

# GRAND LAKE WATER TOUR – Coming from Rocky Mountain National Park

## A. ALVA B. ADAMS TUNNEL

**DIRECTIONS:** Parking is at the end of West Portal Road and is handicap accessible. From US Highway 40 take a left onto Grand Avenue in the Town of Grand Lake. Take the left fork for West Portal Road and park in the cul-de-sac at the end (approx. 2.5 miles).

**YOU ARE HERE**



### DID YOU KNOW???

1. The Alva B. Adams Tunnel is part of the Colorado Big Thompson Project and is operated by the Northern Colorado Water Conservancy District. It provides irrigation water for about 640,000 acres of land, which is about the size of the state of Rhode Island! The project also supplies water for industrial and municipal use, hydroelectric power and water-oriented recreation opportunities.
2. Contractors began building the Adams Tunnel simultaneously from each portal. When the two crews met four years later in June of 1944, the alignment was off by less than the width of a penny! At this time, the Adams Tunnel was considered the longest tunnel in the United States to provide water for irrigation.
3. The tunnel is 9-feet 9-inches in diameter (you can drive a Jeep through it) and runs beneath Rocky Mountain National Park. It cuts through the Continental Divide as much as 3,800 feet beneath the earth's surface which is the same as 16.5 Boeing 747 Jumbo Jets stacked head to tail. Instead of being pumped, water flows by gravity due to the 109 foot elevation drop from the West Portal to the East Portal (a trip that takes about two hours).

## QUESTION

**Why is there a need for water to be transported from the West Slope to the East Slope?** Since 80% of Colorado's water falls on the West Slope and 82% or more of Colorado's population live along the Front Range (East Slope), water must be transported to meet these needs.

## B.POINT PARK

**DIRECTIONS:** Begin by driving East on Grand Avenue in the Town of Grand Lake. Take a right on Vine Street followed by an immediate right on Lake Avenue. Follow this road .3 miles and then take a left on Shadow Mountain Lane. There will be a sign for Point Park shortly thereafter.

**YOU ARE HERE**



### DID YOU KNOW???

1. As you are facing the bridge you will see Grand Lake to your left. The natural lake is part of the Colorado-Big Thompson Project operated by the Northern Colorado Water Conservancy District. The project regulates stores and diverts water from the Colorado River on the West Slope of the Rocky Mountains to the East Slope.
2. Erosion of the mountains from glaciers, rivers, and streams began to carve out the large valleys and sharp mountain peaks that we see today. The Continental Divide surrounds the valleys of Grand Lake in which the Colorado River begins and flows south to your right (Aber, 2006). Water is pumped from the Farr Pump Plant to Shadow Mountain Reservoir (right) and then flows into Grand Lake (left) before making its way through the Adams Tunnel and under the Continental Divide to the East Slope.
3. Grand Lake is 265 feet at its deepest which is the same as 61 elk standing on top of each other! Grand Lake is known to be deepest natural body of water in Colorado.

## QUESTION

**Why is there a need to pump water eastward through the Colorado Big Thompson Project?** Water is pumped through the C-BT system in order to provide water for East Slope Agricultural, municipal and industrial needs.

## C. SHADOW MOUNTAIN RESERVOIR

**DIRECTIONS:** From U.S. Highway 40 turn onto County Road 66 and go 1.2 miles before turning left at the Green Ridge Camp Ground. Take a right at the lake and park in parking lot near the spillway.

**YOU ARE HERE**



### DID YOU KNOW???

1. Shadow Mountain Reservoir is part of the Colorado Big Thompson Project which regulates stores and diverts water from the Colorado River on the West Slope of the Rocky Mountains to the East Slope. The reservoir is owned by the U.S. Bureau of Reclamation and operated by the Northern Colorado Water Conservancy District.
2. This reservoir is located between Lake Granby and Grand Lake and has a maximum depth of 37 feet, or about 222 stacked pizza boxes. The area now filled by Shadow Mountain Reservoir was once a flat valley where the Colorado River meandered. If you look across Shadow Mountain Reservoir to the dam you will see the Colorado River as it makes its way downstream.
3. Shadow Mountain Reservoir provides recreation activities from boating to fishing.

## QUESTION:

**How deep is Shadow Mountain Reservoir?** Shadow Mountain Reservoir has a maximum depth of 37 feet.



## D. FARR PUMP PLANT

**DIRECTIONS:** Turn off of US Highway 40 onto County Road 64. Continue .5 miles and stop on the dirt pull off to the right.

**YOU ARE HERE**



1. The Far Pump Plant is part of the Colorado-Big Thompson Project, which is owned by the U.S. Bureau of Reclamation and operated by the Northern Colorado Water Conservancy District. The C-BT Project provides irrigation water for about 640,000 acres of land. The project also supplies water for industrial and municipal use, hydroelectric power and water-oriented recreation opportunities.

2. The Farr Pump Plant was created to pump water eastward through the Granby Pump Canal to Shadow Mountain Reservoir and is often referred to as the heart of the C-BT Project.

3. The plant contains three pumps. Only one or two operate at a time in a rotation. The reinforced concrete building that houses the plant is 187 feet tall, but most of it is underground!

### QUESTION

**How much of the year does the Farr Pump Plant operate?** (see back) The Farr Pump Plant is in operation 365 days out of the year, but does not pump all of that time.

## E. LAKE GRANBY

**DIRECTIONS:** Turn off of US Highway 40 onto County Road 6. Continue .6 miles and turn left into Quinette Point Picnic Ground.

**YOU ARE HERE**



DID YOU KNOW???

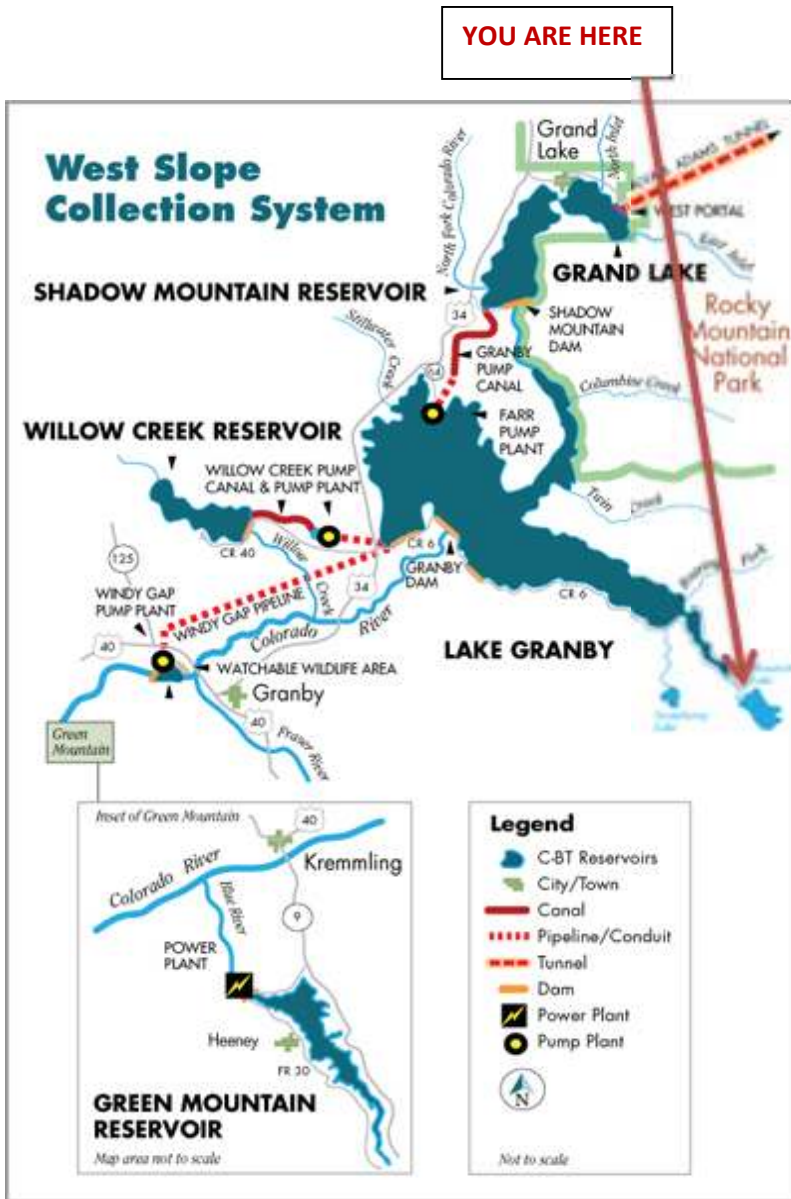
1. Lake Granby is part of the Colorado-Big Thompson Project which regulates stores and diverts water from the Colorado River on the West Slope of the Rocky Mountains to the East Slope. Water is pumped to Lake Granby from both Willow Creek Reservoir and Windy Gap Reservoir (part of the Windy Gap Project) via separate pipelines.
2. The C-BT project is owned by the U.S. Bureau of Reclamation and operated by the Northern Colorado Water Conservancy District, provides irrigation water for about 640,000 acres of land, which is about the size of the state of Rhode Island! The project also supplies water for industrial and municipal use, hydroelectric power and water-oriented recreation opportunities.
3. Lake Granby is the largest storage reservoir in the C-BT Project and the second largest body of water in Colorado, holding up to 539,758 acre feet of water which is approximately 940,475 one-person hot air balloons! Before Lake Granby's completion in 1950, the area contained prosperous farmland, known throughout the nation for their quality of lettuce.

QUESTION

**Is Lake Granby a naturally occurring or man-made reservoir?** (see back) Lake Granby is a man-made reservoir which began storing water in 1949.

## F. MONARCH LAKE

**DIRECTIONS:** To reach Monarch Lake take Highway 34 to the Arapaho National Recreation Area entrance and Lake Granby. Turn right on Forest Road 125 and travel about ten miles to the lake. Park in the parking lot.



### DID YOU KNOW???

Monarch, now a picturesque lake for meandering around on a pleasant summer day, was once a bustling town, the home of the Monarch Consolidated Gold and Copper Mining and Smelting Company, and the rail head of the Rocky Mountain Railroad.

The Monarch Company created Monarch Lake by damming the valley, at the junction of Arapahoe Creek and South fork of the Colorado River, for use with the saw mill and the box factory. A 2800 foot long chute carried tree trunks down the hillside to the lake where they hit the water and could bounce up to 50 ft high. Then a stern-wheel steamer pushed logs into a system of canals and flumes that led down to the saw mill and box factory.

The tour often included a visit to a spruce tree named "Monarch" that was seven feet in diameter.

Currently, the town, mill site, and box factory lay under the waters of Lake Granby and are inaccessible, except in years of draught. However, there are a

couple of remaining pieces at Monarch Lake that are still visible. On the south side of the lake, near the water's edge, is a boiler that was used to yard logs into a chute and shoots the logs into a holding pond. Also, the flume still runs down the hillside into the lake. The trail around Monarch Lake takes hikers directly under the flume.



## G. WILLOW CREEK RESERVOIR

**DIRECTIONS:** Turn off of US Highway 40 onto County road 40. Continue 2.6 miles and take a left at the Willow Creek Reservoir Dam. Take the next right to the cul-de-sac beside the lake.



DID YOU KNOW???

1. Willow Creek Reservoir is part of the Colorado Big Thompson Project which regulates stores and diverts water from the Colorado River on the West Slope of the Rocky Mountains to the East Slope.
2. This project, owned by the U.S. Bureau of Reclamation and operated by the Northern Colorado Water Conservancy District, provides irrigation water for about 640,000 acres of land, which is about the size of the state of Rhode Island! The C-BT Project also supplies water for industrial and municipal use, hydroelectric power and water-oriented recreation opportunities.
3. Water, originating from snowmelt, moves from the reservoir through the Willow Creek Pump Canal and Pump Plant. The water is then lifted 175 feet (approx. 18 stories) and delivered to Lake Granby. The reservoir cost \$2.42 million to build and holds as much as 10,553 acre feet of water, which is the same as 83,458 typical 18-wheeler commercial box trucks!

QUESTION:

**Is Willow Creek Reservoir naturally occurring or man-made? What purpose does this reservoir serve?** Willow Creek Reservoir is man-made and serves as a collection and holding facility for water until it is pumped to Lake Granby for delivery to the East Slope via the Colorado-Big Thompson Project.

### **MAKE A DIFFERENCE! THREE EASY WAYS TO SAVE WATER:**

- Apply water to plants and grass only as fast as the soil can absorb it
- Turn off the water while washing your hair to save up to 150 gallons per month
- Wash your fruits and vegetables in a pan of water instead of under running water

### **THANK YOU FOR TAKING OUR GRAND LAKE WATER TOUR!!!**

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