Grand Coulee Dam:

From Jackrabbits to Electricity

(1933-1941)

2018 Fall Conference

HISTORY COMMITTEE
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AMERICAN PUBLIC WORKS ASSOCIATION
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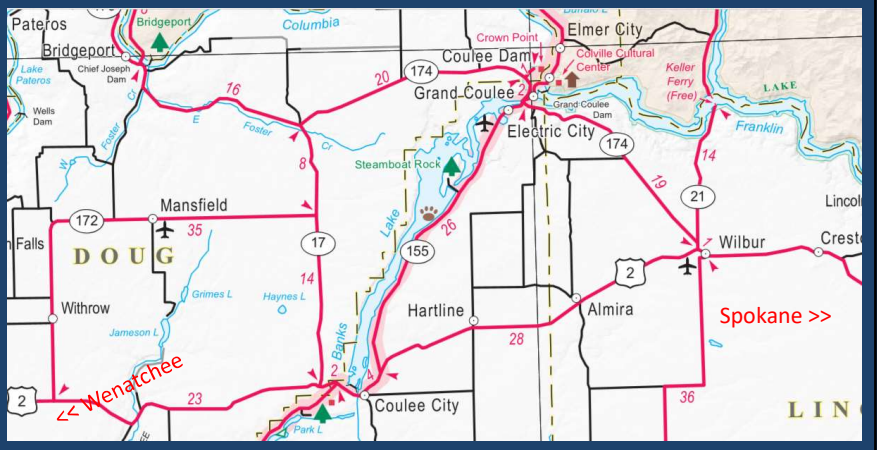
Grand Coulee Dam: From Jackrabbits to Electricity

The Dam Project

- Timeline
- Dam Construction
- Jobs Creation
- FDR Visits
- Life Magazine
- Seattle Times
- Newsreels



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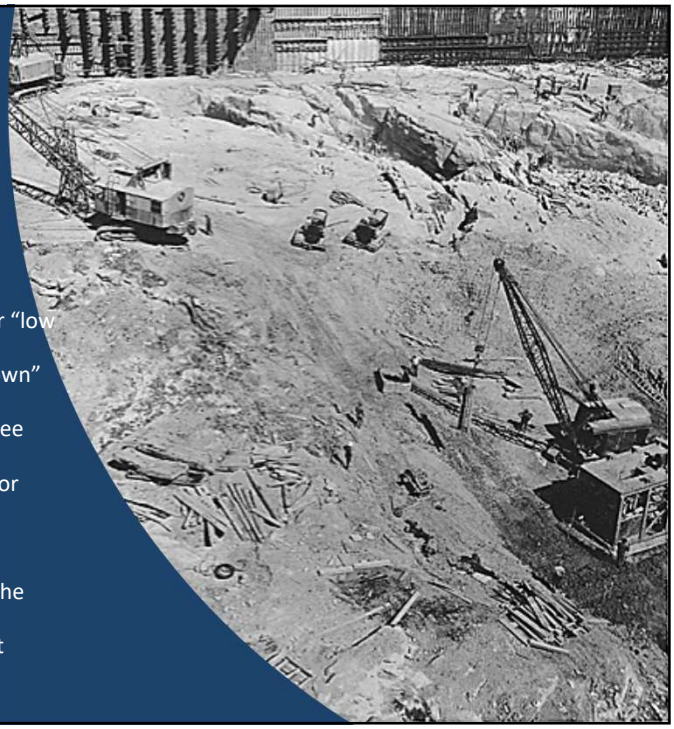
Timeline



- **1933** - Excavation of overburden begins in December
- **1934** - MWAK underbids competitors with $30M bid for “low dam”
- **1934** - Construction of roads, bridges and “engineers town” begins
- **1935** - Congress authorizes development of Grand Coulee Dam and the Columbia Basin Project.
- **1935** - Bureau of Reclamation issues Change Order #1 for “high dam” foundation
- **1937** - Consolidated Builders Inc. secures contract to complete the high dam
- **1941** - Grand Coulee Dam is essentially complete and the Left Power Plant begins to operate
- **1942** – Water level behind the dam rises to full 380 feet

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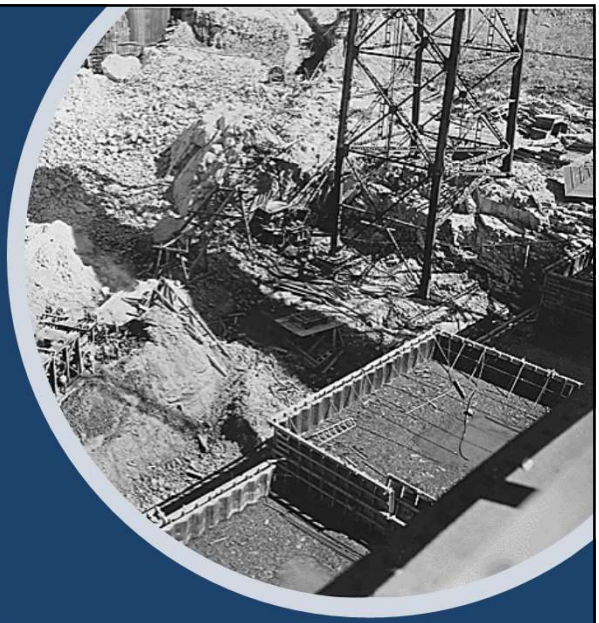
Dam Construction



- More than 22 million cubic yards of "overburden" removed from the dam site
- 9,500 tons of steel used in the framework for the dam
- 12 million cubic yards of concrete poured, with a maximum 536,364 cubic yards of concrete poured in 1 month
- Two-mile long conveyer belt used to haul away the excavated earth and rocks
- Landslides became a serious problem. A landslide in March 1934 dumped 1.5 million cubic yards back into the excavation
- In cold weather, steam was circulated through pipes to keep newly poured concrete from freezing.
- In warm weather, the problem was how to cool the concrete. The solution was 2,000 miles of cooling pipes, embedded in the dam

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Grand Coulee Dam/Hoover Dam Comparison

	Grand Coulee Dam	Hoover Dam
Type of Dam	Gravity Dam	Gravity-Arch Dam
Operating Agency	Bureau of Reclamation	Bureau of Reclamation
Total Generating Capacity	6,809 megawatts	2,078 megawatts
Location	Washington State	Nevada/Arizona
Dates of Construction	1933-1941 1967-1974 Third Powerplant	1931-1936
Height of Dam	550 feet	726 feet
Length of Dam	5,223 feet	1,244 feet
Concrete	11,975,521 cubic yards	3,250,000 cubic yards
Purposes and Benefits	Purposes and benefits of both dams include flood control and river regulation, water storage and delivery (including irrigation), power generation, recreation, and fish and wildlife.	

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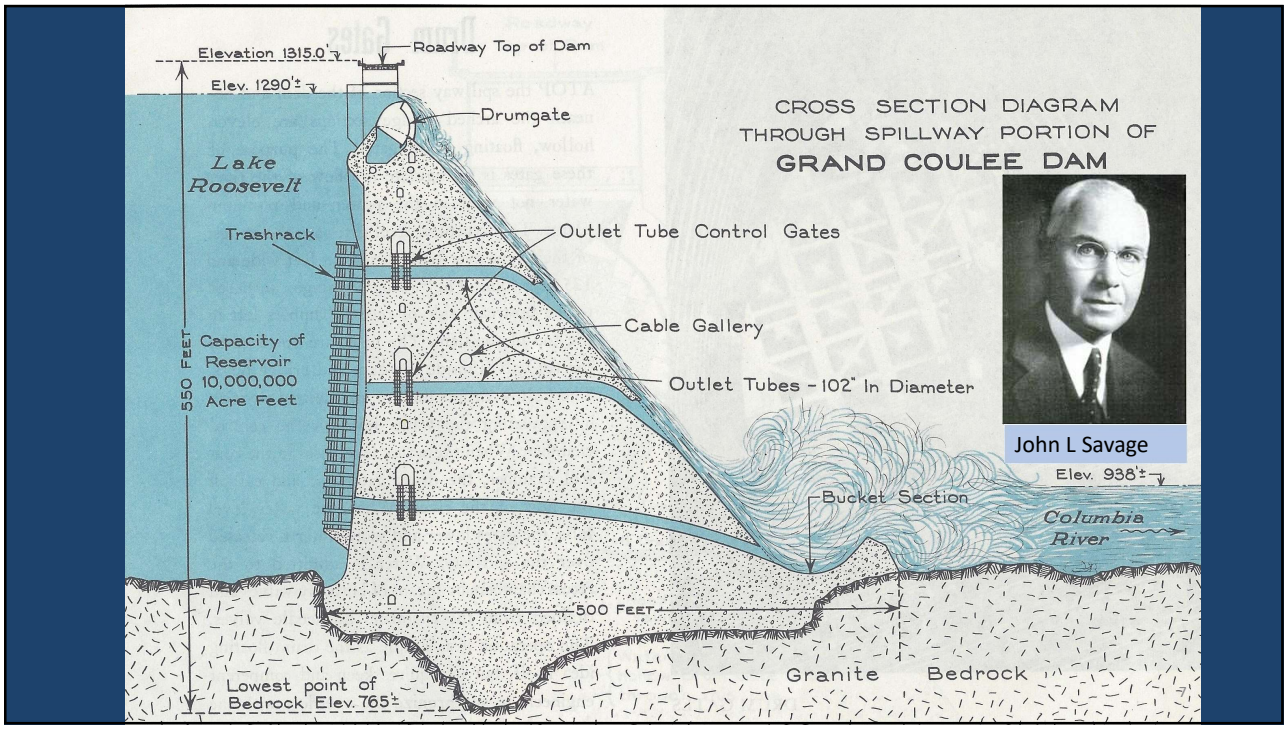

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Jobs Creation

- Franklin Delano Roosevelt supported Grand Coulee Dam for its public power aspect (as opposed to private) and for its jobs creation opportunity
- More than 12,000 people found work on the dam at one stage or another, with a peak payroll of 6,000
- Seventy-two died on the job, mostly from falling or from having something fall on them. Contrary to myth, none were buried in the concrete
- Skilled laborers, such as carpenters and electricians, received up to $1.20 an hour, but the average worker received 85 cents an hour

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FDR Visits in 1934 and 1937

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ROOSEVELT BUILDS THE BIGGEST DAM

And Envisions A New Society

Life Magazine – October 1937

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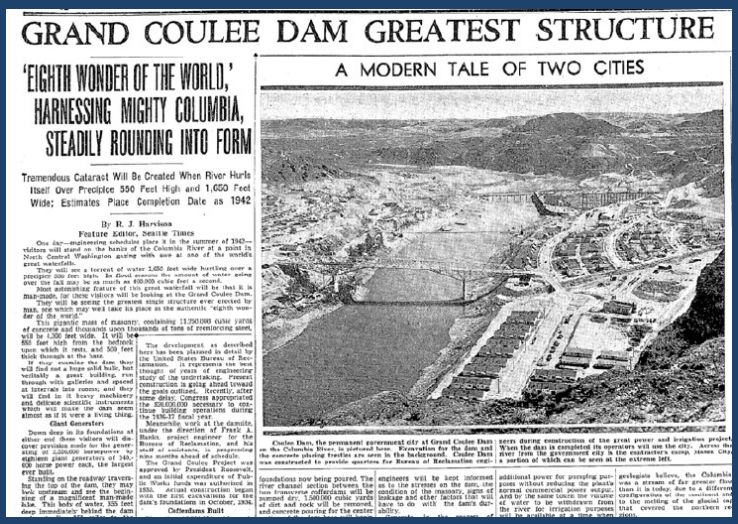
Seattle Times – July 1936



GRAND COULEE DAM GREATEST STRUCTURE

'EIGHTH WONDER OF THE WORLD,' HARNESSING MIGHTY COLUMBIA, STEADILY ROUNDING INTO FORM

Tremendous Cataract Will Be Created When River Hurls Itself Over Precipice 550 Feet High and 1,650 Feet Wide; Estimates Place Completion Date as 1942

By R. J. Harvison
Feature Editor, Seattle Times

A MODERN TALE OF TWO CITIES

Cofferdams Built

Giant Generators

Grand Coulee Dam, the permanent government city at Grand Coulee Dam on the Columbia River, is pictured here. Excavation for the dam and the concrete placing trestles are seen in the background. Coulee Dam was constructed to provide quarters for Bureau of Reclamation engineers during construction of the great power and irrigation project. When the dam is completed its operators will use the city. Across the river from the government city is the contractor's camp, passes City, a portion of which can be seen at the extreme left.

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Newsreels

- Short documentary film containing news stories and items of topical interest
- Prevalent between the 1910s and the late 1960s.
- Typically presented in a cinema, newsreels were a source of current affairs, information, and entertainment for millions of moviegoers.
- Newsreels were typically exhibited preceding a feature film
- Also dedicated newsreel theaters in many major cities in the 1930s and '40s
- Some large city cinemas also included a smaller theaterette where newsreels were screened continuously throughout the day.

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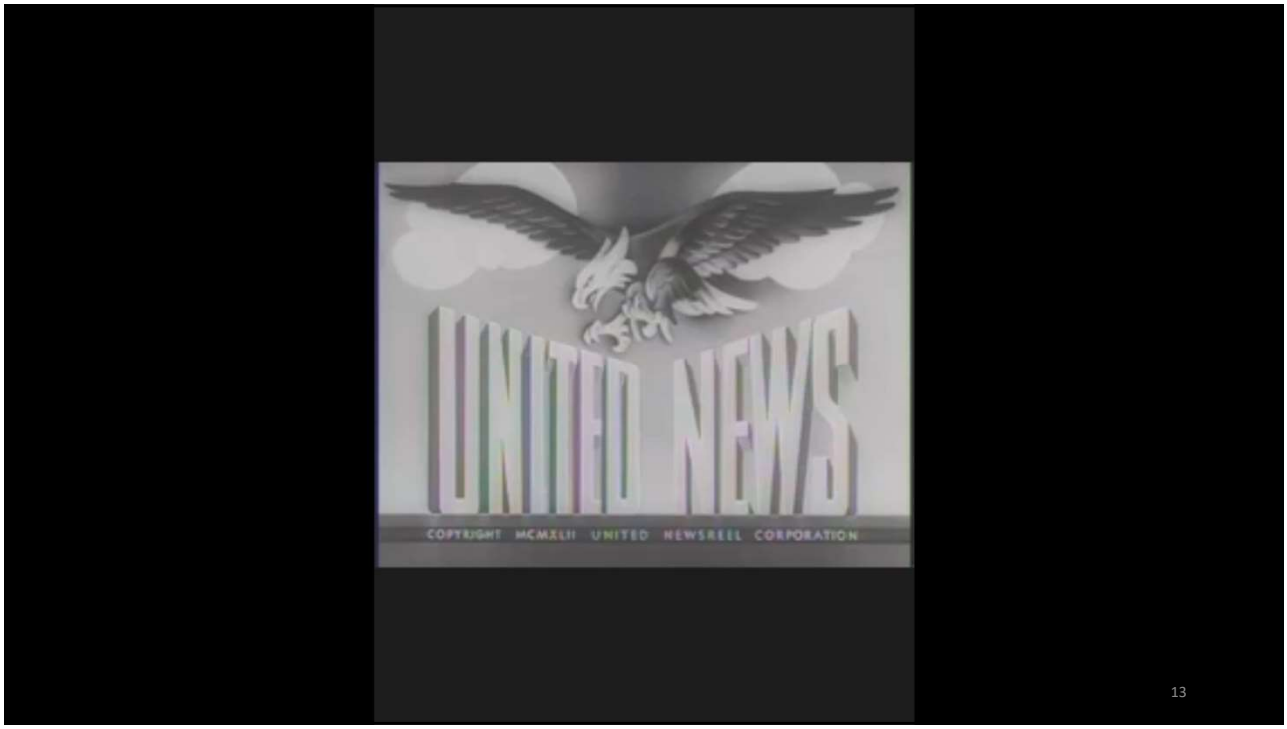
UNITED NEWS
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WORLD'S MIGHTIEST
WATERFALL BEGINS
WORKING FOR U. S.
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Grand Coulee Dam: The Dam Was Only Part of the Project

- Life Before the Dam
- Building New Towns
- Roads, Bridges and Railroads
- Clearing Lake Roosevelt Basin
- Cemeteries and Graves Relocated

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Life Before the Dam

- When construction began, there was virtually nothing at Grand Coulee but the river, jackrabbits, and rattlesnakes.
- No paved roads.
- No bridges over the river, only small private ferries
- The closest railroad spur was 30 miles away
- The closest towns were Almira, Wilbur, Hartline, Creston and Nespelem with a combined 1930 population of 1,462

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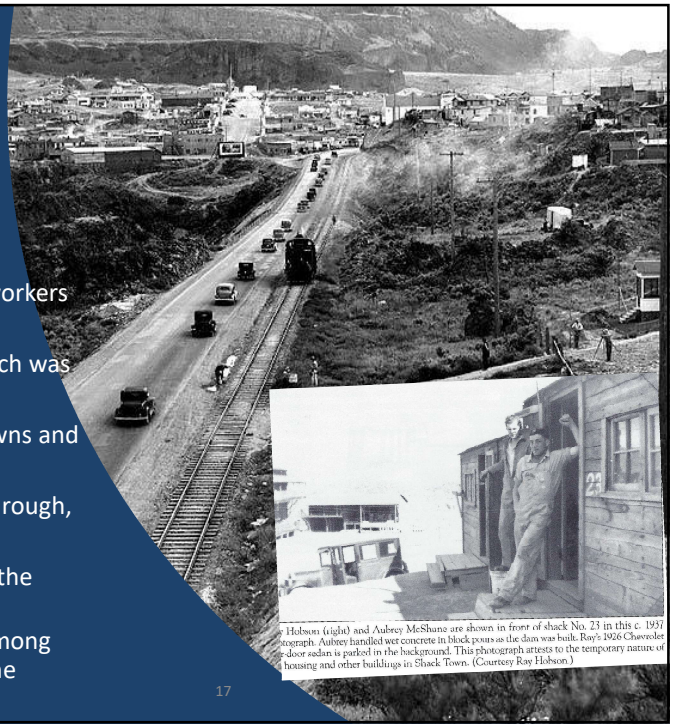
Building New Towns

- MWAK built a town called Mason City to house workers and their families
- Bureau of Reclamation built Engineers Town, which was a model community
- The present city of Coulee Dam includes both towns and was incorporated in 1959
- Other towns that sprung up were wide open and rough, reminiscent of early frontier towns
- Grand Coulee, which sprang up in 1933, became the center for sin and vice
  - The town soon earned several nicknames, among them "The Cesspool of the New Deal" and the "Toughest Town in North America."



Hobson (right) and Aubrey McShane are shown in front of shack No. 23 in this c. 1937 tograph. Aubrey handled wet concrete in block pours as the dam was built. Ray's 1926 Chevrolet r-door sedan is parked in the background. This photograph attests to the temporary nature of housing and other buildings in Shack Town. (Courtesy Ray Hobson.)

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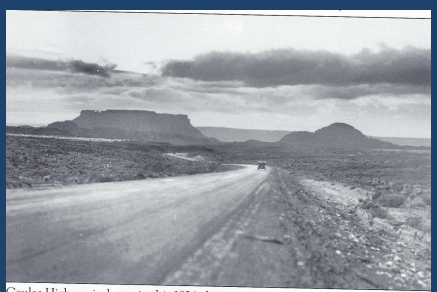
Roads

- No paved roads served the dam site prior to construction
  - Only dirt roads leading to a private ferry service
- In early 1934, the State authorized $600,000 to build roads to the dam site
  - First road was 28 miles from Coulee City through the Grand Coulee, now covered by Banks Lake (now SR 155) and was relocated as part of Banks Lake construction
  - Second Road was 22 miles from Wilbur (now part of SR 174)



Coulee Highway is shown in this 1934 photograph. To aid with dam construction, the shington regraded, widened, and hard-surfaced existing highways leading to Grand the government built a hard-surfaced road from the Grand Coulee to the dam site transmission line, operating at 110,000 volts, was also built from Coulee City t a distance of 31 miles. (Courtesy Washington State Archives.)

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Bridges

- Coulee Bridge 1936 (downstream of dam) (SR 155)
- Kettle Falls Highway Bridge 1941 (SR 395)
- Kettle Falls Railroad Bridge 1941
- Kettle River Railroad Bridge 1941
  - (3 miles north of Jct. of SR 20 and SR 395)
- Fort Spokane Bridge (Spokane River) 1941
  - Washington State Department of Highways (SR 25)

Coulee Bridge 1936

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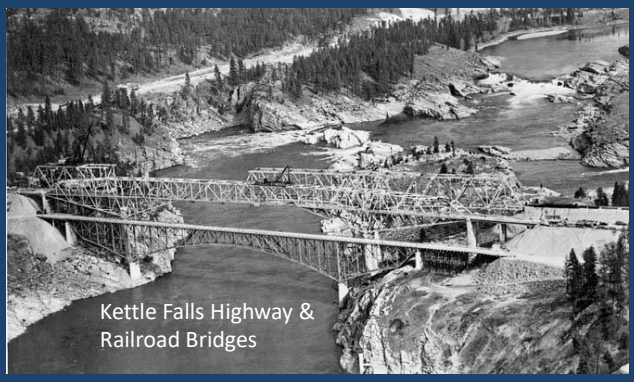

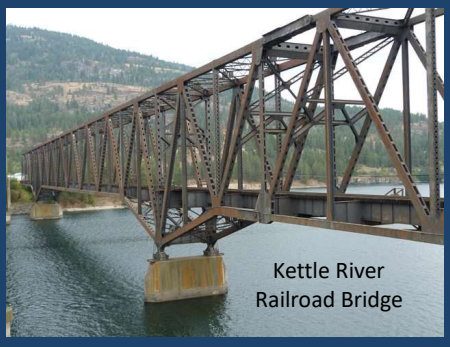

Bridges

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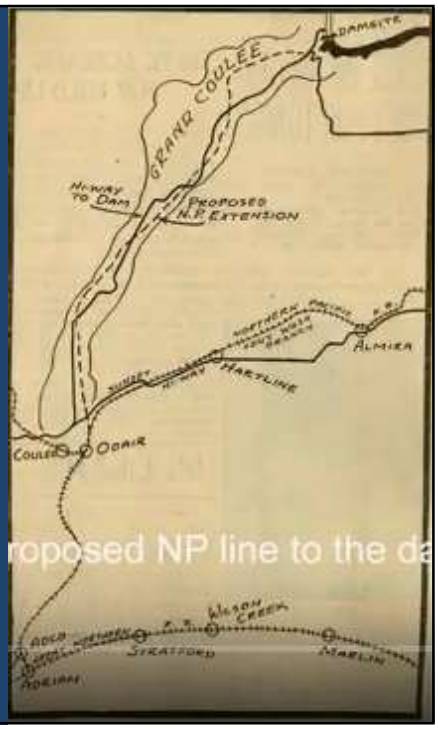
Railroads

- 31 miles of new railroad track Odair to Grand Coulee Dam
- 30 miles of track relocation Kettle Falls to Northport
- 6 miles of track relocation from Kettle Falls to Boyds



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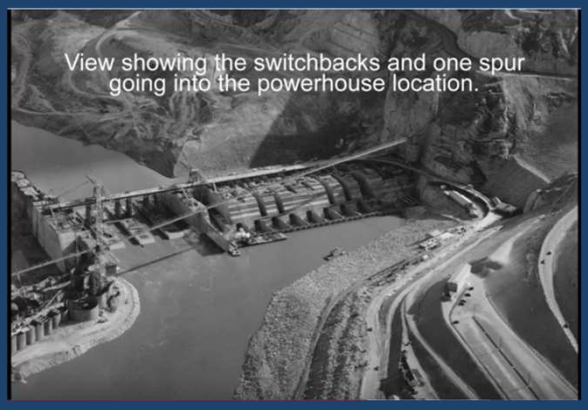

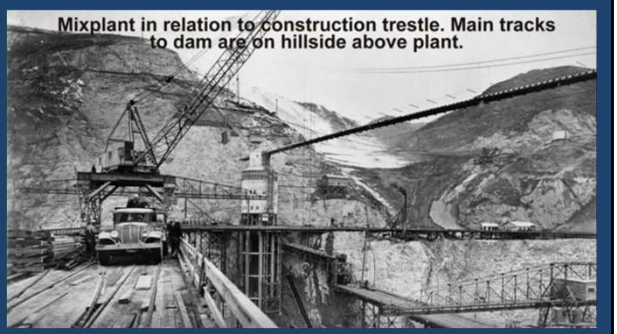

Railroads

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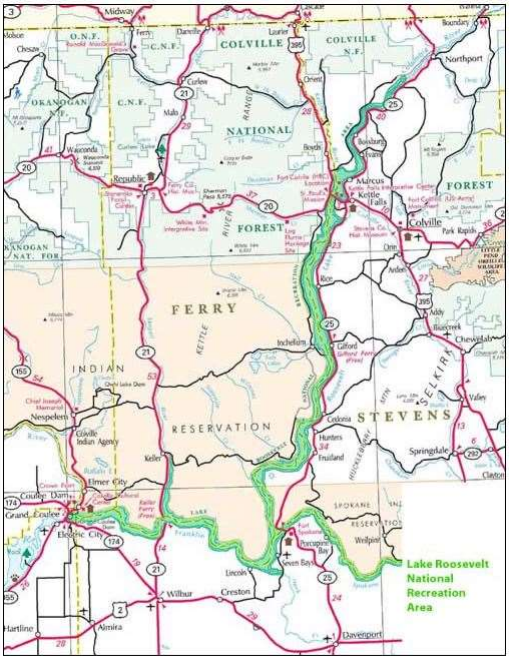
Lake Roosevelt

- Reservoir reaches upriver about 150 miles, depending on depth
- Depth of the lake varies from 380 feet deep at Grand Coulee Dam to about 14 feet deep just below the Canadian border
- When full (elevation 1,290 feet above sea level), it impounds 9 million acre-feet
- Level of the lake is dictated by hydropower and flood control operations
- Lake level can fluctuate by 82 feet



Base Map Source: Washington Department of Transportation 2004 Highways map

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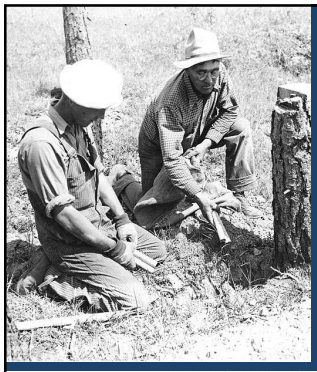

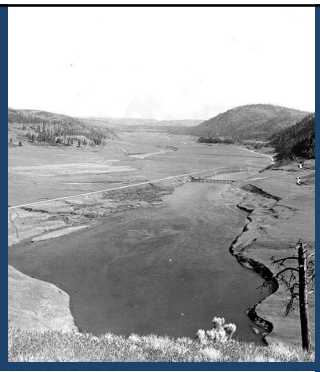

Clearing Lake Roosevelt Basin

- 10 Towns Flooded and/or Relocated
- Town and Indian Cemeteries Relocated
- Elevation 1,310 clearing line
- 100,000 acres
- 3,000 WPA workers
- $10 million

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Clearing Lake Roosevelt Basin

Lincoln County
- Peach - first town flooded, but not relocated
- Lincoln – relocated, now a boat launch
- Keller - relocated

Ferry County
- Gerome flooded
- Inchelium -relocated
- Daisy - relocated

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Clearing Lake Roosevelt Basin

Stevens County
- Gifford - relocated
- Kettle Falls - moved 3 miles east next to Meyers Falls, which was absorbed by the new Kettle Falls
- Marcus - relocated
- Boyds – relocated

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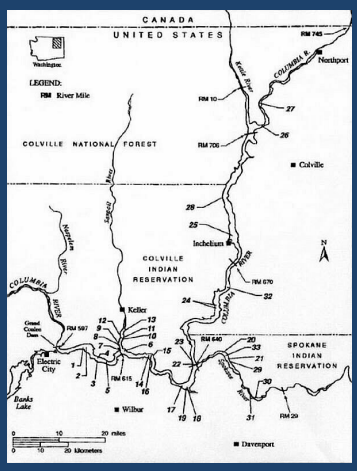
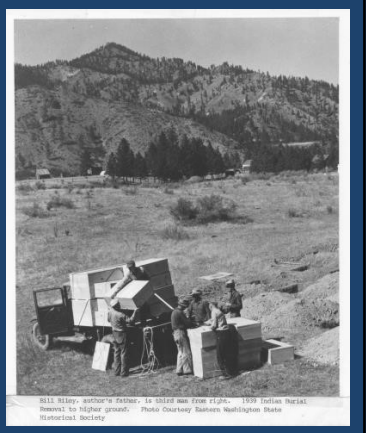
Cemeteries and Graves Relocated

Peach Cemetery. Photo Credit: Cathy Hanson





Bill Riley, author's father, is third man from right. 1939 Indian Burial Removal to higher ground. Photo Courtesy Eastern Washington State Historical Society

- 33 cemeteries originally identified
- 1,388 (or more) graves relocated
- Continued well past the filling of the reservoir as the side slopes sluffed

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Credits

- TVW
- U.S. Bureau of Reclamation
- UW Special Collections
- Seattle Times
- HistoryLink.org
- FDR Presidential Library
- *Grand Coulee: Harnessing a Dream*
- *Spokesman Review*
- *Grand Coulee: From Hell to Breakfast*
- Ewanida Rail Records
- Bridgehunter.com
- Historic Bridges Org
- Images of America: Grand Coulee Dam
- WSDOT & Washington State Archives

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