

Bridges at Mount Rainier

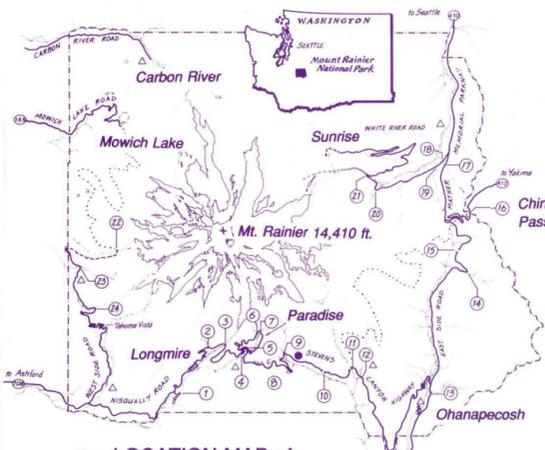
Bridges of various construction span Mount Rainier's major streams and lesser tributaries. One of the most interesting is the Nisqually River Suspension Bridge at Longmire, originally built in 1924 of logs and hewn timbers. The bridge was reconstructed of dimensional lumber in 1952 but basically retains its original appearance. It is the only surviving vehicular suspension bridge designed by the National Park Service (NPS).



Many of the park bridges appear to be constructed of stone masonry. Actually, these arch bridges are built of concrete and merely faced in stone, characteristic of the NPS Rustic Style. Good examples can be seen at Christine Falls (1928), White River (1929), and Box Canyon (1952).

The Fryingpan Creek Bridge (1931) on White River Road is an unusual three-hinged steel web-arch girder designed for this frequently shifting stream.

Even smaller bridges and culverts were generally designed to blend with the rugged mountain scenery. Most of the park bridges are constructed on tangents or curves, and are frequently superelevated or banked, offering a smooth transition from road to span. Such designs enable the park roads to sweep gracefully through the spectacular terrain.



LOCATION MAP of ROAD-RELATED STRUCTURES

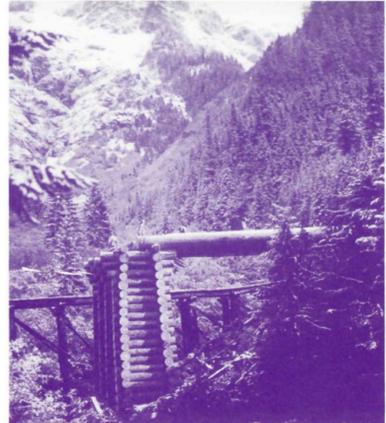
Modern Roads for Modern Times

In 1925 the National Park Service signed an agreement with the Bureau of Public Roads (BPR), U.S. Department of Agriculture, under which the BPR would take responsibility for all major road projects in the national park system. The BPR immediately took over the reconstruction of the Nisqually Road. By 1930, the road had been widened and paved, enabling visitors to reach Paradise in greater safety and comfort.

The BPR also began conducting new location surveys for roads on the west and east sides of the park and for a spur road to Yakima Park. The proposed West Side Road was planned to link the Nisqually River near the park entrance with the Mowich Lake and Carbon River areas in the northwest corner of the park. A new road on the east side would connect the Ohanapecosh Hot Springs area (then outside the park) with the new state road at Cayuse Pass. Construction of the proposed road to Yakima Park would largely entail the reconstruction of the old Glacier Basin mining road as far as the White River crossing, at which point it would climb a series of switchbacks to reach the high meadows at Yakima Park where the new "Sunrise" development would be constructed.

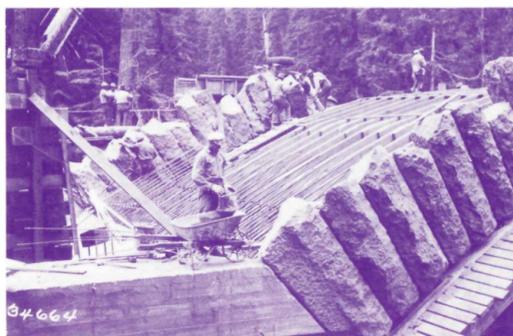
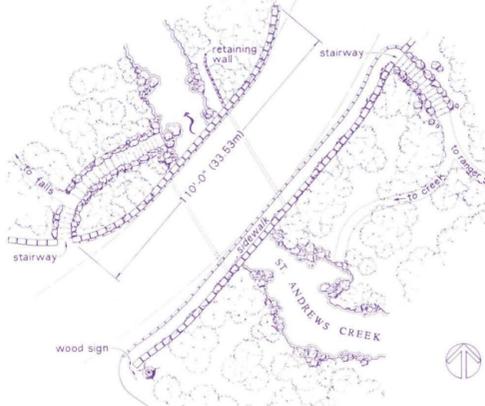
HISTORIC ROAD STRUCTURES IN MOUNT RAINIER NATIONAL PARK

1. NISQUALLY RIVER SUSPENSION BRIDGE (1924/52)
2. CHRISTINE FALLS BRIDGE (1928)
3. NISQUALLY GLACIER BRIDGE (1957)
4. NARADA FALLS BRIDGE (1928)
5. PARADISE RIVER BRIDGE - 2nd CROSSING (1926)
6. EDITH CREEK BRIDGE (1926)
7. PARADISE RIVER BRIDGE - 4th CROSSING (1926)
8. SUNBEAM CREEK CULVERT (1935)
9. STEVENS CREEK BRIDGE (1941)
10. STEVENS CANYON TUNNEL (1937)
11. MUDDY FORK BRIDGE at Box Canyon (1952)
12. NICKEL CREEK BRIDGE (1952)
13. LAUGHINGWATER CREEK BRIDGE (1935)
14. DEER CREEK BRIDGE (1939)
15. EAST SIDE TUNNEL (1939)
16. CHINOOK PASS ENTRANCE OVERPASS (1936)
17. DEADWOOD CREEK BRIDGE (1929)
18. DRY CREEK BRIDGE (1929)
19. KLICKITAT CREEK BRIDGE (1930)
20. FRYINGPAN CREEK BRIDGE (1931)
21. WHITE RIVER BRIDGE (1929)
22. NORTH PUYALLUP RIVER BRIDGE (1934)
23. ST. ANDREWS CREEK BRIDGE (1931)
24. SOUTH PUYALLUP RIVER BRIDGE (1931)



North Puyallup River Bridge under construction on the West Side Road, 1934. This section beyond Klapatche Point has been abandoned, and fragments of the bridge are still visible.

PLAN OF ST. ANDREWS CREEK BRIDGE
This skewed bridge was built on a curve with stone steps providing access to the creek. Such landscape details integrate the structure with its site.
—Drawn by Julie Dickson, HAER, 1992.



Construction of Deer Creek Bridge on East Side Highway, 1939. The derrick-placed stones were hand-cut from templates.

West Side Story

Construction of the southern section of the West Side Road began in 1926. By the time the road had been completed as far as the North Fork Puyallup River in 1934, park officials had decided against extending the road north through the rugged terrain to Carbon River; the cost would be too great, and construction would adversely impact the fragile park landscape. The road opened in 1934, and provided access to the Sunset Park and Indian Henry's Hunting Ground trailheads; a debris flow has closed the road since 1989.

A rough, unpaved road to the remote Mowich Lake region in the northwest corner of the park was completed in 1933 but was not opened to private automobiles until 1955. The road has seen little improvement, but continues to provide access to one of the most isolated areas of the park.

1925

National Park Service and Bureau of Public Roads sign agreement; BPR assumes construction of all national park roads

Three-year park road program begins with reconstruction of Nisqually Road; surveys for West Side, East Side and White River roads

1931

White River Road completed; opening of Sunrise development in Yakima Park



1932

Mather Memorial Parkway; first access to park from eastern Washington

1933

Mowich Lake Road built, but does not open until 1955



1933-42

Civilian Conservation Corps, Emergency Conservation Works programs improve park infrastructure

1934

West Side Road completed as far as North Puyallup River; never extended

1940

East Side Highway completed



1957

Stevens Canyon Highway links east and west sides of park; last major road development

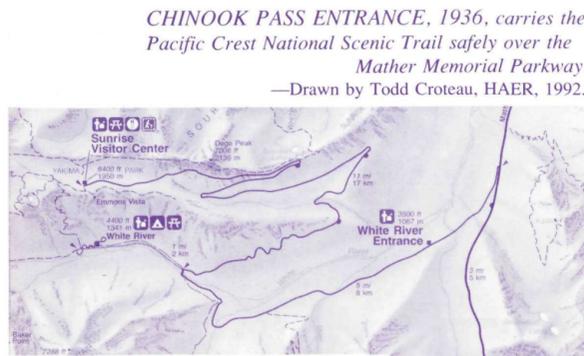


1992

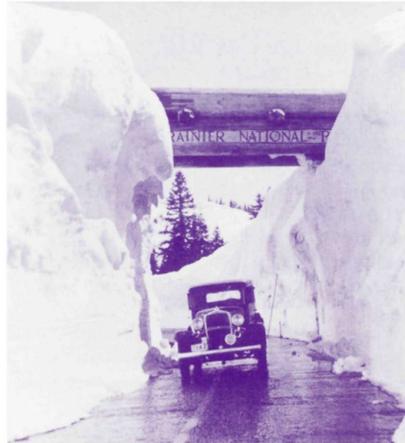
Mount Rainier roads and bridges documented by NPS Historic American Engineering Record

1999

Mount Rainier National Park Centennial



CHINOOK PASS ENTRANCE, 1936, carries the Pacific Crest National Scenic Trail safely over the Mather Memorial Parkway.
—Drawn by Todd Croteau, HAER, 1992.

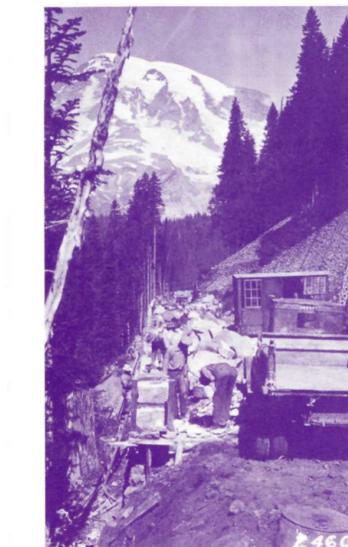


Inspecting snow-removal operations on Mather Memorial Parkway at the Chinook Pass Entrance, 1930s.

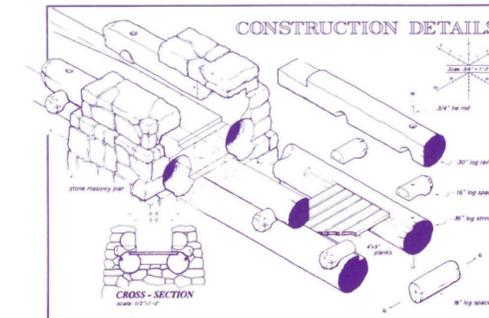
East Side Roads

The State of Washington began construction of the "Naches Pass Highway" in 1927. The new road would run from the Seattle suburb of Auburn through Enumclaw, then along the park's eastern boundary to Cayuse Pass before swinging east over Chinook Pass and on to Yakima. The road, completed in 1932, was renamed Mather Memorial Parkway after Stephen T. Mather, the first director of the National Park Service. Mather had spearheaded the plan to preserve a timber belt along the highway not only in the park but also in the adjacent national forests.

The new White River Road to Yakima Park was completed in 1931. At 6,400' elevation, Yakima Park is the highest point reached by a road in the park. Here, amid fields of subalpine flowers, the new Sunrise development quickly rivaled Paradise as a popular destination.



Placing stones for a retaining wall. Notice the variety and craftsmanship of rustic masonry designs.

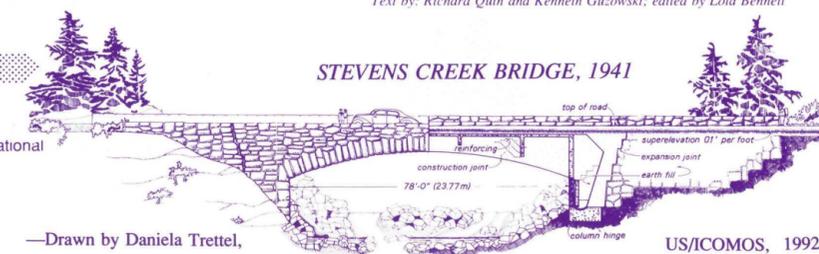


A rough private road was built to the Ohanapecosh Hot Springs in 1924. Following the addition of this area to the park in 1931, this road was reconstructed and work began on the East Side Highway, linking Ohanapecosh with the Mather Memorial Parkway at Cayuse Pass. The new road, now designated State Route 123, was completed in 1940.

The last major park road development was Stevens Canyon Highway. Construction started in the late 1930s but was suspended during World War II. Work did not resume for more than a decade. The road was finally completed in 1957, and provided the first direct link between the east and west sides of the park.

Over the years, proposals were made for many other roads, including a "Wonder Road" around the mountain and even a road to the summit! These were never built, however, and most of the park remains as wilderness. Nevertheless, motorists find easy access to many of the most spectacular areas of the park, and any trip along the park roads is a memorable one.

This brochure was produced by the Historic American Engineering Record (HAER), a division of the National Park Service, Department of the Interior, as part of a long-range program to document historically significant engineering and industrial works in the United States. The 1992 Mount Rainier Roads and Bridges Recording Project was cosponsored by the NPS Roads and Bridges Program and Mount Rainier National Park. Photos were provided by Mount Rainier National Park Archives.
Design by: Todd Croteau, Julie Dickson, Bryan Fish, Daniela Trettel
Text by: Richard Quin and Kenneth Guzowski; edited by Lola Bennett



STEVENS CREEK BRIDGE, 1941

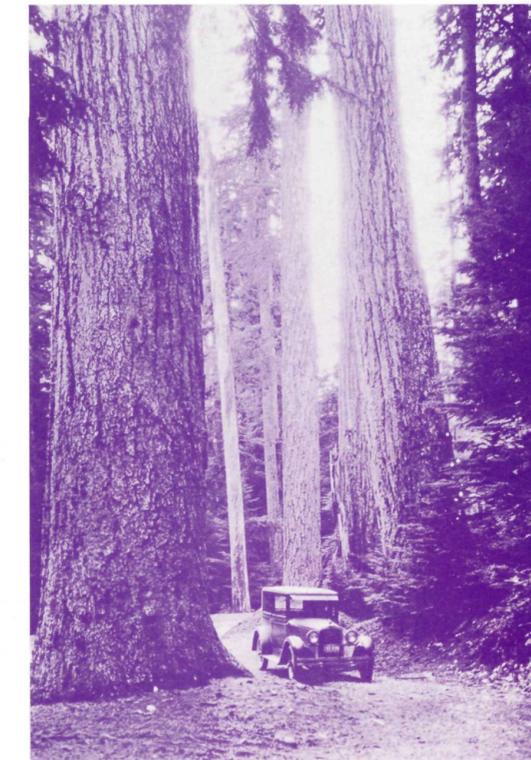
—Drawn by Daniela Trettel,

US/ICOMOS, 1992.

HIGHWAYS IN HARMONY

Mount Rainier Roads and Bridges

Mount Rainier National Park, Washington



Winding through the old-growth forest near Longmire.

Design with the Land

Mount Rainier has always been famous for its glaciers, luxuriant foliage and brightly-colored subalpine meadows. During the early national park years, pre-1916, the U.S. Army Corps of Engineers designed the park roads and bridges to harmonize with the superb landscapes. Following the establishment of the National Park Service (NPS) in 1916, NPS engineers and landscape architects worked together to continue the tradition of appropriate design for the park landscape.

Between 1920 and 1940 the Rustic Style of architecture became the design standard for park construction. Native stone, logs and other indigenous materials were commonly used for buildings, shelters, bridges, retaining walls, campground facilities, and signs. Natural planting practices were adopted for revegetation work. Native trees and shrubs were skillfully integrated into the developed areas to blend them with the wilderness.



Some of this work was carried out by the Emergency Conservation Works program, the parent organization of the Civilian Conservation Corps, a massive public works project that provided relief for many unemployed men during the Great Depression.

The landscape work related to the roads and bridges of Mount Rainier National Park demonstrates a sensitivity to the natural features of the land. Most built components were designed to blend into the system as a whole, in harmony with the natural landscapes of the mountain region. In addition to preserving the natural beauty of the park, Mount Rainier's roads and bridges provide safe and convenient access for millions of visitors. Without this carefully-designed infrastructure, the national park experience would be markedly different.

First Access

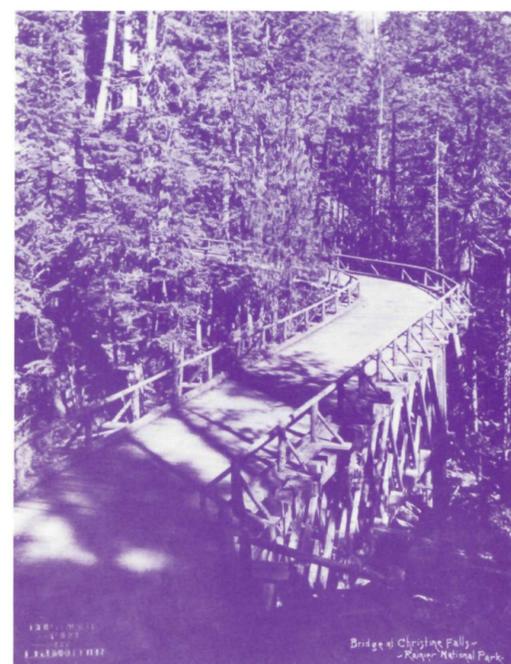
Mount Rainier National Park contrasts beautiful landscapes with harsh environmental conditions. Rain and snow, rock and ice, floods and avalanches are obstacles that may influence one's interaction with "The Mountain." Throughout history, these obstacles have been overcome by the desire to gain access to the mountain domain.

The first route into the area was a rough trail constructed in 1884 by James Longmire to a series of mineral springs on the southwest flank of Mount Rainier. The first settler of the area, Longmire touted the springs for their alleged medicinal value and developed a primitive resort that evolved into the present park community of Longmire. Four years later, the Longmire family constructed a crude foot trail to the subalpine meadows they named "Paradise," and in 1890-91, aided by five Native Americans, opened the first road to Longmire Springs. This was a toll road, suitable only for wagons travelling in good weather.

Mount Rainier was designated as the nation's fifth national park on March 2, 1899. As the Department of the Interior had no budget or personnel to administer the new reserve, the administration was handled in its first five years by the supervisor of the adjacent Rainier National Forest Reserve. Visitation, however, was hampered by the lack of a good road to the park and congress soon acceded to requests to provide better access to the park.



The Army Corps of Engineers, under the direction of Eugene Ricksecker, surveyed the Nisqually Road, superposing proposed routes onto photographs.



Built by the Army Corps of Engineers, this timber bridge spanning Van Trump Creek at Christine Falls demonstrated early design sensitivity to the landscape. "The intention is to follow...the graceful curves of the natural surface...being most pleasing and far less destructive than regular curves laid with mathematical precision." --Eugene V. Ricksecker, 1904



Early roads were constructed by hand labor, using picks, shovels and blasting powder to carve the rugged terrain.

The Road to Paradise

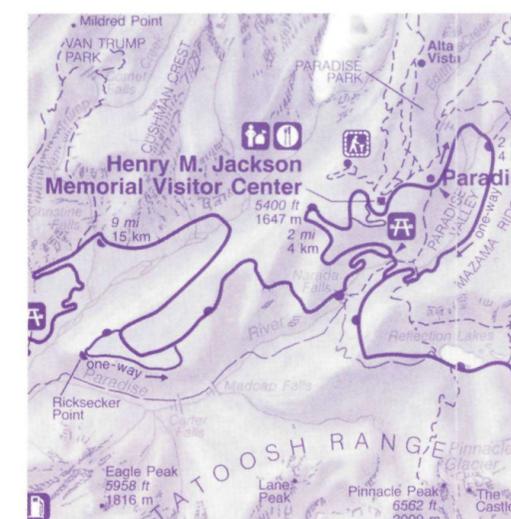
The U.S. Army Corps of Engineers was assigned the task of constructing a park access road in 1903. The Corps had recently completed the road system for Yellowstone National Park, and this experience would prove helpful in the rugged terrain of Mount Rainier. Surveys for the road were conducted in 1903 and 1904 under the direction of Eugene V. Ricksecker, a talented civilian engineer employed by the Corps' Seattle office. Construction began in August 1904.

The road to Paradise was planned as a "pleasure road" for park visitors, taking advantage of the glorious views and providing access to some of the most spectacular glaciers and waterfalls. A maximum grade of 4 percent, considered the steepest over which horses could trot and cyclists pedal, was adopted. The natural terrain was followed wherever possible, creating a road of gentle grades and graceful curves.

In July 1908, the road reached the Nisqually Glacier, and was hailed as the first road in America to reach a glacier. The road was completed to the "Camp of the Clouds" at Paradise Valley in 1910; however, automobiles were not permitted on the upper section of the road until 1915.

When President William Howard Taft's touring car made the trip to Paradise Valley in 1911, the road was not completely passable, and the car was dragged into the valley by a team of mules. Considerable improvements had to be made before private automobiles were allowed to make the complete journey four years later.

The new road immediately proved popular and visitation at Mount Rainier National Park soared. Visitors could leave Seattle or Tacoma in the morning, have lunch at Longmire Springs, and spend the afternoon in Paradise Valley.



"First Crossing" Paradise River Bridge at Narada Falls, built by the U.S. Army Corps of Engineers in 1908.



The National Park Transportation Company operated motor stages from Ashford to Paradise Valley.

National Park Service Years

Established in 1916, the National Park Service was entrusted with the mission of preserving cultural artifacts and natural wonders for the benefit of all Americans. This new agency adopted the Rustic Style of architecture, which dictated that park structures and facilities should harmonize with their natural settings. This style is well-represented in Mount Rainier's outstanding collection of historic park buildings, as well as its bridges and other road-related structures.

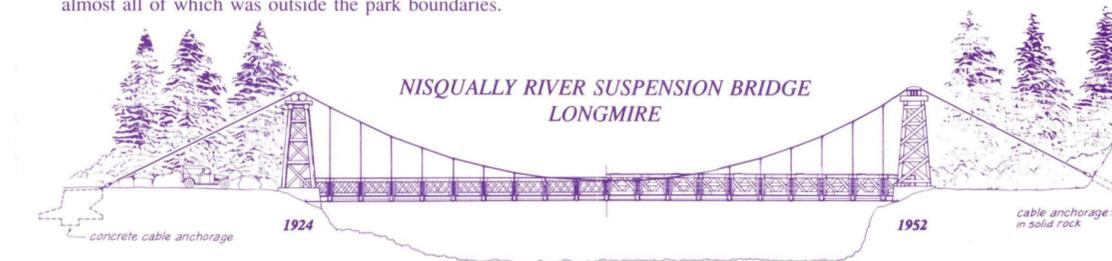
The creation of the National Park Service prompted surveys for expansion of the park's road system. A rough road was opened into the Carbon River section at the northwest corner of the park in 1921. For many years, this route was periodically inundated by raging floods, and even today is closed much of the year.

By the early 1920s, the park roads were in terrible condition. Visitors were irritated by choking clouds of dust from the unpaved surfaces, and serious accidents were beginning to occur. The park was forced to expend more and more money on repeated repairs and maintenance.

No sooner is one rough place repaired than others, worse, are worn. By the time a second or third dangerously rutted section is repaired the first work must be done over. The worst feature of it all is the gradual deterioration of the old road despite all the work done and expenditures made, giving the impression to visitors that we either do not know how to maintain roads or else we are not cognizant of the needs.

--Superintendent O. A. Tomlinson, 1925

Park administrators and motorists clamored for the construction of roads in other areas. Park administrators were hampered by lack of communication between the various park areas; road distance between park headquarters at Longmire and White River Ranger Station was 135 miles, almost all of which was outside the park boundaries.



This bridge was built in 1924 to provide access to the Longmire Public Auto Camp (now closed). The structure was originally constructed with log towers and a wooden Town lattice truss. In 1952 it was reconstructed with dimensional lumber and a Howe stiffening truss. —Drawn by Bryan Fish, HAER, 1992.



Concessionaire buses at the Paradise Inn, late 1920s. Today, increasing auto traffic is pressuring a return to shuttle services.



75,000 or So Years Ago
Mount Rainier reaches maximum height

1792
Captain George Vancouver of the British Royal Navy "discovers" mountain and names it for friend, Admiral Peter Rainier

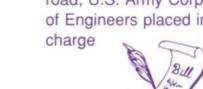
1860s
Citizens of Pierce County survey road and railway routes over Cowlitz Pass near park's present southeast corner; never built

1870
Hazard Stevens and P.B. Van Trump make first documented ascent of Mount Rainier

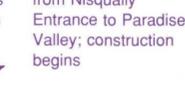


1890
Longmire family and Native American helpers construct first road into area

1899
Mount Rainier National Park established by act of Congress



1903
First funds appropriated for park road; U.S. Army Corps of Engineers placed in charge



1903-04
Eugene Ricksecker directs road survey from Nisqually Entrance to Paradise Valley; construction begins

1904
Tacoma Eastern Railway reaches Ashford near west boundary; visitation up significantly; stages begin daily service to Longmire in 1906



1911
President Taft's car, one of first to reach Paradise Valley; partly pulled by mules

1914
Women allowed to drive on park roads

1915
"Road to Paradise" completed; first road in America to reach a glacier



1916
National Park Service established



1921
Carbon River Road constructed

