

Letter from the Secretary of War, transmitting, with letter of the Chief of Engineers, a report of a preliminary examination of Feather River, California, above Marysville.

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PRELIMINARY EXAMINATION OF FEATHER RIVER, CALIFORNIA, ABOVE MARYSVILLE.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With letter of the Chief of Engineers, report of a preliminary examination of Feather River, California, above Marysville.

DECEMBER 6, 1894.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT.

Washington, December 4, 1894.

SIR: I have the honor to inclose, herewith, a letter from the Chief of Engineers dated December 1, 1894, together with a copy of a report from Maj. W. H. Heuer, Corps of Engineers, dated October 12, 1894, of a preliminary examination made by him in compliance with the provisions of the river and harbor act of August 17, 1894, of Feather River, California, above Marysville.

Very respectfully,

DANIEL S. LAMONT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 1, 1894.

SIR: I have the honor to submit the accompanying copy of report dated October 12, 1894, by Maj. W. H. Heuer, Corps of Engineers, giving results of preliminary examination of Feather River, California, above Marysville, provided for by river and harbor act of August 17, 1894.

Major Heuer reports that he considers that there is no public necessity for the improvement of the Feather River above Marysville, and



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this opinion is concurred in by the Division Engineer, Col. George H Mendell, Corps of Engineers, and by this office.

Very respectfully, your obedient servant,

THOS. LINCOLN CASEY,
Brig. Gen., Chief of Engineers

Hon. D. S. LAMONT,
Secretary of War.

PRELIMINARY EXAMINATION OF FEATHER RIVER, CALIFORNIA. ABOVE MARYSVILLE.

UNITED STATES ENGINEER OFFICE,
San Francisco, Cal., October 12, 1894.

GENERAL: In accordance with the river and harbor act of August 17, 1894, and circular letter from the office of the Chief of Engineers, dated August 20, 1894, an examination of "the Feather River, California, above Marysville" was made by me on October 8, 1894, and the following is the report of said examination:

The Feather River rises in the Sierra Nevada Mountains and flows in a general southerly direction to the Sacramento River, which it joins at a point about 21 miles above the city of Sacramento. This river, in early days, and as late as 1861, has been occasionally navigated by very light-draft steamboats as far as Oroville, which is about 66 miles above the mouth of the river. Since that date Yuba City, situated on the left bank and about 30 miles above the mouth of the stream, has been considered as the head of navigation of this river. Occasionally a little steamboat, drawing about 1 foot of water, and towing a flatboat, 18 feet wide and about 40 feet in length, brings down to Yuba City a load of fruit from a ranch situated about 15 miles above. At Oroville the Feather River is said by the State engineer, in his report of 1880, to be 160.5 feet in elevation above the level of low tide in Suisun Bay, and to have a fall from Oroville to its mouth, a distance of 66 miles, of about 65 feet, an average of about 1 foot fall per mile. He gives the low-water discharge of the stream above Yuba City as 1,200 cubic feet per second, the high-water discharge at 12,000 cubic feet per second, and the average low-water width of channel at 280 feet.

The examination was made by me on October 8, 1894, in a gasoline launch, drawing about 30 inches of water, and extended from the mouth of the Yuba River, which enters the Feather at Marysville and opposite Yuba City, to a point said to be by river 10 miles above Marysville, at the site formerly occupied by the reform school. At this point the launch ran aground and could go no farther, though it is possible that a few miles more could have been navigated in a skiff. In this 10 miles of river the Feather is quite clear, its banks are from 5 to 15 feet in height, densely covered with brush, willows, and cottonwoods, its bottom is sand, and here and there on the sides a sand bar is visible. There are very few snags in the river, and none that are really any obstacle to navigation; moreover, in this distance there are no sharp bends, overhanging trees, or water shoal enough to interfere with navigation. The present stage of the river is a little less than 1 foot above its extreme low-water stage; in freshets its rise is said to be about 18 feet in vertical height, and on these occasions the whole country is inundated, which explains why there are no farms adjacent to either bank of the river. Connecting Marysville with Yuba City is a covered wagon truss bridge without a draw. The bottom chord of this bridge is about 22 feet more or less above low-water stage of the river. About 200 yards

above this bridge is another trussed bridge over which the railroad crosses the river. Some 2 miles above this second bridge is a third bridge, used by the railroad in going from California to Oregon. Not one of these bridges has a draw and the bottom chord of each bridge is from 20 to 25 feet above the level of low-water stage of the river.

In the 10 miles, more or less, of river examined the most striking feature was the clearness and depth of the water as compared with that portion of the river below the junction of the Yuba. The current just above the Yuba junction was sluggish and apparently gradually increased in the next 10 miles above until it reached a velocity estimated at from $1\frac{1}{2}$ to 2 miles per hour. When the launch ran aground and could go no farther the depth of water was from 26 to 30 inches and the bottom was a mixture of sand and mud, into which the sounding pole easily penetrated to a depth of 8 feet.

This clear and moderately deep pool is accounted for by the fact that the Yuba moves annually an immense quantity of sand and other fine mining detritus. This is lodged, some of it in the Yuba, but much of it in the Feather. At the junction of the two rivers the bed of the Feather has been raised at least 13 feet, probably more. This has caused a submerged dam and backed up the Feather.

On the return trip down the river the launch was run very slowly in the channel at as uniform a rate of speed as was practicable. At every sixtieth second a sounding with a pole was carefully made, and the following is the result. Depths are expressed in feet, and where x is shown it means that the depth was greater than 12 feet, which was the length of the pole: 5, 6, 5, 6, 4, 6, 7, 9, 6, 10, 6, 5, 6, 4, 7, 8, 7, 8, 9, 8, $8\frac{1}{2}$, 5, 8, 6, 5, 4, $5\frac{1}{2}$, 6, 8, 7, 10, 8, 10, 7, $7\frac{1}{2}$, 7, 10, x, x, x, 9, 9, x, 9, $6\frac{1}{2}$, 8, x, 10, 6, 10, $9\frac{1}{2}$, x, x, 7, $6\frac{1}{2}$, 6, x, x, x, x, x, 8, 8, 11, 8, 8, 8, 9, x, x, x, x, x, x, x, x.

Over the stretch of river examined there is practically no commerce and no farms on either bank. A railroad runs on each side of the river. One goes to Oroville, 26 miles above Marysville, the other to Oregon; both join near Marysville. Neither of these railroads for over 30 miles of length of river is over 10 miles from the river, and the average distance between railroad and river is less than 5 miles.

Navigation on the 10 miles of river above Marysville is practicable at all seasons of the year, and this stretch of river is in far better boating condition than is the 30 miles of Feather River below Yuba City, at which place, at lowest water periods, not over 2 feet depth of water can be found. The only obstacles that could possibly interfere with navigation for 10 miles on the Feather River above Marysville would be the absence of draws in the three bridges referred to. At high and medium stages of the river boats could not pass under these bridges. At low water there is not depth of water enough in the river beyond a point 10 miles above Marysville for navigation, and not enough commerce in sight to warrant an improvement in this upper river.

Under these circumstances, namely, bad river below, no navigation when the conditions for navigation are favorable, and practically no commerce above Marysville, I consider that there is no public necessity for the improvement of the Feather River above Marysville.

Respectfully submitted.

W. H. HEUER,
Major, Corps of Engineers.

Brig. Gen. THOMAS L. CASEY,
Chief of Engineers, U. S. A.

(Through Col. G. H. Mendell, Corps of Engineers, Division Engineer,
Pacific Division.)

[First indorsement.]

U. S. ENGINEER OFFICE,
San Francisco, Cal., October 24, 1894.

Respectfully forwarded.

The statutes of California declare the mouth of the Yuba (that is, Marysville) to be the head of navigation of the Feather River. This fact accounts for the absence of draws in the bridges herein mentioned.

For reasons stated in this report the opinion therein expressed that there is no public necessity for the improvement of Feather River above Marysville is concurred in.

G. H. MENDELL,
Colonel, Corps of Engineers,
Division Engineer.

