

# Water in the Poudre: Where does it come from, who has rights to use it, and who's watching?



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Poudre River Water Commissioner  
February 8, 2014

# Who's Watching?

## Poudre River Water Commissioner

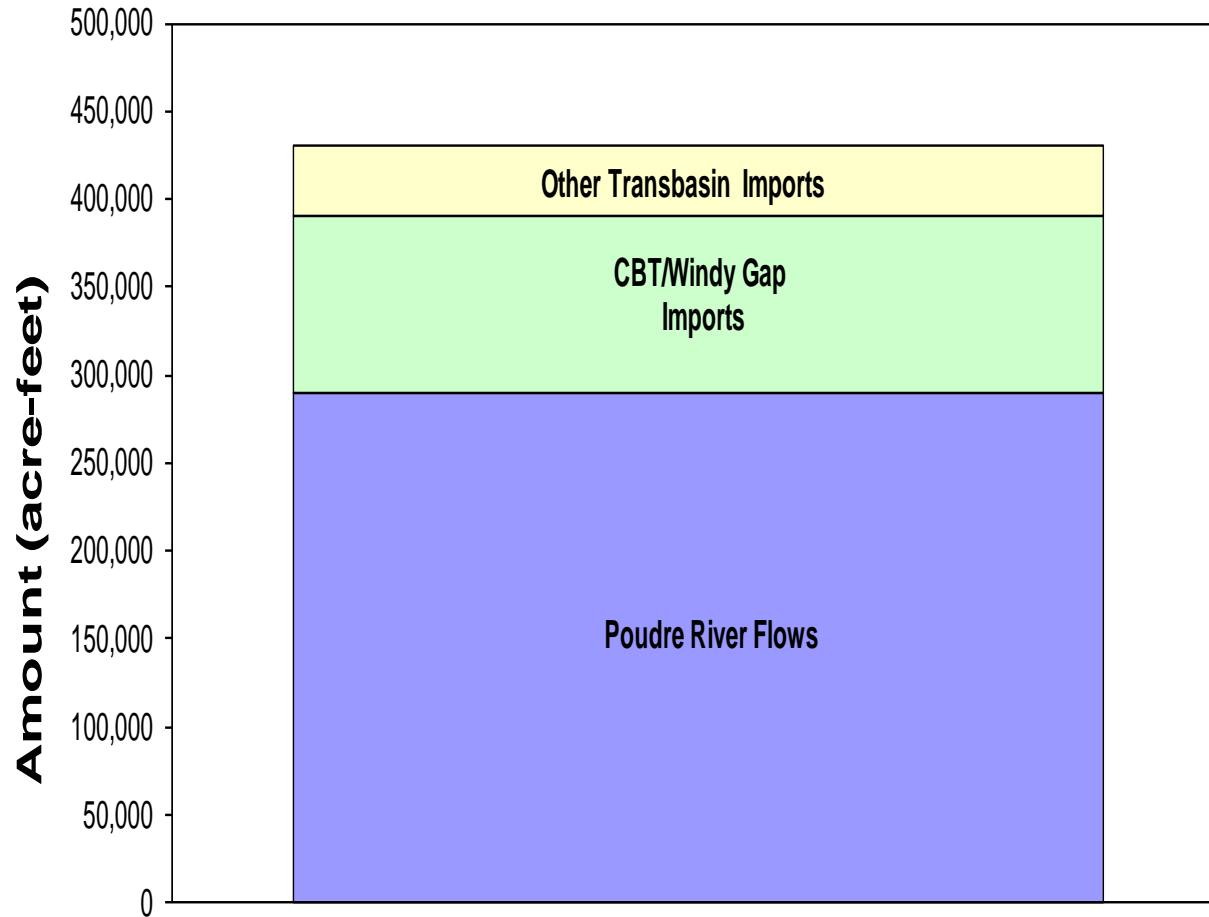
- The Colorado Department of Natural Resources (DNR) Division of Water Resources
  - State Engineer
  - 7 Division Engineers for each major basin of the state
  - Water Commissioner for each major river of the state—responsible for administering water rights on the river

# Where Does the Water in the Poudre Come From?

- Three main sources
  - Native River Water
  - C-BT System Water
  - Other Transbasin Supplies



# Average Annual Poudre Basin Supplies

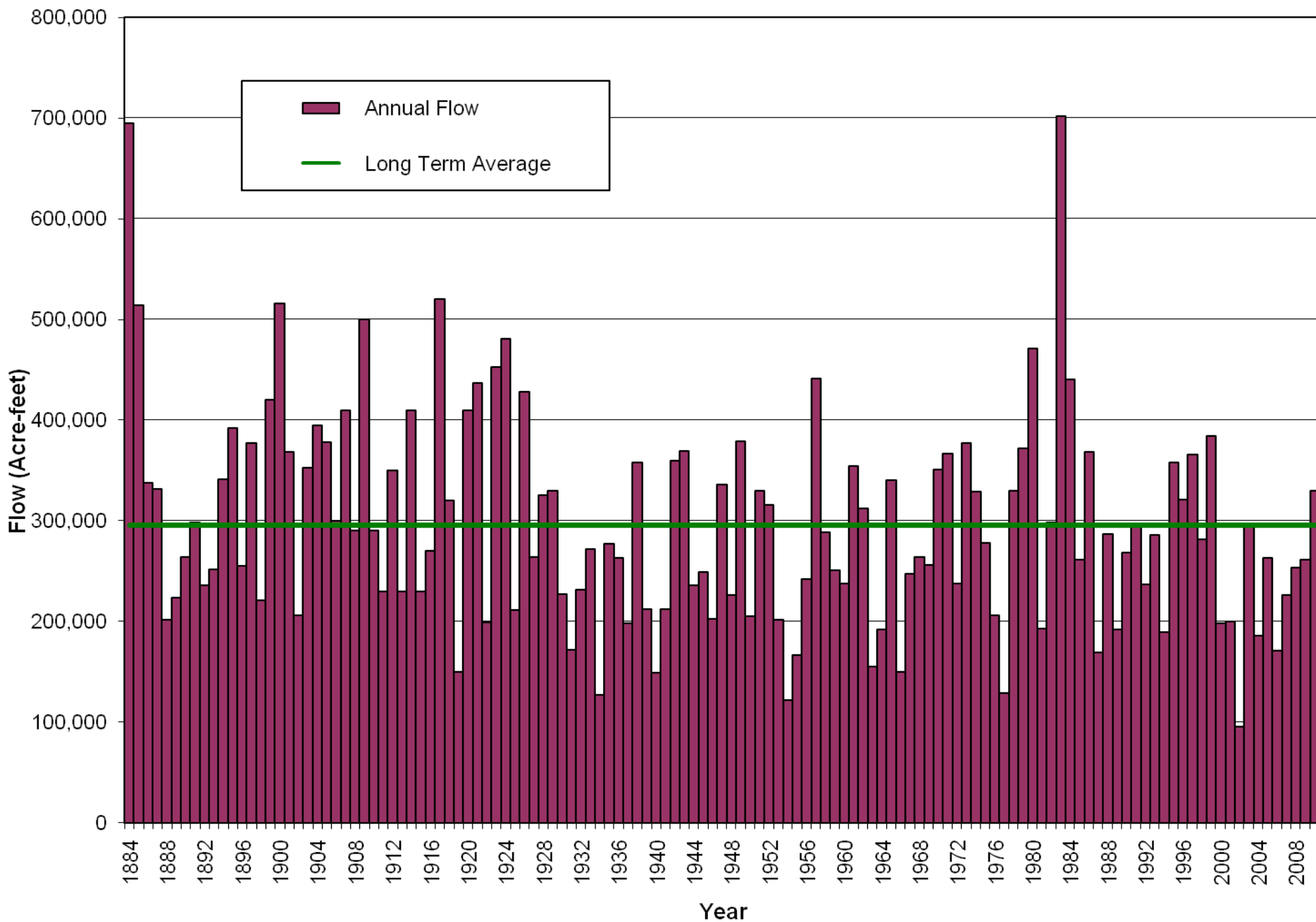


# Native Poudre Water

- Roughly 65% of the Poudre's water is native flows from snowmelt
- Starts from Poudre Lake off Trail Ridge Road, RMNP
- Flows vary from year to year
- The annual volume is highly variable



# Cache la Poudre River Annual Virgin Flows at the Mouth of the Canyon

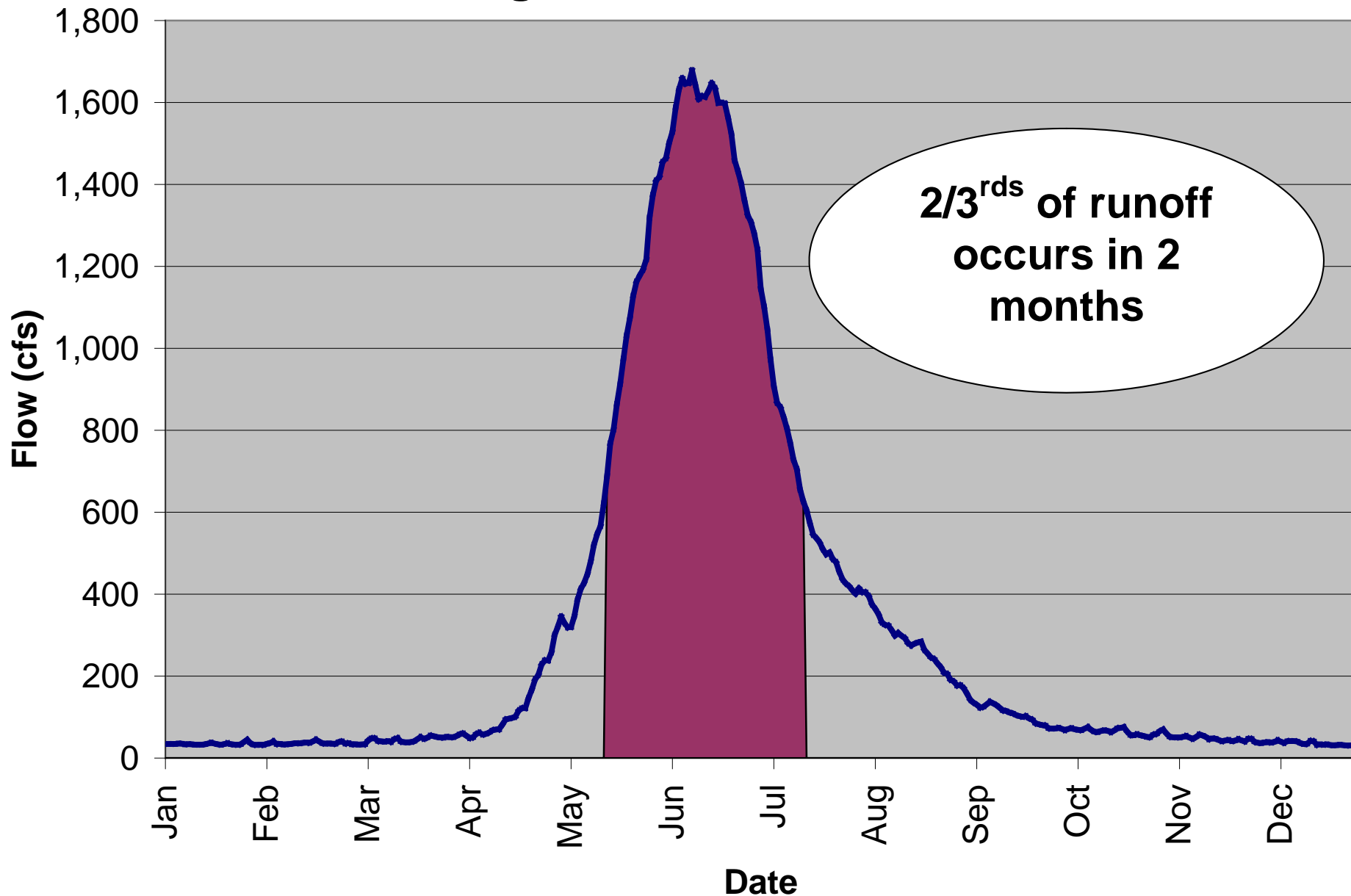


# Native Poudre Water

- Average daily flow varies depending on the time of year
- Two-thirds of the annual volume comes in a two month period
- Winter flows are very low, accounting for only 1 or 2 percent of the annual flow each month



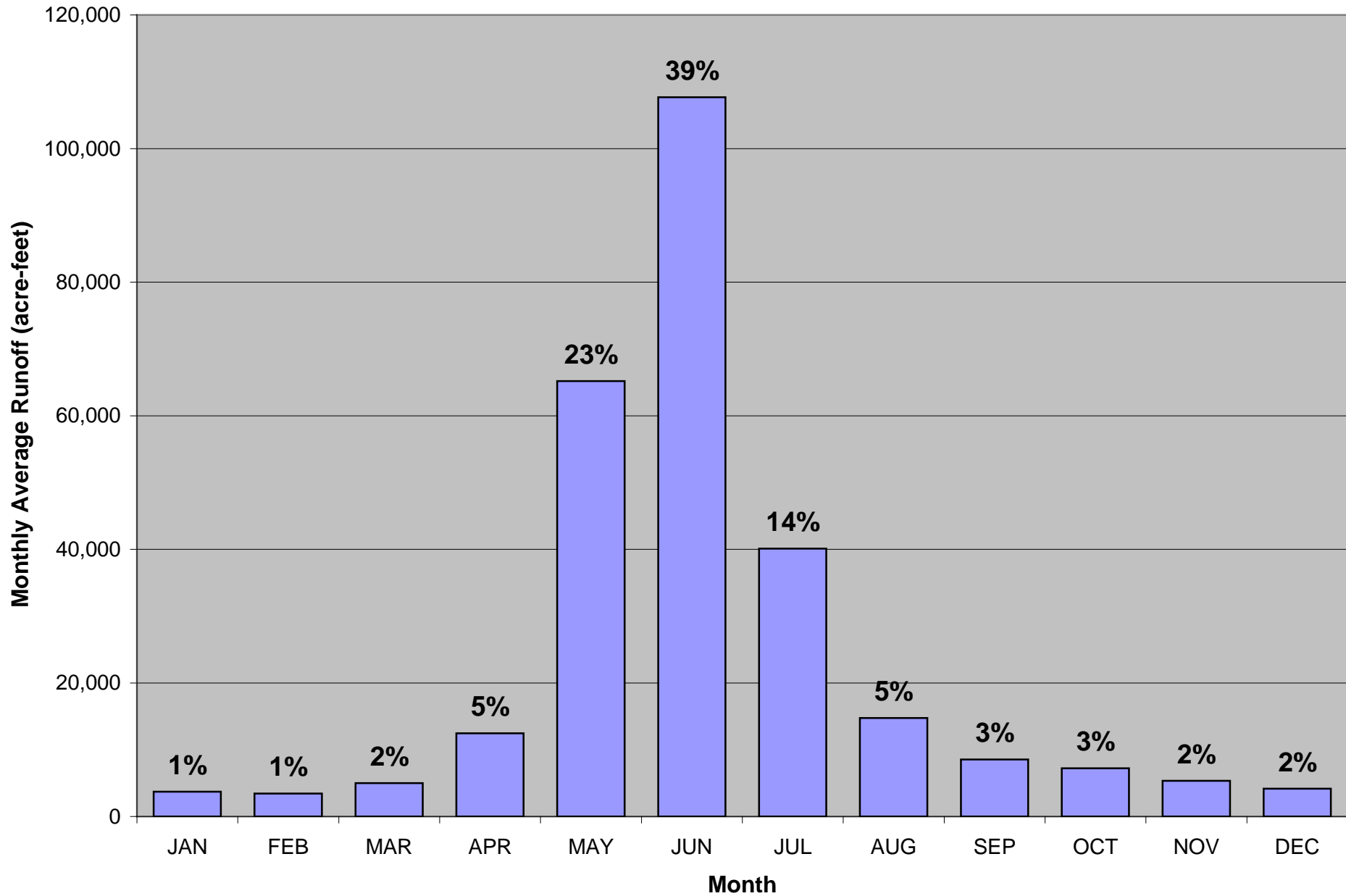
# Average Poudre River Flows



Source: Cache la Poudre River at the Mouth of the Canyon Gage (USGS 06752000)



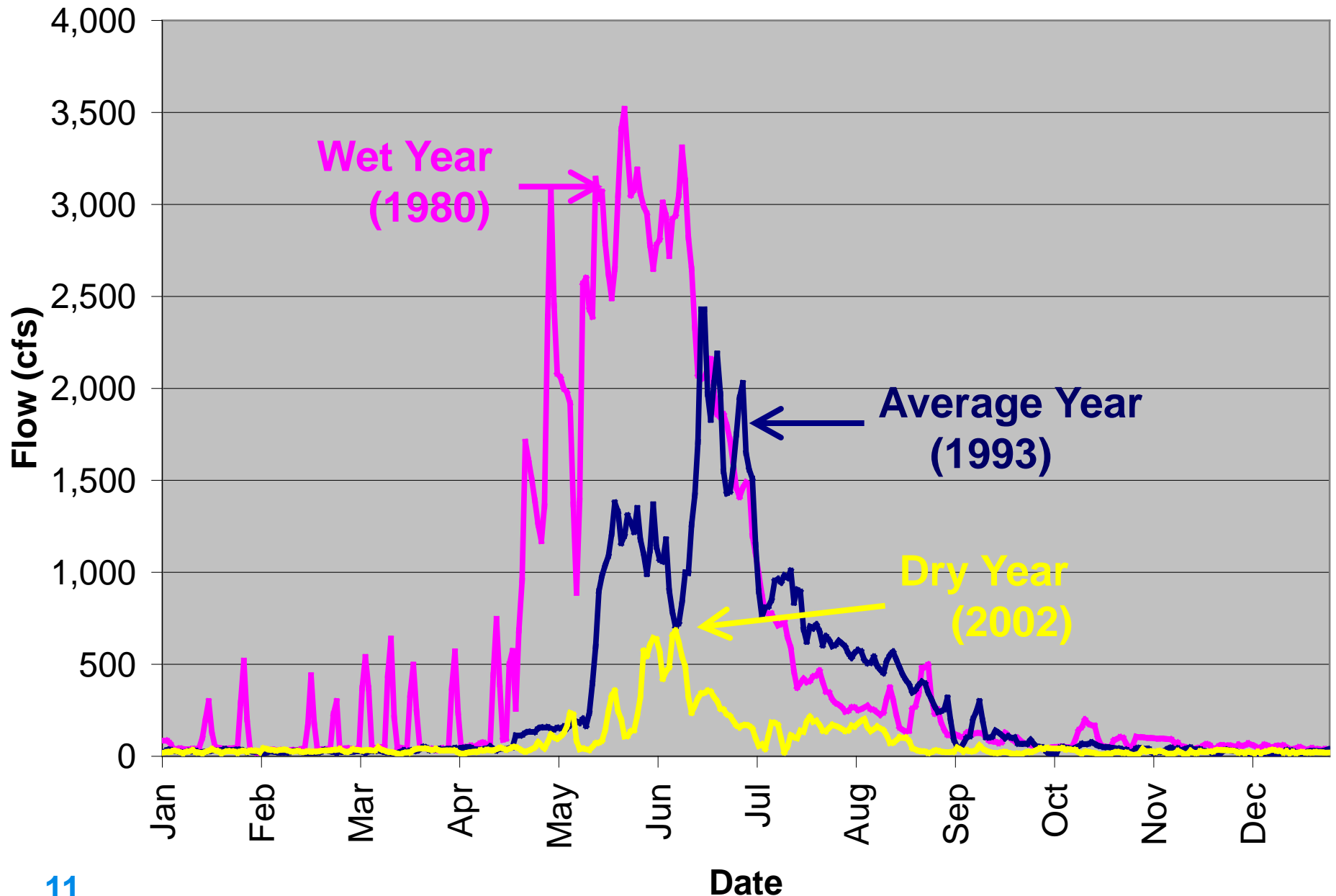
# Cache la Poudre River Monthly Average Native Runoff at the Mouth of the Canyon (1950-2005)



# Native Poudre Water

- Lack of water in the late summer and winter months to meet demands
- Extreme variability in the supply from year to year
- Reservoirs were built to re-time the water so that it is available to meet irrigation and municipal demands

# Poudre River Flows



# Colorado Big Thompson Project



# Colorado Big Thompson Project CBT

- Roughly 25% of the water in the Poudre is diverted from the Colorado River via the Colorado Big Thompson Project
- Helps to fill in supply in years when annual supplies in native rivers are low
- Helps to fill in supply during months when flows in native rivers are low (late-summer, and for municipalities, winter too)

# Colorado Big Thompson Project CBT

- Horsetooth Reservoir is part of the CBT Project, serving the Poudre
- About 60% of the CBT project water is released into the Poudre via Horsetooth
- Horsetooth releases made from April through October, mostly in late summer



# Other Transbasin Diversions



Roughly 10% of the water in the Poudre is diverted from these other transbasin diversions, constructed in the late 1800 's and early 1900's



# Other Transbasin Diversions

- **Grand River Ditch (bringing water from the Colorado River)**





# Other Transbasin Diversions

- **Laramie-Poudre Tunnel (bringing water from the Laramie River in Wyoming)**



# Other Transbasin Diversions

## Other Transbasin Diversions

- **Michigan Ditch**
- **Wilson Supply Ditch**
- **Deadman Creek Ditch**
- **Bob Creek Ditch**
- **Cameron Ditch**

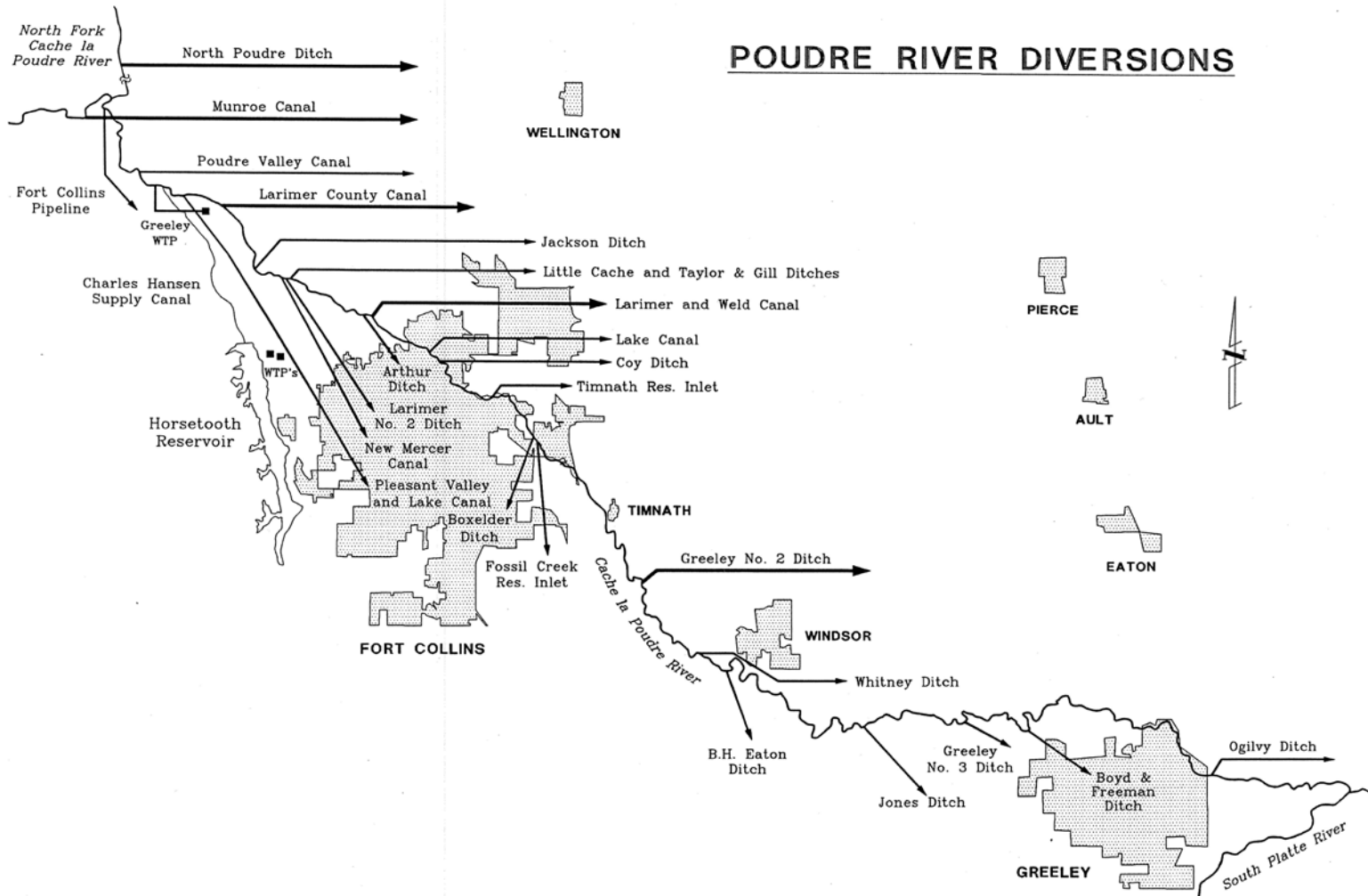


# Who Owns Rights to Use The Water?

- Agricultural Users (~85%)
- Municipal and Industrial (M&I) Users (~15%)
- Recreational and Environmental Users  
(not included in the percentages because they are considered “non-consumptive”)



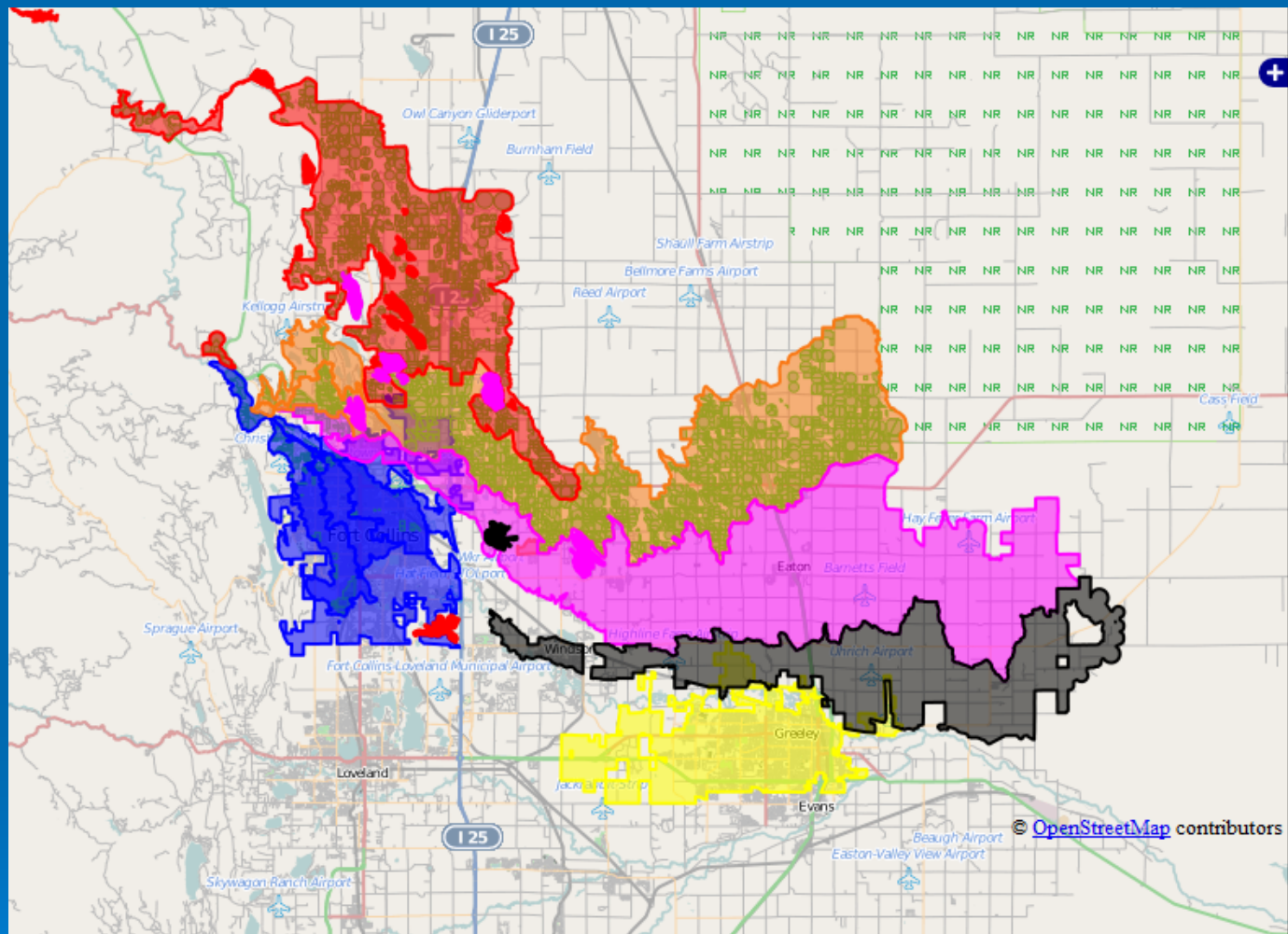
## POUDRE RIVER DIVERSIONS



# Agricultural Uses

- Four Large Irrigation Systems
  - North Poudre Irrigation Company
  - Water Supply and Storage Company
  - Larimer and Weld Irrigation Company
  - New Cache Irrigating Company (Greeley No 2)
- Many Smaller Irrigation Companies





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Fort Collins

Greeley

North Poudre Irrigation Company

Larimer-Weld Irrigation Company

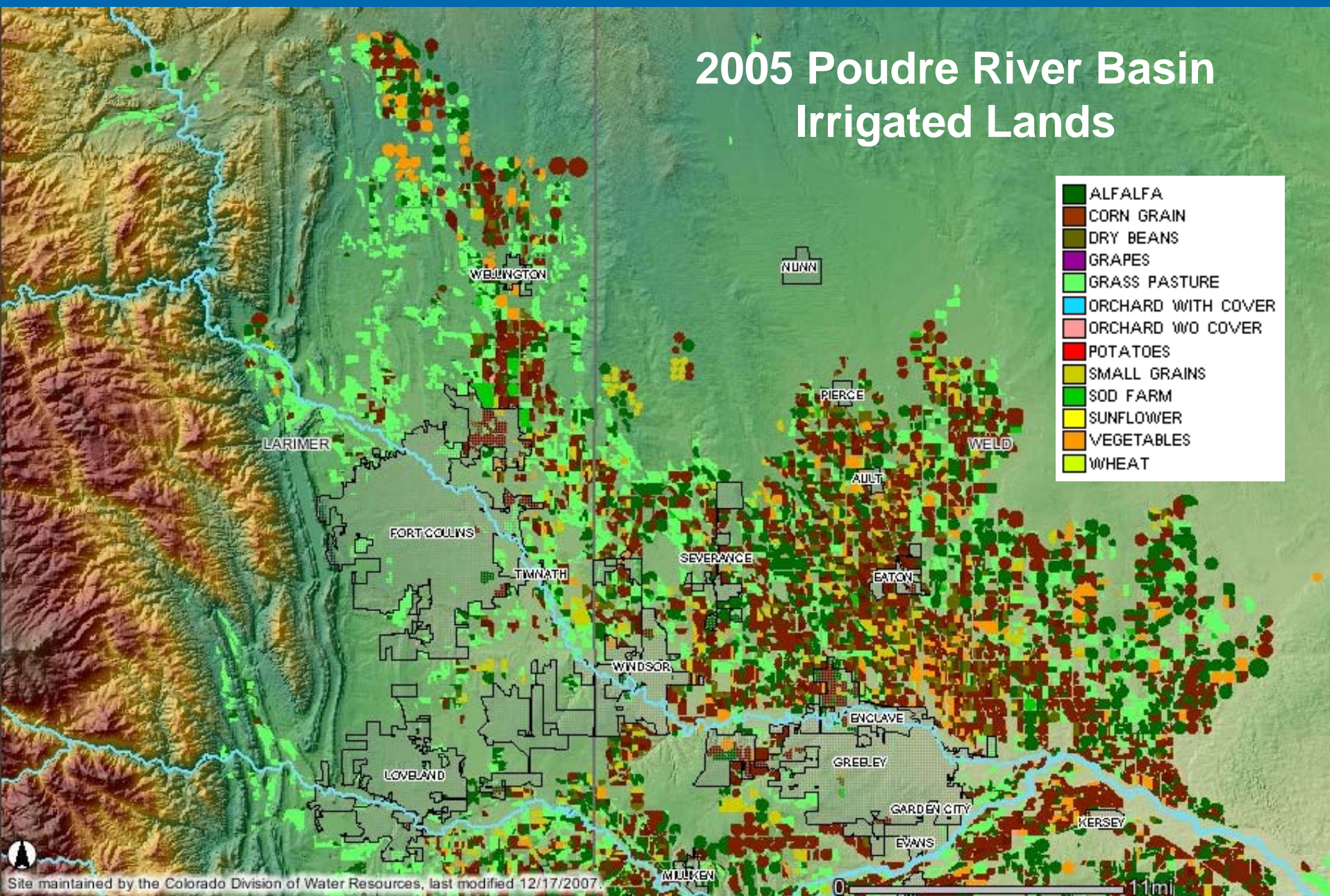
Water Supply and Storage Company

New Cache la Poudre Irrigation Company

Irrigated lands



# 2005 Poudre River Basin Irrigated Lands



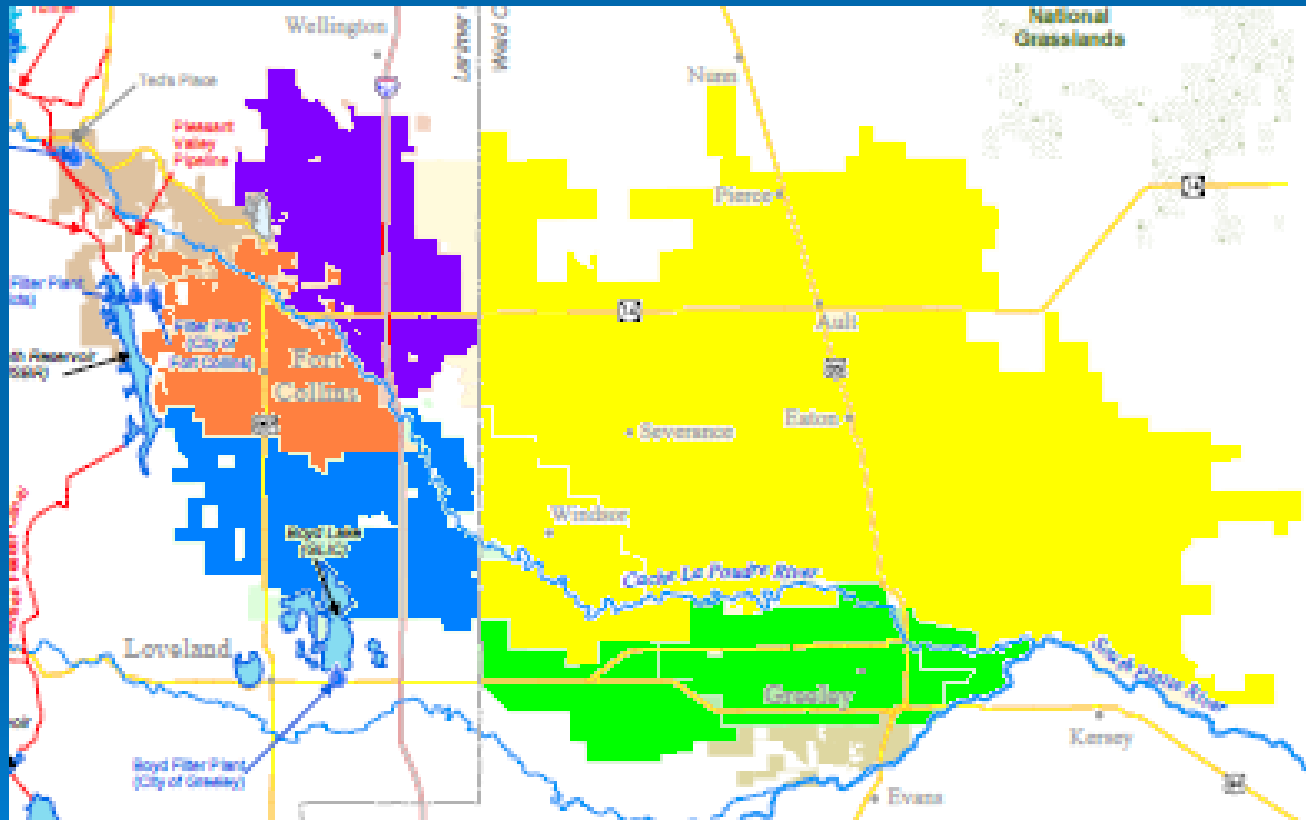
# Municipal and Industrial Users

- City of Fort Collins
- City of Greeley (Bellvue Water Treatment Plant)
- Tri-Districts (Soldier Canyon Filter Plant)
  - Fort Collins-Loveland Water District
  - East Larimer County Water District
  - North Weld County Water District





# Municipalities and Water Districts



# Recreational and Environmental Uses

- CWCBC In-stream Flows (mostly in the mountains)
- Recreational In-Channel Diversions (RICD) City of Fort Collins has two RICDs



# How are Rights Administered?

- The water rights that were applied for first (1860s) get the senior priorities
- The water rights in the Poudre are assigned numbers based on the application date
  - Number 1 is a senior right (6-1-1860)
  - Number 100 is a junior right (1881)

# How are Rights Administered?

## ➤ For Storage decrees

- Usually junior to the direct flow decrees on the Poudre
- Typically the storage season is Nov 1-Apr 15
- Can also be diverted when the high flows occur
- Water is measured at the reservoir using a staff gage

# How are Rights Administered?

- As the flow rate in the river increases, more water rights “come into priority” (can divert)
- As the flow in the river decreases, the last right to divert is the first right to shut off
- In some years junior water rights may not ever come into priority

# Conclusions

- The Poudre River gets its water from many sources
- Poudre River flows vary considerably - annually, monthly, daily
- Agricultural irrigation continues to use a large majority of the Poudre supplies
- For many junior water right holders, the water is not available when the water is needed
- Rules for diverting and using the water is prescribed by Colorado water law
- The Poudre Water Commissioner is responsible to administer the “working river”