repair standpoint and from that of sprinkling.[198]

Bell had his rangers erect new ranger outposts along the roads entering the park. These new posts, called "checking stations," were erected on the Coulterville Road in the Merced Grove of Giant Sequoias, on the Big Oak Flat Road at Crane Flat, on the Wawona Road north of the village at the park boundary, at Tuolumne Meadows on the Tioga Road, and at Hog Ranch (now Mather) on the approach to the Hetch Hetchy Valley.[199] Other checking stations would soon be established. Some of these were used to control motorists' speed through the park; vehicles would be issued a ticket with the time departing the station marked, and the ranger at the next station could calculate if the auto was traveling within the allowable speed limit.

Motorists received additional concessions in 1915. A rental automobile service was inaugurated in the Valley on 16 July. Visitors could hire a car and driver to go out and see the sights. Private travel around the Valley was still prohibited. The extra $5 charge for automobiles visiting Glacier Point was removed on 27 July.[200] Stagecoach operators gradually switched to motor

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[197] Littebrandt, I:734; Blew, 249.

[198] George V. Bell, "Report of the Superintendent of the Yosemite National Park" in *Reports of the Department of the Interior*, 1915, 2 vols. (Washington, D.C.: Government Printing Office, 1916), I:912.

[199] Pavlik, 25.

[200] Bell, I:918.

service; Charlie Baird replaced his stagecoaches, which operated over the Big Oak Flat Road, with a 22-passenger autobus in 1914.

During Bell's term as superintendent, the park experienced a remarkable 90 percent increase in park visitation, occasioned in part by visitors attracted to California by the Panama-Pacific International Exposition in nearby San Francisco; many of these arrived by automobile. Park planners responded to the new demands by inaugurating a road improvement program that included widening, straightening, relocating and oiling many of the Valley roads. However, major work had to wait for nearly a decade due to World War I.[201]

The dilapidated El Capitan Bridge was replaced in 1915 by a new combination wood-and-steel Pratt pony-truss bridge. The bridge was constructed by the California Construction Company of San Francisco at a cost of $2,925. Costs borne by the Government for hauling materials and building the approaches brought the total price to $3,025. The new structure had a capacity of twelve tons. Bids were also put out this year for the replacement of the Sentinel Bridge.[202] However, its replacement was delayed until 1918-1919.

Stephen Tyng Mather of California accepted the post of Assistant Secretary of the Interior in January 1915. As part of his duties, Mather was responsible for overseeing the national parks. Mather wanted to promote automobile travel to the parks, and thought that Yosemite, with which he had long been familiar, offered an opportunity for an early improvement program. Mather remembered the abandoned Tioga Road, and decided to resurrect the route. The road would not only open up one of the most majestic sections of the park's high country to motorists, but would prove a valuable transmontane highway, there being no other passes between the Sonora Pass to the north and the Walker Pass to the south, a distance of 270 miles.[203]

When told the government could not improve the Tioga Road because it was privately owned, Mather was undaunted. His response was "I'll buy the road, have it repaired myself, and donate it to the government." He immediately began a campaign to raise the necessary $15,000 for the purchase, contacting leading philanthropists and old business associates. He was successful in raising half of the funds, and donated the remainder himself. Among the other contributors were philanthropist Julius Rosenwald and yachtsman Thomas

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201 Pavlik, "In Harmony with the Landscape: Yosemite's Built Environment, 1913-1940," *California History* LXIX (Summer 1990), 186.

202 Charles Goff Thomson, Superintendent, Yosemite National Park, Final Report 74, El Capitan Bridge Removal, October 1931, 1; Mark Daniels, "Report of the Landscape Engineer of the National Parks," in *Reports of the Department of the Interior*, 1915, I:850; Shurfey, "Park Engineer's Report," in Bell, I:913; "Report of the Superintendent of the National Parks to the Secretary of the Interior, 1916" (Washington, D.C.: Government Printing Office, 1916), 790.

203 Trexler, 18.

Thorkildsen, who each gave $1000. The Sierra Club and the Modesto Chamber of Commerce came up with another $6,000. As Mather was a government official and thus not in a position to donate the road to the United States, he asked a friend and fellow member of the Sierra Club, William E. Colby, to write up the contracts and to personally purchase the property for conveyance. Once the purchase was made, automobile clubs paid for the repairs.[204]

A special act was passed on 3 March 1915 allowing the acceptance of right-of-ways within national parks, and on 10 April the road was transferred to government control and became a part of the park. Mather attended the dedication of the road at Tioga Pass on 28 July, where he broke a champagne bottle filled with water from the Pacific Ocean so that it would flow to either side of the pass. Mather smashed the bottle over the "$15,000 rock," memorialized in contemporary cartoons and now a part of the Yosemite Museum collection.[205]

Mark Daniels, Superintendent and Landscape Engineer of the national parks, recognized the acquisition of the Tioga Road as a major addition to the Yosemite Road system. In his annual report to the Interior Department, he wrote "it will be the most popular pass for transcontinental tourists through the Sierra Nevada Mountains, as well as being a favorite for local drivers." The road was opened to automobiles on 28 July 1915, though drivers had to pay an additional $5 fee. By 1 October approximately 350 cars had traveled over the new road.[206]

In July, Tuolumne County purchased the Big Oak Flat Road and made it a free county road. The county turned over the portion of the road from Gentry's to the Valley floor to the federal government. The National Park Service then established checking stations on the road at Gentry's and El Capitan, and assumed the road's maintenance which had been neglected for some years.[207]

The automobile was becoming one of the dominant factors in park affairs. Roads had to be reconstructed, as the park roads in almost all cases predated the automotive era. Service facilities, such as garages and gas stations had to be provided, parking areas constructed, and attention devoted to traffic enforcement. Even more importantly, the automobiles fostered an enormous increase in visitation, and park policies and facilities had to be adjusted to

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[204] Robert Shankland, *Steve Mather of the National Parks* (New York: Alfred A. Knopf, 1954), 62-63; Trexler, 19.

[205] Mather, "Report of the Director of the National Park Service," in *Reports of the Department of the Interior*, 1918, 2 vols. (Washington, D.C.: Government Printing Office, 1919), I:822; Trexler, 19. The special act was 38 Stat., 827, 863.

[206] Daniels, I:849; Bell, I:917.

[207] Greene, I:443.

meet the new demand. Concessionaires immediately began to cater to the new visitors, and in doing so increasingly impacted the Valley landscape. (Of course, they were operating under permits from the National Park Service.)

In June 1916, the number of visitors arriving by car surpassed the number arriving by train, 14,527 to 14,251. A year later, three times as many visitors came in automobiles; in 1918, the figures stood at 26,669 by car to only 4,000 by train.[208]

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[208] Runte, *National Parks*, 156.

CHAPTER FIVE

NATIONAL PARK SERVICE

> The Yosemite Valley has long needed a proper road system, and when one considers the fact that there are weeks during the summer when several hundred cars are being operated in this relatively small area each day, and that there may be during this time four or five thousand visitors in the valley all told, no road system may be considered too highly improved for this public use.
>
> --Superintendent Washington B. Lewis, 1917[209]

The motorist found a friend in Assistant Secretary of the Interior Stephen T. Mather. A native Californian with a great personal interest in Yosemite and the Sierra Nevada, he recognized that the key to promoting support for the national parks was to increase access and attract influential policy makers. To Mather, the automobile was a key factor. He once commented, "It was inevitable that the automobile would revolutionize the park tour, just as it changed travel conditions everywhere and turned into memories cherished methods of seeing and doing things." He also foresaw the political and financial clout of the automotive and petroleum industries and automobile clubs. Mather reasoned that by providing roads and facilities for the motoring constituency, they in turn would encourage additional congressional funding and thereby help protect the parks' natural and scenic resources from exploitation. He thought of national parks as ultimate vacation destinations for the new breed of tourists, with the national monuments serving as "way-stations" along the way.[210]

The consequences of this stance proved far-reaching. Providing access in many cases was given more attention than previous concerns for conservation. The increasing numbers of tourists required expanded facilities and concessions, ultimately resulting in the park's present congested condition. Mather and his associates surely did not envision the eventual results of this automobile-oriented policy.

In the 1910s, the Department of the Interior was able to devote only limited resources to the National Parks, which it administered along with Indian affairs, American territories, the Bureau of Education, health and welfare

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209 Washington B. Lewis, "Report of the Superintendent of Yosemite National Park" in *Reports of the Department of the Interior*, 1917, 2 vols. (Washington, D.C.: Government Printing Office, 1917), I:844.

210 Hyde, 163; Cohen, 41.

services, and other diverse programs. An assistant attorney and two or three clerks handled the paperwork in Washington, and each of the national parks had a superintendent in charge of a minimal staff. In early 1916, only two Washington employees worked full-time on the parks, while other Interior personnel spent some time on park affairs. For instance, Secretary Franklin Lane was supposed to give one-thirtieth of his time to the parks, and departmental supply clerk Amos Hadley was budgeted for one-fortieth of his time at $56.25 per year.[211] Mather and his staff, along with national conservation organizations, lobbied to have a central agency created and adequately funded to manage the national parks and many national monuments. They successfully lobbied to this end through 1915 and 1916.

The "Organic Act" of August 1916 created the National Park Service. The new agency, housed within the Department of the Interior, was charged with the administration of the existing national parks (including Yosemite), most of the national monuments and various historic sites. The Organic Act dictated that the Park Service was to "conserve the scenery and the natural and historic objects and wildlife therein by such means as shall leave them unimpaired for the enjoyment of future generations." The basis for this language has been attributed to Frederick Law Olmsted's report to the first Yosemite Board of Commissioners; this provision was actually written by his son, Frederick Law Olmsted, Jr., then a member of the federal Commission of Fine Arts.[212] Stephen Mather was appointed as the first Director of the new agency. During his administration (1916-1929), Mather was personally involved in many of the decisions which affected Yosemite National Park, including the reconstruction of the park road system.

Robert B. Marshall, outgoing Superintendent of the National Parks, filed the service's first annual report in 1916. In it, he suggested that parks would attract ever-increasing numbers of visitors in automobiles, and warned better preparations were necessary. "To foster tourist travel," he claimed, "it will become necessary to develop the roads, trails and other accommodations in the park to the point where the traveler will not be subjected to serious discomfort."[213]

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[211] Albright, 6, 32-33.

[212] "An Act to Establish a National Park Service, and for other purposes," 25 August 1916. Public Law 235, 64th Congress; Linda Flint McClelland, "The Historic Landscape Architecture of National Parks," typed MSS, based on the forthcoming study "The Rustic Landscape Design of National and State Parks," 1; Albright, 34.

[213] R. B. Marshall, "Report of the Superintendent of the National Parks, 1916" in *Reports of the Department of the Interior*, 1916, 2 vols. (Washington, D.C.: Government Printing Office, 1917), I:751. Robert B. Marshall was detailed to the National Parks from the U.S. Geological Survey in 1915 as general park supervisor, one of two Interior Department Washington office employees to assigned to the parks; in his earlier position, he had participated in a

In the same report, Mather stated there had been "an astonishing increase in travel" to the national parks since automobiles had been admitted or readmitted, and that 19,848 cars had registered in the parks in 1916 as opposed to 12,563 in 1915, representing an annual increase of 50 percent. Mather called for more improvements to provide better access for motorists:

> This tremendous increase in automobile travel leads to one conclusion only, and that is in the early future travel in private machines will overtake the increasing railroad travel and constitute the greater portion of all park travel. This makes it incumbent upon the Federal Government to prepare for the great influx of automobiles by constructing new roads and improving existing highways wherever improvement is necessary....
>
> American motorists are intensely interested in the national parks, are visiting them in ever increasing numbers, and are contributing, by way of automobile fees large sums of money toward park improvement and administration. They have the right, then, to expect that the Federal Government will pursue a broad policy in the extension of road systems in the several parks, and that they shall enjoy all privileges not inconsistent with good administration of the parks' management and protection.[214]

The National Park Service was a new agency, and parks were still a relatively new idea. Mather reasoned that, without a constituency, the NPS had to build one, and that meant attracting people to the parks. This meant sometimes promoting parks through ties with business interests. Hotels and other concessions were to be provided to care for the new visitors, and better roads were to built for them travel around and between the parks.

In Yosemite National Park, the first NPS-appointed superintendent, Washington Bartlett Lewis, noted in his first annual report to the Department of the Interior that Yosemite had 103 miles of road under government control, of which only one mile had a good, hard-surfaced pavement. Two other miles of Valley roads had a covering of water-based macadam, but these had not been properly maintained and were badly rutted. Five miles of Valley roads were surfaced with river gravel, which pulverized quickly under traffic and required sprinkling to keep the dust down. The remaining park roads were dirt

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survey of Yosemite, doing much of the field work for the first USGS topographic maps of Yosemite. Assistant Secretary Mather had desired to make Marshall the first Director of the National Park Service, but a massive cost over-run on the Yosemite power plant, troubles with the railroad and concessionaires at Yellowstone, and a pompous personal style convinced Mather to return Marshall to the Geological Survey in December 1916 and to take the post himself. (Albright, 29-30, 48-49.)

[214] Mather, "Report of the Assistant Secretary of the Interior," 1915.

tracks, often narrow and built on steep grades. Lewis stated that these roads were "not adaptable" to automobile travel and heavy trucking. The park was just beginning its first modern road project, the reconstruction of the El Portal Road to eliminate grades greater than 6 percent. The superintendent requested a substantial appropriation to improve other park roads.[215]

Lewis pointed out that little work had been done on the park's bridges in recent years. Of the bridges in the Valley, only one, the 1915 wood-and-steel truss El Capitan Bridge, could carry more than six tons. The Sentinel Bridge, over which most of the traffic passed, had been condemned and could bear only a three ton load. All trucks and heavy vehicles used the El Capitan Bridge to cross the river, resulting in delays and extra transportation costs. Superintendent Lewis urged the speedy rebuilding of the Sentinel Bridge, followed by the replacement of the Pohono, Happy Isles and Stoneman bridges over the Merced River and the Tenaya Creek bridge. The replacement structures should be able to bear loads of at least 15 tons.[216]

As early as 1916, consideration was given to the relocation of parts of the Big Oak Flat Road. That year, a survey of a new routing from Crane Flat to the park boundary was made by E. E. Newell and W. O. Tufts. However, no construction ensued from this project. The federal government tried to buy the Coulterville Road in 1916, but Mariposa County refused to sell out. In return, the National Park Service discontinued maintenance on the sections within the park boundaries.[217] Over the next five decades, the road was subject to only indifferent care.

In 1918, Mather and his hand-picked assistant director, Horace M. Albright, issued a "Statement of Policy" regarding improvements to the national parks. This promulgated a long-standing NPS policy that developments must be designed to fit into their surroundings.[218] Mather's report to the Secretary of the Interior that year repeated the principle:

> All of the improvements in the parks must be carefully harmonized with the landscape, and to this end engineers trained in landscape architecture or fully appreciative of the necessity for maintaining the parks in their natural state must be employed to carry out improvement work.[219]

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[215] Lewis, "Report of the Superintendent of Yosemite National Park" in *Reports of the Department of the Interior*, 1916, I:790.

[216] *Ibid.*.

[217] Russell, "Highlights," 2; Sargent, *Yosemite's Rustic Outpost*, 22.

[218] Quoted in Pavlik, (*California History*), 182.

[219] Mather, I:814.

There was as yet no integrated planning in the construction of new buildings, camps, villages, entrances, trails and roads. To implement the new policy, a park landscape engineering division was created. This bureau helped design structures, roads, bridges and other park features to harmonize with their settings. Under the direction of its first chief, Charles D. Punchard, and his successor, Thomas C. Vint, the new division was actively involved in the reconstruction of Yosemite's road system, and took special care to see that new construction would have a minimal effect on the incomparable Valley landscape. The office moved from Los Angeles to San Francisco in 1917. Staff of the Landscape Engineering Division, later reorganized as the Branch of Plans and Design, visited project sites and studied the natural resources in the vicinity. All structures were tailored for the individual parks and specific project sites. Such elements as natural color, material, scale and massing would be incorporated into designs. None of the Division's staff had had any background in such design, but the structures designed by the office were harmonized with their settings and reinforced the theme of the park service's responsibility for the preservation of park resources.[220]

The new division employed the so-called "rustic style" of architecture for use in the national parks. The buildings and structures constructed in this style utilized native materials and designs that would integrate with their natural settings. For the most part, such structures were successful in meeting the demands of their environment. In Yosemite National Park, over the next several decades key buildings and road structures like bridges, tunnels and entrance stations incorporated this approach.

Mather also enlisted assistance from the Washington-based National Commission of Fine Arts, asking them to review the proposed projects for the national parks. The Commission became involved when President Woodrow Wilson issued an executive order in 1913 requiring NCFA review of federal projects in which artistic values might be questioned. Commission chairman Charles Moore, an old friend of Mather's, visited Yosemite National Park in 1919, and over the years, the commission would review sundry park projects. Two commission members approved the designs for a new series of bridges on the Valley floor in the 1920s. Arno B. Cammerer, later Director of the National Park Service, served for a while as assistant secretary for the Commission.[221]

Planning for park roads was done by the National Park Service general engineering division, based in Portland, Oregon under NPS Chief Engineer George E. Goodwin, formerly of the U.S. Reclamation Office and later, the U.S.

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[220] Albright, 104, 194; see William C. Tweed, Laura E. Soullière and Henry G. Law, *National Park Service Rustic Architecture*, 1916-1942 (San Francisco: National Park Service, Western Regional Office, 1977) for a complete treatment of the work of the NPS landscape division; Laura Soullière Harrison, *Architecture in the Parks: National Historic Landmark Theme Study* (Washington, D.C.: National Park Service, 1986), 5-7.

[221] Albright, 93, 104; Pavlik, (thesis), 47-48.

Army Corps of Engineers. Goodwin had planned and overseen construction of the roads in Crater Lake National Park in 1915, and was hired away from the Corps by Mather as chief engineer for the parks.[222] The park road program was hampered by insufficient funding and staff, and could do little more than plan for the maintenance and rebuilding of existing roads and road structures. Not until the mid-1920s would the Park Service have the engineering and construction resources it needed, and these they then obtained only by turning to another federal agency for assistance.

Director Mather was an avid car-camper, and believed that the national parks should provide for this new public. He stated, "Undoubtedly the principal factor in the travel movement today is the enlarged use of the automobile. Its perfection as a reliable and comfortable means of transportation has undoubtedly had most to do with stimulating visitation to the national parks." Mather favored the National Park-to-Park Highway Association's proposal to establish a 6,000-mile loop system of roads connecting the western national parks. The highway would begin at Denver, then go to nearby Rocky Mountain National Park, and from there to Yellowstone, Glacier, Mount Rainier, Crater Lake, Yosemite and Sequoia before returning via Salt Lake City to Denver. He also supported the National Parks Touring Association, which sought to work with state and federal authorities to develop a road system linking the parks. Mather proclaimed that improvements to Yosemite roads would attract ever-increasing numbers of new users. In his 1918 report, he wrote "I look forward to the day when many motorists here, as in the Yellowstone, will bring camping outfits packed on their cars, and will enjoy this grand wilderness in the only way it can be enjoyed thoroughly.[223]

Mather was a great promoter of the national parks, and sought publicity for them by any means. For Yosemite, it meant sending out thousands of maps to automobile clubs, or even capitalizing on commercial advertising. When a tire manufacturer used a panoramic shot of the Yosemite Valley from Glacier Point with his company's tire prominently featured in the center, Mather wrote that he found the advertisement had been handled in a "dignified and appropriate manner."[224]

The early Park Service management and the first superintendents of Yosemite National Park supported improvements to the park in order to promote its use by the motoring public. They maintained that the public would follow any road

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[222] Albright, 103-104.

[223] Stanford Ellis Demars, "The Triumph of Tradition: A Study of Tourism in Yosemite National Park" (Doctoral dissertation, University of Oregon, 1970), 117; Mather, "Report of the Director of the National Park Service," 1918, I:852; "Report of the Director of the National Park Service" in *Reports of the Department of the Interior*, 1920, 2 vols. (Washington, D.C.: Government Printing Office, 1920), II:40; Albright, 27-28, 104-05.

[224] Marshall, I:764; Shankland, 148.

into the "wilderness" so long as it was paved and had facilities provided en route and at the destination. (This, of course, reflects a rather different notion of "wilderness" than previously expressed.) Motorists were further encouraged in 1917 when the season automobile rate was reduced from $8 to $5. Despite competition from the railroad and from concessionaires who controlled the stage lines to the Valley, the private automobile was now the dominant form of transportation at Yosemite. By 1920, two-thirds of park visitors arrived by car.[225]

Not only were there more visitors, they were no longer largely restricted to the upper classes, who until now had been the only group with the money and leisure time to devote to extensive holidays. As automobiles became less expensive, more members of the middle class began to appear in the park. These new tourists often arrived with camping gear, and were thus freed from having to deal with park concessionaires. For the railway, stage lines, and to a lesser degree, providers of lodging, a significant portion of their part of the market share had evaporated. By the 1940s, the railway and stage lines went out of business.

The increasing demands on park facilities were met with changes to the road system. A concrete bridge was built over Cascade Creek on the El Portal Road in 1917, replacing the 1907-08 wooden timber truss. When a new administrative site was developed near the base of Yosemite Falls in 1916-1917, plans were made to replace the old Sentinel Bridge in order to provide better access between the Old Village and the new administrative site. A new reinforced concrete bridge [HAER No. CA-94] was erected in place of the old iron structure in 1918 and 1919. The Gutleben Brothers of Stockton, California were contractors for the structure, which cost somewhat more than the original contract price of $8,000.[226] The Stoneman Bridge was also replaced at about the same time with a reinforced concrete structure of similar design. The bridges were designed by the National Park Service engineering division.

The government acquired control of the Wawona Road from the Washburns in 1917 in exchange for certain transportation privileges. The transfer also included the branch roads to Glacier Point and the Mariposa Big Tree Grove. The

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[225] Pavlik, (*California History*), 194; Albright, Acting NPS Director, "Report of the Director of the National Park Service," in *Reports of the Department of the Interior*, 1917, I:805; Hyde, 165.

[226] Greene, II:542; Pavlik, (*California History*), 184-85; Mather, "Report of the Director of the National Park Service" in *Reports of the Department of the Interior*, 1919, 2 vols. (Washington, D.C.: Government Printing Office, 1919), I:980, 983; "Sentinel Bridge" MSS; "Bridge in Yosemite to Get a Face-Lifting," (San Francisco) *Examiner*, 13 November 1966, 8.

government eliminated the charges for passage on the roads,[227] and the era of toll roads in the park came to an end. However, the park entry fee for automobiles remained in effect. Mather defended the charge:

> I think the principle of having the parks free is the proper one, and we hope that the time will come when we can make them free to motorists as well as to others. But in the meantime, when Congress has not gotten to the point where it will make as large appropriations as we will need, we have got to depend in a measure on the revenues that we will derive from the parks themselves.[228]

Motor stages now connected the railroad terminus at El Portal with the Valley floor, and automobiles themselves were being transported by rail to the park boundary, from which they drove in on the stage road. The increase in traffic on the narrow route led the state and federal governments to reconstruct the road. By 1918, four of the 8 miles had been rebuilt, and Director Mather requested a congressional appropriation of $50,000 for further work on the gateway road. Work continued on the Valley roads as well. In 1918, they were widened to 20', and a layer of gravel from 3"-6" in depth was added. By the end of the year, 13 miles of the Valley roads had been graveled. Mather observed that the granite gravel disintegrated quickly, however, and added "I myself think that eventually we shall have to lay concrete roads in the valley as a measure of economy." In 1919, he requested a second special appropriation of $75,000 to completion the work on the El Portal Road.[229]

Motorists' organizations helped promote travel to Yosemite. The American Automobile Association (AAA) instituted a road service program in Yosemite in 1916. The Automobile Club of Southern California erected signs to mark the route to the park and prepared fire prevention posters to decrease the likelihood that fires would be caused by new auto campers. The organization protested some of the arcane regulations placed on automobile use, and expressed unhappiness with the winter closure of the Coulterville Road. In 1919, the California Highway Association advocated construction of an "All-Year Highway" to the park. It launched a campaign to raise $1 million toward the cost of the road, which would be matched with $700,000 in state and federal funds. The Association, which was comprised of automobile dealers, civic bodies and commercial organizations, proposed the sale of 200,000 shares

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[227] Lewis, Report of the Superintendent of Yosemite National Park, in "Report of the Director of the National Park Service" in *Reports of the Department of the Interior*, 1917, I:844; Johnston, II:59-60.

[228] Quoted in Albright, *Birth of the National Park Service*, 37.

[229] Runte, *Yosemite: The Embattled Wilderness*, 101; Mather, "Report of the Director of the National Park Service," in *Reports of the Department of the Interior*, 1918, 2 vols. (Washington, D.C.: Government Printing Office, 1919), I:850-51; "Report of the Director of the National Park Service," 1919, I:980; Fitzsimmons, 32.

of stock valued at $5 each to fund the project. Governor William Stephens endorsed the endeavor by purchasing the first certificate. A new body, the "Yosemite Valley Highway Association," was organized to coordinate promotion for the project. The Park Service supported the new road and Assistant Director Albright came to California to lobby on its behalf.[230]

The old proposal for a road from Yosemite Valley to the high country in the vicinity of Tuolumne Meadows was revived by the Secretary of the Interior in his 1919 annual report: "The proposed Yosemite Valley-Nevada Falls-Tenaya Road must be built, in order to give quick access to the Sonora section of the park and relieve traffic congestion on the floor of Yosemite Valley." He stated that the construction of the road was of "first importance" to the department. Director Mather added his support for the proposal in an attached report. In 1920, he repeated his interest in the route and the park submitted a request for $1.5 million to construct the route,[231] but soon afterwards the plans to construct a road through this environmentally sensitive area were shelved.

By 1920, over 100,000 cars a year were using park roads. The Yosemite Park and Curry Company built a garage in Yosemite Valley, and gasoline stations were established at Camp Curry and Yosemite Lodge. During the 1920s, the Big Oak Flat Road was advertised by the Yosemite Transportation System (which operated the auto stages) as a part of the "Bret Harte Line, Route of Romance," after the author who had written numerous stories about Tuolumne County. From South Fork (on the Tuolumne River), the route visited Hetch Hetchy, then went by Carl Inn to the Tuolumne Big Tree Grove and Crane Flat before making the descent to the Valley.[232]

The increasing traffic loads necessitated more bridge work in the Valley. Superintendent Lewis reported in 1920 that the Yosemite Creek and Happy Isles bridges required immediate replacement. He reported "Two of these prehistoric types still standing have reached a very marked state of disrepair and must be

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[230] Don Patton, *The First 80 Years: A History of the California State Automobile Association* (California State Automobile Association, 1984); Ralph Anderson MSS, n.d., 2, Yosemite Research Library; Albright, *Birth of the National Park Service*, 77; "Highway Fund was Short in 1919, Too," reprinted from *California Highways and Public Works* (March-April 1953) in *Yosemite Nature Notes* XXXIV (August 1955), 100; Hunkins to Hubbard, 1; advertisement in *Oakland Enquirer*, 7 June 1919; additional information from Jim Snyder.

[231] *Reports of the Department of the Interior*, 1919, I:141; Mather, "Report of the Director of the National Park Service" 1919, in *Ibid.*, I:980; "Report of the Director of the National Park Service," 1920, I:111, 252.

[232] Robinson, "History of Business Concessions," 90; Fitzsimmons, 117; Yosemite Transportation System, "Bret Harte Line" advertisement, n.d., Yosemite Research Library.

removed. The fact that they are still standing and carrying the traffic they do is beyond comprehension and contrary to all the laws of engineering."[233]

Congress appropriated no funds for road projects in the national parks in 1920, and the NPS engineering division used the year to prepare plans and specifications for numerous new projects, including the replacements for the Yosemite Creek and Happy Isles bridges. Funds were appropriated in 1921 and the two bridges were constructed.[234] The new Yosemite Creek bridge [HAER No. CA-102] was a single-span semi-circular arched bridge of concrete construction faced with native granite. The Happy Isles Bridge [HAER No. CA-89] over the Merced River was a conventional single-span concrete girder bridge.

The lack of hard-surfaced roads forced the park to devote considerable attention to maintenance. Each spring, the roads underwent major repairs, consisting largely of grading, oiling, and filling ruts. Summer maintenance included regraveling and sprinkling the roads to reduce the dust. Not until the paving of park roads in the 1920s would this burden be diminished.[235] However, the hard-surfaced roads also required considerable, though different sorts of maintenance: cleaning culverts, oiling and sealing, patching and striping, shoulder repairs, etc. But the dust problem was eliminated.

One of the first Yosemite road projects undertaken under National Park Service administration was the realignment of the Mirror Lake Road in 1919. The new road was laid roughly adjacent to the existing road, which was then obliterated. Other new connecting roads were constructed and existing roads improved elsewhere on the Valley floor. These projects included a new road through Camp 7 (now the Lower River Campground) in 1921, widening of the Camp Curry-Clark's Bridge-Mirror Lake Road (1923), a road across Cook's Meadow (1924), two roads connecting the north and south roads (1925), and the Camp Curry bypass (1925). The park's first parking lot was constructed at the new Village in 1922. Parking was increased at Happy Isles in 1923, and lots were expanded at Camp Curry and Yosemite Lodge as these facilities grew.

Always seeking to increase travel to the parks, Director Mather initiated programs to attract more visitors in the off season. In Yosemite, this resulted in the development of a winter sports program. The National Park Service had pressed the Desmond Park Service Company to build a new $350,000

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[233] Lewis, "Report of the Superintendent of Yosemite National Park" in *Reports of the Department of the Interior*, 1920, I:252.

[234] Mary Shivers Culpin, *The History of the Road System in Yellowstone National Park*, 1872-1966, draft ed. (Denver, CO: National Park Service, Rocky Mountain Regional Office, 1991), 118; Lewis, "Report of the Superintendent of the Yosemite National Park" in *Report of the Director of the National Park Service to the Secretary of the Interior*, 1921 (Washington, D.C.: Government Printing Office, 1921), 200.

[235] Fitzsimmons, 50.

hotel at Glacier Point in 1917, and Mather saw great possibilities for winter use. In 1921, he suggested that "If Glacier Point with its beautiful hotel were available in wintertime, Sentinel Dome with its heavy snowfall could be made to rival St. Moritz." However, year-round access would have to be provided. Mather rejected the idea of a tramway as too highly visible. Instead, he proposed construction of an internal shaft within the cliffs from the Valley to Glacier Point. Mather warned that the structure would have to be totally hidden.[236] There is no indication the proposal was ever studied.

Increasing tourist travel, organized pressure from motoring groups, and the availability of independent sources of funding led the California State Highway Commission to construct the first modern highway to the park. The "All-Year Highway" was built along the Merced River from Merced through Mariposa as far as Briceburg, about 15 miles downriver from El Portal. Spurred on by the California Automobile Association, the state began work on the final section up the Merced Canyon in 1924. The construction was done by state convicts under provisions of the so-called "Alco Bill" (Assembly Bill #1366) which authorized prison labor for road construction projects. The new road was a wide "high-gear" hard-surfaced road.[237]

Construction of the new state road prompted park superintendent W. B. Lewis to call for the reconstruction of the wagon road to El Portal. The park road, though widened and improved in 1913, was not built to the current standards, and would cause a bottleneck when vastly increased numbers of new visitors arrived over the new highway. Lewis pled for assistance to upgrade the El Portal Road and the Valley road system, and for minor improvements to the remaining 110 miles of park roads.[238] The issue of upgrading road standards would prove a recurring problem. Whenever roads were rebuilt or reconstructed, traffic loads invariably increased, leading inevitably to demands for further improvements.

Lewis also urged construction of a new road from Happy Isles, at the upper end of Yosemite Valley, through the upper Merced River Canyon and on to Tuolumne Meadows, along with a spur road to Glacier Point, roughly following the route of the Panorama Trail.[239] This extraordinary proposal, which incorporated several earlier suggestions, was never adopted, but reflected the prevailing attitude among park managers that improved access should be provided for the motoring public.

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[236] Johnston, II:38.

[237] Pavlik, (thesis), 44-45; Frank Purcell, "A Dramatic Footnote to Yosemite's History," *Yosemite Nature Notes* XXVI (August 1947), 91-92.

[238] Pavlik, (thesis), 45.

[239] *Ibid.*, 186-87.

Yosemite's inadequate road system was not an isolated problem; all of the national parks were in need of major road reconstruction work at this time. Visitors noted that the federal government had appropriated considerable funds for road work in the national forests, but that roads in the national parks were in comparatively poor condition. By 1922, only three of the parks, Yosemite, Yellowstone and Crater Lake, had complete road systems, and these, were inadequate.[240] Secretary of the Interior Albert Fall urged the government to provide an appropriation for park roads:

> It is my judgement that only by the adoption of an authorized road program can the anomalous situation of having well-built convenient roads leading to the national park boundaries, and then having inadequate or insufficient roads through the parks themselves, be cured, and just criticism of the national administration of the parks be avoided.[241]

Motorists' organizations continued to support improvements to park roads. In an article entitled "National Park Roads Vitally Needed," the manager of the Good Roads Board of the California State Automobile Association suggested that good roads were as important to the parks as their scenic resources.

> To one visiting our national parks and monuments, there are two features which stand out prominently--scenery and highways, or it would be better expressed to say that the one stands out prominently by its abundance and magnificence and that the other is called to the attention by its lack of everything that it should be, even to its very existence.[242]

Highway access remained limited in the northern half of the park, but the new Hetch Hetchy Reservoir proved a popular attraction. With the completion of the O'Shaughnessy Dam in 1923, the tracks of the Hetch Hetchy Railroad were removed between Mather Station (as Hog Ranch had been renamed) and the dam, and the old railway bed was converted to a motor road in 1925. Large numbers of visitors immediately drove over the rough road to see the massive, controversial project and the flooded valley.

One of the provisions of the 1913 Raker Act authorizing San Francisco's Hetch Hetchy project was a requirement that the city spend $1.5 million on the construction of roads and trails in the area around the reservoir. Despite protests from the National Park Service, the city proved very slow to comply with this provision When the railway was removed and the city began to construct some of the roads, the Park Service found the work unsatisfactory.

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[240] Culpin, 123.

[241] Cited in Pavlik, (thesis), 123.

[242] Cited in *Ibid.*, 124.

The city insisted that it was only obligated to build roads to meet the 1913 standards in effect when the bill was passed.[243]

The *Stockton Record* supported construction of the proposed scenic road around the reservoir, an access road to Lake Eleanor, and a road from Mather Station by Harden Lake to a connection with the Tioga Road.[244] However, other than the main road along the old railbed and a rough service road to Lake Eleanor, no other roads were built in the area.

In 1924, Director Mather secured from Congress the requested $7.5 million dollar appropriation for a three-year program to upgrade roads in the national parks (43 Stat. 90). Mather realized the money would not begin to cover the costs of the construction of a new road system, but intended to use it largely on upgrading existing roads, and to build new roads only in parks where none existed. Yosemite received $1.5 million for its roads. Superintendent Lewis explained how the funds would be used.

> Most of the $175,000 expected for the coming year will be spent on improving the Big Oak Flat and Wawona roads, the two principal routes by which motor to Yosemite. The Big Oak Flat road between Crane Flat and Tamarack Flat will be changed to a new location, which will be a tremendous improvement in itself....
>
> Following is the way in which the national park service plans to divide the total $1,500,000 for Yosemite road improvement during the three-year period provided by the legislation: For paving twenty miles of road on floor of Yosemite valley, $400,000; for improving Wawona road, $200,000; for improving Tioga road, $420,000; for improving Glacier Point road, $50,000; for improving Mariposa Big Tree road, $50,000.[245]

In May, Lewis reported that the Park Service was again studying the relocation of the Big Oak Flat Road. He warned that part of the proposed route passed through patented land holdings, and urged that a buffer zone through the commercial timber tracts be acquired to protect the scenery. Lewis soon began negotiating for a 60' right-of-way for the new road.[246]

In May 1924, the California State Automobile Association started a free road service program for its members visiting the park, stationing emergency road

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243 *Ibid.*, 192; Albright, *Birth of the National Park Service*, 220, 268.

244 "Open Hetch Hetchy to Motorists," *Stockton Record*, 19 January 1924.

245 "Park Highway Program Hits Another Snag," *Stockton Record*, 14 June 1924.

246 Lewis, Superintendent's Monthly Report, May 1924, 10-11.

service cars on the Wawona and Big Oak Flat roads. At the same time, the organization opened a seasonal bureau at the park superintendent's office.[247]

Rains in the latter part of 1924 caused thousands of dollars in damage to the park roads. The Big Oak Flat Road was washed out at Rainbow View in December, closing the road until after the first of the year. An 80' section of stone retaining wall at "Windy Point" on the El Portal Road was washed out and had to be rebuilt in the spring.[248] This location continues to be damaged regularly by floods and rockslides.

In January 1925, NPS Associate Engineer Bert H. Burrell ran a new survey for the El Portal Road between Pohono Bridge and the park boundary. In April, The Dennis Construction Company was awarded a $325,825 contract for paving the El Portal Road and a part of the Valley roads. The company immediately began the task of improving the El Portal road by widening it and rectifying grades prior to paving it. The work suffered numerous delays and was not completed by the time the new state road opened on 31 July 1926.[249]

By the late 1920s, the crowds of automobile tourists had changed the Yosemite Park experience for many visitors. While many for the first time had the means to visit Yosemite, others noted that the park was considerably more crowded than before. Jokesters would point out that the difference between Yosemite and Los Angeles was that Yosemite had trees but no traffic cops, and Los Angeles had traffic cops and no trees. Not everyone was amused. The invasion of automobiles and their occupants was noticed by Yosemite residents and devotees. Charles W. Michael, the assistant postmaster in the Valley, protested the crowds in 1927: "Yosemite Valley is getting to be an awful place. We have had crowds all season and right now the camps are very much crowded. The air is filled with smoke, dust, and the smell of gasoline." A year later, he complained, "I am tired of the constant whiz of automobiles."[250]

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[247] "Tow Car Service Starts on Oak Flat Highway," *Stockton Record*, 17 May 1924.

[248] E. P. Leavitt, Acting Superintendent's Monthly Report, November 1924, 10; Acting Superintendent's Monthly Report, December 1924, 10; Acting Superintendent's Monthly Report, March 1925, 8-9.

[249] Idem, Acting Superintendent's Monthly Report, March 1925, 9; Acting Superintendent's Monthly Report, July 1926, 4, 8; Acting Superintendent's Monthly Report, September 1926, 4, 10; Lewis, Superintendent's Monthly Report, April 1925, 10-11.

[250] William C. Everhart, *The National Park Service* (Boulder, CO: Westview Press, Inc., 1983), 65-66; Runte, *Yosemite: The Embattled Wilderness*, 144.

CHAPTER SIX

THE BUREAU OF PUBLIC ROADS TAKES CHARGE OF PARK ROADS

> In any area in which the preservation of the beauty of Nature is a primary purpose, every modification of the natural landscape, whether it be by the construction of a road or erection of a shelter, is an intrusion. A basic objective of those who are entrusted with the development of such areas for human uses for which they are established, is, it seems to me, to hold these intrusions to a minimum and so design them that, besides being attractive to look upon, they appear to belong to and be a part of their settings.[251]
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> --Arno B. Cammerer, in preface to *Park Structures and Facilities* (1935)

A milestone in the development of park roads was reached in July 1925 when the National Park Service and the Bureau of Public Roads (BPR), an agency of the federal Department of Agriculture, signed a Memorandum of Agreement under which the Bureau would provide for the engineering, design and construction of new roads within all the National Parks. The Park Service remained involved through review by its landscape architecture and engineering divisions, and local park officials were also involved in the placement of the new roads. Engineering, construction planning and project supervision was taken on by the Bureau, but the NPS dictated location and design and retained final approval on projects.[252] However, the decision had far-reaching ramifications, and over the years, the National Park Service gradually lost much control over the design and construction of roads in the parks. Today, the Department of Transportation, through the Federal Highway Administration (FHwA), continues to oversee planning of park roads.

The Bureau of Public Roads had its origins in the Office of Road Inquiry, established in 1893 by order of the Secretary of Agriculture. The office was charged with making inquiries in the road systems management across the country and to investigate the best methods of road-making. Creation of the agency was largely a response to agitation from the "good roads" movement, which in the 1880s began to seek Federal aid. In 1899, the name of the agency was changed to the Office of Public Roads Inquiries. In its early years, the office's work was purely investigative and advisory, although constructed experimental roads and worked with other agencies to build "object-lesson

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251 *Park Structures and Facilities*, i.

252 Pavlik, (*California History*), 187; Conrad L. Wirth, *Parks, Politics, and the People* (Norman: University of Oklahoma Press, 1980), 62.

roads," locally funded but built under the supervision of the office's engineers. A testing laboratory for road materials was established in 1900.[253]

On 1 July 1905, the Office of Public Roads Inquiries and the Division of Tests of the Bureau of Chemistry were consolidated as the Office of Public Roads. The new agency was divided into three divisions--highways, tests and investigations, and information. A fourth division, for bridges and culvert engineering, was added in 1910. By this time, the office prepared plans and estimates for county road projects. The agency was given bureau status in 1919. The Bureau of Public Roads had major responsibilities under the $75 million Federal Road Act of 1916 and subsequent appropriations for public road improvements. The Federal Highway Act of 1921 vastly increased the Bureau's functions, and under this mandate the BPR negotiated to supervise road work in the national forests and the national parks.[254]

The agreement between the National Park Service and the Bureau of Public Roads ensured that new park roads were constructed to the latest standards, but with minimal adverse impact on park lands. The NPS dictated certain restrictions on construction activities, including prohibitions of destructive blasting and requirements to protect rock outcrops and natural vegetation.[255]

The basis of the agreement went back to the 1924 special park roads appropriation of $7.5 million. Director Mather realized that even this sum, the largest yet awarded to his agency for road development, would not cover new construction of many new park roads. He decided that most of the money would go towards upgrading existing roads, rather than building new ones.[256]

Mather was concerned about the poor road conditions in the parks. The major proportion of the road budget had to be spent on constant maintenance, as most of the roads in the parks were primitive tracks. He protested the arrangement in his 1921 annual report:

> The thousands of dollars the government is forced to spend annually in order to keep the park roads in a passable condition represents largely waste, for nothing of a permanent nature in the way of improvement is accomplished. The beginning of each season finds conditions essentially the same as those at the beginning of the previous year, and the work done during each season is largely

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253 Truman R. Strobridge, Introduction to *Preliminary Inventories No. 134, Records of the Bureau of Public Roads* (Washington, D.C.: National Archives and Records Administration, 1962), 1-2.

254 *Ibid.*, 2-4.

255 McClelland, 3.

256 Shankland, 156.

> a repetition of that done the previous year, except that, as the travel increases, it is more and more intense and more money must be spent. There is only one solution to the problem and that is permanent improvement, which means a heavy initial expenditure but which will eliminate much of the heavy expenditures of maintenance which are now being borne and which must continue under present methods.[257]

To carry out his major road program, Mather brought the Bureau of Public Roads into the picture. His first contact with the BPR had been at Jackson Hole, Wyoming, where a Bureau engineer, Bill Austin, proudly showed off a new road that agency had just completed. Mather was impressed with the manner in which the new road had been built through the stunning mountain landscape, and when Austin suggested that the Park Service use the BPR for its road construction projects, he decided to give the agency an opportunity to demonstrate its skills by inviting it to take over construction of the transmontane road in Glacier National Park in Montana.[258]

Glacier featured some of North America's finest mountain scenery, but the lack of a road across the park discouraged potential visitors from making the extensive trip. Mather reasoned a road over the Continental Divide through some of the park's best scenery would drastically increase use. To this end, he had the BPR survey a route over Logan Pass in 1924 as a test: if the road met with his satisfaction, he would engage the BPR to do more. The Bureau selected its Senior Highway Engineer Frank A. Kittredge to run the location survey. Kittredge had worked for the Alaska Central Railway and the for the Washington and Oregon state highway commissions before joining the BPR in 1917.[259]

The "Going-to-the Sun Highway" over Logan Pass, surveyed under Kittredge's supervision, was exactly the sort of route Mather desired. He was further impressed by an address made by Dr. Laurence E. Hewes, western regional engineer for the BPR, whom he had invited to speak at the 1925 Superintendent's Conference at Mesa Verde National Park. Mather made a decision to let the Bureau take charge of construction of the new roads in the National Parks, and the Memorandum of Agreement was signed in July 1925. BPR engineers were in Yosemite by late summer, and by the end of the year had taken over the

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[257] Mather, *Annual Report of the Director of the National Park Service*, 1921, 194.

[258] Shankland, 157.

[259] *Ibid.*, 158-59; Kathleen Steen, Historic American Engineering Record, Historian's Report, Going-to-the-Sun Road, Glacier National Park, Montana, HAER No. MT-67; draft report, 1990, 16.

supervision of all major park road projects, including the paving of the Valley roads and the improvements to the El Portal road.[260]

The mid 1920s has been called the "golden age" of the Bureau of Public Roads. Under its chief, Thomas MacDonald, the BPR became the Nation's premier road-building agency. Bureau engineers designed technologically advanced roads based on extensive research, testing and experience. The Bureau also developed close working relationships with state highway departments and other federal agencies. The BPR built few roads on its own, but tended to work with state engineers in the development of road programs. Since 1916, the agency had also been responsible for the construction of roads in the national forests. Mather directed his administrative assistant, A. E. Demaray, to investigate the arrangement in 1924. Demaray reported that the BPR was constructing all roads which cost more than $5,000 per mile, and the Forest Service continued to construct the less expensive roads. Forest Service personnel had told him they were generally pleased with the work of the BPR, but that occasionally conflicts had to be taken to the Secretary of Agriculture for resolution. Demaray was warned that "the Park Service should retain absolute and final control over standards on which park roads should be built."[261]

George Goodwin, Chief Engineer for the NPS, opposed the contract with the Bureau of Public Roads. He telegraphed Arno B. Cammerer with a strong protest

> FOR BUREAU PUBLIC ROADS CONSTRUCT PARK ROADS IT WOULD COST MORE AND THEIR IDEALS AND STANDARDS MUST NECESSARILY BE CHANGED TO COMPLY THOSE OF SERVICE. ALSO ALL WORK SHOULD BE CONCENTRATED UNDER ONE ENGINEER NOT LEFT UNDER DIFFERENT DISTRICT ENGINEERS AS AT PRESENT. . . OUR PROPOSED ROAD ORGANIZATION PRACTICALLY CONSISTS ONLY FEW ENGINEERS MOSTLY TEMPORARY AND PROBABLY LESS IN NUMBER THAN PUBLIC ROADS WOULD USE. STOP. GREATEST SAVINGS COULD BE EFFECTED BY SOME SIMPLE ENGINEERING ORGANIZATION TAKING OVER ALL PARK TECHNICAL WORK ESPECIALLY INCLUDING MAINTENANCE. . .[262]

Goodwin's protest may have been interpreted as an attempt to retain control for his office over road matters, and to expand the role of his Engineering Division. But Goodwin was not the only Park Service administrator opposing the agreement. Assistant Director Albright warned that the BPR, on account of its extremely high technical standards, would prove too costly. If the Park Service were to adopt these standards, the $7.5 million park road budget would

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[260] Lewis, Superintendent's Monthly Report, December 1925, 6; Albright, *Birth of the National Park Service*, 194.

[261] Steen, 19.

[262] Arno B. Cammerer, NPS, Washington, to George E. Goodwin, NPS Chief Engineer, Portland, 16 June 1924 (telegram); Goodwin to Mather, 17 June 1924 (telegram), National Archives, Record Group 70, Entry 22, Box 4, "Policy and General" file.

not build half as many miles as planned. He pointed out that, where the NPS standards retained curves to avoid unsightly cuts and fills, the BPR favored elimination of curves wherever possible. He also warned that the BPR was not accustomed to working with landscape engineers, citing as an example the cutting of a controversial right-of-way through the Calaveras Big Tree Grove and the destruction of the largest sugar pines in California. Albright agreed with Goodwin on the size of the engineering staff, remarking that the BPR would have to hire just as many engineers as the NPS to handle work in the parks, and that that agency had higher overhead costs. He added that Forest Service was now opposed to the BPR doing its own road work.[263] But Mather was apparently determined that the BPR would take on the park road program.

Albright urged Mather to place strict conditions on any agreement with the BPR. The Secretary of the Interior should be allowed to set road standards and expenditures, and should have an equal voice with the Secretary of Agriculture regarding overhead charges. The NPS Landscape Engineering Division should approve all surveys and specifications and supervise all landscape work. Parks with existing engineering forces should be permitted to continue operations. Albright assured Mather that if these conditions were met, he could support the Bureau of Public Roads, citing his respect for MacDonald and Hewes.[264]

The Park Service continued to negotiate with the Bureau of Public Roads. In a meeting at Spokane, Washington on 21 and 22 April 1925, NPS landscape engineer Thomas C. Vint and Glacier National Park Superintendent Charles J. Kraebel met with C. H. Purcell, J. A. Elliott and Frank Kittredge of the BPR. Although the meeting had been called to discuss the Going-to-the-Sun Road project in Glacier Park, the groups worked out a "Suggested Procedure for Cooperation Between the National Park Service and Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks." Under the proposed procedures, the Director of the NPS would ask the BPR Chief to assign a Bureau engineer to make a preliminary examination of a project. The Park Service would provide a staff landscape engineer and instruct the park superintendent to work with the engineer on the survey. Each of the three would file a report with the Director. If the Director decided to act on the project, he would ask the BPR Chief for a final location survey. The BPR district engineer and the NPS landscape engineer would then draw up plans and specifications for the road. The Park Superintendent had to sign all plans as well. The plans were then submitted to the Director. After approval, the park superintendent could advertise the contracts. The BPR district engineer and the park superintendent would then agree on the bids and forward their recommendations to the Director. He would notify the BPR Chief of the approval of the bid. The BPR would assign a resident engineer, who would report monthly to his supervisor, who would forward a copy to the park superintendent. The NPS landscape engineer would monitor ongoing work. Upon completion of a project, the BPR would

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263 Culpin, 137.

264 *Ibid.*.

turn it over to the park superintendent for acceptance. This system gave the Park Service ultimate control over road design; the Interior Department also controlled all monies for park roads, not the Bureau of Public Roads.[265]

By April, Albright had changed his mind in favor of the agreement. He conceded that it would be easier to obtain road funds with the BPR in charge of the works, and commended the BPR for having the "best road engineers available to the Federal Government." He also thought it was time to replace Chief Civil Engineer George Goodwin, who he felt was "out of harmony with some of Director Mather's policies." Albright believed (incorrectly, as it turned out) that the BPR would soon be transferred to Interior Department, anyway.

Mather asked Goodwin to draw up new standards for park roads in line with the roads being built by the BPR. The engineer protested that it would be impossible to build park roads to the new standards under the Service's budget. Goodwin was then relieved of his duties by Secretary of the Interior Hubert Work on 1 July 1925. Goodwin's assistant, Bert H. Burrell, became Acting Chief Engineer. Mather then asked the BPR's Hewes to help the NPS develop new road standards. Kittredge's work on the Logan Pass survey had impressed Albright, and he suggested to Mather that Kittredge be asked to work out a program for all the major roads in the parks based on the new road standards. Mather agreed to hire him permanently, and Kittredge became chief engineer of the National Park Service in 1927. The office was relocated from Yellowstone to San Francisco.[266] In his new capacity, Kittredge was closely affiliated with the construction of the modern road system in Yosemite National Park. He served as park superintendent from 1941 to 1947, and as director of the NPS Region IV office in San Francisco.

The Park Service continued to plan the relocation of the Big Oak Flat Road between the Valley floor and Crane Flat. The road would be moved to the sunny south slope, allowing the road to open earlier in the spring, and shortening the distance between the two points. Kittredge arrived in Yosemite in August 1926 to oversee the location survey for the new route.[267]

The NPS landscape architecture division worked closely with the BPR to ensure that the new road projects did not adversely affect park landscapes. In the early years, this relationship was described as

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[265] *Ibid.*, 19-20.

[266] Albright, *Birth of the National Park Service*, 194-95; Culpin, 142-43. Relocation would place the engineering office in San Francisco along with the Landscape Division and other western regional NPS offices, as well as the district office of the Bureau of Public Roads.

[267] Old Big Oak Flat Road National Register nomination, Sec. 8 p. 2; Leavitt, Acting Superintendent's Monthly Report, August 1926, 2.

> a function of landscape architecture rather than engineering. The competence of Bureau engineers has seldom been subject to question; on the other hand, Service concern in road design and in road construction practices has been with fitting these "necessary evils" into the landscape with the least damage, unobtrusively, softening the lines of demarcation between road construction and the bordering undisturbed landscape.

This called for the special skills of the landscape architect. The flattening and rounding of cut slopes, the provision of natural-looking vista clearings, and the wedding of the road margins with the adjacent land through careful planting of native vegetation have given a special and widely-copied character to park roads.[268] These features are particularly characteristic of the roads constructed in Yosemite National Park during this period. It should be noted, however, that such practices reflect a manipulation of the environment, and not preservation or landscape restoration.

The first projects conducted by the BPR and the NPS involved roads on the Valley floor and the El Portal Road. The North Valley road was abandoned in 1925 at the east end where the Park had decided to build the grand Ahwahnee Hotel. Traffic was to be carried by the Middle Road, on which two new bridges [Sugar Pine Bridge (Kenneyville No. 1), HAER No. CA-99, and Ahwahnee Bridge (Kenneyville No. 2), HAER NO. CA-100] would be built to carry the road across the Merced south of the new hotel. A new access road to the hotel site was under construction by July.[269]

The BPR took over supervision of the final phases of the reconstruction of the El Portal Road in 1925. Even with the agency's assistance, the road was not completed until September 1926, two months after the state had opened the All-Year Highway to El Portal. In July 1926, the old Arch Rock entrance station was removed and a new facility, with ranger station/residence and checking kiosks, was constructed.[270]

The completion of the All-Year Highway in 1926 resulted in a vast increase in park visitation. The new road provided a direct road link with Merced, a distance of 87 miles, as opposed to 93 miles over the primitive Coulterville Road. The All-Year Highway had to climb only 4,000', as opposed to 6,050' on the Wawona Road and 7,250' on the Big Oak Flat Road. In 1924, only 146,070 travelers entered Yosemite. By 1927, this number had more than doubled to 490,430. At Arch Rock, a 51 percent increase in motor cars was recorded in 1927, with 3,202 cars arriving in October as opposed to 2,116 during the same month in 1926. More than 90 percent of visitors now arrived by private automobile. The park's road signs were redesigned to the National Park

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[268] Quoted in Greene, II:553.

[269] Lewis, Superintendent's Monthly Report, July 1925, 10.

[270] Idem, Superintendent's Monthly Report, August 1925, 10-12.

Service standard in the mid 1920s. In 1931, signs to mark various elevations were installed on park roads.[271]

The opening of the All-Year Highway was a major blow to the fortunes of the Yosemite Valley Rail Road. In 1924, Superintendent Lewis wrote Albright, urging that no franchise be granted for an auto stage line to operate over the new road, lest the railway be adversely affected. This request proved of little consequence, and the rail line's business peaked in 1925. Over the next three years, traffic over the line declined 78 percent. The Yosemite Lumber Company, the railway's major freight account, suspended operations in 1927. In 1928, the trains carried an average of only 4.4 passengers a day.[272]

By the end of 1927, all of the main roads in the Valley had been paved under BPR supervision. The Park Service experimented with a new method of oiling the All-Year Highway. The "California Method" involved spraying 2 1/2 gallons of No. 7 Gilmore oil on each square yard of the crushed rock surface. The system was cheaper than paving the roads with concrete, but the Park Service concluded that the system would best be utilized for parking areas, campgrounds, and other areas subject to lighter use. In the Old Village, 325' of curbing was laid to protect the flora from vehicles.[273]

In July 1927, Mather met with District Engineer Bonner of the National Forest Service to discuss the proposed plan to upgrade the Wawona Road. Mather told Bonner that the Park Service did not expect funding for the road reconstruction project for another four or five years. Since the road needed some work, he agreed it would be desirable to spend $50,000 for maintenance for and minor improvements. However, he was committed to a new Wawona Road.[274]

A series of new bridges were built on the Valley floor. These were designed by the Bureau of Public Roads, which also supervised their construction. The bridges were modern reinforced concrete structures, faced with native granite so as to appear indigenous to the landscape. The arch bridges were

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[271] "Tourist Travel to Yosemite Valley," 1; James V. Lloyd, Interpretive Ranger, to Leavitt, November 1927, attached to Leavitt, Acting Superintendent's Monthly Report, November 1927; Fitzsimmons, 7; Lewis, Superintendent's Monthly Report, December 1925, 11; Thomson, Superintendent's Monthly Report, April 1931, 5.

[272] Lewis to Albright, January 1924, attached to Leavitt, Acting Superintendent's Monthly Report, January 1924; Leavitt, Acting Superintendent's Monthly Report, January 1928, 8-9; Drury, 360.

[273] Lewis, Superintendent's Monthly Report, March 1927, 3; Superintendent's Monthly Report, May 1927, 2. YNP Historian Jim Snyder indicates that the process was also tried on some park trails.

[274] Lewis, Superintendent's Monthly Report, July 1927, 2; Leavitt, Acting Superintendent's Monthly Report, October 1927

constructed by erecting a stone vault, into which the concrete was poured. The bridge was then faced in cut stone and filled with earth before paving. The use of native materials made the bridges textbook examples of the "rustic style." Six new bridges were constructed in this manner. These included replacements for Pohono, Clark's and Happy Isles bridges over the Merced River and the Tenaya Creek Bridge, and the two new spans across the Merced south of Kenneyville, on which site the grand new Ahwahnee Hotel was built.

The six bridges were designed by George D. Whittle, BPR Senior Highway Engineer for the San Francisco office, with the assistance of the NPS Landscape Engineering Division. The designs were reviewed by a panel from the National Commission of Fine Arts. Most of the bridges were designed with 27' widths, which was thought adequate for two lanes of traffic. Whittle offered his thoughts on the bridge design in an article he published in *Western Construction News* in 1928. He stated that "two considerations were uppermost, namely, that they take care of all classes of traffic to which they would be subjected, and that they be in harmony with the rugged natural surroundings."

The Bureau of Public Roads provided the National Park Service with a number of general bridge designs which might be built, including variations of stone-faced arch bridges, steel trusses, exposed concrete bridges, and girder and suspension bridges. The NPS Landscape Engineering Division chose a series of reinforced concrete structures faced in native granite, making changes to the plans to adapt them to the specific sites. The division also prepared sheets of architectural details for the final construction drawings.[275]

Nathan W. Morgan, NPS Office Engineer, visited Yosemite in October 1925 to inspect the new bridge sites. Morgan recommended stone arch bridges for most sites, but suggested that a suspension bridge, supported by "rustic" or stone-faced towers, should be employed at what is now Sugar Pine Bridge. This was rejected for a long stone arch bridge, favored by superintendent Lewis. Morgan emphasized designing bridges to fit their surroundings.

> I do not favor the use of cement finished structures in the Park. I think [they] would ruin the appearance of beautiful stream crossings. If it has to be girders, by all means use stone facing. . .and <u>curved</u> stone wing walls. . . I advise curved wings in place of straight and personally I favor use of a square of round post on the ends of same. I find that the <u>plain lines</u> and <u>plain surfaces</u> that are so strongly urged, are not used at all in this Park and I believe would look out of place to put one in now. On the other hand, two or three bridges here are on the other extreme, (which is worse) too much "dressed up." I like the Yosemite [Creek] bridge very much. I like the coping along the

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[275] Pavlik, (thesis), 47-48.

handrail, the curved wings and the square end posts and the slight offset in the arch ring masonry.[276]

The San Francisco construction firm Rocca and Caletti built five of the bridges--Kenneyville Bridges #1 and #2 (Sugar Pine and Ahwahnee), Tenaya Creek, Clark's and Pohono; another similar bridge at Happy Isles was built under a separate contract by Schuler and McDonald a year later. Elsewhere in the park, new bridges were constructed over Cascade Creek on the Big Oak Flat Road and over Yosemite Creek and the Middle Fork of the Tuolumne River on the Tioga Road.[277]

A new inter-valley bridle path was planned at about this time, and two of the new bridges, Clark's and Happy Isles, were designed to include arched equestrian underpasses. This design would eliminate grade crossings with the roads at these points.[278] The new Stoneman Bridge, constructed in 1932, also incorporated two equestrian tunnels.

Rocca and Caletti paid little attention to protecting the fragile Valley landscape around the bridge sites. The acting park superintendent, E. P. Leavitt, admonished the company for failing to adhere to the park's standards for preserving landscape values when the company cut trees without permission, quarried sand and stone from unauthorized sites, and used excessive amounts of dynamite, causing irreparable scarring. Leavitt claimed that park officials "pleaded, scolded and threatened in an effort to control, but without result." Leavitt was forced to order the contractors arrested on charges of desecrating park property. This evidently got the firm's attention, as no more incidents were recorded, and the bridges were completed in a satisfactory manner.[279]

The stone guard rail along the El Portal Road was extended in 1927 and 1928. The hand-laid granite wall [HAER No. CA-107] was placed by the City Improvement Company of San Francisco. In October, 2000' was laid, and by the end of the year more than two miles was complete. The wall was finished by the early spring, and the project was accepted by the Park Service on 17 March 1928. The gutters were of cobblestones, also hand-laid. These were eventually paved over, in part to allow for easier cleaning or "mucking. The road

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[276] Nathan W. Morgan, NPS Office Engineer, Yosemite National Park, to Thomas C. Vint, NPS Landscape Engineering Division, 9 October 1925, National Archives, Record Group 79, Entry 22, Box 20.

[277] Greene, II:560.

[278] Leavitt, Acting Superintendent's Monthly Report, January 1928, 2.

[279] Pavlik, (thesis), 48-49.

at the Arch Rock entrance station was widened in 1928 to accommodate four traffic lanes, and the two checking kiosks were moved down the road.[280]

In October 1927, Mather told a meeting at Merced of civil officials from the region that work would soon begin on the relocation of the Big Oak Flat Road within the park, and hinted that the road might be rebuilt towards Carl Inn, west of the park's boundary. The plans were subject to the park acquiring the necessary rights-of-way through a timber exchange with the Yosemite Lumber Company. The land swap was criticized by some, but Mather adamantly declared that the Park Service "had no desire to route a highway through a desert." The "Big Oak Flat Highway Association" was organized at the meeting, for the purpose of promoting and supporting the proposed road.[281]

The Sierra Club continued to support improvements to park roads. In 1927, they advocated more roads than even Mather had envisioned, including routes along both rims of the Valley with spurs to scenic viewpoints atop El Capitan, Taft Point, and Yosemite Point, as well as the earlier proposed road up the Tenaya Creek canyon towards Tuolumne Meadows.[282]

A 22 percent gain in tourist visitation was registered in 1927. Most of the travelers arrived by car. The opening of the All-Year Highway enabled motorists to enter the park in the winter season, and many of the additional visitors used the park for winter sports. Winter activities were actively promoted. The Yosemite Park & Curry Company [YP&CC], which hoped to attract winter guests for its new Ahwahnee Hotel and other concessions, engaged a Swiss winter sports promoter, Ernst des Baillets, to develop skiing, skating, and other winter sports in the park. These activities ultimately grew to include figure skating, ice hockey, dog-teaming and ice carnivals. A ski touring school was established in 1928. In 1929, the park applied to host the 1932 Winter Olympics, but was rejected in favor of Lake Placid, New York.[283] The National Park Service supported these programs; indeed, Mather and the NPS had prevailed upon the Yosemite Park & Curry Company to build the lavish Ahwahnee. The YP&CC, however, was initially concerned that it would never be able to fill the rooms.

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[280] Leavitt, Acting Superintendent's Monthly Report, October 1927, 8-9; Acting Superintendent's Monthly Report, November 1927, 7; Acting Superintendent's Monthly Report, December 1927, 4; Acting Superintendent's Monthly Report, March 1928, 5; National Register of Historic Places nomination for Arch Rock Entrance Station and Retaining Walls, Sec. 8, pp. 1-2.

[281] Leavitt, Acting Superintendent's Monthly Report, October 1927, 17; "Problem Will Be Worked Out, Says Albright," *Stockton Record*, 26 May 1928.

[282] Cohen, 47.

[283] Leavitt, Acting Superintendent's Monthly Report, January 1928, 8; Greene, II: 663, 670.

Early in 1928, Mather unveiled plans for the reconstruction of the Wawona Road. He suggested the project would make the Mariposa Big Tree Grove accessible year-round, and would also help promote additional winter sports and camping in areas away from the congested Valley floor. Engineer Henry S. Tolen of the BPR's San Francisco office came to Yosemite to survey a new right-of-way. Tolen reported that the steep grades from Grouse Creek up to Inspiration Point and back down to the Valley were too steep for contemporary traffic requirements. He recommended that a new, lower route be established by constructing a new road along the bluffs below Turtleback Dome.[284]

The Yosemite National Park Board of Expert Advisors was established in July 1928 to review developments within the park in order to preserve its scenic and natural resources. The three original members were chosen based on their contributions to landscape planning, science, and the national parks. They were Duncan McDuffie, president of the Berkeley brokerage firm of Mason-McDuffie and originator of the idea for the board; Dr. John P. Buwalda, a geologist from the California Institute of Technology, and Frederick Law Olmsted, Jr.. Olmsted, like his father, was a prominent landscape architect and while with the Commission on Fine Arts had contributed the mission statement for the Organic Act. The Board of Expert Advisors carefully considered all issues which might effect the park landscape, and devoted special concern to the design of new roads and related structures.[285]

The NPS Landscape Architecture Division in 1928 hired a staff of new landscape architects who would reside in the parks in the summer and complete plans and drawings at the San Francisco office over the winter. Landscape architect John B. Wosky was assigned to the Yosemite park staff, and immediately became immersed in the review of road planning and construction. Among his first projects was the review of ongoing work on the El Portal Road. He also designed the new ranger station and entrance at Tioga Pass in 1931,[286] as well as other road and roadside structures. Wosky reviewed the location survey for the new route for the Wawona Road, and served for a brief period as acting superintendent of the park.

The location of the new routing for the Wawona Road was given tremendous attention by the NPS landscape architecture division and by the Bureau of Public Roads. The new road was to be built to modern standards with an easier grade than the old road route, and designed to have a minimum impact on the

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284 "Information on the Construction of the Wawona Road, Based on Statements from Mr. Henry S. Tolen," typed MSS, 5 April 1948, 2-3, Yosemite Research Library; Johnston, I:45.

285 Runte, *Yosemite: The Embattled Wilderness*, 154. Runte suggests that the appointment of the Board of Advisors might have been a characteristic attempt on Mather's part to turn potential critics of policy into "collaborators."

286 McClelland, 4; Tweed *et al.*, 49, 57; Leavitt, Acting Superintendent's Monthly Report, January 1928, 6.

park landscape, particularly in the area of the exposed granite cliffs where the road would begin its descent into the Valley. Here, BPR Engineer Tolen recommended a tunnel through a northern flank of Turtleback Dome. Some, including Assistant Director Albright, urged that the road continue to cross the dome in order to preserve the vista at Inspiration Point. Frank A. Kittredge outlined a proposed plan that would have carried the road up from Grouse Creek to reach Inspiration Point. At one point Tolen had twenty-seven men going over the possible routes at Turtleback Dome.[287] The alternatives, including a higher tunnel plan, were rejected in favor of the long tunnel.

Construction of the new Wawona Road began in 1928 with the clearing of a right-of-way near Wawona. This work was done mostly with hand labor by day crews of axmen, fellers and buckers based at Camp A. E. Wood, near Wawona. Felled trees and brush was burned in the cleared right-of-way. T. E. Connelly of San Francisco was awarded the contract for the construction of the section between Alder Creek and Camp Hoyle, and the section between Eleven Mile Station and Alder Creek was awarded to the W. A. Bechtel Company. The BPR established a project field office at Camp Hoyle in October.[288]

Albright continued to express concern over the impact of park roads. In 1929, he asked landscape division chief Thomas Vint to draw up a budget for a park naturalization plan, including a special appropriation for roadside cleanup, which he defined as the

> restoration of natural conditions along highways by cleanup and repair of construction damage; covering by planting of cut slopes; screening undesirable views and vista clearing for good ones; planting out old roadways and borrow pits; and may include roadside structures as fountains, parking area development, etc.[289]

By this time, cars were being driven into and across the Valley meadows, damaging the fragile terrain. The new Board of Expert Advisors found this ludicrous, and in June 1929 the Park Service inaugurated its so-called "moral

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[287] Frank A. Kittredge, NPS Chief Engineer, to F. A. Mathes, Chief, U.S. Coast and Geodetic Survey, 3 April 1929; "Information on the Construction of the Wawona Road," 5.

[288] Completion Report 60, Clearing of Wawona Road, April 193, Yosemite National Park Maintenance and Engineering Office; Leavitt, Acting Superintendent's Monthly Report, August 1928, 3; Acting Superintendent's Monthly Report, October 1928, 5; Acting Superintendent's Monthly Report, November 1928, 4; Bureau of Public Roads, Location Survey Report on the Wawona Road, Camp Hoyle to Turtleback Dome, 22 March 1932, 2; Tolen, Final Construction Report, Wawona Road, Grading, Camp Hoyle-Alder Creek, 26 February 1930, 2; Idem, Final Construction Report, Wawona Road, Alder Creek-Eleven Mile Station, n.d., 3-4.

[289] Quoted in McClelland, 5.

ditches" program. Work crews dug ditches across the road margins to keep cars out of the meadows. One mile of the Valley road system was ditched in April 1931; another 6,654' was ditched in May. In 1930, an experiment was tried with placing large boulders on the roadsides, but Superintendent Charles G. Thomson found that these were visible from Glacier Point and presented an "unsightly appearance" and had them removed.[290] (However, both practices were again being followed in the summer of 1991.)

In 1929, Dr. Donald Tressider of the Yosemite Park and Curry Company proposed a cable car system to convey visitors from the Valley floor near Camp Curry to Glacier Point, where the company's Glacier Point Hotel was losing money. The company thought that a tramway would allow winter sports development at Sentinel Dome and would draw more visitors to the hotel. Engineer Richard Ernst from the Adolph Bleichart Company (Bleichart-Zuigg Rope Way Company) of Austria came to Yosemite in February 1929 and investigated routes for two counter-balanced cableways, one from Happy Isles to Glacier Point and another from the Valley up the Tenaya Canyon to Tenaya Lake. The plans were submitted to the Department of the Interior on 20 October 1930. The proposed Glacier Point system would be carried on three tower supports, which Ernst assured that "in a place like Yosemite, these would be inconspicuous." Two counter-balanced cable cars would carry 280 passengers an hour in each direction; individual trips would take only eight minutes. The cost was estimated at $381,000. The Board of Expert Advisors saw some merit in the Glacier Point proposal, as it would alleviate some of the congestion on park roads. But the visibility of the tramway was an overwhelming concern, and they feared visitors would find the tram an attraction in itself, and a distraction from the great natural landscape. The park administration, NPS Director Albright, and the Sierra Club opposed the project. The Board of Advisors finally nixed the proposal in order to preserve the Valley's integrity, and with the coming of the Great Depression, the Curry Company ceased to lobby for its implementation.[291] The proposal surfaced again in the late 1960s and early 1970s, but was again rejected.

In summer 1929, park maintenance crews oiled 66 miles of park roads in an attempt to reduce the dust problem which persisted on the unpaved roads. The park superintendent reported that the work induced "profound satisfaction among park visitors, especially those expecting the intolerable dust previously encountered." Some trails were oiled too, until tourists began tracking oil in on the Persian rugs at the Ahwahnee Hotel. By the end of the year, the park had 29 miles of paved roads, and 15 miles with an oiled surface. The Big Oak Flat Road was widened between the park boundary and the Tuolumne Grove at a cost of $27,675. The Happy Isles Road was graded and

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[290] Runte, *Yosemite: The Embattled Wilderness*, 156; Thomson, Superintendent's Monthly Report, June 1929, 18; Superintendent's Monthly Report, April 1931, 13; Superintendent's Monthly Report, May 1931, 3; Pavlik, (thesis), 49-50.

[291] Leavitt, Acting Superintendent's Monthly Report, February 1929, 6; Johnston, II:38, 40; Runte, *Yosemite: The Embattled Wilderness*, 157.

paved and its new bridge placed in service. Parking requirements continued to increase. The Happy Isles and Mirror Lake parking lots were expanded in 1929, and a new lot was built at the base of Bridalveil Fall in 1935.[292]

After being absent from the region for more than a decade, a new toll road was proposed in January 1929. E. H. Zion asked for legislative approval to build a turnpike road from LaGrange, California to Briceburg, where a connection with the All-Year Highway would be made. The new road would shorten the driving distance from San Francisco to Yosemite by 30 miles. Zion estimated the cost of construction at $1.5 to $2 million. His franchise was granted in March, but by this point park officials were skeptical about the road's chances for completion. Zion's plans had been vague, and he had not hinted at any source of capital except the sale of stock in the venture.[293] The road was never built.

Preliminary reconstruction of the Wawona Road continued in 1929. The T. E. Connelly Company finished the clearing of right-of-way between Alder Creek and Camp Hoyle. In September, contracts for the 11-mile section between Eleven Mile Station and Grouse Creek were awarded to the Welch & Murdock Company. In November 27, the Contoules Construction Company of San Francisco was awarded the contract for the 2.19-mile segment of the road between Grouse Creek and Turtleback Dome. By December, the section between Alder Creek and Eleven Mile Creek was complete and open to traffic.[294]

One of the contractors on the Wawona Road, Contoules Construction Company, proved troublesome to manage. The Park Service denied the company permission to build a "tote road" from the old road at Inspiration Point down to the new road section on Turtleback Dome because agency officials feared the road would make an awful scar. In July, the company was warned that it was not adequately protecting trees and vegetation, was using excessive amounts of blasting powder, and was sidecasting materials onto the slopes below the road

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[292] Unrau, 6; Information provided by Yosemite Park Historian Jim Snyder; Lloyd, "Yosemite Park Roads Much Improved in '29,'" *Oakland Tribune*, 1 December 1929, 2-0; Arthur E. Cowell, Associate Engineer, Bureau of Public Roads, "Report of Construction Activities, 1929," Typed MSS, 21 February 1930, 4, Yosemite National Park Maintenance and Engineering Office; Fitzsimmons, 61.

[293] Leavitt, Acting Superintendent's Monthly Report, January 1929, 7; Thomson, Superintendent's Monthly Report, March 1929, 7.

[294] Thomson, Superintendent's Monthly Report, April 1929, 6-7; Superintendent's Monthly Report, May 1929, 15, 19; Superintendent's Monthly Report, September 1929; Superintendent's Monthly Report, November 1929, 6, 11, 23; Superintendent's Monthly Report, April 1930, 6; Tolen, Final Construction Report, Grading of Wawona Road, Eleven Mile-Grouse Creek (1928-29), 26 February 1930, 2; Idem, Final Construction Report, Camp Hoyle-Alder Creek, 2; T. M. Roach, Final Construction Report, Wawona Road Grading, Grouse Creek-Turtleback Dome, 17 February 1932, 3.

in violation of its contract. The company persisted in these practices, and on 24 June the company was shut down until it brought in trucks to take out the blasted materials. On 21 July Engineer Tolen shut down their operations again for excessive blasting. After two days, the company agreed to adhere to its contractual agreements and the work resumed.[295] Similar problems were encountered elsewhere on the road. Indeed, some sections were apparently under-engineered, and through the 1980s park maintenance crews were forced to deal with unstable road cuts, slumping shoulders, inadequate culverts and drains, and insufficiently compacted fill.

The El Capitan Bridge failed on the night of 28 April 1930 when the upper member of its wooden west truss collapsed. The Park Service decided to relocate the replacement bridge and a new crossover road a half mile upriver to the east. Although the dilapidated bridge was removed in June,[296] it would be three more years before its replacement was placed in service.

A new boundary marker was erected at the El Portal boundary on the All Year Highway in November 1930. The granite rubble pylon, which supported an illuminated sheet metal sign, was the gift of James H. Schwabacher of Philadelphia, a friend of Director Mather and a benefactor of the park. The old stone pillars that originally marked the entrance were removed. A new entrance station was established at the park line on the Big Oak Flat Road; the site had formerly been occupied by a tow camp operated by the California State Highway Association.[297]

Goerig & Dahlberg of Seattle, Washington was chosen as contractor for final section of the Wawona road between Turtleback Dome and the Yosemite Valley. This contract included construction of the Wawona Tunnel [HAER No. CA-105] and the approaches to either side. The National Park Service and the Bureau of Public Roads conducted two years of intensive studies concerning the effect the new road would have on the park landscape. Superintendent Thomson determined that the preliminary road realignment design and some proposed alternatives were unacceptable. He claimed a road benched out of the palisades would have produced an "irremediable scar, ruinous to the landscape." An underpass in the region of Bridalveil Fall was rejected, as was a series of switchbacks down the dome; these would have caused "an appalling disfigurement." The plan finally adopted called for a tunnel through the mountainside below Inspiration Point. By keeping the road's line high, scarring on Turtleback Dome was reduced, and the road's distance was shortened by nearly a

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295 Thomson, Superintendent's Monthly Report, July 1930, 8; Roach, Final Construction Report, Grouse Creek-Turtleback Dome, 3, 6.

296 Thomson, Superintendent's Monthly Report, April 1930, 16; Superintendent's Monthly Report, June 1930, 7; Idem, "Final Report #74, El Capitan Bridge Removal," 1.

297 Thomson, Superintendent's Monthly Report, November 1930, 4; Arch Rock National Register nomination, Sec. 8 p. 2; Greene, II:803.

mile. This decision was reached with the consensus of Park Service management, NPS landscape architects, and the Board of Expert Advisors.[298]

The reconstruction of the Wawona Road necessitated construction of a new bridge to replace the wooden covered bridge over the South Fork of the Merced River at Wawona. The Park Service awarded the contract for construction of the new structure [HAER No. CA-104] to the George Pollock Company, which began work on 9 May 1931. The bridge was completed in October at a total cost of $30,962.34. The three-span steel I-beam bridge was faced with logs and had log guard rails.[299] The use of the materials reflected the prevailing "rustic style" of architecture used on other park bridges and structures. This bridge remains in use, but its original log trim has been replaced by cast concrete stringers bolted to the I-beams, and by a concrete guard rail.

Portions of the El Portal Road were widened in 1931, and 46 new turnouts were constructed. Extensive new sections of dry-laid stone retaining wall were built along the river's edge at this time. Special attention was given to landscape concerns in order to lessen the impact of road work on the magnificent river gorge.[300]

Replacements for the Stoneman and El Capitan bridges were designed in 1931 by the San Francisco office of the Bureau of Public Roads. The National Park Service landscape division assisted by preparing detail sheets for the stone work and other design elements. Contracts for the two structures were awarded in November 1931 to Sullivan & Sullivan of Oakland, California. The contractors established their construction camp at the base of Bridalveil Fall and opened a new quarry near the power house dam to obtain stone for the projects. Sullivan & Sullivan proved inexperienced with bridge work, and the construction was severely delayed. In February 1932, BPR engineer Tom Roach terminated their contract, with work only 6 percent complete. The National Surety Company, which had issued the construction bond, engaged the Portland, Oregon firm Kuckenberg-Wittman & Co. to finish the two bridges. The Stoneman Bridge was completed at the end of 1932, and the El Capitan Bridge in January

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[298] National Register of Historic Places nomination for the Wawona Tunnel, prepared by Linda Wedel Greene, March 1989, Sec. 7, p. 3; Bureau of Public Roads, Location Survey Route for the Wawona Road, Camp Hoyle-Turtleback Dome, 22 March 1932, 1-2; Idem, Location Survey Route for the Wawona Road, Turtleback Dome-Valley Floor, 14 April 1932, 2, 3-4.

[299] Final Completion Report, S.F. Merced Bridge, Yosemite Project 2-B2, 1 April 1932, 1, 4, 10; Thomson, Superintendent's Monthly Report, October 1931, 8.

[300] Arch Rock Entrance National Register nomination, Sec. 8 p. 2.

1933. The new El Capitan crossover road was paved in the spring and opened to traffic on 27 May.[301]

The new Stoneman Bridge [HAER No. CA-95] was a semi-elliptical arched concrete structure, faced in granite like most of the other Valley bridges. Like the Happy Isles and Clark's bridges, it featured two equestrian tunnels so as to enable the bridle path to avoid a grade crossing. The new El Capitan Bridge [HAER No. CA-101] marked a departure from the stone arch designs used on all the new Valley bridges in the 1920s. Superintendent Thomson, felt that more variety was needed for bridges in the park, and the new structure was designed to appear to be of log construction. The steel and concrete structure rested on rubble stone abutments, constructed in part from boulders taken from the river bed, and had large 42" diameter redwood log stringers cladding the sides and supporting the bridle path/sidewalks above.

The Glacier Point Road received better maintenance in the early 1930s. Each year, park crews graded the road, cleared away rockslides and fallen debris, and applied surfacing materials, followed by a coat of light fuel oil to keep down the dust. Superintendent Thomson estimated that the improvements would reduce the cost of annual maintenance by 75 percent. By this time, the Park Service had determined that the road had to be rebuilt. Over the summer season, more than 100,000 tourists were visiting Glacier Point, but 90 percent were hikers who climbed the Four-Mile Trail from Yosemite Valley. Only about 12,000 automobiles made the trip from the Wawona Road. Many motorists were discouraged by the condition of the rough mountain road to the famous vista. The existing route was little better than a one-way track, with sharp switchbacks and a 20 percent grade in places. The road, which varied from 10'-15' in width, ran much of the distance through deep cuts, affording poor views and exposure to sunlight. Planning for a new road began in 1930.[302]

The Glacier Point Road location survey was run in 1930 and 1931 by Harry S. Tolen, Resident Engineer for the Bureau of Public Roads, and Karl E. Nissi, BPR Senior Engineering Inspection Foreman. They were assisted by superintendent Thomson and resident landscape engineer John B. Wosky. They had hoped to located the new road on a line along Alder Creek up from Chinquapin, but this went through a recently logged area, and the line was rejected. The route which was ultimately selected comprised 22.3 miles from Chinquapin Flat to Glacier Point, with an 8.75 mile loop road from Bridalveil Creek to

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301 A. W. Schimberg, Engineer, Bureau of Public Roads. "Final Construction Report, Stoneman and El Capitan Bridges, Yosemite National Park, Mariposa County, California," 11 May 1933, 3-6; Thomson, Superintendent's Monthly Report, November 1931, 8; Superintendent's Monthly Report, December 1931, 7; Superintendent's Monthly Report, December 1932, 9; Superintendent's Monthly Report, May 1933, 11.

302 Unrau, 6-7.

Sentinel Dome, Glacier Point and Mono Meadow. Plans for the new road were prepared by the Bureau of Public Roads in the summer of 1931.[303]

Survey crews also scouted a new route for the Tioga Road in 1931. Potential locations were inspected by Thomson, Wosky, and engineer H. S. Alderton of the Bureau of Public Roads, following the procedures set in April 1925. Among the alternatives was a so-called "High-Line" route, which would have carried the route north of Mount Hoffman through the Ten Lakes region and down the Grand Canyon of the Tuolumne River. Engineers Tolen and Roach of the BPR inspected the "High Line" route in September 1933.[304] The route was rejected in favor of a road along Tenaya Lake and over the summit to Yosemite Creek.

To provide a fitting gateway to the park on the new road, a new ranger station and park entrance were constructed at Tioga Pass in 1931. Wosky's design epitomized the "rustic style." The ranger station, which remains in use, was characterized by its boulder masonry construction and irregular roof with "whittled" rafter ends. Simple stone pylons to mark the entry were added in 1933. They remain, but their pivoting wooden gates are no longer extant.[305]

The 4,230' Wawona Tunnel was largely complete by January of 1932, when Superintendent Thomson drove the first car through the new bore. Work on the portals, ventilation adits and other features took another year and a half. The total cost of the structure was $847,500. The Wawona Tunnel was formally dedicated on 10 June 1933, with a "Parade of Progress" commemorating the history of transportation in Yosemite. The procession through the tunnel included local Indians on foot, prospectors with burros, early tourist parties on horseback, lumber wagons, stage coaches, motor stages and the latest automobiles.[306] Superintendent Thomson emphasized the significance of the engineering feat:

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[303] Roach, Project Yosemite S-A2, Location and Design Report, Bridalveil Creek-Sentinel Dome Saddle, Glacier Point Road, 10 March 1933, 2-5; Karl E. Nissi, Bureau of Public Roads, Location Survey Report, Wawona Road-Glacier point, 31 August 1931, 1-3; Roach, Final Construction Report, Project Yosemite S-A1-GR, Chinquapin-Bridalveil Creek Section, Glacier Point Road, 3 April 1934, 4.

[304] Thomson, Superintendent's Monthly Report, June 1931, 2; Superintendent's Monthly Report, September 1933, 2.

[305] Pavlik, (*California History*), 192; Thomson, Superintendent's Monthly Report, October 1931, 6. The south pylon was later relocated a few feet south to allow for road widening.

[306] Johnston, 45-46; National Park Service program brochure, "Dedication, Yosemite--Wawona Tunnel, Pageant of Progress," 10 June 1933; Press release, "Dedication--Pageant of Progress," 7 June 1933. Yosemite Research Library.

> With the early completion of the Wawona Road, a new era dawns in the southern approach to Yosemite, and the improvement is being accomplished by means of this tunnel, which although spectacular because of the boldness of its conception, was the only engineering solution that guarantees the preservation of the priceless palisades, and the full protection of those incalculable values for which the National Park Service is responsible.[307]

The remaining work on the Wawona Road, including a branch section between Wawona and the Mariposa Big Tree Grove, was complete by the end of the year. The new $2 million road was immediately popular with park motorists. The *San Francisco Chronicle* applauded the new route, saying "Motoring to the Yosemite Valley has become a new and thrilling experience." The old Wawona Road remained open from Bridalveil Fall to Inspiration Point until it was heavily damaged by the flood of 1937, at which point it became a pack trail.[308]

The Wawona Basin was added to the park in 1932, following a series of land and timber exchanges with adjoining forest land owners and the U.S. Forest Service for parts of the roads right-of-way and a protected buffer through some virgin timber.[309] As a result, the old south entrance station was relocated from Alder Creek to Four Mile Station, the junction of the Wawona and Mariposa Grove roads.

Construction then began on the new Glacier Point Road. In 1932 and 1933, the section of the road between Chinquapin Flat and Bridalveil Creek was graded, and paved in 1933 and 1934. The roadway for this section was built to meet the 16′ wide Forest Highways Standard; total shoulder-to-shoulder width was 22′. From Bridalveil Creek to Glacier Point, the total width was to be 18′. The Bureau of Public Roads complained that this section was being built "far below standards," but should be adequate for several years. The new road would be built on compacted fill, and the steep cuts were to be daylighted. The section between Sentinel Dome Saddle and Glacier Point was graded in 1934 and paved the next year. At Chinquapin Flat, a new ranger station, a service station/lunchroom, and comfort station were built in 1934. New parking areas were constructed at Glacier Point and at Washburn Point. The reconstruction of the road was complete by 1936.[310]

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[307] Quoted in Johnston, I:46.

[308] *Ibid.*; Wawona Tunnel National Register nomination, Sec. 7, p. 1; Greene, II:784. The road passes through designated wilderness; however, the road was reopened as a fire road in 1990 and will be reopened in 1992 for the removal of the old phone cable to Wawona.

[309] Pavlik, (thesis), 98.

[310] Roach, Final Construction Report, Day Labor Construction, Glacier Point Road Section A3, 13 May 1936, 3-11, *passim;* Greene, II:825.

As part of the Glacier Point Road project, a new bridge was constructed over Bridalveil Creek in 1933. The 32' foot bridge [HAER No. CA-103] is of steel girder construction, rests on cement rubble masonry abutments, and is faced in yellow-pine logs so as to appear to be of rustic construction. The structure, which was designed by the BPR's San Francisco office, was built by contractors Nelson & Nelson of Escalon, California. Excavation work on the site began in June, and the bridge was completed in August at a cost of $10,359.50.[311]

In summer 1933, Park Service Director Arno Cammerer ordered the practice of painting traffic stripes on curves discontinued in the national parks, citing their "undesirable appearance." However, after two fatal accidents in Yellowstone, the painted lines were brought back.[312]

The City of San Francisco still maintained that it was only obligated to provide roads built to 1913 standards in the Hetch Hetchy region, and had done little construction work. By this point, the Park Service decided it did not want roads in the area anyway. To avoid the construction of an inadequate road and trail network in this fairly remote section of the park, an agreement was reached in 1932 between the city and the Park Service under which the NPS would assume responsibility for road and trail construction in return for $1.25 million of city money. The funds could be used for construction of other roads in the park. After considerable debate, much of this money was for used the reconstruction of the Tioga Road eastward from Crane Flat.[313]

The new route of the Big Oak Flat Road was planned in 1933 and 1934. The road would leave the All-Year Highway at the Power House Dam on the Merced River, then climb up the north side of the valley above the Cascades to reach Meyer Pass in 4 miles. In this section, it would cross three creeks (Cascade, Tamarack and Wildcat) on open spandrel arch concrete bridges, and pass through three tunnels in order to avoid scarring the granite cliffs. Road cuts would be hidden by stone retaining walls. Project planning was done by the BPR district office; the work was reviewed and approved by the NPS landscape architecture division and personally by NPS Director Albright. BPR engineer Thomas Roach arrived in Yosemite in April 1934 to oversee the location planning, and to monitor ongoing work on the Glacier Point Road.[314]

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311 Roach, "Final Construction Report, Bridalveil Creek Bridge, Proj. E S-Al, 21 March 1934, 2-6. Yosemite Research Library.

312 Culpin, 168, 174.

313 Albright, *Birth of the National Park Service*, 269; Pavlik, "In Harmony with the Landscape" (*California History*), 192.

314 National Register of Historic Places nomination for the New Big Oak Flat Road, Sec. 8, 2; J. W. Emmert, Acting Superintendent's Monthly Report, April 1934, 8.

Federal assistance proffered during the Great Depression helped with further reconstruction of Yosemite National Park roads. From 1933 to 1940, Public Works Administration (PWA) funds and workers were utilized on several projects, supplemented by assistance from Civilian Conservation Corps (CCC) enrollees and Emergency Conservation Works personnel. The partial reconstruction and realignment of the Tioga Road was the first park project to utilize relief assistance, as well as funding provided under the agreement with San Francisco.

Improvements to the Tioga Road took place in three phases. First, the section from Tioga Pass to a point 2 miles west of Tuolumne Meadows was relocated and rebuilt.[315] Grading of this section of the road began in July 1933. The contractor, C. G. Willis & Sons, employed 45 men at first, increasing the work force over time to at least 163 men. The contract also included construction of a new bridge across the Tuolumne River at Tuolumne Meadows . The reinforced concrete girder deck bridge [HAER No. CA-109] rested on stone abutments and crossed the river on three short spans. All grading work was completed and the bridge finished by October 1934.[316]

The next section of the Tioga Road to be reconstructed was an 11-mile segment between Crane Flat and McSwain Meadows, 2 miles east of White Wolf. The contract went to the Idaho construction firm, Morrison-Knudsen, which began work in October 1934. Construction of this section led to the eventual closure of the old road between the park's western boundary and White Wolf, though a 7 mile stretch remains open as an access road to private inholdings at Aspen Valley. From Aspen Valley to Harden Lake, the old road is now maintained as a trail; from Harden Lake to White Wolf, the old route remains in use as a service road for White Wolf sewage treatment plant and the Harden Lake corral and stables. [A ranger station and campground located at Harden Lake were removed about 1960.] The remaining part of the road between McSwain and Tuolumne Meadows was surveyed by the Bureau of Public Roads in 1935, but construction did not begin until the late 1950s.[317] This left a 21 mile unimproved section in the central part of the route.

Throughout the early phases of work on the Tioga Road, the Yosemite Board of Expert Advisors and other concerned parties reviewed the construction to help ensure that the landscape was not adversely affected. The park administration determined to leave portions of the old road open for access to campgrounds

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[315] For a plan of the entry complex, see National Park Service, *Park Structures and Facilities* (Washington, D.C.: National Park Service, Branch of Planning, 1935), 13.

[316] Press release, Tioga Road reconstruction, attached to Thomson, Superintendent's Monthly Report, November 1932; Thomson, Superintendent's Monthly Report, July 1933, 9; Superintendent's Monthly Report, August 1933, 7; Pavlik, (thesis), 125.

[317] Pavlik, (thesis), 193.

and for a while, as an alternate route from White Wolf through Aspen Valley to the west. The Sierra Club was consulted and approved the project as an "improvement" to the park. A 1934 report by club directors Francis P. Farquhar, Ernest Dawson, William E. Colby, Walter Huber and Duncan McDuffie stated the road improvements would "enable travelers to reach Tuolumne Meadows and the eastern portions of the park readily and with comfort." However, the directors wrote that, because the Club's primary objective was the preservation of the wilderness, they could support only improvements to the existing road, not a new alignment.[318] In the 1950s, proposed reconstruction plans for the remaining section of the road, particularly the stretch near Tenaya Lake, would cause lead to a major controversy with the Sierra Club, ultimately helping dissolve the long, though sometimes strained, close relationship between the club and the National Park Service.

By October 1934, park officials began to have second thoughts about the amount of resources they were having to devote to accommodate automobiles and the vastly increased numbers of visitors they were bringing to the park. Superintendent Thomson appointed a special commission to study transportation problems, with an aim to reduce the number of vehicles using park roads.[319] But construction continued, and more road projects were initiated in an effort to keep up with increasing demands.

Construction of the new Big Oak Flat Road began on 23 January 1935. The park was allotted $300,000 for clearing a right-of-way from the Valley floor to Meyer Pass. Surveys for the bridges over Cascade, Wildcat and Tamarack creeks were conducted from 1936 to 1938. On the upper section of the road between Meyer Pass and Crane Flat, the contractor, Morrison-Knudsen, established a base camp at Big Meadow in April 1935, and completed the grading and a pioneer road by the end of 1936.[320]

Work on the Tioga Road reconstruction continued in 1935. Morrison-Knudsen, was behind schedule and put 240 men to work on the project in an effort to make up time. The clearing was completed in November, and the firm began construction of a pioneer road. On the eastern segment between Tioga Pass and

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[318] Greene, II:763; Cohen, 94-95.

[319] Thomson, Superintendent's Monthly Report, October 1934, 17.

[320] Idem, Superintendent's Monthly Report, January 1935, 8; Superintendent's Monthly Report, April 1935, 7; attached NPS press release on the Big Oak Flat Road, 4 April 1935; John B. Wosky, Acting Superintendent's Monthly Report, March 1935, 8; NPS press release, "Yosemite Starts Work on Big Oak Flat Road," 1 February 1935; Pavlik, (thesis), 128; Lawrence C. Merriam, Acting Superintendent's Monthly Report, October 1936, 7.

Cathedral Creek, the Peninsula Paving Company completed its surfacing contract in September 1937.[321]

By this time, the Park Service, having rejected the proposed "High-Line" route, completed the final location surveys for the remaining section of the road between Cathedral Creek and McSwain Meadow. The chosen route would follow along the north shore of Tenaya Lake and then climb through exposed granite terrain over the summit to Yosemite Creek and on to White Wolf. Although the Park Service intended to let the contracts for this phase of construction in 1936,[322] the needed funds were not allotted, and the final section of the road was not reconstructed until the late 1950s.

Morrison-Knudsen bridge built a bridge over the South Fork of the Tuolumne River in summer and early fall 1937 as part of its contract for the Crane Flat-McSwain Meadow segment. The steel and reinforced concrete deck bridge [HAER No. CA-108] rested on stone abutments and had a wooden guard rail, giving the structure a vaguely rustic look. The South Fork drops in a series of cascades immediately to the side of and below the bridge, and motorists often turn off and walk back to the bridge for the view.

In 1935, the National Park Service published a design book, *Park Facilities and Structures*, which offered measured drawings and photographs of appropriate structures for parks. The book was in essence a portfolio of the NPS "rustic style" of architecture. It stressed that roads and structures in the parks had to be designed to blend into their surroundings. It offered a number of guidelines for bridge construction in the parks.

> In general, bridges of stone or timber appear more indigenous to our national parks than spans of steel or concrete, just as the reverse is probably true for bridges in urban locations or in connection with broad main highways. Probably there are few structures so discordant in a wilderness environment as bridges of exposed steel construction. . . Too great "slickness" of masonry or timber techniques is certain to depreciate the value of these materials for park bridges. Rugged and informal simplicity in use is indisputably the specification for their proper employment in bridges.
>
> In no park structure more than bridges is it of such importance to steer clear of the common errors in masonry. Shapeless stones laid up in the manner of mosaic are abhorrent in the extreme. In bridges particularly is there merit in horizontal coursing, breaking of vertical joints, variety in size of stones--all the

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321 Thomson, Superintendent's Monthly Report, August 1935, 7; Superintendent's Monthly Report, September 1935, 8-9; Superintendent's Monthly Report, November 1935, 7; Merriam, Acting Superintendent's Monthly Report, September 1937, 7.

322 John B. Wosky, Acting Superintendent's Monthly Report, September 1935, 7.

> principles productive of sound construction and pleasing appearance in any use of masonry. The curve of the arch, the size of the pier, the height of the masonry above the crown of the arch are all of great importance to the success of the masonry bridge.
>
> Timber bridges may utilize round or squared members to agreeable results. Squared timbers gain mightily in park-like characteristic when hand-hewn.[323]

Civilian Conservation Corps workers were employed in landscaping projects to hide some of the damage caused by the road construction projects. The most significant of these projects was the landscaping of the new Wawona Road. The CCC workers, under the direction of ecologist Dr. F. E. Clements of the Carnegie Institution, re-graded steep cuts along the road and set out native plantings. Seeds for the project were collected by Emergency Conservation Works personnel. Where newly cut granite was exposed, particularly around the new Wawona Tunnel, CCC workers painted the fresh rock surfaces with a mixture of lamp black and mineral spirits. The re-sculpting of cut slopes along the Wawona Road followed guidelines developed by the Park Service landscape division in 1929; this rounding and flattening of steep slopes was characteristic of park roads from this period.[324] These projects are indicative of the concerns of the Park Service landscape architecture division that the new road be made to blend into its surroundings. Similar replanting work was done on the Glacier Point Road and other park thoroughfares.

In addition to work with the CCC on landscaping roads, workers from the Emergency Conservation Works program did other projects to lessen the impact of roads and new construction. They continued the "moral ditches" program and landscaped around several of the new bridges in the Valley.[325]

The new Glacier Point Road proved very popular with motorists. During the summer of 1935, while the road work was only partially complete, 500 cars made the trip on some days. The lower part of the road received much additional winter use when the Badger Pass Ski Area opened in 1935. In 1937, the Park Service promoted the scenic drive in a park brochure:

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[323] *Park Structures and Facilities*, 43-44.

[324] Enid Michael, "Roadside Planting of the New Wawona Highway," *Yosemite Nature Notes* XII (December 1937); Thomson, Superintendent's Monthly Report, November 1932, 7; National Register of Historic Places nomination for the Wawona Tunnel, prepared by Linda Wedel Greene, March 1989, Sec. 8, p. 4; McClelland, 3.

[325] Thomson, Superintendent's Monthly Report, February 1934, 9-10; Idem, Final Completion Report 129, Improvement Bridge Approaches, April 1933, 1. Yosemite National Park Maintenance and Engineering Office

> No visitor should leave Yosemite without seeing Glacier Point. It is the climax of all Yosemite views. It is reached by an excellent paved road which leaves the Valley just west of Bridalveil Fall, then through the 4,233-foot tunnel to Chinquapin, from which a good paved road leads through forests of fir and lodgepole pine to Glacier Point. The total distance is 30 miles, or about 1-1/4 hours' drive each way. . . A short drive of a half mile from the main road above Glacier Point brings one to Sentinel Dome, 8,117 feet in elevation, where an unobstructed panorama of the southern half of the park may be had, from the coast range on the west to the snow-capped ridge of the Sierra on the east. . .[326]

Grading and road preparation for the New Big Oak Flat Road was largely completed in 1936, and construction began on the major structures along the road. These included three tunnels, three reinforced concrete open-spandrel arched bridges, and extensive sections of stone retaining and guard walls. The two short tunnels on the lower section of the road [HAER Nos. CA-86 and CA-87] were opened up in 1936. In their construction, a 6' x 7' pilot tunnel was driven in first, after which the extra material was drilled or blasted out. The two tunnels were lined with concrete in early 1937, after which the portals were faced with stone arch rings or voussoirs. The portals, which were done by the Union Granite Company of Rocklin, California under a subcontract, feature some of the best stone work done in the park during this period. Temporary bridges were erected over Cascade, Wildcat and Tamarack creeks in preparation for the construction of the main spans.[327]

BPR Engineer B. H. McCain arrived in Yosemite in January 1937 to serve as resident engineer for the construction of the long tunnel [HAER No. CA-88]. Work began in mid-May. The 2,083' tunnel was bored with a drilling "jumbo," a device built specifically for use on the project. The large machine, mounted on a 5-ton Liberty truck, had six separate drills that were used to bore holes for the blasting. All boring was done from the west or uphill side. According to the final construction report, this tunnel was the longest structure yet attempted by this method.[328]

Much of the road between Meyer Pass and the Valley floor had to be built on fill or cantilevered out from the bluffs. This required heavy stone

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[326] Quoted in Unrau, 31. The spur road to Sentinel Dome is now used only as a fire motorway.

[327] National Register of Historic Places nomination for the New Big Oak Flat Road, Sec. 8 p. 2; Wosky, Acting Superintendent's Monthly Report, February 1937, 5, 7; Acting Superintendent's Monthly Report, May 1937, 7; Merriam, Acting Superintendent's Monthly Report, October 1937, 7.

[328] Thomson, Superintendent's Monthly Report, January 1937, 3; Wosky, Acting Superintendent's Monthly Report, April 1937, 7; NPS press release, 7 April 1937, attached to April report; Pavlik, (thesis), 129-30.

retaining walls. These walls [HAER No. CA-89] were constructed of irregular sized granite blocks, placed by hand-operated mast-and-boom derricks. The derricks were moved ahead by mule train.[329]

On 23 March 1937, Park Superintendent Thomson died of a heart ailment in the park hospital. He had overseen much of the modern road construction in the park, including the rebuilding of the Wawona, Big Oak Flat, and Tioga roads. A memorial service was held at the Wawona Tunnel. Frank A. Kittredge, who had long worked with Thomson, delivered the eulogy and remembered how Thomson had striven to see that new construction was compatible with the park environment:

> His keen sense of the fitness and desire for the harmony of things in the national parks has made itself felt in the design of every road, every structure, and every physical development in the Park. He recognized the importance and practicability of restricting and harmonizing necessary roads and structures into a natural blending of the surroundings. He has set a standard of beauty and symmetry in construction which has been carried beyond the limits of Yosemite into the entire National Park system.[330]

As the new park roads were completed, the Yosemite Valley Railway faced more difficult times. After losing most of its lucrative passenger business following the completion of the All-Year Highway, the Yosemite Valley Railroad went into bankruptcy in 1935. Reorganized as the "Yosemite Valley Railway," the company resumed operations, picked up some additional freight business, and by 1937 was showing a slight profit. Passenger business remained light.[331] In 1937, less than 2 percent of Yosemite visitors arrived by train. On 11 December, following a long series of warm rains which melted off much of the early snow pack, a tremendous flood came down the Yosemite and Tenaya creek watersheds, forcing the Merced River below far out of its banks. In the Merced canyon below the Valley, several miles of the railway line were destroyed. The trackage was soon rebuilt, and the railway reopened in 1938. Most business consisted of carrying timber for the Yosemite Lumber Company, which had resumed operations.[332]

This same storm also wreaked havoc on park roads and bridges. Several long sections of the All-Year Highway were swept away, the longest at a sharp bend called "Windy Point" below the Arch Rock entrance. The road was closed from 11-30 December. The Arch Rock entrance station was badly damaged when

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[329] New Big Oak Flat Road National Register nomination, Sec. 8, p. 2.

[330] Quoted in Russell, 171.

[331] Drury, 360-61.

[332] Russell, 69-70; "1937 Travel Report," attached to Merriam, Acting Superintendent's Monthly Report, September 1937; Drury, 361.

floodwaters washed the buildings off their foundations and destroyed the parking lot. The metal truss bridge over Cascade Creek was destroyed. The Old Wawona Road, which had been kept open as far as Inspiration Point, was washed out and permanently closed to motor vehicles. In the Valley, flood waters tore the log rails and sides off the El Capitan Bridge, and badly washed out the north abutment of the Pohono Bridge.[333]

The long tunnel on the New Big Oak Flat Road was still under construction when the storm hit, and its lower end was filled with 10' of water. The supervising engineer for the project, B. H. McCain, was severely injured during the storm when a yellow pine fell on his car and tore off his mouth. The water was pumped out of the tunnel, and by year's end the bore was more than half complete. The structure was holed through on 22 April 1938.[334]

The $148,099 contract for the construction of the three bridges over Cascade, Wildcat and Tamarack creeks was awarded to John Rocca of San Rafael, California. Construction began in October 1938, and the bridges were completed twelve months later at a cost of $162,823.69.[335] The three reinforced concrete open spandrel arch bridges [HAER Nos. CA-83, CA-84 and CA-85] marked a radical departure from the earlier "rustic style" of design, in which structures were designed to appear to be of made of native materials. Nevertheless, the light and graceful arched bridges harmonize well with their environment, where the creeks drop in series of cascades to the Valley floor.

When the grading and clearing work on the road was finally complete, the Bureau of Public Roads in July 1938 awarded a contract for the paving of 10.5 miles of road. The project included paving the spur road to Foresta and a short section of the new Tioga Road between Crane Flat and Gin Flat. The Union Paving Company of San Francisco received the contract, and began laying a base course of crushed rock in October. Crews began cutting stone for the guard walls which would border the road. Sample sections of the wall were built in November.[336]

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[333] Wosky, Acting Superintendent's Monthly Report, December 1937, 5a-5g, 6, 10; Merriam, Superintendent's Monthly Report, January 1938, 5b.

[334] Merriam, Superintendent's Monthly Report, April 1938, 6; Superintendent's Monthly Report, August 1938, 6.

[335] Schimberg, "Final Construction Report, Yosemite Project 3-A1, Bridges, Big Oak Flat Road, Yosemite National Park, Mariposa County, California," 21 January 1941, 1-2, 10.

[336] Merriam, Superintendent's Monthly Report, July 1938, 7; Superintendent's Monthly Report, October 1938, 6; Superintendent's Monthly Report, November 1938, 5; Acting Superintendent's Monthly Report, June 1937, 16; Acting Superintendent's Monthly Report, August 1937, 9; Acting Superintendent's Monthly Report, October 1937, 7; Acting Superintendent's Monthly Report, November 1937, 7.

The "Big Oak Flat Recreational Highway Association" proposed a spur road leaving California Highway 120 (the section of the Big Oak Flat Road outside the park) at "Cliff House" and passing via Mather to Hetch Hetchy.[337] This road was not built. The Hetch Hetchy Road today follows the same general route as that of the construction railroad between Mather and the valley. Outside the park, the old Cherry Oil Road provides the connection between the "Cliff House" site and Mather; part of the old Tioga Road alignment (now called Evergreen Road) gives access to Mather by Hodgdon and Ackerson meadows.

Final surfacing work on the segment of the Tioga Road between Crane Flat and Gin Flat was completed in July 1938, and the segment was opened to motorists in September. At Gin Flat, it connected with the old Big Oak Flat Road. The central part of the Tioga Road, which remained unreconstructed, was oiled in late summer. The Tioga Road was then opened to cross-park traffic.[338]

In 1939, National Park Service Chief Engineer Kittredge was made Director of the NPS Region IV office in San Francisco. Kittredge's engineering staff were moved to the regional offices and to the new Branch of Plans and Design under Thomas Vint; Vint's landscaping division merged into the planning office. This reorganization, done under a reorganization plan from Park Service Director Cammerer, resulted in better coordination between engineers, architects and landscape architects. The Bureau of Public Roads was reorganized as well, becoming the Public Roads Administration (PRA), a division of the Federal Works Administration. After World War II, the agency was reconstituted as the Bureau of Public Roads, but was transferred to the Department of Commerce.[339]

While work on the lower section of the New Big Oak Flat Road was still underway, the National Park Service in 1939 asked the BPR to begin surveying an extension of the road between Crane Flat and the South Fork of the Tuolumne River. The location survey by E. E. Erhart, which ranged west as far as Buck Meadows, favored a route along the South Fork instead of over Pilot Peak, as had been surveyed in 1926 and was the Park Service's choice as well as that of the Tuolumne County interests. However, the U.S. Forest Service [which administers the Stanislaus National Forest, through which the projected route passed] and the BPR supported the lower, South Fork route, as it would provide easy access to Forest Service recreation areas and developments at Mather. In April 1940, the three federal agencies agreed to work together to push for the

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[337] T. J. McCabe, "O'Shaughnessy Dam a Spectacular Scenic Drive," *Oakland Tribune*, 28 August 1938.

[338] Merriam, Superintendent's Monthly Report, June 1938, 8; Wosky, Acting Superintendent's Monthly Report, August 1938, 7; Acting Superintendent's Monthly Report, September 1938, 6; NPS Press release, "Tioga Road Now Open," attached to Wosky, Acting Superintendent's Monthly Report, July 1938.

[339] Wirth, 128-29; Strobridge, 5.

South Fork route. At the same time, they asked the state to begin work on a new route up the steep Priest's Grade west of Big Oak Flat.[340]

The stone retaining walls along the El Portal Road were extended in 1939. A section of dry-laid wall above the powerhouse was 30' high, and the 45' long section below the dam was 25' feet high and used 180 cubic yards of rock. The boulders were moved with two derricks operated by hand winches, and the parapet walls were laid by hand. Between 31 May and 7 July 1939, 795 linear feet of wet masonry parapet walls were built at an average rate of 22' feet per day.[341] A new bituminous surface treatment was applied to the entire length of the Glacier Point Road in 1939 and 1940 at a cost of $153,251.03.[342]

The $1.2 million New Big Oak Flat Road was completed in the early summer of 1940. A formal dedication ceremony took place on 23 June at Crane Flat. William E. Colby, long-time president of the Sierra Club, delivered the keynote address, in which he summarized the history of road developments in Yosemite and spoke of the importance of opening up the Sierras to the motoring public.[343] In the not too distant future, the Sierra Club would demonstrate a much different attitude towards making the high country so accessible to automobiles, but Colby would continue to support the road improvements.

The new road was formally opened in an unusual variant of the traditional ribbon-cutting." Teams of CCC workers from the two road construction camps competed in sawing apart a large log that had been placed across the highway. The Crane Flat "home" team beat the challenging team from the Cascades. The new "high-gear" highway was immediately put into service. The five automobile checking stations on the old road were closed. A new checking station was established at Carl Inn about 1941, but was relocated to Crane Flat a few years later. The former toll road remained in use as a downhill scenic drive until a rock slide took out the famous "Zig-zag" in 1945. Much of the old route now passes through designated wilderness.[344]

In October 1940, the Wawona and Glacier Point roads were formally relinquished to the Park Service. They had been under construction or post-construction administration by the BPR and PRA since 1928.[345]

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[340] Russell, "Highlights," 3; George T. McCoy, State Highway Engineer, to Tuolumne County Supervisor M. C. Merrell, Groveland, 27 May 1952. Yosemite Research Library.

[341] Arch Rock Entrance Station National Register nomination, Sec. 8 p. 2.

[342] Unrau, 34.

[343] Brockman, 92; Pavlik, (*California History*), 193.

[344] Pavlik, (*California History*), 193; Greene, II:861.

[345] Unrau, 34.

The outbreak of World War II had a drastic effect on Yosemite National Park. Visitation plummeted as gasoline rationing was implemented, park personnel were called to military service, and the federal relief programs doing much work in the park were disbanded. Funding for the National Park Service was severely curtailed; appropriations to the agency in 1945 were only 20 percent of the prewar level.[346]

The Civilian Conservation Corps was dissolved at the end of June 1942. The agency's equipment, materials and supplies were offered first to the military. A few units were taken directly into the army for war-related work (construction of the AlCan Highway, etc.) The Public Roads Administration was transferred to the General Services Administration in July 1949 and was renamed the Bureau of Public Roads. A month later, the BPR was transferred to the Department of Commerce.[347]

The war era marked the decline of the involvement of landscape engineers with road and major construction projects. No master plans were prepared and no new roads were built over the next decade. When road-building in the park resumed in the 1950s, the principle of blending the construction with the landscape was no longer so great a concern.[348]

Another casualty of the war was the Yosemite Valley Railway. Its major freight account, the Yosemite Lumber Company, ceased operations in 1942, and passenger traffic fell off almost entirely during the war. On 31 August 1944, the trustees of the railway petitioned to abandon the line. Another flood in February 1945 took out more of the line, and a bridge fire in August stranded some of the company equipment. The last run over the line took place on 24 August. The National Park Service considered rebuilding the line in order to provide an alternate means for visiting the park, but took no action, and the tracks were soon dismantled.[349]

No longer able to bring supplies to the park by railway, the Yosemite Park & Curry Company ran large trucks over the All-Year Highway to the Valley. The Arch Rock over the road at the entrance station was too low to allow the trucks the pass, and for some years the westbound or exit lane had to be closed periodically to allow trucks around Arch Rock. In 1948, park crews enlarged the passage through the rock by blasting out portions of the stone

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[346] Greene, II:748-50.

[347] Strobridge, 5.

[348] McClelland, 7.

[349] Drury, 361; Runte, "Blueprint for Comfort: A National Park-to-Park Railway," in Eugenia Horstman Connally (ed.), *National Parks in Crisis* (Washington, D.C.: National Parks & Conservation Association, 1982), 116.

ceiling with small charges.[350] Trucks, buses and large recreational vehicles can now negotiate the entrance, though there are still occasional by-passes for the largest vehicles.

By the late 1940s, some members of the Sierra Club were rethinking their original support for the reconstruction of the central part of the Tioga Road. Harold Bradley, later a director and club president, suggested that the remaining section of the road should be only slightly improved, and that the 25 mph speed limit be maintained. Bradley reasoned that the semi-primitive road made the high country accessible, but only to those who truly desired to experience the area. The road in its present condition discouraged "the mere restless driver and the speed addict." He feared that an improved highway would become an all-year road, leading to intensive development of the Tuolumne Meadows region. The new road would bring hordes of new visitors, winter sports developments in the fragile region, and result in brutal scarring of the exposed granite landscape. Such consequences would, to Bradley, make a visitor forget "just what a National Park is, and for what purpose it was created." In 1948, club directors Ansel Adams and Richard Leonard proposed an alternative route for the road which would avoid the contentious area around Tenaya Lake. Neither Bradley's proposal nor the alternatives received the backing of the club, which was divided over the issue. There would be no confrontation with the Park Service until construction began on the disputed stretch.[351]

Thomas Vint, chief of the NPS Branch of Plans and Designs, complained about the incomplete segment of the Tioga Road, calling it a "bottleneck" to east-west travel across the park. Vint, the Park Service's senior landscape architect, supported the reconstruction plans for the central section, but warned that preservation of the surrounding terrain remained of critical importance. He rejected a proposed second, parallel lane along the existing road because it would cause too much additional scarring.[352]

A crippling flood hit the park in 1950, washing out more than 700' of the stone retaining wall along the El Portal Road. The bridge over Cascade Creek was severely damaged, culverts were clogged, shoulders were washed away, and the road was covered with debris. The required repairs were extensive and expensive, coming at a time when the park budget was severely strained, and inexpensive labor forces like the CCC workers were no longer available.

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350 Completion Report, Arch Rock Enlargement, 1948, 2. Yosemite National Park Maintenance and Engineering Office.

351 Cohen, 96-99.

352 Vint, "Statement Concerning Road Developments in the High Sierra Section of Yosemite National Park," Typed MSS, 1 November 1948. Yosemite Research Library.

Another severe flood in 1955 caused major damage to the road and throughout the Yosemite Valley and down to El Portal.[353]

On the Valley floor, the old south road at the Old Village was abandoned and obliterated in the early 1950s, and the Sentinel Bridge Road became the principal cross road in the upper part of the Valley.[354]

Demobilization after the war and the lifting of gasoline and tire rationing resulted in a vast rise in the numbers of tourists. The increase was aided in part by better transportation but even more so by general economic prosperity. Park funding recovered somewhat by the 1950s, but was still greatly inadequate to deal with the new demands. Roads and structures had deteriorated in the meantime, and a new program was developed to revive the parks.

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[353] Greene, II:796; Pavlik, 53-54.

[354] Fitzsimmons, 57.

CHAPTER SEVEN

MISSION 66 ROAD PROGRAMS

Conrad L. Wirth became director of the National Park Service in 1951, replacing Newton B. Drury, the last director to have served under Stephen Mather. Wirth inherited a park system crippled by inadequate funding, indifferent maintenance, and threatened natural and cultural resources. He saw a need to attract the attention of Congress in order to secure assistance in upgrading and expanding park programs, and in 1955 announced the Mission 66 program. Mission 66 was a comprehensive ten-year program to improve park facilities and infrastructure to meet the demands visitors would place on parks by the 50th anniversary of the Service in 1966. This "comprehensive and integrated program of use and protection" was largely a response to the demands of the automobile tourist. Wirth wanted to provide "optimum opportunity for public enjoyment of the parks."[355] This policy marked a return to the old Mather plan, under which motorists' use of the parks was encouraged.

Wirth unveiled the program in February 1955. He sent a memorandum to parks personnel in the field and in the Washington project, in which he stated the purpose of the program:

> The purpose of MISSION 66 is to make an intensive study of the problems of protection, public use, interpretation, development, staffing, legislation, financing, and all other phases of park operation, and to produce a comprehensive and integrated program of use and protection that is in harmony with the obligations of the National Park Service under the Act of 1916.[356]

The actual mission statement justified a new series of road construction projects, noting that:

> Construction is, of course, an important element in the program. Modern roads, well-planned trails, utilities, camp and picnic grounds, and many kinds of structures used for public use or administration, to meet the requirements if an expected 80,000,000 visitors in 1966, are necessary; but they are simply one of the means by which "enjoyment-without-impairment" is to be provided.[357]

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[355] Wirth, 241-42.

[356] *Ibid.*.

[357] Reprinted in Roland Steinmetz, "Some Aspects of Mission 66," *Yosemite Nature Notes* XXXVI (September 1957), 85.

Wirth admitted unrestricted automobile access was largely responsible for the severe crowding in the parks. In justification of the proposed development program, he declared "the types of facilities preferred by people visiting the parks in their own cars were different from the kind formerly preferred by those who traveled by train and took coach tours." Wirth claimed the condition of the parks had become deplorable, and they would have to be rebuilt.[358]

In Yosemite National Park, the program involved acquisition of private inholdings, construction of new water and sewerage systems, replacement and upgrading of concessionaire operations, relocation of some facilities from Yosemite Valley, and major improvements to the road system. It marked the first attempt by the park to adopt a policy to contend with the increasing numbers of tourists, and the first ceilings to be assigned for various park uses. The Park Service decided to emphasize other parts of the park than Yosemite Valley by developing operations at Wawona and by opening up the northwest and central parts of the park by upgrading the Big Oak Flat and Tioga roads.[359]

One of the first Mission 66 projects in the park was the reconstruction of the old covered bridge across the South Fork of the Merced River at Wawona. The bridge was severely damaged by winter floods in 1955. In April 1956, Yosemite Park superintendent John C. Preston warned the NPS regional office that the situation was so critical that a good snow would cause the structure to collapse. Thomas Vint, then Chief of Design and Construction for the NPS, visited the bridge and noted it was the only covered bridge surviving in a national park. The NPS administration soon directed that the bridge be preserved.[360] The structure was pulled to the north bank and its reconstruction begun.

While the work was in progress, the park administration proposed to establish an "historical area" around the covered bridge. The plan called for the relocation of a number of historic structures from different parts of the park. Together with the Wawona Hotel, the structures would help interpret the human history of the Yosemite area. The National Park Service enthusiastically endorsed the proposal, and the "Pioneer Yosemite History Center" was developed on the north side of the river. The center opened in 1961, and has proved very popular with visitors.[361]

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[358] Cohen, 137.

[359] Greene, II:754; Stanford E. Demars, *The Tourist in Yosemite*, 1855-1985 (Salt Lake City, University of Utah Press, 1991), 124-25.

[360] John C. Preston, Superintendent, to Merriam, Director NPS Region IV, 25 April 1956; Preston to NPS Wirth, 25 June 1957; Vint to Regional Chief of Interpretation, NPS Region IV, n.d. (1956). Yosemite Research Library.

[361] Current NPS policy would probably have discouraged the relocation of the historic structures.

More highway projects were planned for Yosemite National Park as part of the Mission 66 program. One of the primary goals was the completion of the Tioga Road reconstruction. The Big Oak Flat Road was to be reconstructed northwest from Crane Flat, and various other small road projects were to be done through the program. Extensive improvements to park and concessionaire facilities were also undertaken. A new Yosemite Lodge complex, with office, lounge, cafeteria, post office and souvenir shop was completed in 1956. Two years later, construction began on "the mall," where new structures were built to house restaurants, the Village Store, and miscellaneous other concessions. Other improvements were made to facilities at Camp Curry.[362] The Park Service began promoting facilities in the high country along the Tioga Road and at Wawona to provide alternatives to the crowded Yosemite Valley.

Wirth promised that the preservation of park resources was "a basic requirement underlying all management." But conservationists remained suspicious. One of Wirth's closest allies was the American Automobile Association, which was a staunch advocate of improved park roads. Wirth announced a "checklist of construction accomplishments" for the program, including not only new roads but parking areas, comfort stations, visitor centers, trailer sanitary disposal areas, and other developments to support increased use by automobile tourists.[363]

As a part of the program, the middle part of the Tioga Road was to be replaced by a modern, shorter route. The unimproved central section inhibited cross-country travel; of the more than one million visitors to Yosemite in 1955, only 31,157 made the trip over the Tioga Road. The road improvements were expected to dramatically increase its use. Reconstruction was supposed to start in the summer of 1956, but severe rains in the winter of 1955 diverted attention to repair work elsewhere in the park, and the project was delayed until the 1957 season. Bids for two 3.3 mile sections, between McSwain Meadow and Yosemite Creek and the next to the east of the creek, were opened in June, and work was underway later in the season.[364]

The Tioga Road reconstruction proposal epitomized preservationists' fears. The Sierra Club restated its concerns first expressed in 1933. Club president Richard M. Leonard argued against the reconstruction of the road as a higher-speed route across the park: "The Yosemite National Park speed limit is very appropriately 35 mph, quite adequate for park display and internal park travel roads. Why then adopt the standards of the Crane Flat road section? [That

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[362] Greene, II:913, 917.

[363] Cohen, 137.

[364] Harry Stoekel, "Old Tioga Road Ride Gives Travelers Big Scenic Treat," [Merced, CA] *Sun-Star*, 28 July 1956, 15; "Tioga Road Job Delayed," *San Francisco Chronicle*, 17 July 1956; "Early Tioga Use Indicates New Travel Record," *Fresno Bee*, 2 June 1957, 1-B.

section] invites speeds of 50 to 70 mph, so that the man who wants to travel at 35 mph and see the scenery is in danger of being hit in the rear by those who are not interested in scenery." Leonard switched to a more philosophical argument against the proposal. "We don't build public thoroughfares through museums, libraries, art exhibits or cathedrals. Let us not build them through our parks." His successor, Alex Hildebrand, agreed, stating "A highway down the center aisle of a cathedral would enable more people to go through it, but it would not enable more people to come there for peace and spiritual inspiration."[365]

Ansel Adams, a member of the board of the Sierra Club, reprimanded the organization for its strategy of consultation and compromise which, he believed, promised failure in the Yosemite dispute. He offered his resignation (it was declined) and began a personal campaign with Interior Department officials, ultimately questioning their allegiance to the National Parks Act of 1916. Harold Bradley and other club leaders continued to seek a compromise with the Park Service over the road. When plans continued, the club reluctantly joined the opposition to the project.[366]

The Tioga Road controversy caused a crisis within the Sierra Club. Some members openly supported the reconstruction project. Former club president William E. Colby, who as a young lawyer had helped with the acquisition of the road for the park, backed the NPS plan. He was so agitated by the controversy and the lack of deference to his views that he resigned from the board of directors. Another club president, Walter Huber, a civil engineer who had once consulted the parks on road improvements, had approved the Tioga Road reconstruction plans in the 1930s and defended the project through the fight in the late 1950s. He felt the Sierra Club, having supported the original proposals for road improvements, should not contradict its previous statements on Park Service policies. Edgar Wayburn, chairman of the club's Conservation Committee, and his wife, Peggy, wrote a supportive piece in the April 1956 *Sierra Club Bulletin* in which they pointed out that 90 percent of the money proposed for roads was devoted to reconstruction of existing roads. They did, however, express concern that the NPS had not solicited the involvement of outside groups in the planning of the new program. Wirth complained that the Sierra Club, having once backed the road proposal, had "turned against" the Park Service.[367]

On the other side of the issue, the BPR was pushing for even wider roads. The agency argued that road standards had changed since the 1930s, and that a wider road with wide shoulders was now required. BPR engineers wanted shoulders wide enough to allow cars having trouble to pull off the road. The Bureau informed the Park Service that, unless the new standards were accepted,

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[365] Quoted in Runte, *Yosemite: The Embattled Wilderness*, 196.

[366] Cohen, 142-43.

[367] Cohen, 60-61, 93, 99; Wirth, 358.

it would not undertake the project. Although he approved the construction through the Tenaya Lake region, Wirth rejected the BPR's proposal. He said, "I have given definite instructions that I do not want a fast road. I want a narrow road, because it is the width of the road that controls the speed." The matter was referred to Walter Huber, then chairman of the Yosemite National Park Board of Expert Advisors, who expressed his support for the Park Service's original plans.[368]

Project opponents failed to impress their arguments on Congress, and the new Tioga Road alignment was soon approved and work commenced. The Sierra Club was able to halt construction briefly in August 1958, as the road construction reached the exposed granite escarpments southwest of Tenaya Lake. Wirth came out to inspect the project in person and ordered its resumption.[369] The new route cut across the granite outcroppings in a series of terraces blasted out of the glaciated landscape, the most prominent of which was ironically named "Olmsted Point."

The new Tioga Road was dedicated at a ceremony held at Olmsted Point in June 1961. Wirth defended the chosen route, saying "I'm making no apologies for the Tioga Road." Superintendent Preston asked that the park be allowed to keep open the section of the old road in the May Lake area to provide a one-way scenic loop, but the NPS regional office rejected the proposal, insisting that the area be returned to wilderness. Regional Director Lawrence Merriam wrote a memorandum to the superintendent in which he pointed out that by keeping the old road open, the arguments for the new route location would seem hypocritical.[370] A short section of the road does remain open to provide access to the May Lake trailhead; another stretch, roughly 4 miles in length, serves the Yosemite Creek Campground.

In conjunction with the final work on the Tioga Road, the California Department of Highways announced plans for reconstruction of the remaining section of Highway 120 between Tioga Pass and Lee Vining. Although NPS landscape architect Volney Westley attempted to persuade the state to reroute the road

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[368] *Ibid.*, 359; Ansel Adams, "Tenaya Tragedy," *Sierra Club Bulletin* XLIII (November 1958), 18; Preston,"Statement by Superintendent John C. Preston concerning the Tioga Pass controversy at the Region Four Conference, Death Valley National Monument, January 11-16, 1949," Typed MSS, 3. Yosemite Research Library.

[369] Runte, *Yosemite: The Embattled Wilderness*, 196-97.

[370] "One of the World's Best Sights, Says Wirth of Tioga View," *Fresno Bee*, 24 June 1961; Memorandum, Preston to Merriam, 29 September 1960; Memorandum, Merriam to Preston, 14 October 1960. Yosemite Research Library.

down Lundy Canyon, the existing route down Lee Vining Canyon was upgraded in 1963.[371]

Seven miles of the Big Oak Flat Road, between Crane Flat and Carl Inn, was to be replaced as well under the Mission 66 program. The old road would serve as an access road to the Tuolumne Grove of giant sequoias. There was considerable debate over the route of the new connecting California Highway 120 outside the western boundary of the park. Some of the Tuolumne County interests still pushed for the Pilot Peak route. However, the NPS held out for the South Fork route, which was selected.[372]

Clearing for the new section of the Big Oak Flat Road began in fall 1961. This part of the project was done under a $369,067 contract awarded to the A. J. Diani Company of Santa Maria, California, which subcontracted most of the work to Wallace E. Reiswig of Chicago. A site was cleared for an entrance station at the park boundary. The new road opened to traffic in April 1962, coinciding with the opening of California Highway 120 outside the park boundaries. The Crane Flat ranger station remained open for some time.[373]

The "Northern California-Yosemite Highway Association," organized in 1956 by Modesto business interests, undertook the rebuilding of parts of the Coulterville Road between Bower Cave and the Merced Grove of Giant Sequoias. The section, which lay outside the park boundaries, was rebuilt in 1958.

At Glacier Point, the parking area was graded in 1957 in preparation for expansion. In 1958, the NPS let a $109,327 contract for the construction of three new parking areas at Glacier Point, Washburn Point and the Badger Pass ski area. The Fresno Paving Company began work in June. The parking area at Glacier Point was more than doubled, increasing in capacity from 100 to 248 automobiles. Parking was increased from 20 to 60 spaces at Washburn Point, and from 300 to 600 spaces at Badger Pass. Traffic circulation at Glacier Point was improved, eliminating a troublesome bottleneck. The Bridalveil Creek Campground was enlarged and upgraded under a separate project in 1960, and the access road was given a new base course and bituminous surfacing.[374]

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371 "Plan is Started for New Tioga Road Links," *Fresno Bee*, 29 September 1958; "Tioga Pass: Where Roadbuilders Meet the Rugged West," *California Highways and Public Works*, January-February 1966, 9.

372 Roland Steinmetz, "Some Aspects of Mission 66, Part II," *Yosemite Nature Notes* XXXVI (October 1957), 102-103; Preston to McCoy, 21 December 1955. Yosemite Research Library.

373 "Big Oak Flat Road to Open Friday," National Park Service press release, 18 April 1962. Yosemite Research Library.

374 Unrau, 37.

In the fall of 1960, the Glacier Point Road between Chinquapin Flat and the Badger Pass ski area access road was resurfaced. The same contract also included the paving of the El Capitan Bridge and the Wawona Tunnel. Harm Brothers Construction Company was the contractor. The hot mix surfacing was hauled from the Mariposa Sand and Gravel Company plant at El Portal. A 2" surface was laid over a roadway width of 22'. All work, including the center-line striping, was completed in the summer of 1961.[375]

To prepare for the planned replacement and enlargement of the Yosemite Lodge, the north road was realigned to bypass it on the north in 1956. Other roads were constructed to serve the new mall complex, new employee residences, and other facilities. By 1966, auxiliary roads on the Valley floor amounted to more than 50 percent of the road mileage in the Valley. However, total road length in the Valley was down slightly, to 18 miles in 1966 from 19 miles in 1913. A large parking lot was constructed at the base of Yosemite Falls in 1962. By 1966, there were 25 acres of parking in the Valley, not including parking spaces in campgrounds and employee housing areas.[376]

The Mission 66 projects had significant effects in Yosemite National Park. Much good was accomplished under the program. Many park support operations and a good deal of park housing was relocated away from the Yosemite Valley to El Portal. Antiquated park utility systems were replaced or upgraded, and badly-needed new facilities were provided. Some parts of the Valley floor were restored, and new facilities were provided at Wawona and along the new Tioga Road. Accommodations in the park were upgraded. Access to Yosemite was greatly improved by the reconstruction of the Big Oak Flat and Tioga roads. Not surprisingly, these improvements had the cumulative effect of boosting visitation to the already-crowded park. While Mission 66 had improved park facilities to meet current needs and changing road standards, the rising visitor loads would put increasing pressure on the National Park Service to continue to develop roads and facilities in the park.

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375 *Ibid.*.

376 Fitzsimmons, 57-67, *passim*.

CHAPTER EIGHT

YOSEMITE AT THE CROSS ROADS

> Fifty years ago we were busy building roads and parking areas to "open up" Yosemite Valley and make it accessible to the new generation of mobile Americans; today we look with irony on the acres of the pavement, the traffic congestion, and the noise we have created.
>
> --Proposed General Management Plan, 1978

By the late 1960s, the ambitious road-building program at Yosemite National Park was inviting additional criticism. Automobiles were still considered by some to be unsafe for mountain driving, especially at the higher speeds the new roads allowed. Noise and air pollution caused by automobiles were recognized as increasing threats. Park roads, parking lots, and increased tourist facilities were taking up considerable amounts of the park landscape. Each improvement to the park roads invariably increased visitation. In 1950, tourists visiting Yosemite numbered 850,585. Four years later, the one million mark was passed, and by 1965, the park's annual visitation reached 1,635,380. By the late 1960s, air quality in the Valley had deteriorated significantly. The high granite walls trapped automobile exhaust emissions and campfire smoke. On some weekends, the pollution levels exceeded those of Los Angeles.[377]

In an effort to reduce some of the automobile congestion and attendant pollution, the Yosemite Park & Curry Company instituted a shuttle bus service in the Valley in 1967. In 1968, roads in the central part of the Valley were shifted to a one-way circuit to further reduce traffic. Interestingly, the adoption of the one-way routing reflects the 1865 recommendation of Frederick Law Olmsted for a one-way circuit road around the Valley. This change reduced the accident rate over the 5 1/2-mile stretch by 86 percent. Open air motor trams were introduced in the Mariposa Grove of Giant Sequoias in 1969.[378]

The Bureau of Public Roads was transferred from the Department of Agriculture to the Department of Transportation in 1966. Its functions were assigned to the Federal Highway Administration (FHwA), which continues to oversee the planning and construction of roads in the national parks.

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[377] Fitzsimmons, 5; "Tourist Travel to the Yosemite Valley," 1; Michael Frome, "The Un-Greening of Our National Parks," in Connally, 40.

[378] George B. Hartzog, Jr., "Clearing the Roads--and the Air in Yosemite Valley," *National Parks & Conservation Magazine*, August 1972, 14-16.

The famous "Firefall" from Glacier Point was halted by the Park Service in 1968. The nightly summer spectacle attracted thousands of visitors, further overcrowding the Valley roads, and increasing levels of automobile exhaust emissions, and resulting in large amounts of litter.[379] In addition to these serious problems, critics had finally prevailed that the pyrotechnic display was simply not compatible with the mission of a national park.

It was not until 1970 that the NPS showed any departure from its pro-automobile orientation that dated from the Mather era and reached its zenith in the Mission 66 program. In that year, cars were banned from the eastern third of the Yosemite Valley, and propane-powered shuttle buses were placed in service. This was the first time the Park Service tried an alternative to modernizing the park roads as the only solution to increasing use. The Valley roads were rated as having a daily capacity of 10,000 cars, and without regulation, this threshold would be exceeded by 1977.[380]

In a reversal of tradition, a ribbon-cutting ceremony was held to mark the "closing" of the east Valley roads on 9 July 1970. Larry Quist of the National Park Service, who emceed the ceremonies, spoke of the pressures facing the park's road system:

> Traffic congestion and the pollutant effects of noise and exhaust emissions are frustrating to the visitor enjoyment of the valley. And the natural serenity of the valley is becoming increasingly impaired. . . The unhealthy, disturbing and often violent social conditions that now occur daily during the peak travel season are believed to be the direct result of free and unrestricted automobile access to this valley.[381]

Dr. Robert L. Katz of the Yosemite Park & Curry Company called the move "one small step in what we hope will be a three-year program of eliminating *all* the automobile traffic from Yosemite Valley, and returning it to the grandeur that it has known in the serene days when people traveled through it only on foot or on horseback." National Park Service Director George B. Hartzog, Jr., was also in attendance. He noted that the road closure was the first instance in a national park in which automobile-related problems were being reduced by restricting access, disregarding the 1900 ban implemented by Major Benson. He

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[379] Runte, *Yosemite: The Embattled Wilderness*, 202. The Interior Department had abolished the Firefall once before, in 1913, only to allow its return four years later.

[380] *Ibid.*, 203; National Park Service press release, Yosemite Valley road closure, 9 July 1970, 1. Yosemite Research Library.

[381] Larry Quist, "Remarks at ribbon-cutting ceremony for closure of the East Valley roads, 9 July 1970," 1. Transcript by Marie Herold. Yosemite Research Library. Quist's mention of "violent social conditions" is probably a reference to riots in Stoneman Meadow five days earlier.

was optimistic that the action would "materially diminish" congestion and pollution in the Valley. By 1971, the shuttles were carrying 1.6 million people, which equated to the elimination of some 400,000 trips in private automobiles.[382]

While Hartzog applauded the closure of roads in the east end of the Valley, he proposed a high-level bridge across the Merced gorge between Grouse Creek and Foresta. He thought this would solve the bottleneck in the upper gorge. Hartzog wanted to develop a new traffic staging area at Foresta, and talked about using Big Meadow there as a reservoir for Yosemite Valley, supplied with water delivered by pipeline from Tenaya Lake. The proposal was studied and a model of the bridge was constructed, but the project was never authorized.[383]

In 1971, NPS planners considered banning automobiles from the entire floor of the Yosemite Valley. The proposal was acclaimed by preservationists, until they found out that to accompany the ban, the old plan for a tramway to Glacier Point was to be revived. The dichotomy of the related proposals did not go unnoticed. Morgan Harris, a professor of zoology at the University of California, complained to Hartzog: "It seems ironic that we should be attempting on the one hand to remove automobiles from the Yosemite Valley, while proposing on the other the introduction of man-made facilities in an even more sensitive location." He attacked the director, the park superintendent, and the Secretary of the Interior for their apparent support of the proposal.[384]

Cars were banned from the "mall" at Yosemite Village in 1972. New propane-powered three-car "minitrain" shuttles with a capacity of 87 seated and 62 standing passengers, were introduced.[385] The shuttles significantly reduced between Camp Curry and Yosemite Village.

Another controversy erupted in 1971 when park officials proposed a new auto bridge across Leidig Meadow between the Wawona and Big Oak Flat roads. A draft environmental statement prepared by the park staff rejected the proposal, but at least one of the bridges showed up at the park anyway. A surplus steel truss "Bailey bridge" obtained from the military was delivered one night to the old CCC camp at the base of El Capitan. The proposed $96,000 bridge was quickly attacked by conservationists. Critics claimed construction of the road through the meadow would "decimate a beautiful area for all time." The "Friends of Leidig Meadow" was organized in 1972 to fight the project. The group claimed the new road was designed only to divert traffic bound for

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382 Robert L. Katz, remarks in *Ibid.*, 2; National Park Service press release, 9 July 1970, 2; Hartzog, 14.

383 The model was burned in a July 1972 fire which destroyed the old government equipment warehouse.

384 Runte, *Yosemite: The Embattled Wilderness*, 203.

385 Hartzog, 14.

the south part of the park to the west and northern sections and would only save ten minutes time over the existing El Capitan crossover road. The project was never approved. The "Bailey bridge" remained at El Portal for a while and the NPS occasionally offered plans to use the stockpiled parts in the park, none of which were accepted.[386] The controversy was a contributing factor leading to Congressional hearings in 1974 that led to scrapping of proposed drafts of the park general management plan.

The Yosemite Park and Curry Company, which had been purchased by the gigantic Music Corporation of America (MCA) in 1973, attacked the proposal to ban automobiles from the Valley. Edward C. Hardy, the Curry Company's chief operating officer, complained in June 1974 that the problem was not automobiles in the Valley, but rather the lack of adequate parking for them. He urged instead the construction of increased parking facilities and the approval of the Glacier Point Tramway. Bernard I. Fisher, vice-president for development of the MCA, also advocated construction of the aerial tram, arguing "a 32-mile ride from Yosemite Valley to Glacier Point carrying thousands of vehicles polluting the atmosphere causes far greater damage to the land and mood of the Park than would an appropriately placed aerial tramway." The company stood to profit from the tram, which it would control and which would link its concessions on the Valley floor and at Glacier Point. Ansel Adams also supported the tramway, as it would lead to the removal of the Glacier Point Road and the return of that corridor to wilderness.[387] But the tramway generated more criticism than support, and the Park Service dropped it from its proposed General Management Plan.

By the mid-1970s, the continuing increase in visitation began to place even greater strain on the park road system and other facilities. The dramatic population boom in California was a contributing factor. Visitors were likely to face traffic jams, inadequate parking, and over-crowded facilities. Such distractions seriously denigrated the park experience.

A stunning alternative vision for the future of Yosemite was outlined in *YV88*, by Christopher Swan and Chet Roaman, published by the Sierra Club in 1977. This "eco-fiction" depicted Yosemite without roads, access being provided by electric trains utilizing energy generated in "solar spheres." Some small trains would utilize gravity on downhill segments, with downhill energy picked by engine rotors operating in reverse being fed back into the grid. Solar-sail "airships" would provide supplemental transportation.

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386 "Merced Gorge Bridge Plan Ripped at Park Forum," unidentified clipping, 5 August 1971; Draft Environmental Statement, Proposed Miscellaneous Bridges, May 1972, 1. Yosemite Research Library.

387 Runte, *Yosemite: The Embattled Wilderness*, 204. Adams testified in support of the tramway at hearings held in Yosemite Valley on the 1971 master plan for Yosemite.

> People saw the Sierra Railway north of here--it's makin' money hand-over-fist carryin' tourists behind ancient steam engines--they'd think we could build one like that to Yosemite. Well, they had the right idea but the wrong tool. Old oil-burning steam locomotives may be romantic, but they're not efficient. Besides, who needs more air pollution? Lots of folks thought this idea old-fashioned, trains and all.
>
> Finally someone named. . .damn, what was that guy's name? Anyway, somebody suggested an electric railroad powered by solar generators. Then they began to reconsider and realized what a good, basic idea a train was. Sure it was old, but that didn't mean it was no good. So that's how the railroad idea took hold.[388]

The ideas advanced by Swan and Roaman were so revolutionary that most people dismissed the whole concept. Even though alternative energy sources were being seriously considered as a result of the oil crisis, clearly no technology yet existed to allow the development of solar-powered trains, much less airships. Even the idea of a return of trains to the park attracted little attention at the time.

A new draft General Management Plan (GMP) for the park was proposed in August 1978. Its preamble identified the automobile as the cause of the increasing pressures on Yosemite:

> As advancing urbanization presses our tolerance of asphalt and concrete and noise and pollution, we are becoming aware that what is truly valuable about places like Yosemite is their scenery, their quietness, and the opportunity they provide or escape from city life. Accompanying this awareness is a recognition that we have been destroying these qualities by trying to transport our city lifestyles into the parks.[389]

The plan stated that the National Park Service had established as a "long-term goal" the elimination of all automobiles from the Yosemite Valley. Until an efficient transportation system could be developed, overnight visitors would be permitted to drive to their accommodations, and day users would be diverted to a new 700-space lot at Taft Toe, at the base of the Valley wall south of the El Capitan Bridge. Nearly 2,000 parking places east of El Capitan would be removed, and all day-use parking would be limited to the new 700-car lot and 571 existing spaces at pullouts. Shuttle buses would transport visitors from the parking areas around the Valley. Smaller "experimental" parking lots would be constructed at El Portal (150 spaces) and Crane Flat (200 spaces),

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[388] Christopher Swan and Chet Roaman, *YV88: An Eco-Fiction of Tomorrow.* (San Francisco: Sierra Club Books, 1977), 20.

[389] Draft Environmental Statement, 1978 GMP, 5.

with bus service provided during the summer season. These measures would reduce by 18,000 the number of vehicle-miles driven in the Valley each day. Commercial buses could continue to drive to points of interest in the Valley. Shuttle service would be provided from Yosemite Valley to Glacier Point in the summer and to Badger Pass during ski seasons. The Mariposa Grove of Giant Sequoias would be closed to private automobiles, and a tram system would be established to transport visitors through the grove. It suggested that historic views should be reopened by clearing vistas. No changes were recommended for routes 41, 120 and 140 through the park.[390]

Several alternatives were offered. Alternative Two called for curtailing automobile access more significantly. The Yosemite Lodge and many other developments in the Valley would be removed, and automobiles would be diverted into staging areas west of the Valley. Visitors would have to use shuttles for access to the Valley. Shuttles would also serve Glacier Point year-round; cars would park at a staging area at Chinquapin Flat. This alternate also called for closing the Tioga Road except to Trans-Sierran travelers, and instituting a shuttle service along this section. Campgrounds along the road would be converted to walk-in sites. The removal of private cars would do much to reduce the impact on the high Sierra section of the park; however, the pristine area near Tioga Pass would be severely affected by the construction of a 1500-car staging area and the establishment of commercial services. Although the shuttle service seemed promising, the study suggested that to handle the expected loads from staging areas, buses would have to depart every thirty seconds. The steady stream of buses would itself be a major source of noise and exhaust emissions. Auto congestion would be eliminated in the park, but could be expected in the staging areas. The auto camper would find his choices restricted to El Portal, Crane Flat, Hodgdon Meadow and Wawona; these sites would be limited and in great demand. Walk-in camping would be encouraged. Overnight and day visits would be significantly decreased if the plan was adopted.[391]

In contrast, Alternative Three would have opened the park to vastly increased numbers of overnight visitors, who would be provided with numerous additional services by the park concessionaire. Automobile access in the Valley would be unchanged, except that strip parking along Southside Drive between Sentinel and Stoneman bridges would be removed and a new parking lot built adjacent to the Sunnyside walk-in campground. A total of 2,720 parking spaces would be available in the Valley, an increase of 1,099 over the proposal. A parking area would also be constructed at Crane Flat, with shuttle buses running from there to the Valley and back. The Glacier Point and Tioga roads would remain open to private automobiles. Auto congestion in the Valley would be somewhat lessened on account of the new parking areas, but cars would still be visible

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390 *Ibid.*, 4, 10-11, 127.

391 *Ibid.*, 148, 168-71, 181.

from most parts of the Valley.[392] A "no-action" Alternative Four would allow most existing conditions to continue, and would require no impact on the road system or other developments. In all alternatives, through-park traffic would continue to be allowed to use the All-Year Highway and the Wawona and Big Oak Flat roads.

The 1978 General Management Plan admitted that overcrowding in Yosemite was reaching unacceptable levels. It suggested that absolute limits would have to eventually be placed on the numbers of visitors in all parts of the park, similar to limits already placed on backcountry use. Overcrowding was to be reduced through the reduction of overnight accommodations in the Valley, restrictions on the number of private cars allowed into the Valley, and by the development of other areas, such as Wawona, as alternate attractions.[393] The GMP proposals related very little to the area surrounding the park, even though day use was increasing dramatically. Even though accommodations were slightly reduced within the park, new overnight facilities were established outside the park, providing for much of the increase in day use. The overwhelming majority of day users reach their park destinations in private automobiles. Thus, although the increased development outlined in Alternative 3 was rejected, this development has occurred outside the park.

Part of the Glacier Point Road, from the Badger Pass ski area entrance to a point 1.2 miles east, was resurfaced in 1980. The section from the Taft Point/Sentinel Dome trailhead to Glacier Point was resurfaced the next year. Switchbacks were improved by widening curves. Rock outcrops on the sides of the road were removed and a new asphalt shoulder was provided. In 1982-83, the Federal Highway Administration resurfaced a 2.5-mile section east of Bridalveil Creek. The Glacier Point parking area and overlook were rebuilt in 1987 and 1988, and no longer retain their historic appearance.[394]

The historic Coulterville Road, the first of the wagon roads to reach the Yosemite Valley, was covered at the lower end by a rockslide on 3 April 1982. Park Superintendent Robert Binneweis rejected requests to reopen the road, stating "The road surely is a part of the rich and varied history of Yosemite. Unfortunately, its collision with the geologic history of the park was inevitable, and the rocks prevailed."[395]

The impact of the road system on Yosemite was minimized by former Park Service Director Horace Albright as late as 1975. He observed that the old roads were

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[392] *Ibid.*, 183-85, 192-94, 200.

[393] National Park Service, *Yosemite: Summary of the General Management Plan.* (Washington, D.C.: Government Printing Office, August 1978), 22.

[394] Unrau, 37-38.

[395] Sargent, *Yosemite's Rustic Outpost*, 90.

"unsurfaced, dirty in the dry season, the means of covering all vegetation with dust, and slippery mud channels in the winter."[396]

Passage of the California Wilderness Act in 1984 led to major management changes at Yosemite, where the nearly 95 percent of the park land was soon designated a wilderness area. Some old sections of road had already been closed, and other sections were torn up and removed. In many cases, little or no drainage or vegetation work was done, and old road scars remain evident around Tioga Pass, in Tuolumne Meadows, and in fire scars. Abandoned road sections were closed to vehicular use, and over the years more portions of old roads have been closed and in many cases obliterated.

In 1987, Secretary of the Interior Donald Hodel proposed that the O'Shaughnessy Dam be drained and the Hetch Hetchy Valley restored as an alternative destination to Yosemite Valley. Studies were undertaken, which suggested that the restoration might take centuries. Hodel had the Bureau of Reclamation prepare a report in support of the project, but another report from the Department of Energy rejected the idea. San Francisco, which depended on the reservoir for a large part of its water supply, was of course opposed to the surprise proposal. Nothing came of the plan.[397]

The NPS undertook a parkwide road system evaluation in 1989 under obligations from the Federal Lands Highway Program established under the National Surface Transportation Act of 1982. The study reported that 17 percent or 34 miles of the park roads had deteriorated beyond the point which cyclical maintenance could overcome. However, with the exception of the last five miles of the Glacier Point Road, these were minor roads. The major portion of the road mileage, 54 percent or 105 miles, was in fair condition, and the remaining 29 percent (56 miles) was described as in good condition. Four out of five miles of roadway in the park was more than twenty years old. The study urged special study of certain road segments. As much of the proposed work would fall under regulations established under the National Environmental Policy Act, the study recommended that an Environmental Assessment be completed for each of the park's five major road segments.[398]

The report stated that the park had 195 miles of paved roads with 31 major structures. Most of these had originated as early stage or wagon roads, modified in the 1920s or 1930s, paved in the 1930s and 1940s, and resurfaced in the 1970s. Some of the roads were carrying loads two to ten times their designed capacity. The study identified most of the bridges and tunnels as

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396 Quoted in Runte, *Yosemite: The Embattled Wilderness*, 212.

397 *Ibid.*, 217.

398 National Park Service, *Yosemite National Park Road System Evaluation: Parkwide Road Evaluation Study*, May 1989, 3-9, *passim*. Copy at Yosemite National Park Roads and Trails Office, Division of Maintenance and Engineering.

too narrow and with other substantial deficiencies. It noted that 90 percent of park visitors saw Yosemite National Park mainly from their cars, though 94.45 percent of the park remained backcountry wilderness.[399]

Certain stretches of the park roads were singled out as particularly hazardous. High speeds on the improved Tioga Road led to a number of fatal accidents, as had been forecast by opponents of the road improvement project. The Glacier Point Road as far as Badger Pass was another bad accident zone, as was the "Discovery View" turnout at the east end of the Wawona Tunnel. Motorists on the El Portal Road (All-Year Highway) were prone to sideswipes from out-of-lane recreational vehicles and cars traveling at too high a rate of speed. Many park roads were posted at 35 mph speed, even though they were designed for speeds of 30 mph. Numerous park roads had substandard narrow lanes with no foreslopes or shoulders, and too few passing turnouts were provided.[400]

The park decided to replace the Sentinel Bridge by this time with a new masonry-faced structure 160 yards upstream. The bridge design was being finalized while HAER was recording the existing bridge in the summer of 1991.

Suntrain, Inc., organized in 1980, has developed a new concept for a rail-based park transportation system. The Suntrain approach would utilize self-propelled railcars that might function singly or in trains of up to fifteen units with van service. The trains would utilize existing street tracks in California cities, rebuilt main lines on which the cars could travel at up to 150 miles and hour, and mountain branch lines. The "Yosemite Railway" would provide connections between the park and Merced, where it would join the main Suntrain network. The proposed Yosemite Railway system would include 207 miles of light railway connecting Merced, El Portal, Yosemite Valley, Crane Flat, Groveland, Lee Vining, and Fish Camp, with branch lines to Glacier point, Hetch Hetchy and Mariposa. Highway 140 between Mariposa and El Portal would remain open only to El Portal residents. Only Park Service vehicles with extra railset wheels would be allowed above El Portal. In the park, the rail lines would be laid over existing roadbeds, but only the light rail strips would be visible. The park roads themselves would be obliterated, and 98 percent of the paved area would be returned to native vegetation. The railcars would be smaller than conventional equipment, and would present a minimal visual impact. The plans also describe "gravity cars," special open railcars carrying 26 passengers, which would glide almost silently through the park, presumably downhill. Such a service would allow unprecedented views, and glimpses of wildlife now rarely seen. Double-deck railcars would provide transportation around the Yosemite Valley. The existing road cuts and fills would be terraced or landscaped. Some of the fill areas would be cut out and

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399 *Ibid.*, 19-38, *passim*.

400 *Ibid.*, 69-70, 87, 131.

replaced with bridges, and some cuts would be transformed into short tunnels, restoring the old roadways to native habitat.[401]

Swan's proposal is only a portion of a far-reaching demonstration project called "Yosemite Anew," which addressed major park planning problems in transportation, energy, water and communications. While the program may eventually offer realistic solutions to the park's most difficult issues, at the present the project remains in a conceptual development stage.

As of this writing, the pending contract negotiations for the park concessionaire is attracting national attention to the park. Although the role of the concessionaire (Yosemite Park & Curry Company) is only indirectly related to traffic issues, traffic remains identified as one of the major park problems that should be addressed. The Nevada-based Donrey newspaper group urged new solutions in a September 1991 editorial:

> The biggest step is putting a brake on the valley's auto traffic, with the ultimate goal of banning private cars. More than 3 million visitors clog Yosemite annually and some weekends the valley is choked with people, cars and smog--a lethal combination that threatens to annihilate the wilderness experience. Shuttle buses, and perhaps eventually light rail service, could protect Yosemite while ensuring visitor access.[402]

The Historic American Engineering Record [HAER] of the National Park Service documented the road system of Yosemite National Park in the summer of 1991. The six-person international team recorded significant road related structures in the park and produced this overview history of the development of the road system. Individual structures were documented with measured drawings, large-format photographs, and individual historical reports.

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401 Christopher Swan, "Yosemite Anew," *Yosemite* [Journal of the Yosemite Association] 53 (Spring 1991), 7-9.

402 [Columbia, Tennessee] *Daily Herald*, "Yosemite for Sale," September 1991, 4.

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