

# Water Resource Training Water Rights 101



Loveland Utilities Commission

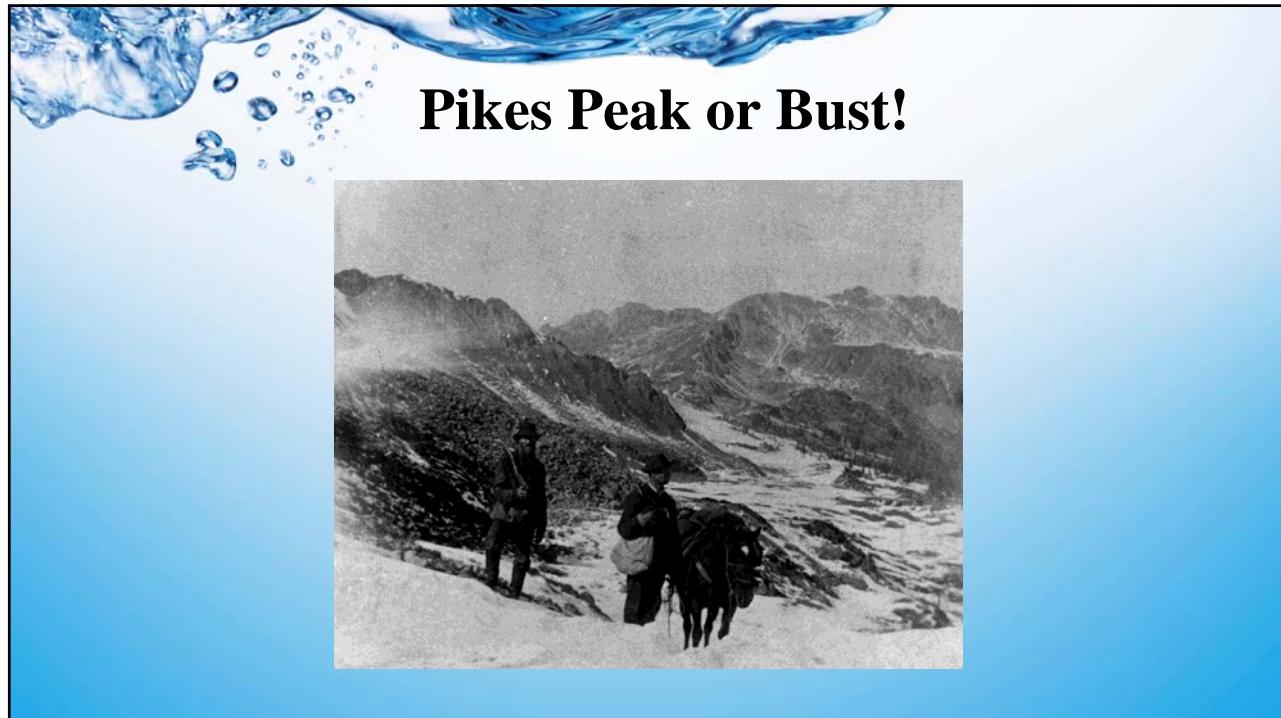
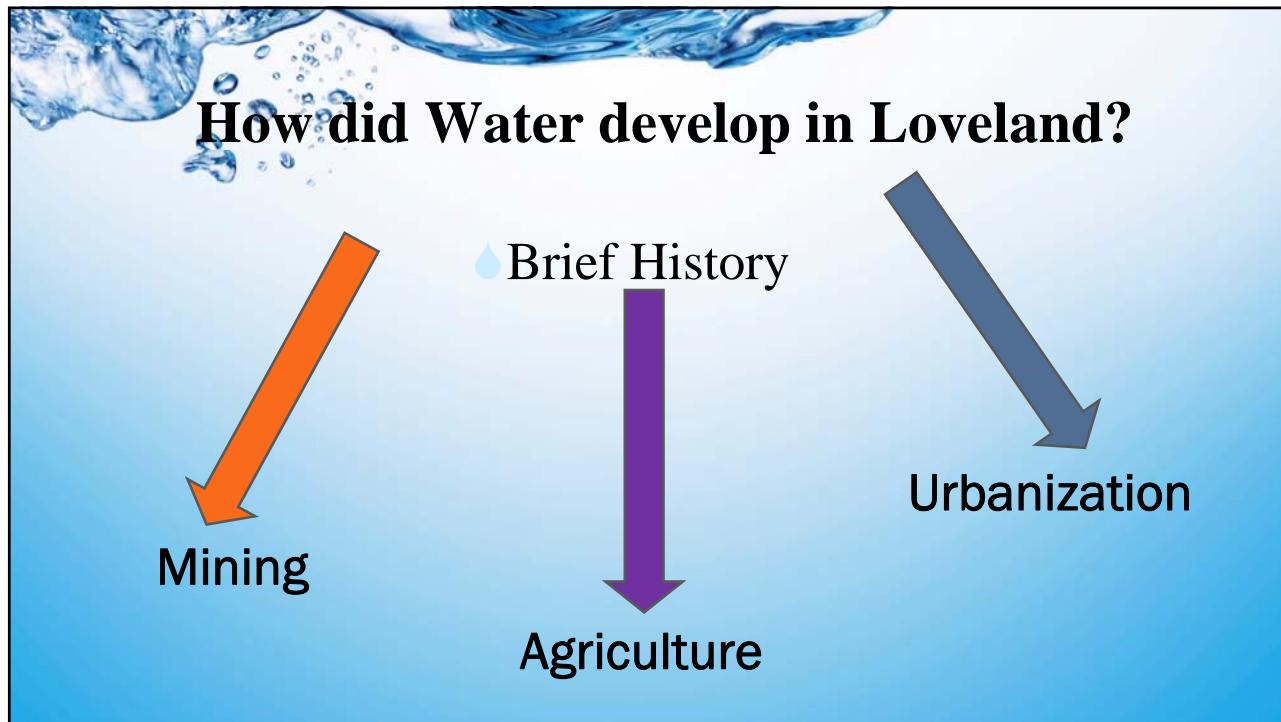
October 8, 2014

Greg Dewey, Civil Engineer I

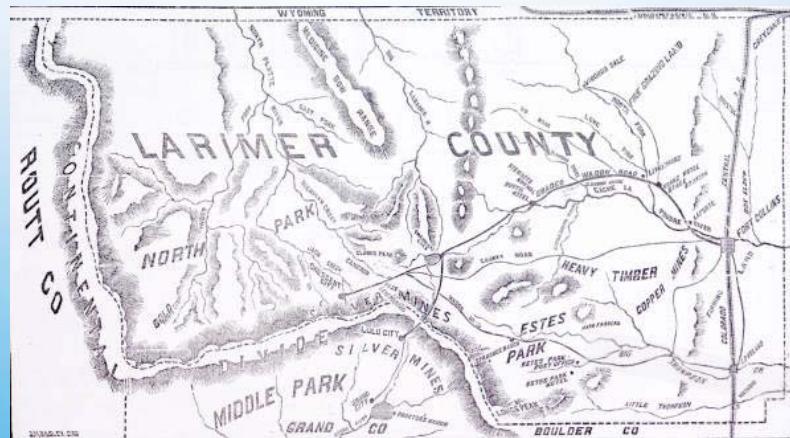
## Water Rights Concepts

### Doctrine of Prior Appropriation

- Own the use of the water,  
not the drops of water (*beneficial use*)
- First in time, first in right (*priority*)
- No injury to existing water rights (*injury*)
- Use it or lose it (*abandonment*)



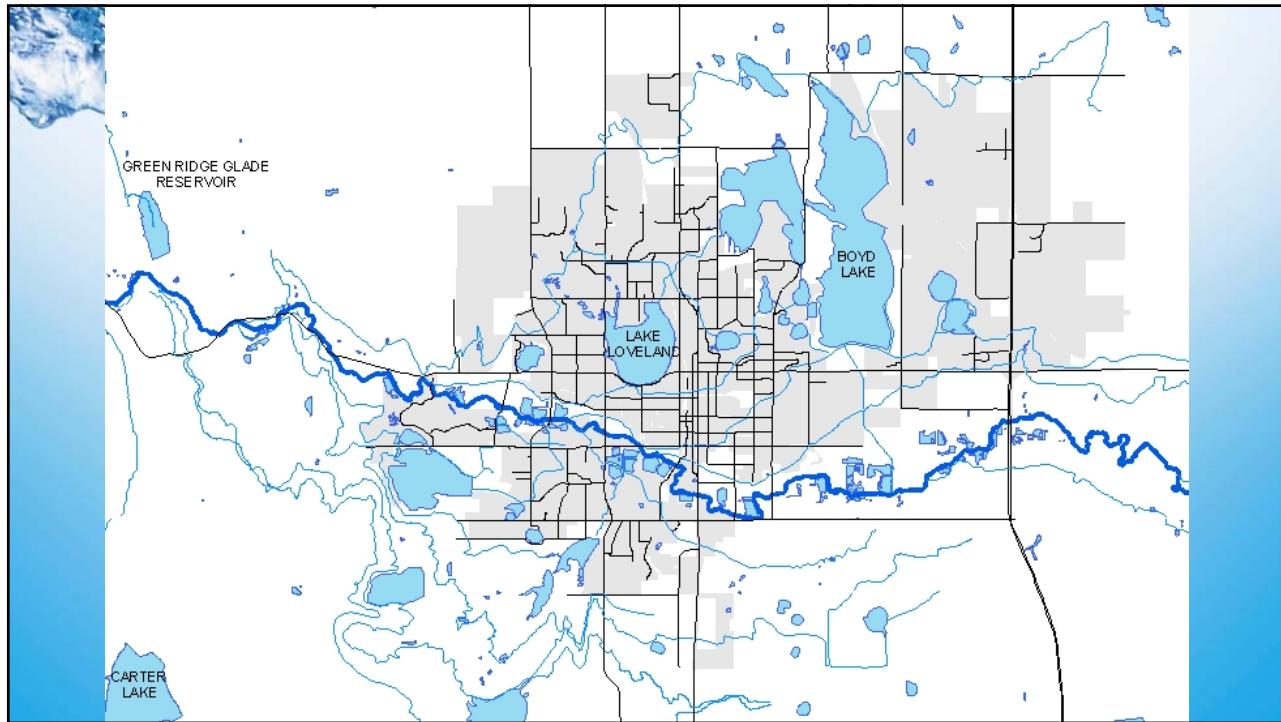
## 1881 map of Larimer County



## Irrigated Agriculture



## Urbanization



## WHAT YEAR DID THE ADAMS TUNNEL FIRST DELIVER WATER?

- A. 1932
- B. 1955
- C. 1929
- D. 1944

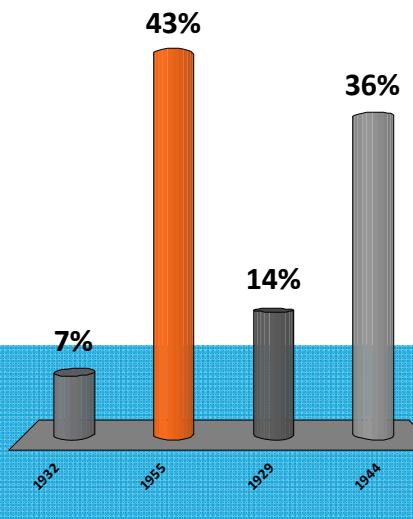
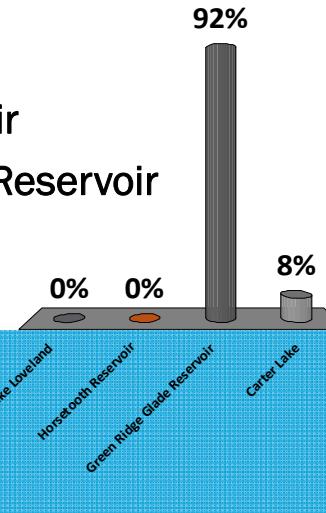


Photo by  
Dick  
Stenzel

## WHAT IS THE NAME OF THE CITY OF LOVELAND'S RAW WATER STORAGE RESERVOIR?

- A. Lake Loveland
- B. Horsetooth Reservoir
- C. Green Ridge Glade Reservoir
- D. Carter Lake



## Existing Raw Water Sources for Loveland

- 💧 Native diversions (Big Thompson River)
  - City-owned rights
  - City transferred ditch shared
- 💧 Transbasin diversions (Colorado River)
  - Colorado-Big Thompson Project
  - Windy Gap Project
- 💧 Storage – Green Ridge Glade Reservoir



## Native diversions (Big Thompson River)

- City-owned rights
  - First water rights owned by the City
  - Appropriated in 1887
  - 3.44 cfs acquired 1907. Direct flow to Loveland Pipeline, No. 1 priority



## Native diversions (Big Thompson River)

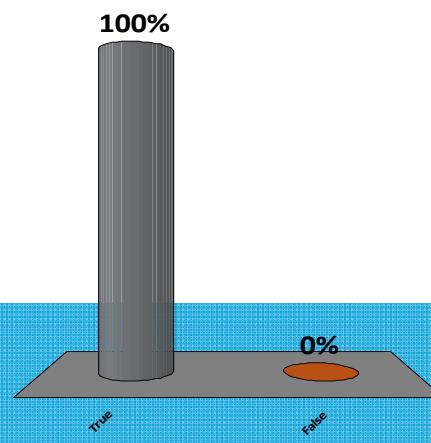
- City-transferred ditch shares
- Additional from 1985 transfer
- Originated in local ditches, irrigation use
- Additional from 2010 transfer
- 6 cfs = 1926 transfer

## Home Supply Dam (Big Dam)



TRUE OR FALSE: LOVELAND USES BOTH BIG THOMPSON RIVER BASIN WATER AND COLORADO RIVER BASIN WATER TO MEET ITS DEMANDS.

- A. True
- B. False



## Loveland Pipeline Diversion



## Storage (Green Ridge Glade Reservoir)



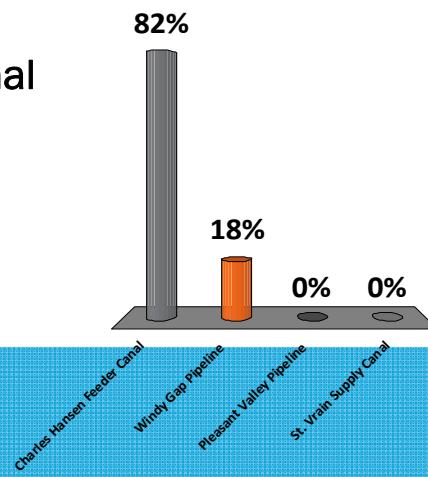
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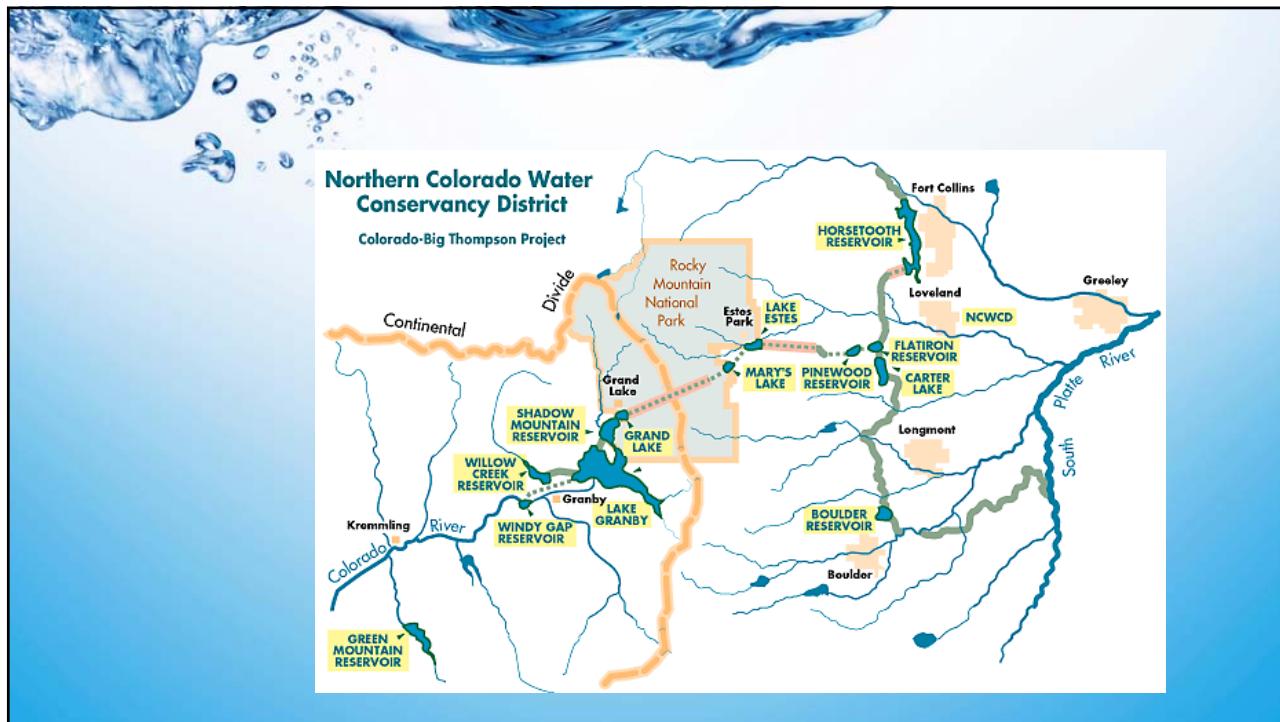
## Transbasin diversions (Colorado River)

- Move water from one river basin to another river basin
- Regional projects that serve many other besides Loveland residents
- Two in this region are:
  - Colorado-Big Thompson Project
  - Windy Gap Project

WHAT IS THE NAME OF THE CANAL THAT FEEDS LOVELAND'S GREEN RIDGE GLADE RESERVOIR?

- Charles Hansen Feeder Canal
- Windy Gap Pipeline
- Pleasant Valley Pipeline
- St. Vrain Supply Canal



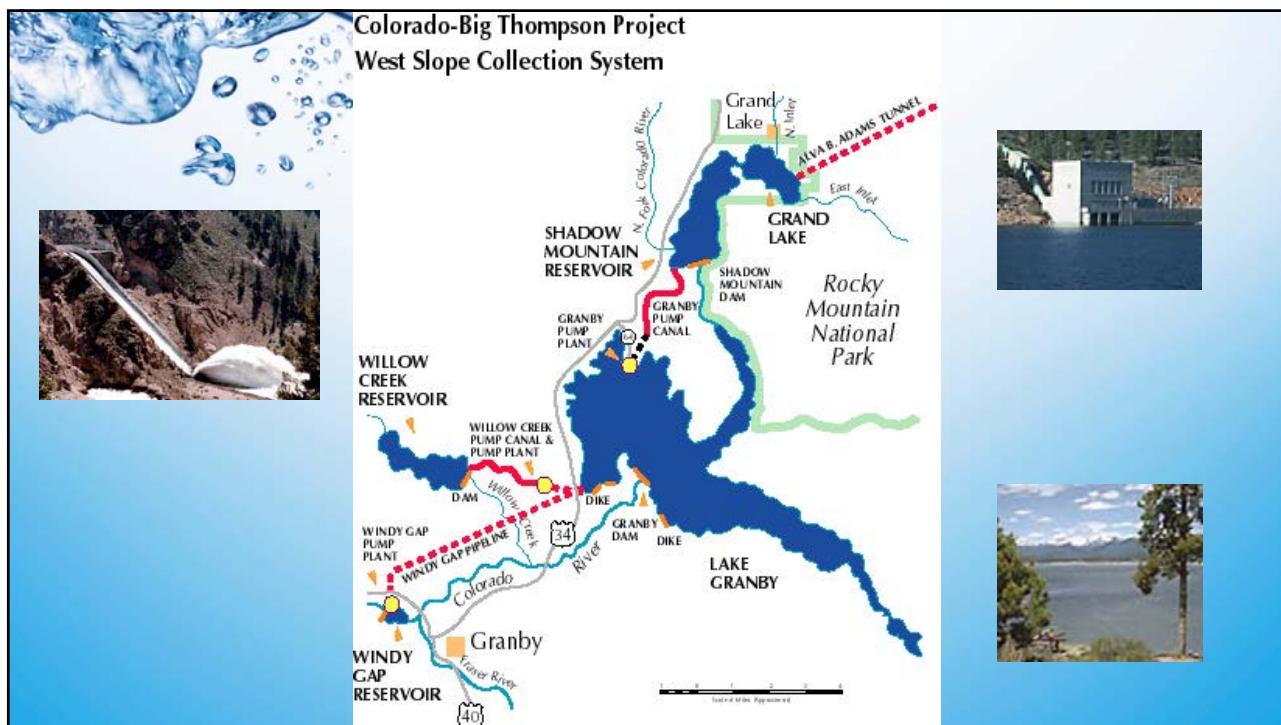
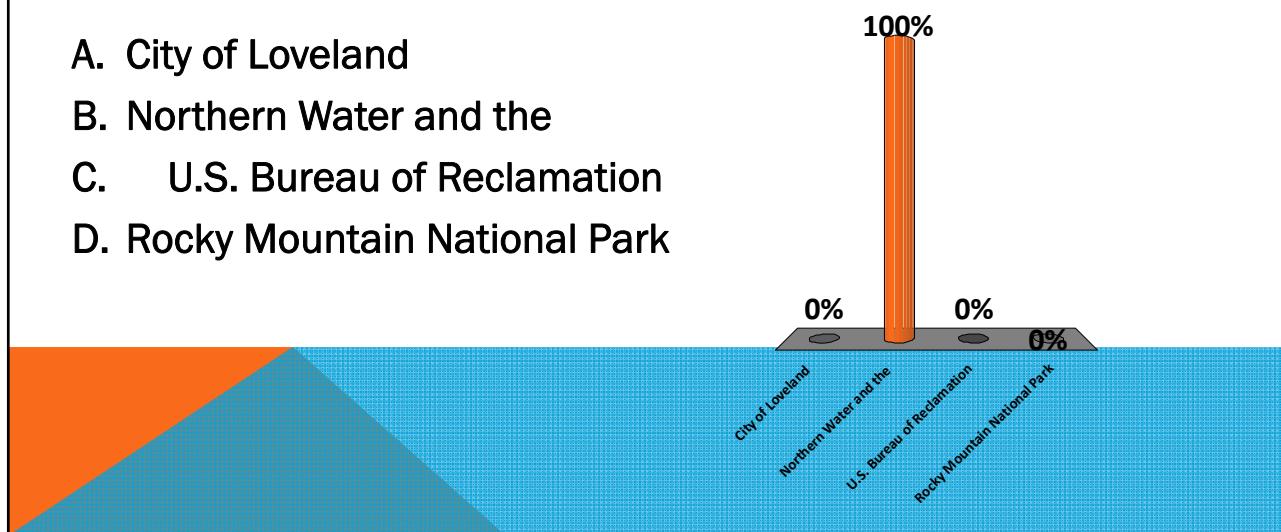


## Colorado-Big Thompson Project

- ◆ Largest Transbasin diversion in Colorado
- ◆ Built between 1938 and 1957
- ◆ Supplements water supply for 30 towns and cities
- ◆ Irrigates 693,000 acres of farmland
- ◆ Average delivery is 213,000 acre-feet per year

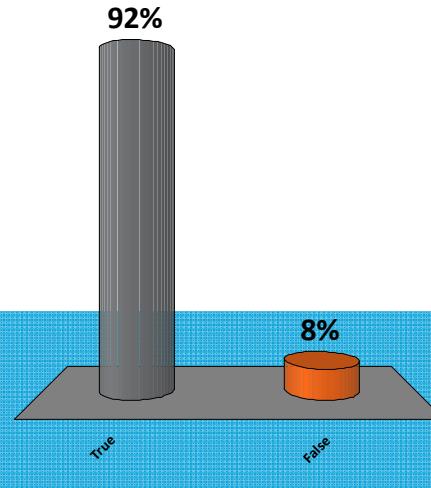
## WHO MANAGES THE COLORADO-BIG THOMPSON SYSTEM?

- A. City of Loveland
- B. Northern Water and the
- C. U.S. Bureau of Reclamation
- D. Rocky Mountain National Park



## TRUE OR FALSE: THE LARGE PIPELINE ABOVE HWY. 34 AT THE MOUTH OF THE CANYON IS PART OF THE CBT SYSTEM?

- A. True
- B. False



## Windy Gap Project

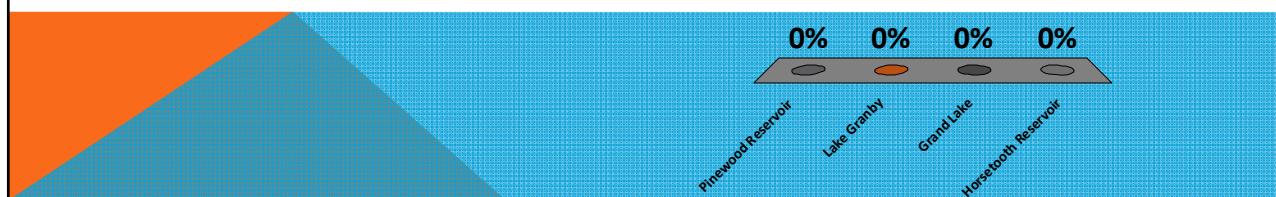
Originally called the “Six Cities Project”

- ◆ Boulder, Estes Park, Fort Collins, Greeley, Longmont and Loveland
- ◆ Envisioned to meet future municipal demands
- ◆ Water rights filed in 1967
- ◆ Municipal Subdistrict formed in 1970
- ◆ Built between 1981 and 1985
- ◆ Uses existing C-BT facilities to convey water



WATER IS PUMPED INTO GRAND LAKE FROM THE SECOND LARGEST BODY OF WATER IN COLORADO. WHAT IS THAT RESERVOIR'S NAME?

- A. Pinewood Reservoir
- B. Lake Granby
- C. Grand Lake
- D. Horsetooth Reservoir





## Decrees – the “paper” behind the right

- Just one sign of how water rights evolve over time:
  - Original decree – 1887 (about 1 page)
  - 82CW202A – 1985 (14 pages)
  - 2002CW392 – 2010 (38 pages)



## 2002 CW392

### Decree – by the “numbers”

- 2002 is the year application was filed
- 19 objectors in the case
- 18 objectors stipulated out of the case
- 6 ditch companies’ shares transferred
- 3,860 acre-feet of average yield
- 970 acre-feet of firm yield
- 8 years to get approval
- \$1.4 Million spent on engineering/legal



## Future Water Sources

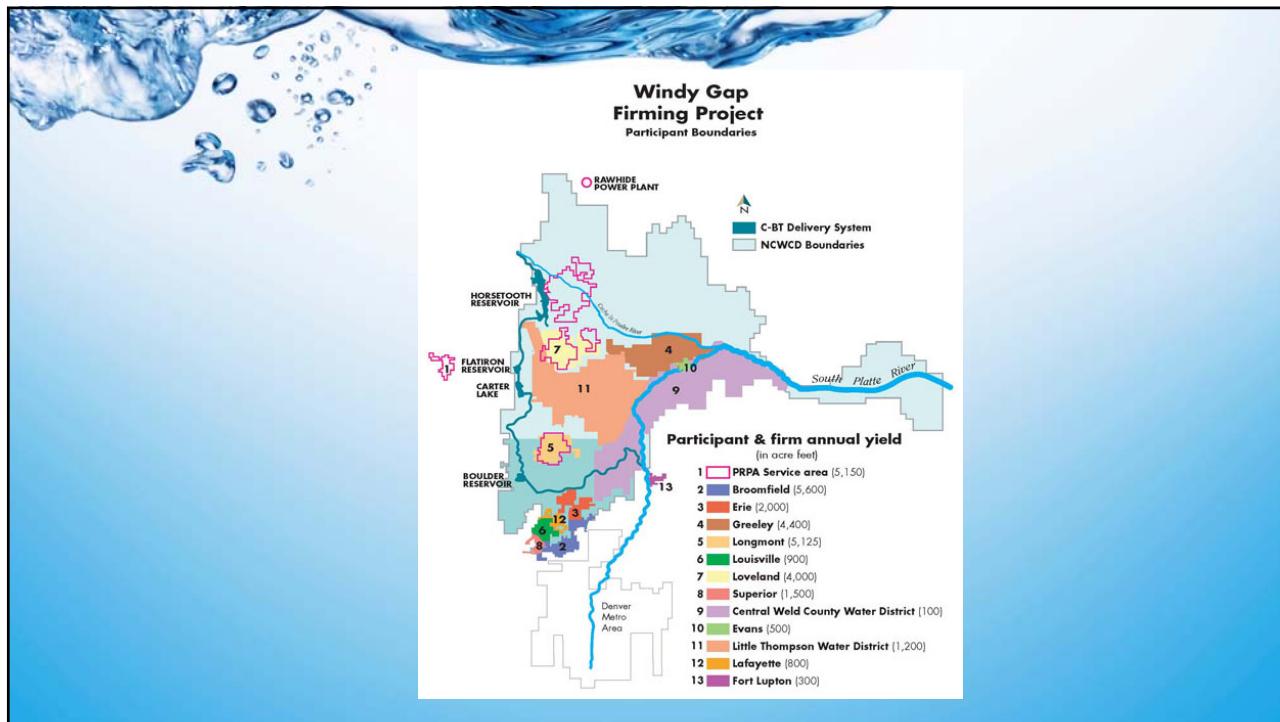
Growth is coming

- Population of north front range expected to double within next 40 years
- Two regional projects are poised to help meet future water demand:
  - Windy Gap Firming Project
  - Northern Integrated Supply Project (NISP)



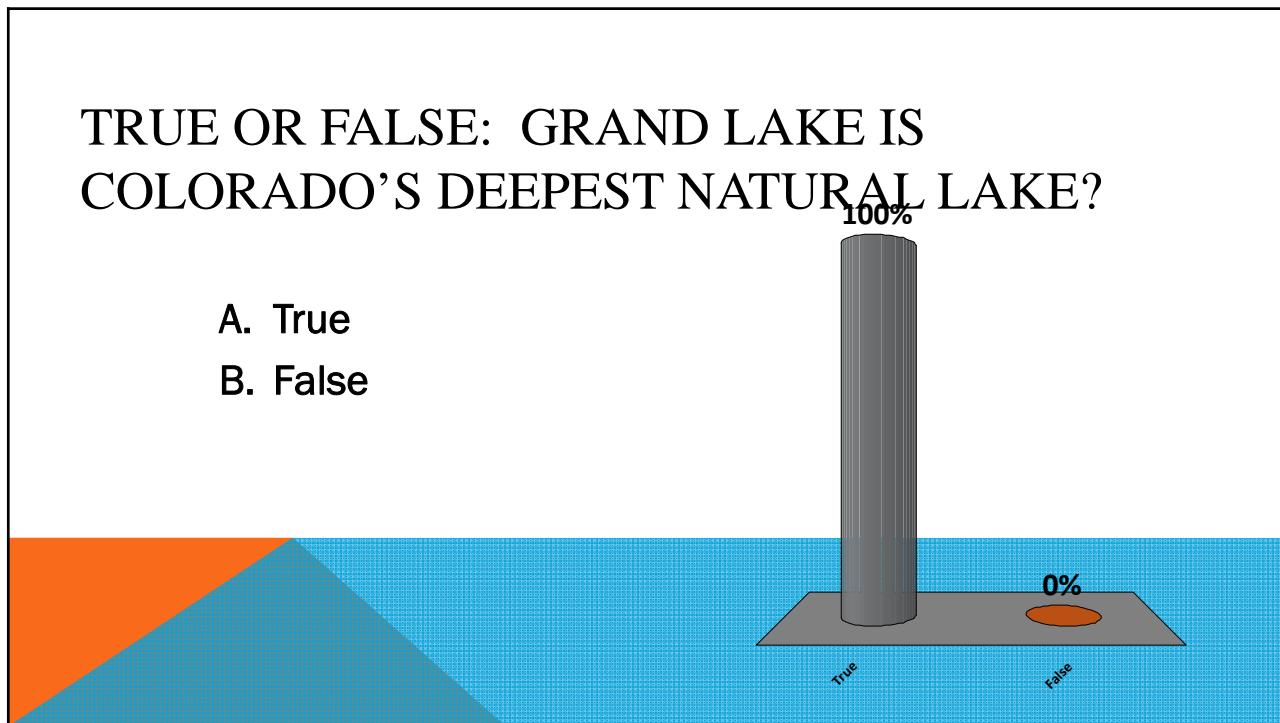
## Windy Gap Firming Project

- Windy Gap water is conveyed through existing C-BT facilities as space is available
- When Lake Granby spills, Windy Gap water is the first to go
- Firming Project envisions a new reservoir to store Windy Gap water to ensure reliable deliveries

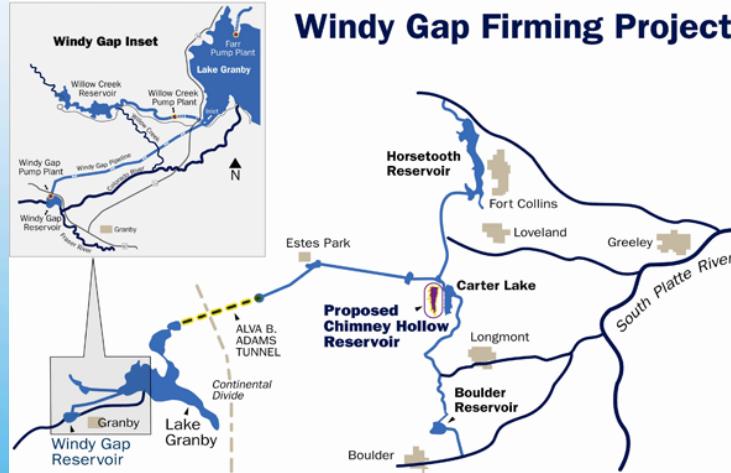


## TRUE OR FALSE: GRAND LAKE IS COLORADO'S DEEPEST NATURAL LAKE?

- A. True
- B. False

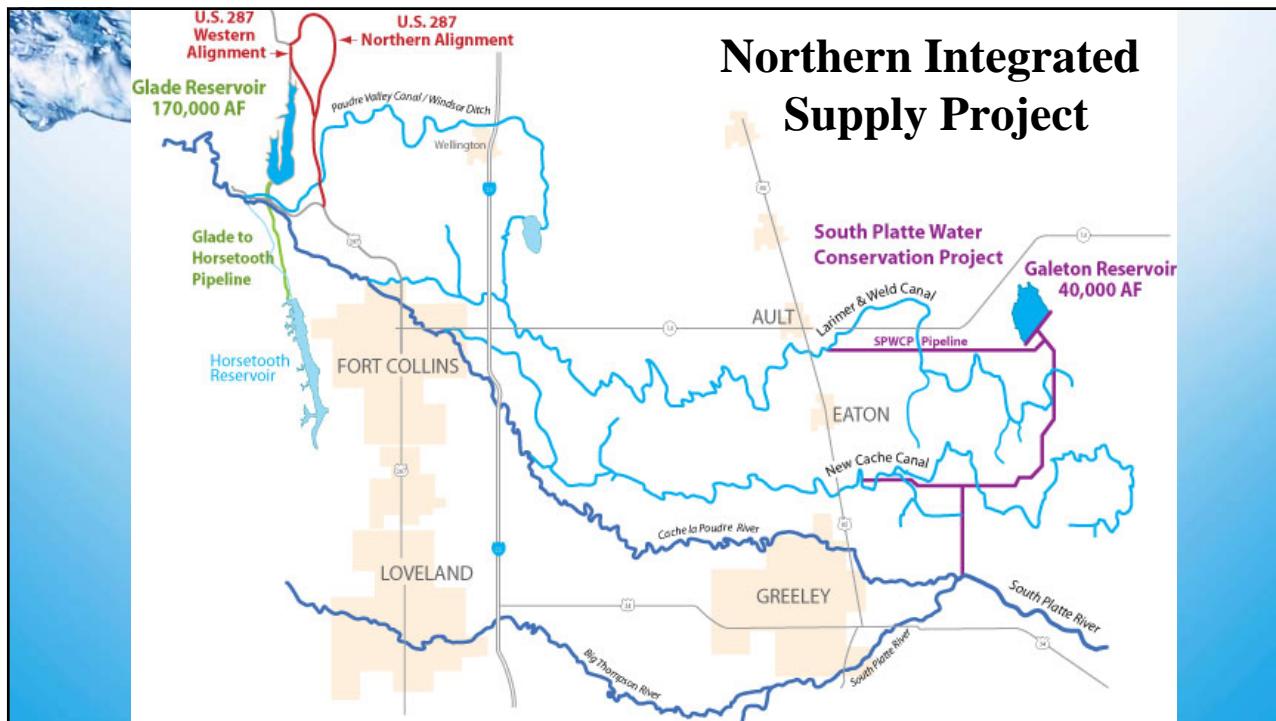
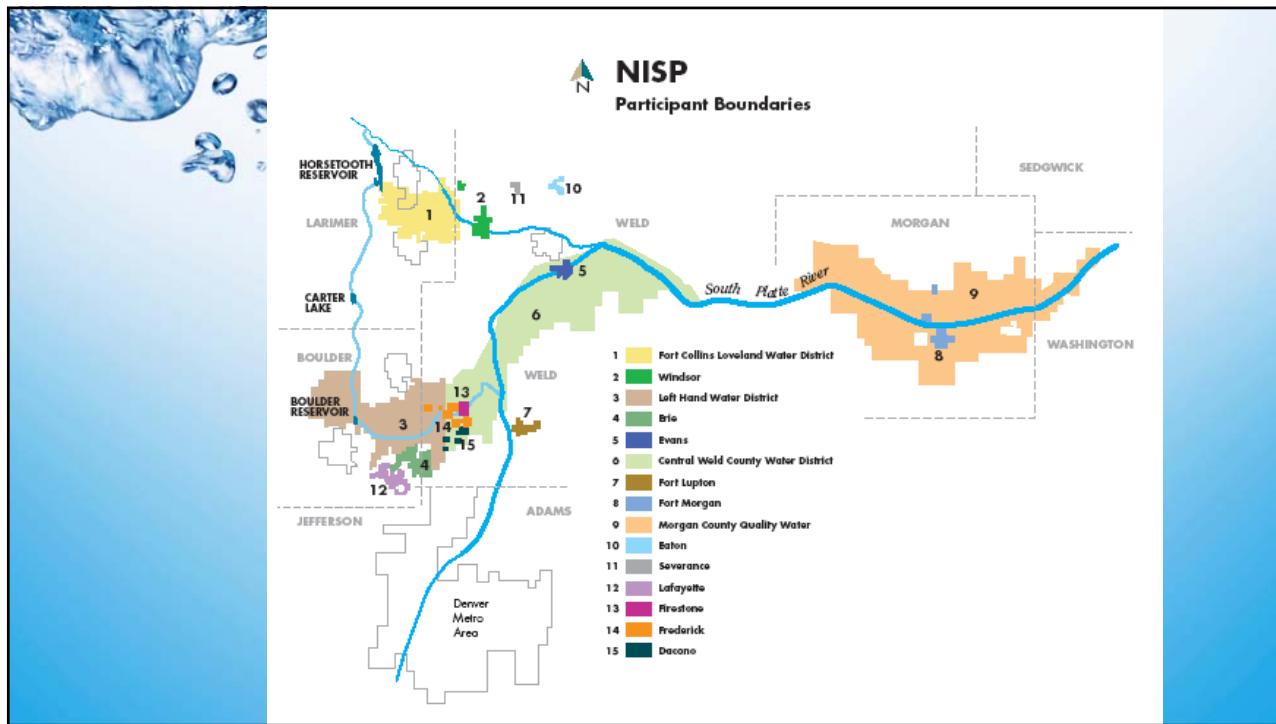


## Preferred Alternative Chimney Hollow Reservoir



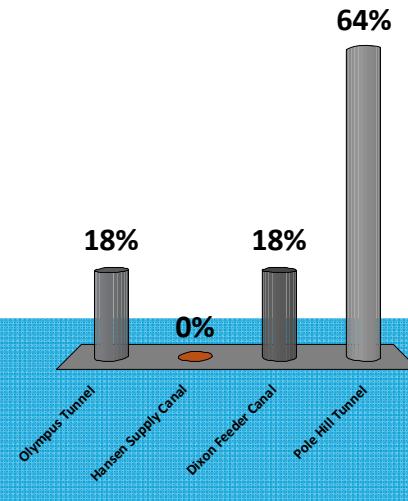
## Northern Integrated Supply Project

- Uses 2 reservoirs – Glade & Galeton
- South Platte water fills Galeton Reservoir
- Farmers help fill Glade Reservoir by allowing project to use their Poudre water
- M&I investing in agriculture's future



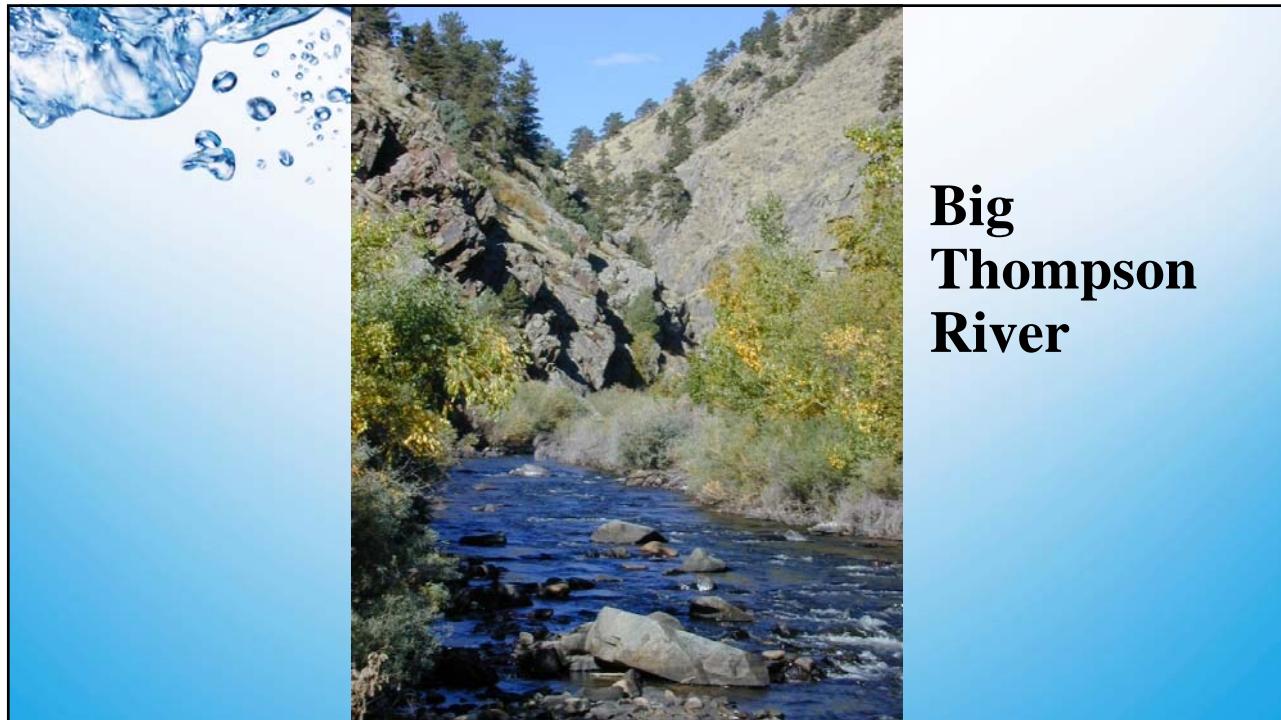
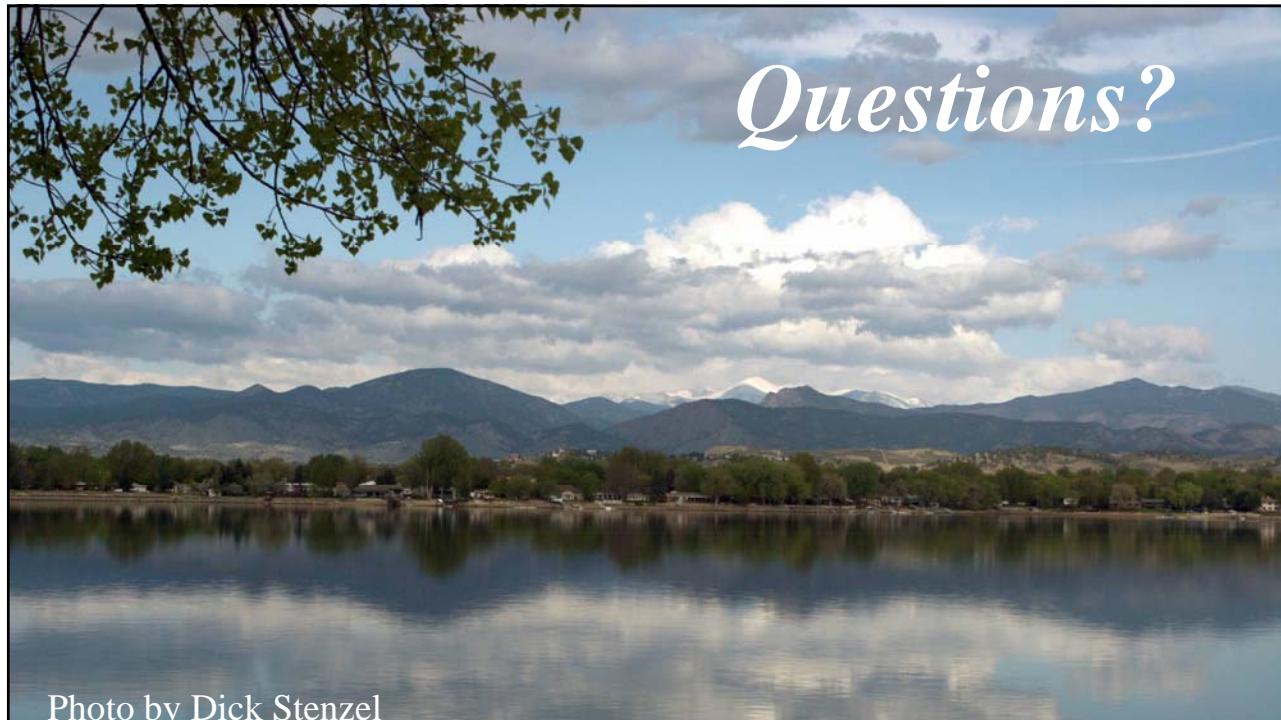
## WHAT IS THE NAME OF THE TUNNEL THAT RUNS FROM LAKE ESTES TO PINEWOOD RESERVOIR?

- A. Olympus Tunnel
- B. Hansen Supply Canal
- C. Dixon Feeder Canal
- D. Pole Hill Tunnel



## Summary

- Water rights have a deep history in mining and agriculture
- System is arcane, but it works, and distributes water fairly
- Loveland gets water from Big Thompson River and the Colorado River
- Regional projects and cooperation are key to meeting water demand



# PART 2

## WATER RIGHTS SPECIFIC TO THE CITY OF LOVELAND

### LOVELAND'S WATER RIGHTS FOR DEVELOPMENT HISTORY

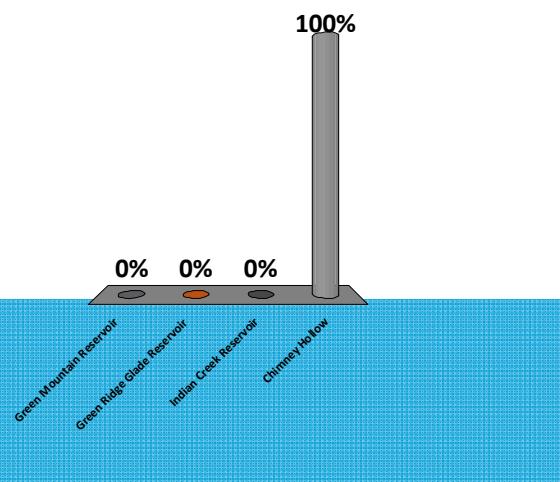
- City of Loveland began serving water in 1887.
- Many early plats dedicated the water rights that irrigated the subject land
- 1960, City Council motion – 1<sup>st</sup> time water rights were expressly required
- Many of the water rights acquired originated as shares in local ditches, used for irrigation
- 1982, City filed an application in Water Court to change the use / location of these shares so the City could divert / treat the water for municipal use

## SIGNIFICANT CHANGES TO THE CITY POLICY

- 1960 – Blanket requirement of 2 AF per acre, regardless of use
- 1978 to 1982 – Blanket requirement of 3 AF per acre
- 1982 – Business zonings pay initial 1 AF per acre & rest due at building permit, based on meter size.
- 1984 – Residential zonings pay initial 1 AF per acre & rest due at final plat, based on dwelling units
- 1999 to 2007 – Eliminated initial payments for residential and business zonings
- In summary:
  - Each step has delayed the timing of the payment in the development process
  - Made the amount of the payment commensurate with the use of the property

WHAT IS THE NAME OF THE NEW RESERVOIR NORTHERN WATER IS PLANNING TO CONSTRUCT NEXT TO FLATIRON RESERVOIR AND CARTER LAKE?

- A. Green Mountain Reservoir
- B. Green Ridge Glade Reservoir
- C. Indian Creek Reservoir
- D. Chimney Hollow





## WATER CREDIT ON PROPERTIES

- Once dedicated, water credit stays with the land
- Can be used toward any future requirement
- No refund given
- Blanket requirement (i.e. 2 acre-feet) means no more required, regardless of use
- This is why water credit can be a valuable entitlement

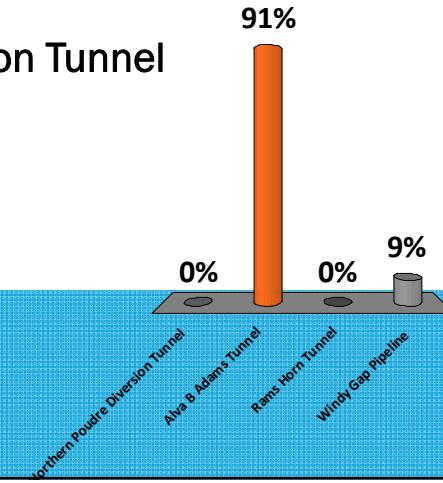


## LOVELAND WATER BANK

- City-owned and operated since the mid-1980's
- Acceptable water rights deposited may be ditch company shares or CBT units.
- Deposits are made in advance of development
- Provides the City the opportunity to own the water rights and take the necessary steps to make the water useful for diversion
- Credits in excess of development needs may be bought and sold on the open market
- Credits can satisfy raw water requirement wherever the City serves treated water.

## WHAT IS THE NAME OF THE TUNNEL THAT CARRIES WATER UNDERNEATH THE CONTINENTAL DIVIDE, BELOW RMNP?

- A. Northern Poudre Diversion Tunnel
- B. Alva B Adams Tunnel
- C. Rams Horn Tunnel
- D. Windy Gap Pipeline



## QUESTIONS

