

# **EXHIBIT B**

# Course of the Colorado River

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The Colorado River is a major river of the western U.S. and northwestern Mexico in North America. Its headwaters are in the Rocky Mountains of north central Colorado. It flows southwest through the Colorado Plateau country of western Colorado, southeastern Utah and northwestern Arizona where it flows through the Grand Canyon. It turns abruptly south forming the Arizona–Nevada border in Lake Mead and the Arizona–California border below Hoover Dam. Before entering Mexico in the Colorado Desert most of its waters are diverted into the Imperial Valley of southern California. In Mexico its course forms the boundary between Sonora and Baja California before entering the Gulf of California.

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Map showing the Colorado River basin

## Headwaters

The Colorado River rises on the Continental Divide at La Poudre Pass, in Rocky Mountain National Park, about 40 km (25 mi). north of Lake Granby, as a tiny stream draining a wet meadow. At the river's headwater, the Continental Divide forms the boundary between the Gulf of Mexico and Pacific Ocean watersheds of North America, between Colorado's Grand and Larimer counties, and the northern boundary of Rocky Mountain National Park.

The river's first diversion is here at its headwater. The Grand Ditch redirects water from the Never Summer Mountains, which would have flowed into the Colorado River, to instead flow across the divide through La Poudre Pass to irrigate farmland to the east.

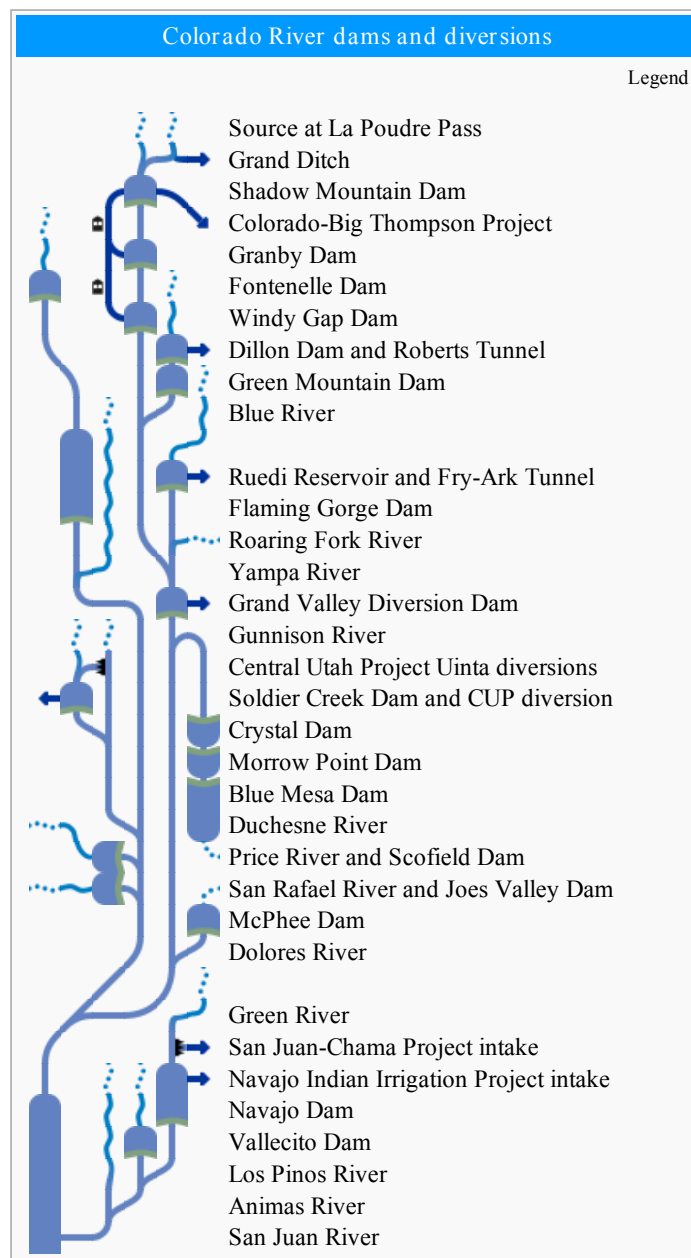


Near the source of the Colorado River in Rocky Mountain National Park, Colorado

About a mile (1.5 km) downstream from its source, the Colorado River has carved its first canyon, the narrow, deep Little Yellowstone Canyon. It then flows through the broad Kawuneeche Valley, where it is joined by U.S. Highway 34, which will roughly parallel it to the town of Granby. It finally exits Rocky Mountain National Park, flowing into Shadow Mountain Lake and then into Lake Granby, which are portions of the Colorado-Big Thompson Project, a large

trans-basin water storage and delivery project that diverts water from the Colorado River under the Front Range mountains to provide an agricultural and municipal water supply for the northern Front Range and plains of Colorado.

Starting in Granby, the river is roughly paralleled by U.S. Highway 40 to the town of Kremmling, and by the tracks of the Union Pacific Railroad until about the Utah border, carrying the Amtrak California Zephyr passenger train. The canyons and valleys of the Upper Colorado River are among the scenic attractions for passengers on this rail route.



Just downstream from Granby, the Colorado is joined by the Fraser River. At Hot Sulphur Springs the river flows through Byers Canyon and then is joined by the Williams Fork. Just below Kremmling it is joined by the Blue River before flowing through Gore Canyon, famous for its challenging rapids for the sport of whitewater rafting, and where it drops significantly until State Highway 131 crosses at the village of State Bridge. It meets the Eagle River in the town of Dotsero, from where Interstate 70 will parallel the Colorado almost until it enters Utah.

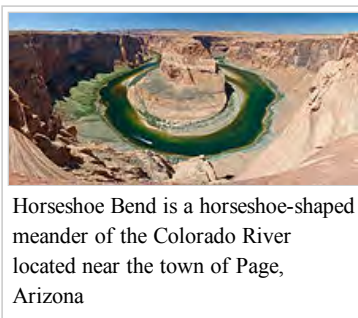


The eastbound and westbound California Zephyrs meet in Glenwood Canyon, alongside the Colorado River.

It then flows through Glenwood Canyon, emerging at the city of Glenwood Springs where it is joined by the swift flowing Roaring Fork River. West of Glenwood Springs, the Colorado runs through De Beque Canyon and the Grand Valley and is joined by the Gunnison River at Grand Junction. Though many of the river's uppermost tributaries within Colorado are small, there are exceptions, such as the Gunnison and Roaring Fork Rivers, in which massive amounts of water flow.

From there it flows in an arc west-north through Ruby Canyon, where it crosses the Utah state line, into Westwater Canyon. Here, the Colorado ranges from 200 to 1,200 ft (60 to 370 m) wide and from 6 to 30 ft (2 to 9 m) in depth with occasional deeper areas.

## Canyons



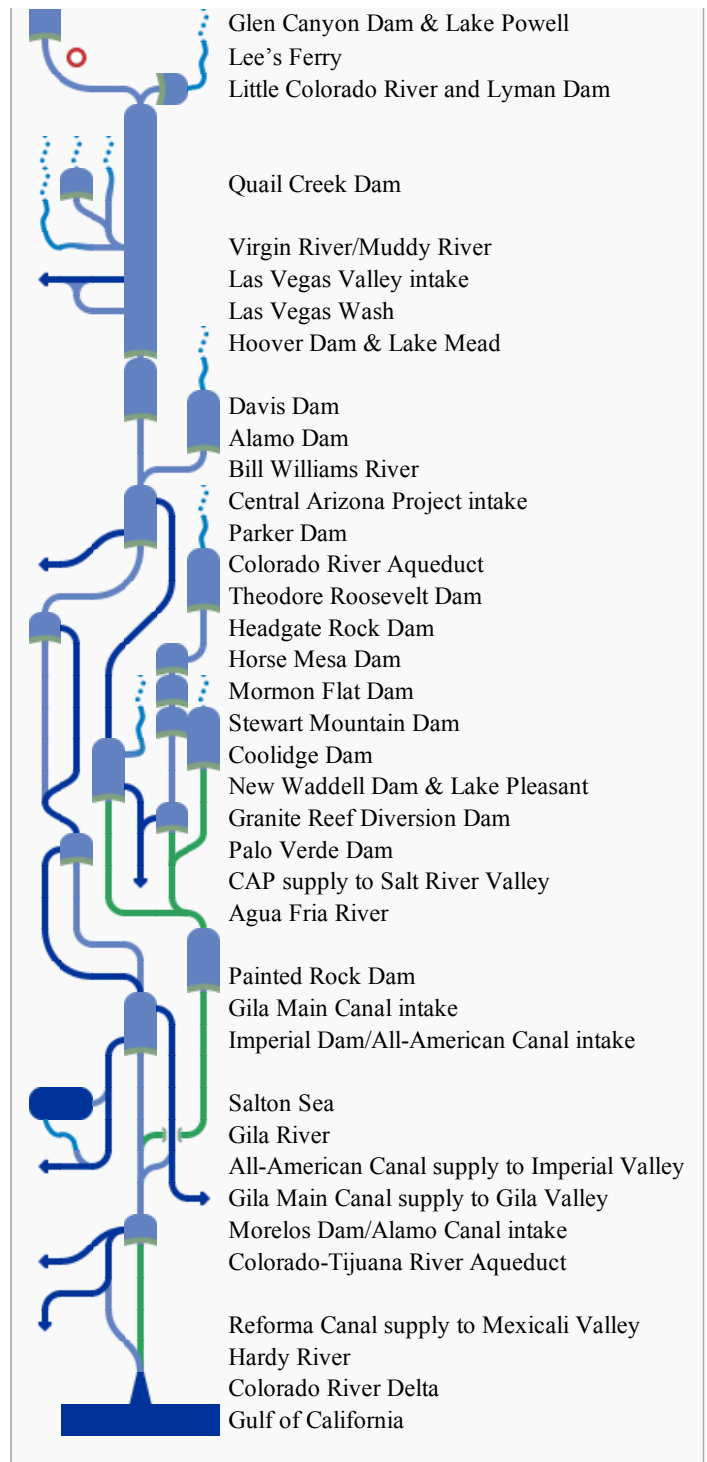
Horseshoe Bend is a horseshoe-shaped meander of the Colorado River located near the town of Page, Arizona

The river turns southwest near Fruita, Colorado, and is joined by the Dolores River soon after entering Utah. It partially forms the southern border of Arches National Park near Moab, Utah, and then passes by Dead Horse Point State Park and through Canyonlands National Park where it is met by one of its primary tributaries, the Green River. The Colorado River then flows into Lake Powell,

formed by the Glen Canyon Dam, where the San Juan River joins. Below the dam, water released from the bottom of Lake Powell makes the river clear, clean, and cold. Just south of the town of Page, Arizona, the river forms the dramatic Horseshoe Bend, then at Lees Ferry is joined by another tributary, the warm, shallow, muddy Paria River, and begins its course through Marble Canyon. Here, the Colorado River ranges from 175 to 700 ft (50 to 210 m) in width and 9 to 130 ft (3 to 40 m) in depth.

At the southern end of Marble Canyon, the river is joined by another tributary, the Little Colorado River, and the river then turns abruptly west directly across the folds and fault line of the plateau, through Grand Canyon and Grand Canyon National Park, which is 349 km long (217 miles) and from 6 to 30 km (4 to 20 miles) between the upper cliffs. The walls, 4,000 to 6,000 ft (1,200 to 1,800 m) high, drop in successive escarpments of 500 to 1,600 ft (150 to 490 m), banded in splendid colors toward the narrow gorge of the present river.

Below the confluence of the Virgin River in Nevada, the Colorado River passes through Boulder Canyon where it abruptly turns southward at the head of the Black Canyon of the Colorado. There the Hoover Dam, built during the Great Depression, forms Lake Mead, a popular recreation site as well as the supplier of most of the water for the Las Vegas metropolitan area. From Hoover Dam, the river flows south and forms part of the boundary between Arizona and Nevada and between Arizona and California. Along the California-Arizona reach of the river, four additional dams are operated to divert water for municipal supplies and agricultural irrigation, and for recreational uses. Lake Mohave, formed by Davis Dam in Pyramid Canyon, lies in the southern portion of the Lake Mead National Recreation Area. Lake Havasu, formed by Parker Dam, provides recreation as well as the home of the retired U.K. London Bridge, now the New London Bridge. The two remaining dams supply irrigation water: Palo Verde Diversion Dam and Imperial Dam. Here, the Colorado River ranges in width from 700 to 2,500 ft (200 to 800 m) and from 8 to 100 ft (2 to 30 m) in depth.



## Final course

Below the Black Canyon the river lessens in gradient and in its lower course flows through the Colorado Desert in a broad sedimentary valley's distinct estuarine plain upriver from Yuma, where it is joined by the Gila River. The channel through much of this region is bedded in a dike-like embankment lying above the floodplain over which the escaping water spills in time of flood. This dike cuts off the flow of the river to the remarkable low area in southern California known as the Salton Sink in the Coachella Valley, and the Imperial Valley. The Salton Sink and its Salton Sea are located below sea level; therefore, the descent from the river near Yuma is very much greater than the descent from Yuma to the Gulf of California.



The Colorado River just upstream from Moab, Utah as it flows past the Fisher Towers.

The lower course of the river—which forms the border between the Mexican state of Sonora on the mainland and the state of Baja California on the Baja California peninsula—is a dry or small stream most of the year due to the river being diverted into either the Imperial Valley's irrigation source, the All-American Canal or to Mexican agriculture via the Morelos Diversion Dam. Several miles from its mouth, the Hardy River enters, adding a little water to the often dry Colorado before it reaches the Gulf of California.

Prior to the mid 20th century, the Colorado River Delta provided a rich estuarine marshland; while today it is now essentially desiccated, the river is still an important ecological estuary resource. The estuary of the Colorado River was subjected to a major tidal bore that has almost disappeared with the drastic reduction in the freshwater flow following the irrigation diversions of the Colorado River, and to a lesser extent because of some dredging of the estuary channel.<sup>[1]</sup> The first historical record of the tidal bore was that of the Croatian missionary in Spanish service Father Ferdinand Konščak on 18 July 1746. During spring tide conditions, the tidal bore formed in the estuary about Montague Island and propagated upstream. It was called locally 'El Burro' or 'burro'. Today the tidal bore is rarely seen although there are still some anecdotal observations.

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