



Poudre Runs Through It

“When the well is dry, we
know the worth of water.”

BENJAMIN FRANKLIN

Scope of Briefing

- Background
- Operations – Raw Water
- Future Planning – Supply/Demand

Greeley's Economic History

- Union Colony founded 1870 as agricultural utopia
 - Irrigation ditches dug 1870
 - Potatoes were first major crop
 - Sugar factory built 1902: by 1920 Colorado produced 25% of nation's sugar
 - Lamb feeding began winter of 1884-1885
 - Monfort packing plant brought cattle to feed lots
- Greeley is Weld County seat
- University of Northern Colorado and Aims C.C.
- Kodak and State Farm in late 1960s
- Regional Northern Colorado Medical Center
- Oil and Gas industry
- Railroads: UP, Burlington Northern, Great Western

Greeley's Economy:

- **Agricultural/ Energy related businesses**
 - Direct farm production of corn, hay, beets, wheat, and high value crops such as onions
 - Weld County #8 in country,
 - #1 in CO in 2007, and 25% of Colorado total
 - Leprino cheese plant 800,000 lb/day of mozzarella cheese for pizza!
 - » Takes a lot of dairy cows, feed, vets, equipment
 - Corporate HQ for JBS-Swift
 - Energy Sector

Greeley's Water Supply Today and Tomorrow

- Four river basins
- Two Filter Plants
- Two transmission systems

Water from Four Basins

■ Poudre River Basin

- Direct flow river rights (1860's)
- Ditch Number 3 (1870) $\frac{3}{8} + 20\%$ of $\frac{5}{8}$ GIC
- Six high mountain reservoirs (1947)

■ Upper Colorado River Basin

- Colorado-Big Thompson Project (22,000 units) (C-BT)
- Windy Gap Project (44 units, 10% of project)

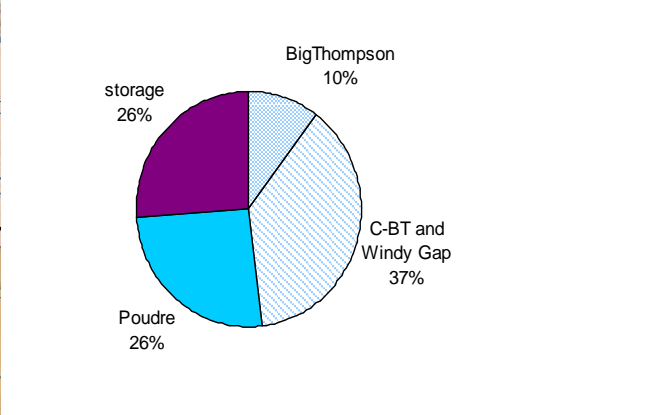
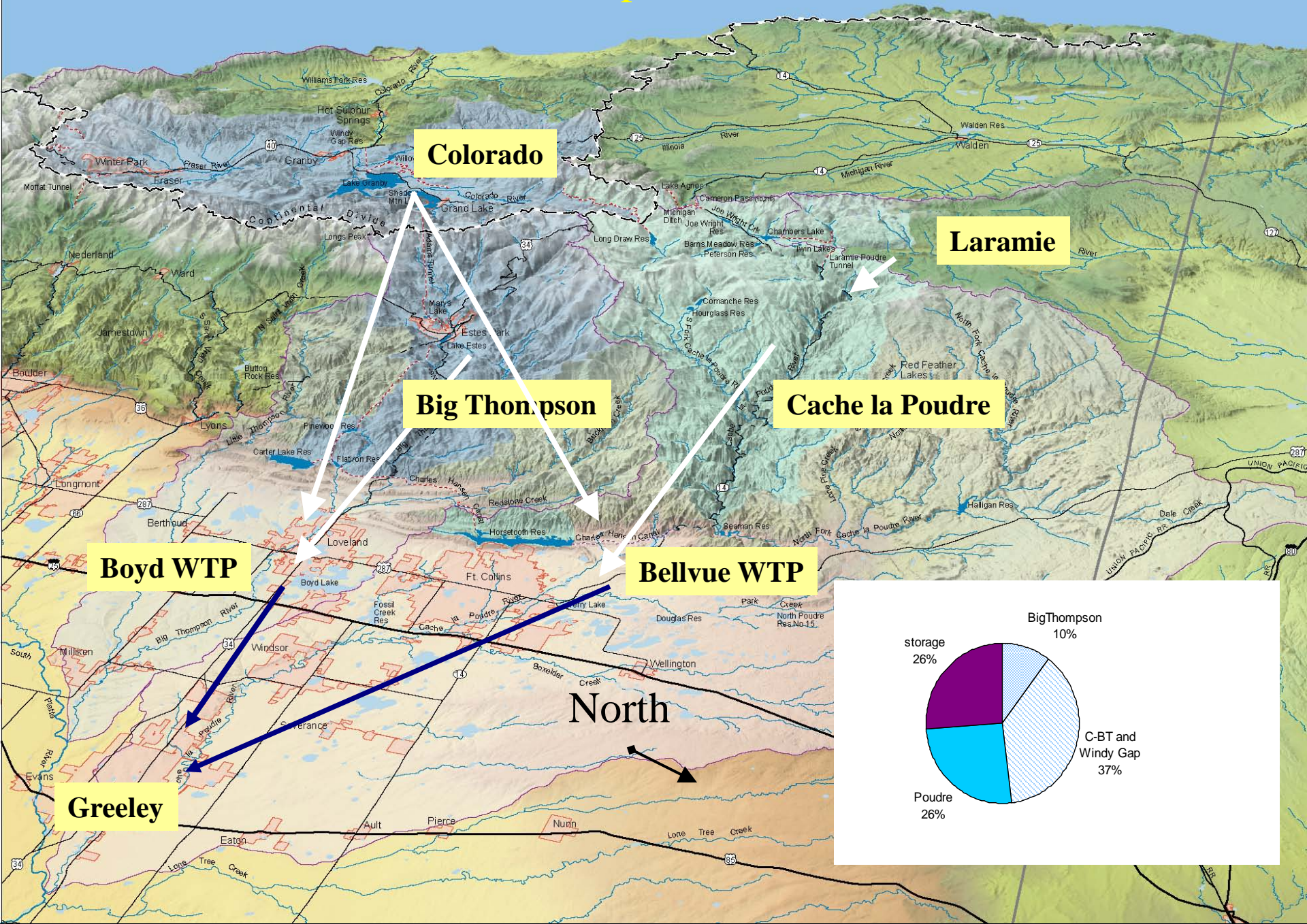
■ Big Thompson River Basin

- Greeley Loveland Irrigation System (50% of company)
 - » Boyd Lake, Lake Loveland, Seven Lakes

■ Laramie River Basin

- Laramie-Poudre Tunnel (Windsor Reservoir & Canal Co)
- Bob Creek

Four river basins – Two filter plants – Two transmission mains



Water Rights – Redundancy

- When your direct flow rights are called out, you have to use your stored water.
- Greeley has about 9 months water supply in storage, enough to supply today's population during a 6-year long, 50-year drought.
- For 3 months starting in June – Greeley was without direct flow rights
- Due to drought conditions and Post Fire Effects – Adequate Water Year?

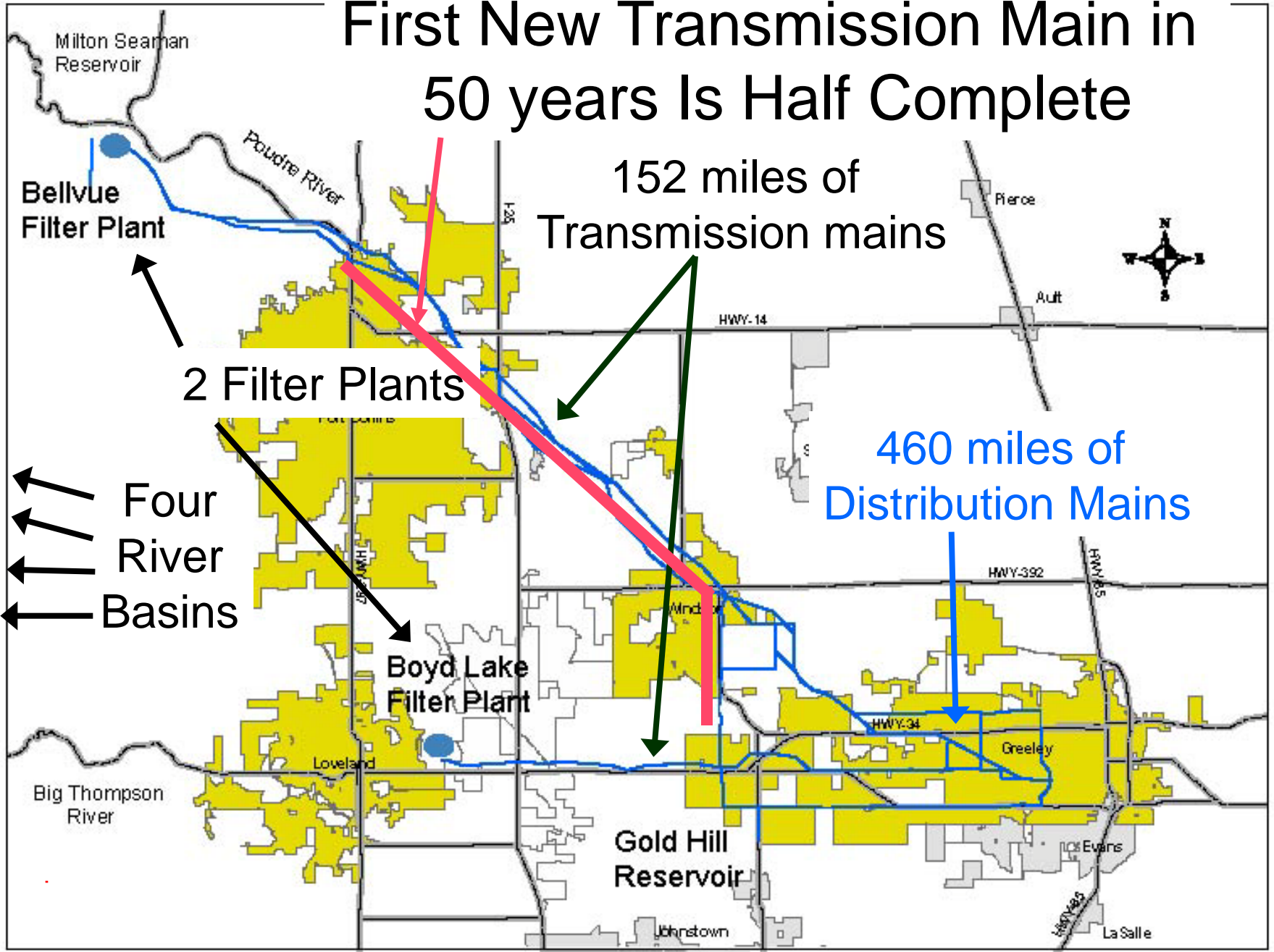
First New Transmission Main in 50 years Is Half Complete

152 miles of Transmission mains

460 miles of Distribution Mains

2 Filter Plants

Four River Basins





Water Treatment

Bellvue Filter Plant

Original 1907

Latest Upgrade

2009

32 mgd

Greeley's winter
Demand = 14 mgd

Summer = 54 mgd



Boyd Lake Filter Plant

Original 1964 Latest Upgrade 2005 38 mgd

Planning for the Future

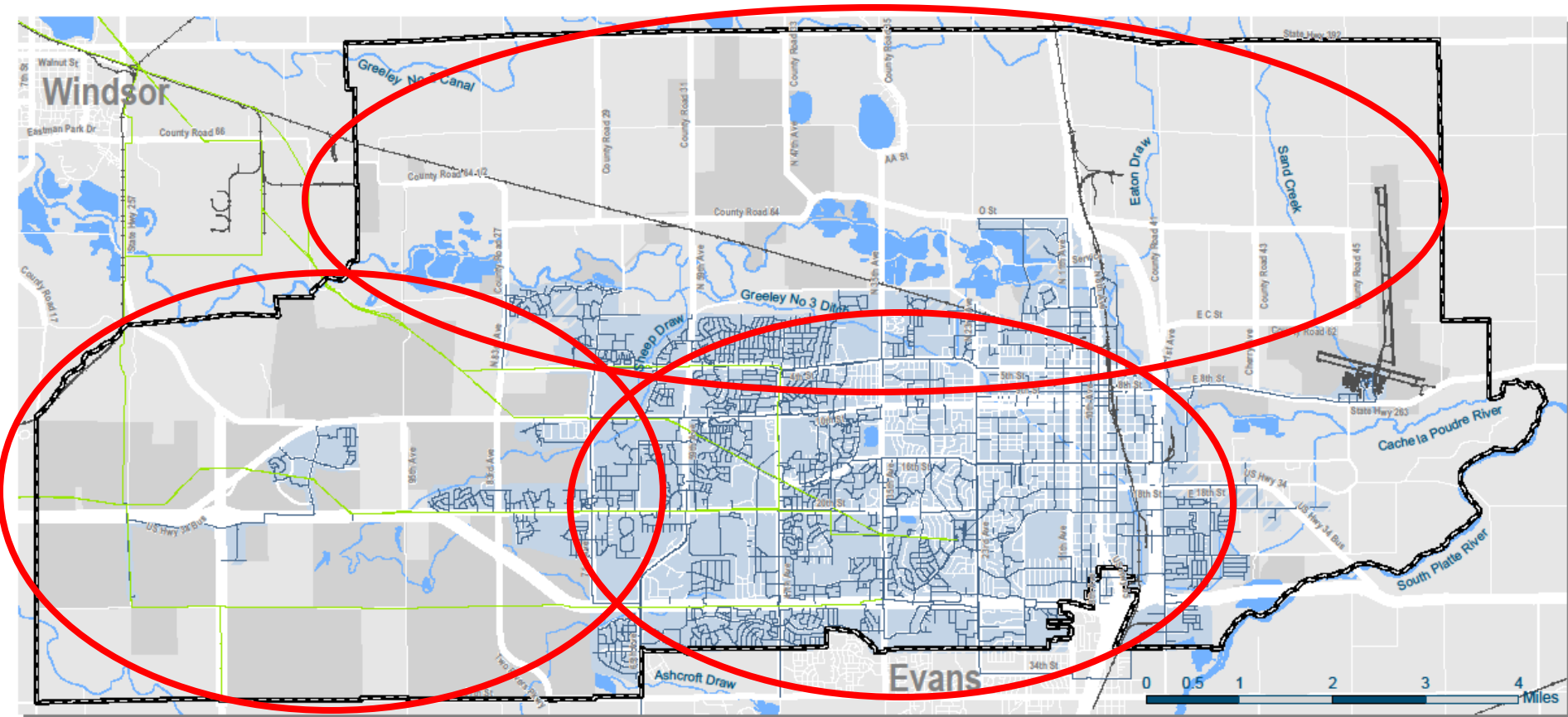
Supply and Demand Problem

Natural Environment



Greeley's 2060 Comprehensive Plan

- The 2060 Plan was adopted in 2009
- Update of “2020 Comp Plan” approved 2000
 - Reviewed key community indicators, trends, projections to assess growth and development
- Adopted unanimously by Council with community testimony of support and no objection



2010 APFA // WATER



Created: 6/29/2010 By: Planning, GIS

- Legend**
- 2010 APFA Water Service Boundary
 - Water Transmission Lines
 - Within City Limits
 - Out of City Limits
 - 8" or Larger Water Lines
 - Service Boundary:**
The greatest extent of existing 8" or larger water service lines

APFA:
Adequate Public Facilities Area, the region within which there are existing or budgeted capital improvements for public facilities.

LREGA:
Long Range Expected Growth Area, the region within which the community is expected to grow over the next twenty to fifty years.

Service Note:
Updates to infrastructure are continual and data representation will change over time. Representation is a general boundary and further review based on different developments is required. Contact the City of Greeley to request a formal review of service locations for a subject property.



Notes:
All planimetric data was digitized from aerial photographs dated 1987, 1992, 1995, 2000, 2005, and 2008. Updates are continual and data representations will change over time. This product is not necessarily accurate to engineering or surveying standards but does meet National Mapping Accuracy Standards (NMAS). The information contained within this document is not intended to be used for the preparation of construction documents.

Information contained on this document remains the property of the City of Greeley. Copying any portion of this map without the written permission of the City of Greeley is strictly prohibited.

Greeley Water is a service provider for the City's planned growth

Driving Factors of Water Master Plan

- Age – Major parts of Greeley's water system are 50 to 70 years old.
- Growth /Demand– Population will over double in 50 years.
- Regulations – higher federal water quality standards: crypto, TOC,
- Competition – Regional growth limits water availability and pipeline construction.

Water Master Plan is Comprehensive and Long-Term

- Four years in the making, developed by staff and Board with consultant's assistance and community input.
- Adopted by Council and Board.
- Provides capital improvements plan for **near-term** (10-15 years) and water supply options for **long-term** (20-40 years).
- Provides water supply and funding concept beyond 2020: **regional storage and future water account.**

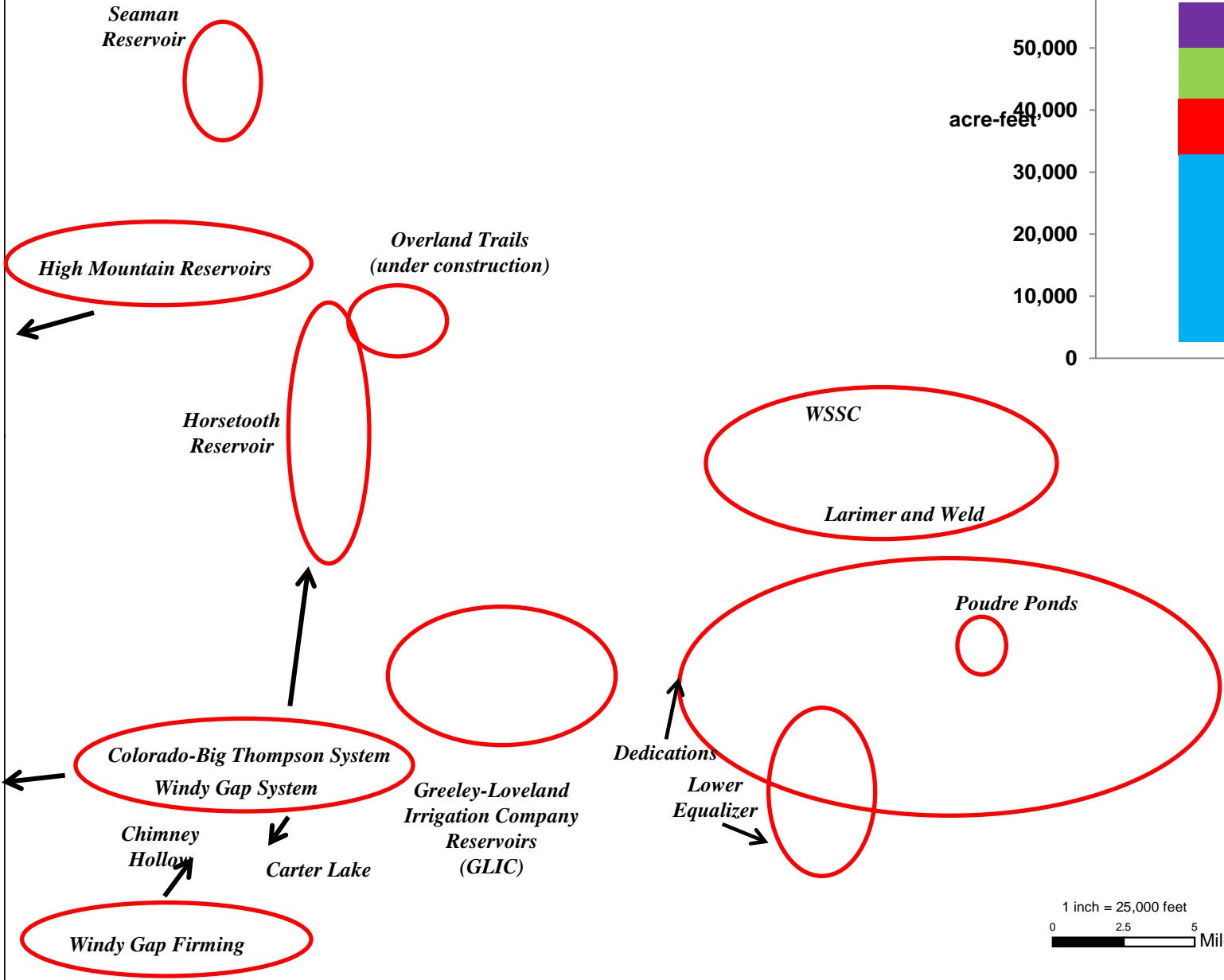
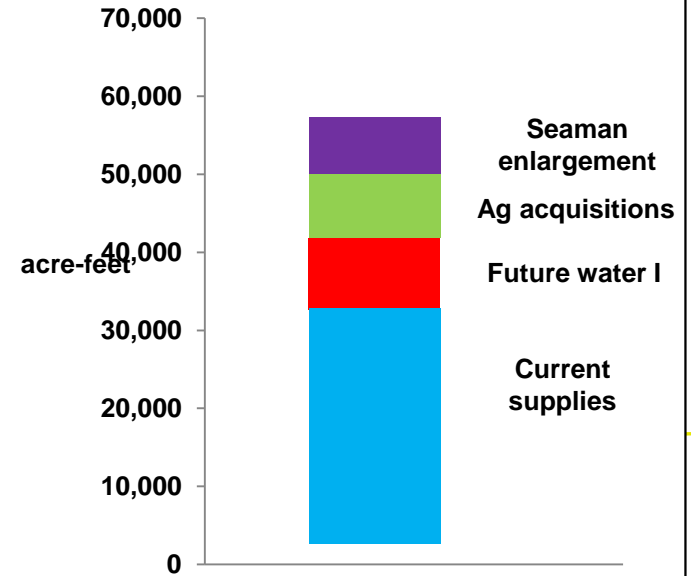
Before the Water

Water is scarce.

Supply Side Planning



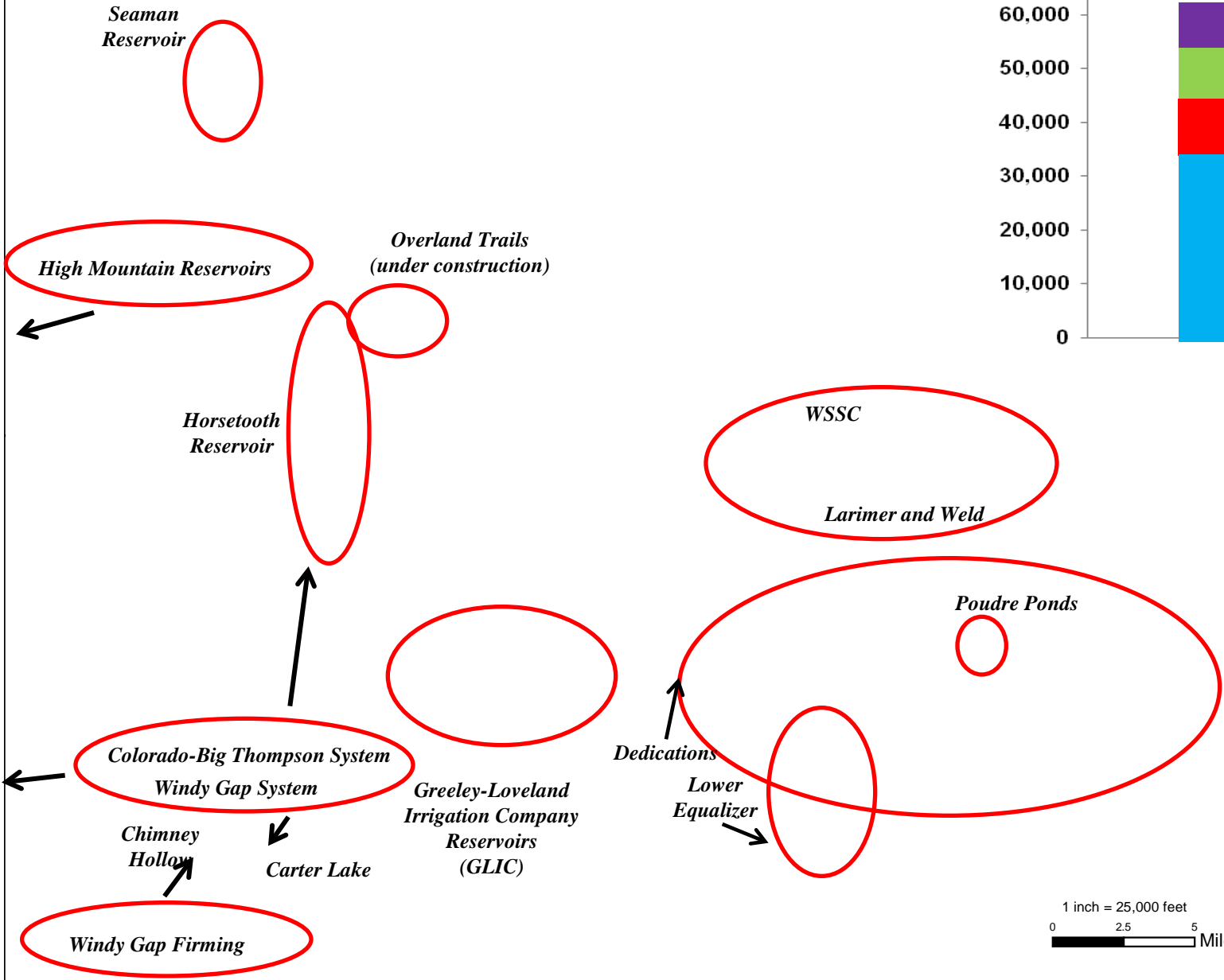
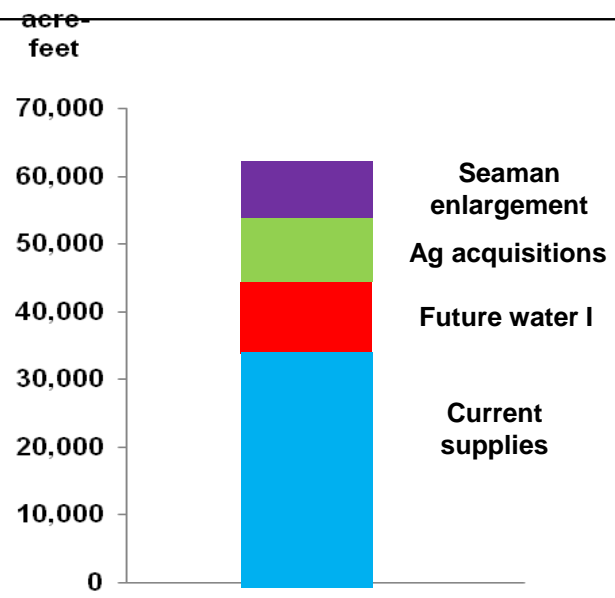
Greeley Water Resources Current and Future Supply



1 inch = 25,000 feet
 0 2.5 5 Miles



Greeley Water Resources Current and Future Supply



1 inch = 25,000 feet
 0 2.5 5 Miles



Drought

A regular occurrence in a semi-arid environment.

On the Demand Side



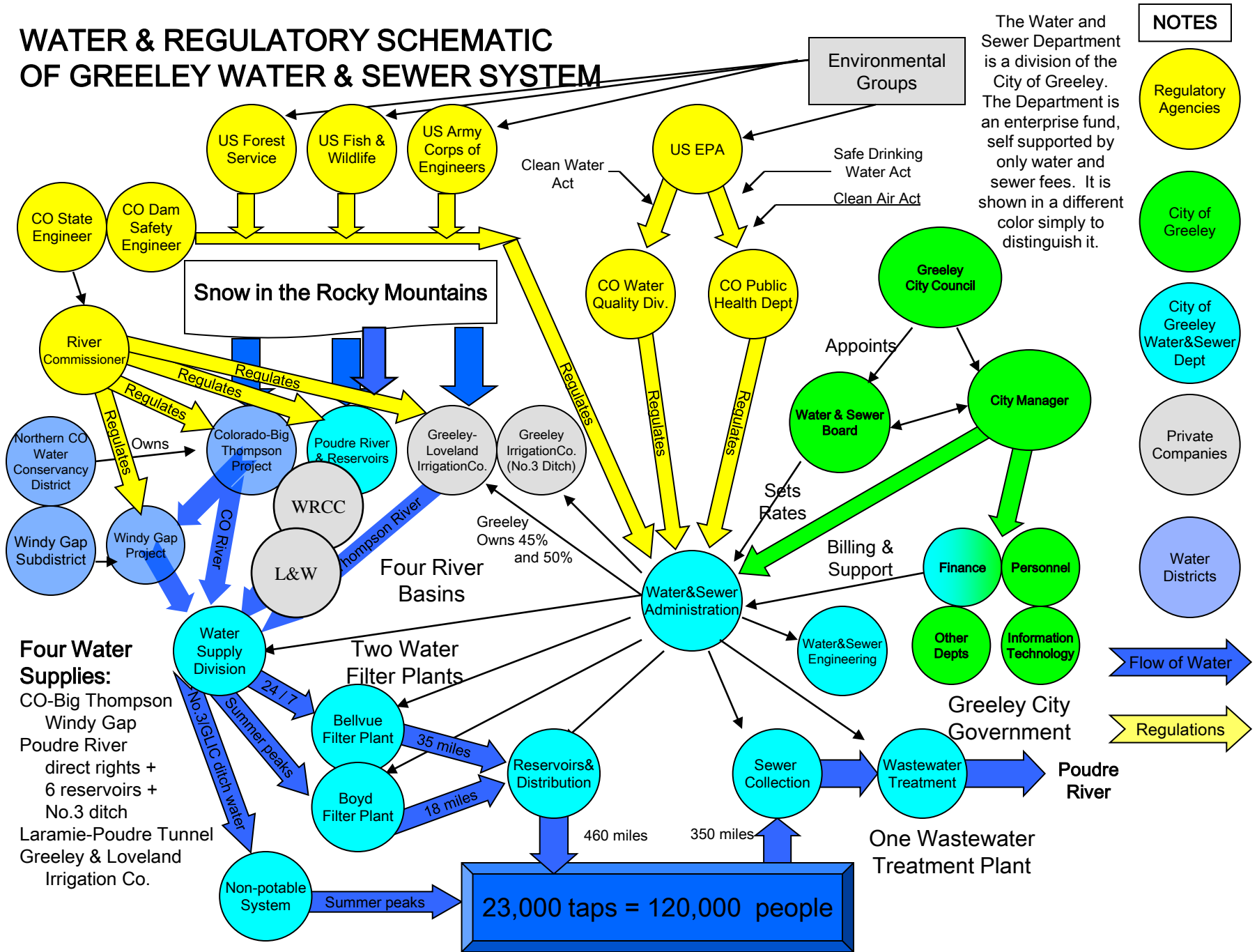
Comprehensive Conservation Program

- Fully metered since 1996
- Leak detection: less than 5% system losses
- Continual watering restrictions since 1907
- Free irrigation & commercial audits, rain sensors
 - JBS-Swift industrial conservation audit completed
 - Parks irrigation control system upgraded
- Rebates for high-efficiency washers and toilets
 - 11th Avenue toilet replacement program
- Required soil amendments; grants for xeric
- Water Budget Pilot Program
- Continual Education (e.g. water festival, mailers)



Desired Environment
A question of values

WATER & REGULATORY SCHEMATIC OF GREELEY WATER & SEWER SYSTEM



NOTES

The Water and Sewer Department is a division of the City of Greeley. The Department is an enterprise fund, self supported by only water and sewer fees. It is shown in a different color simply to distinguish it.

Regulatory Agencies

City of Greeley

City of Greeley Water & Sewer Dept

Private Companies

Water Districts

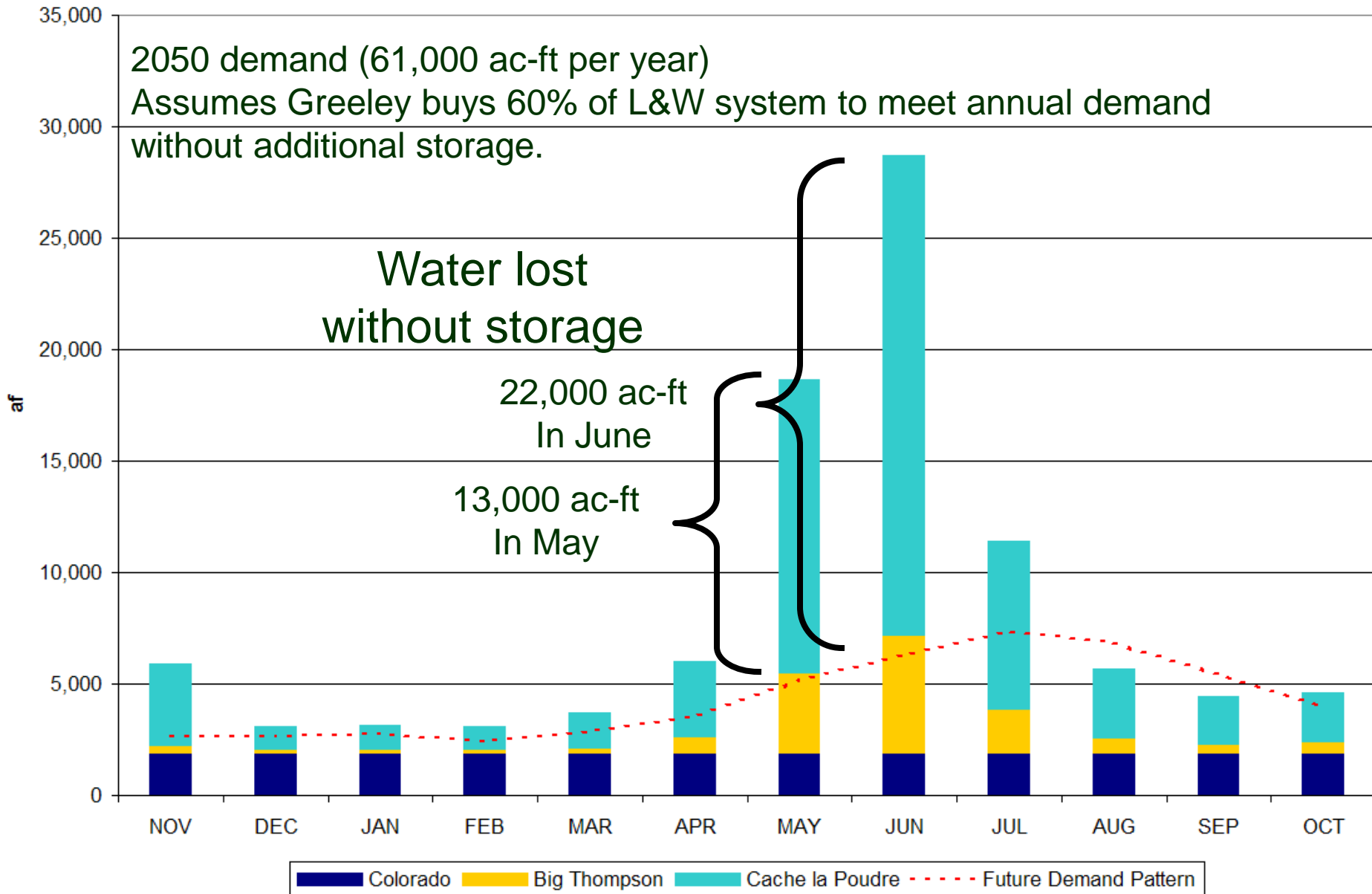
Flow of Water

Regulations

End

City of Greeley: Avg Monthly River Entitlements

2050 demand (61,000 ac-ft per year)
Assumes Greeley buys 60% of L&W system to meet annual demand
without additional storage.



Inefficiency of Junior Water Rights

Greeley Has Annual Surplus Water In Average and Wet Years

