Loveland
Water and Power

Loveland's Water Supply Past, Present and Future

Water Literate Leaders Meeting
Colorado Water Institute in cooperation with the Community Foundation

Larry Howard, Water Resources Manager

October 12, 2016

“Here is a land where life is written in water.”

Thomas Hornsby Ferril,

Colorado’s late Poet Laureate

Rotunda of the state capitol

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

Benjamin Franklin

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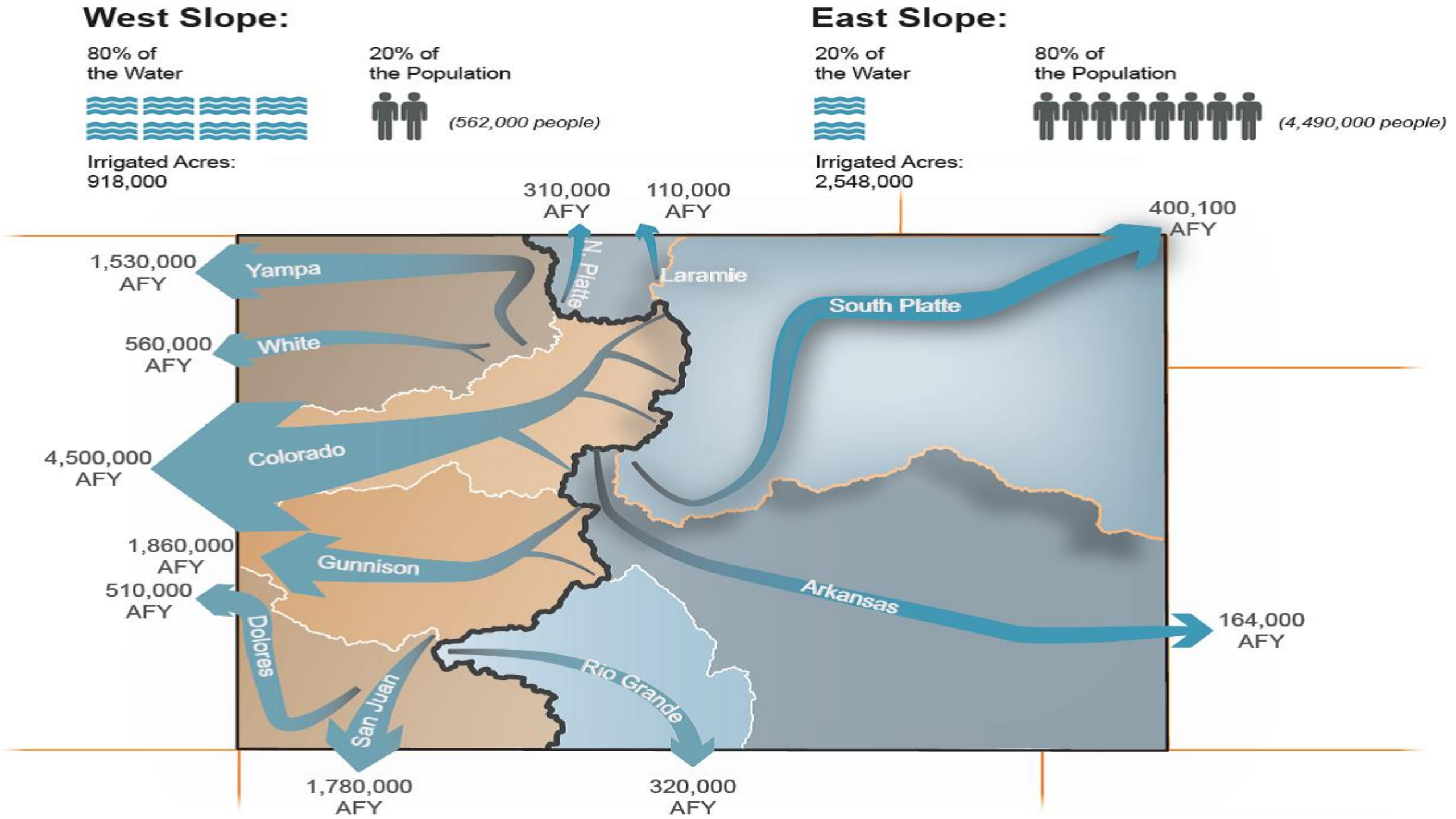
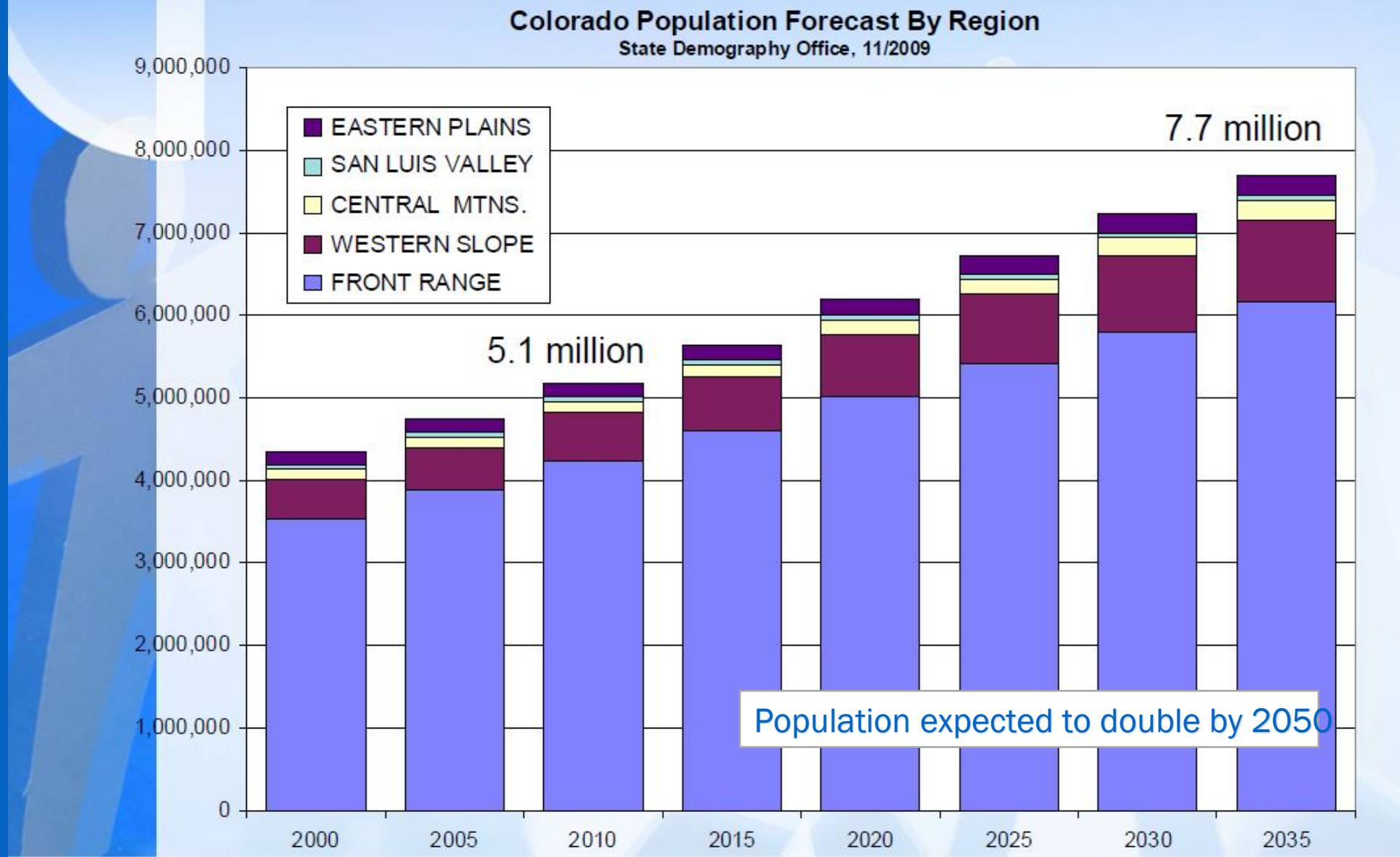
Photo by Dick Stenzel- Loveland Reservoirs looking east


West Slope:
80% of the Water
20% of the Population
(562,000 people)
Irrigated Acres: 918,000
East Slope:
20% of the Water
80% of the Population
(4,490,000 people)
Irrigated Acres: 2,548,000
310,000 AFY
110,000 AFY
400,100 AFY
1,530,000 AFY
Yampa
N. Platte
Laramie
South Platte
560,000 AFY
White
4,500,000 AFY
Colorado
1,860,000 AFY
Gunnison
510,000 AFY
Arkansas
164,000 AFY
Dolores
San Juan
Rio Grande
1,780,000 AFY
320,000 AFY

Population Forecasts



Past

A brief history of Loveland's raw water supply

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Loveland's First Water Diversion

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Loveland Water Supplies

East Slope

- Native Direct Flow
- Transferred Ditch Rights

West Slope

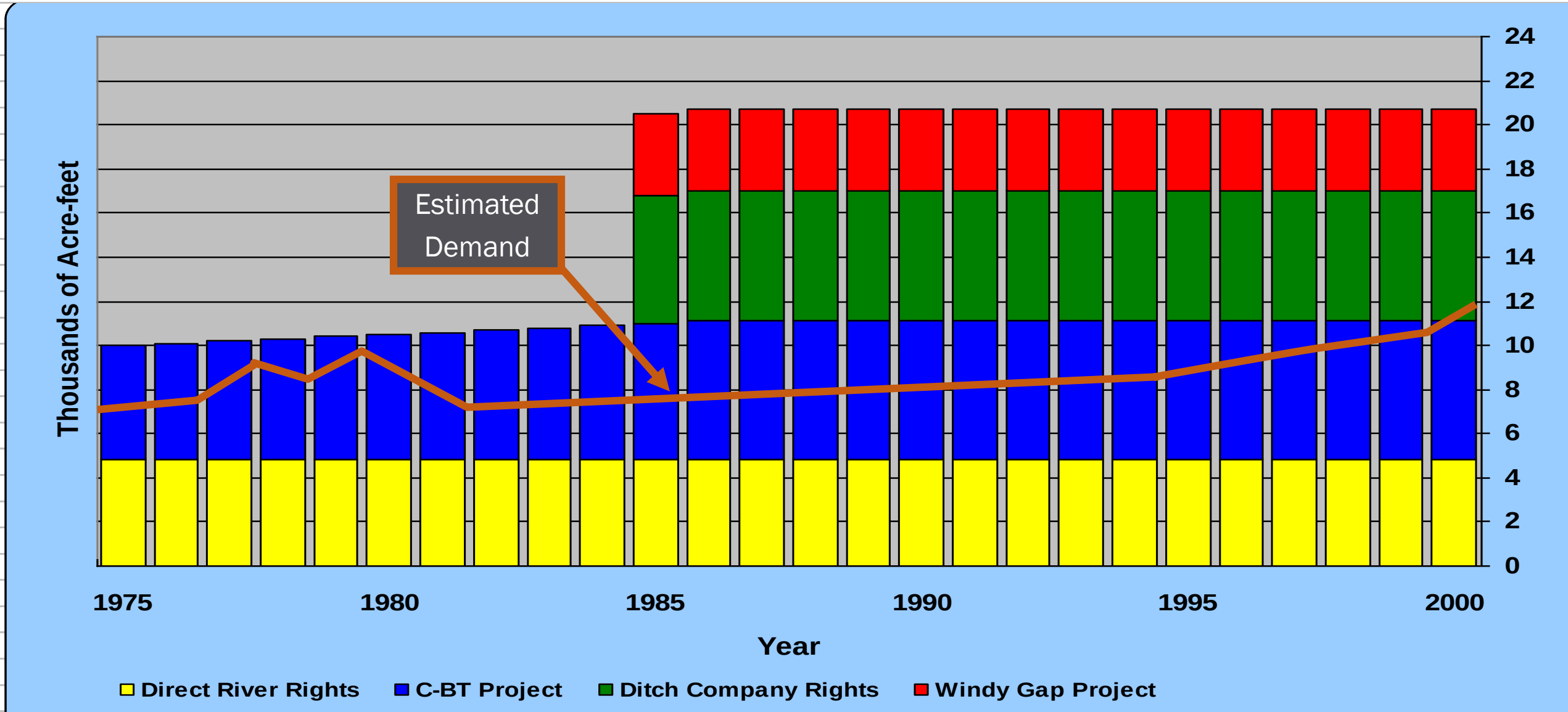
- CBT Project
- Windy Gap Project

Storage

- Green Ridge Glade Reservoir

Current Water Supply

Loveland's Raw Water Portfolio



Present

Where we are

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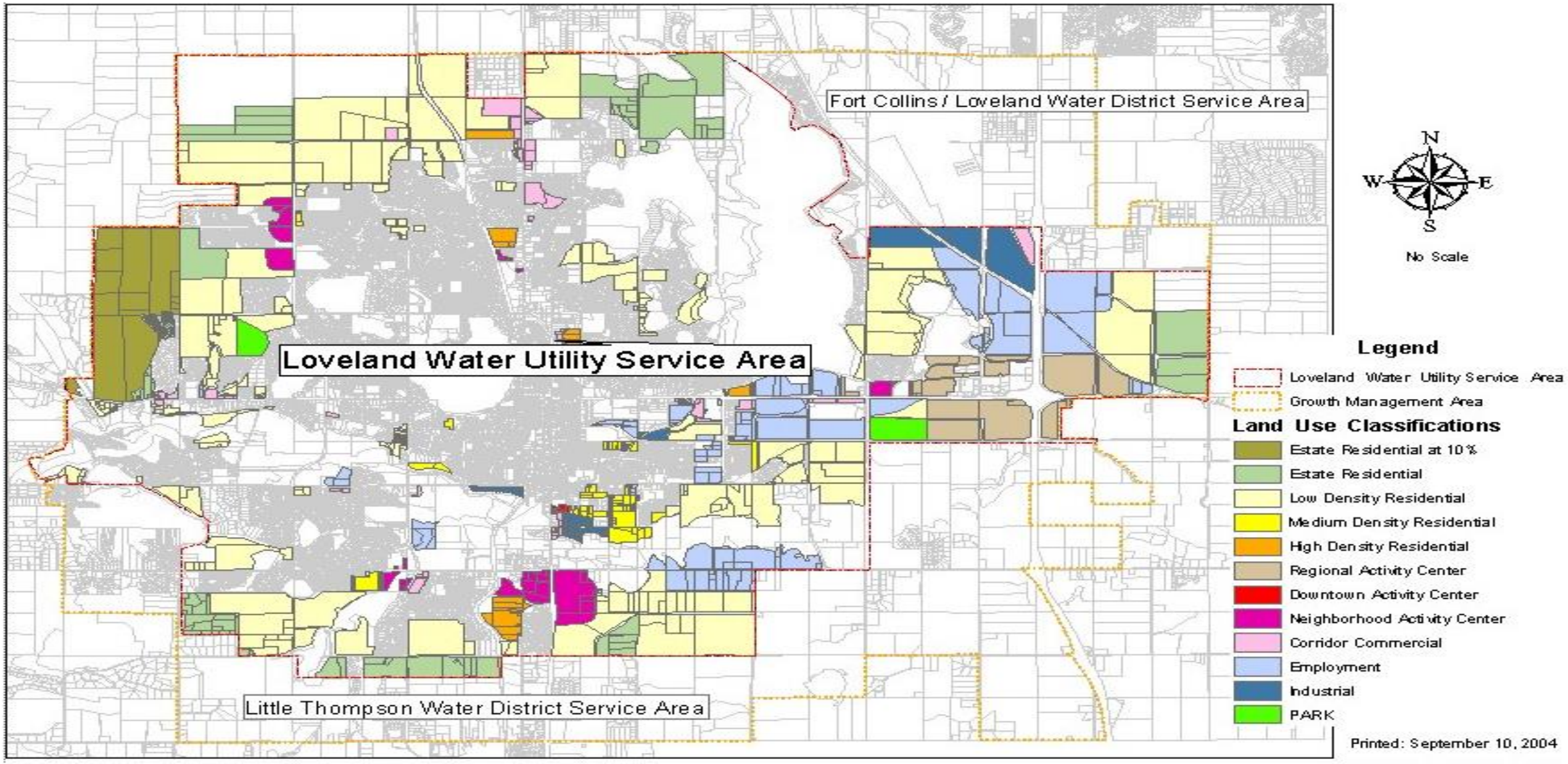
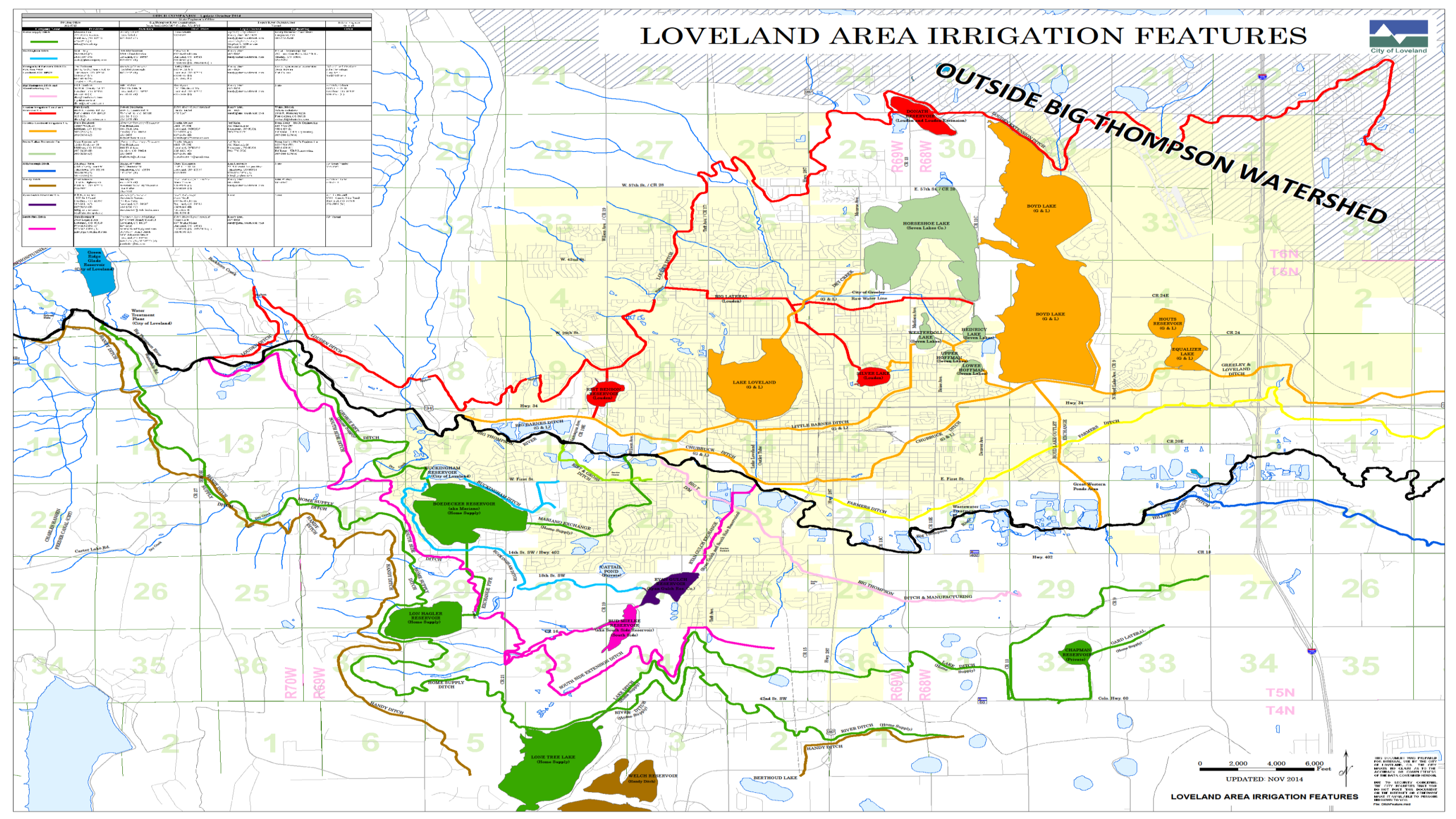
Loveland Water Utility Service Area



Direct Flow River Rights

LOVELAND AREA IRRIGATION FEATURES



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

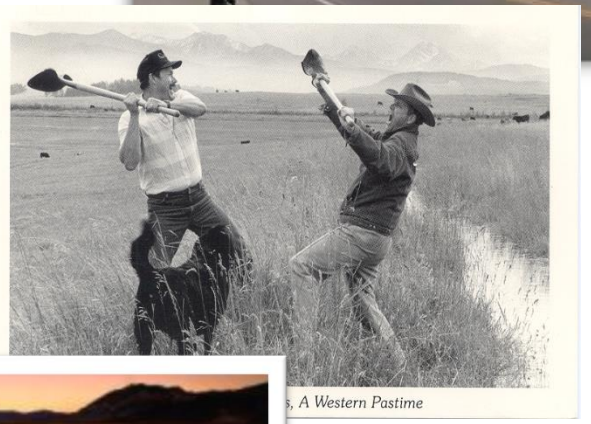
Windy Gap Project

- 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

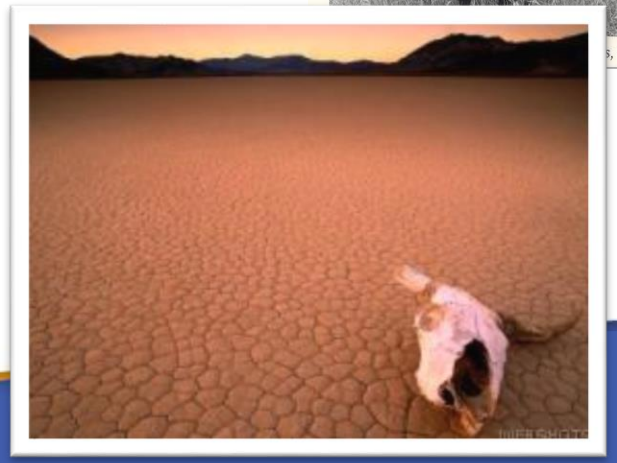
Green Ridge Glade Reservoir Expansion Project

Emergency Protection

Water Management



Drought Protection



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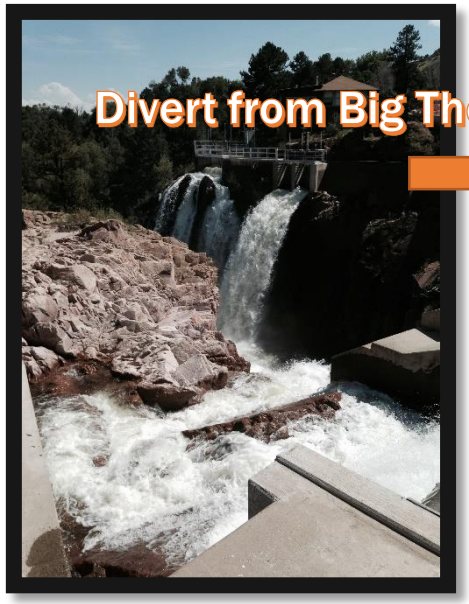
Big Dam Prior to 2013 Flood

Big Dam Repaired after the Flood

Overview of Municipal Water System

Transbasin Water from the Mountains



Divert from Big Thompson River

Water Treatment Plant

Distribution pipes & tanks

To your house!

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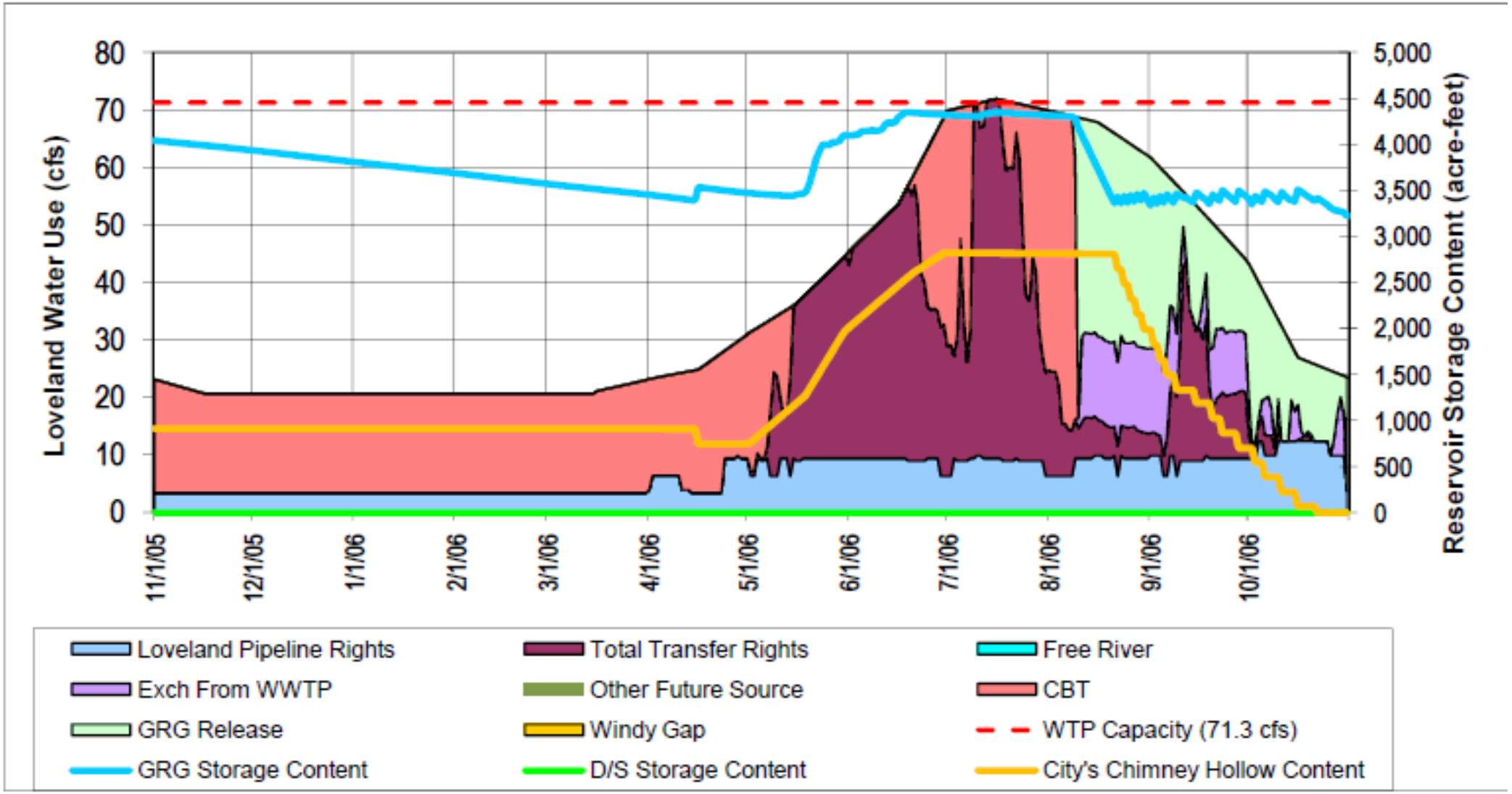
Simulated Daily Loveland Municipal Water Supply

Water Year 2006

Firm Annual Yield = 26,800 + 590 = 27,390 AF



Current Run = Aug 2011 BASE RUN , All Aug Demands Met

Future

What comes next?

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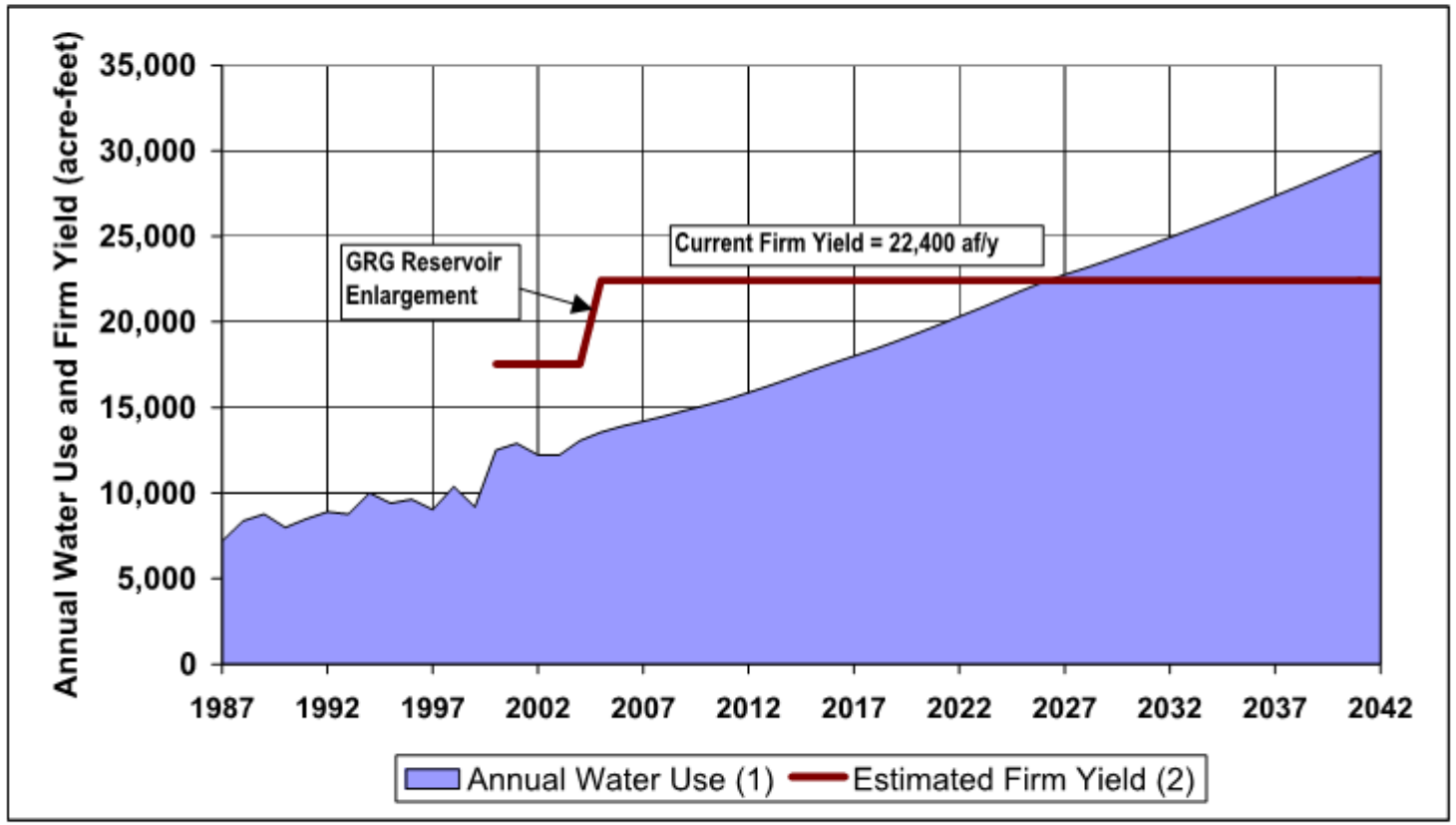
Historical and Projected Water Demand vs. Estimated Firm Water Supply Yield City of Loveland 1987 - 2042

(acre-feet per year)



Notes:

(1) Actual water use through 2003, and projected by City staff thereafter

(2) Firm yield does not include additional supply from the Windy Gap Firming Project or from additional future water supply .

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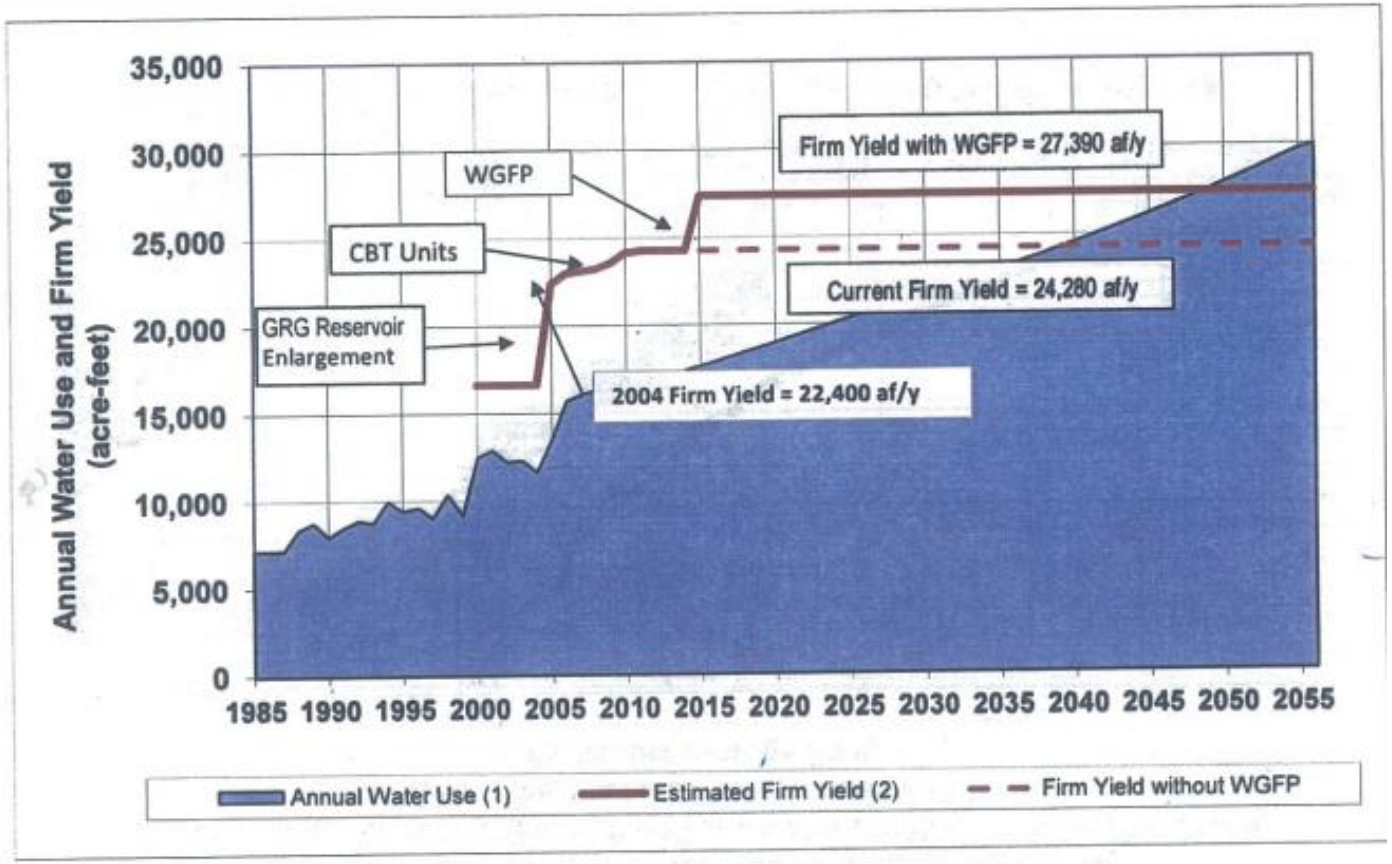
Illustration of Historical and Projected Water Demand vs. Estimated Firm Water Supply Yield City of Loveland 1987 - 2056

(acre-feet per year)



Notes:

(1) Actual water use through 2006 (year of highest demand), and projected by City staff thereafter. Projected use includes augmentation demand of 590 af/y.

(2) Firm yield does not include additional supply from additional future water sources .

Water Conservation Programs at Loveland
Wise Use of Water

- Low Cost Energy and Water Audits
- Sprinkler audits
- Garden in a Box
- Promote Xeriscape landscaping through Hydrozone program

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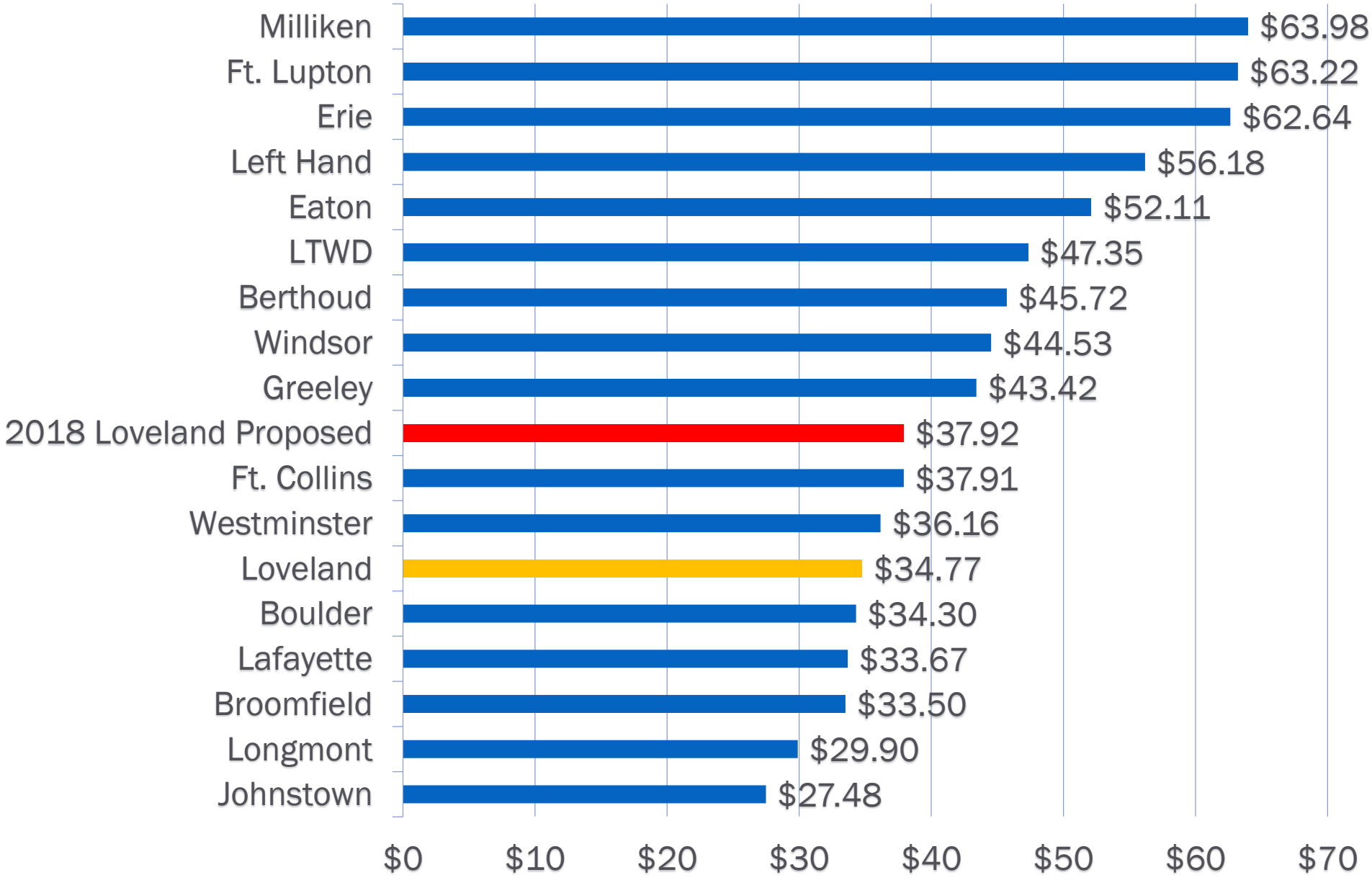
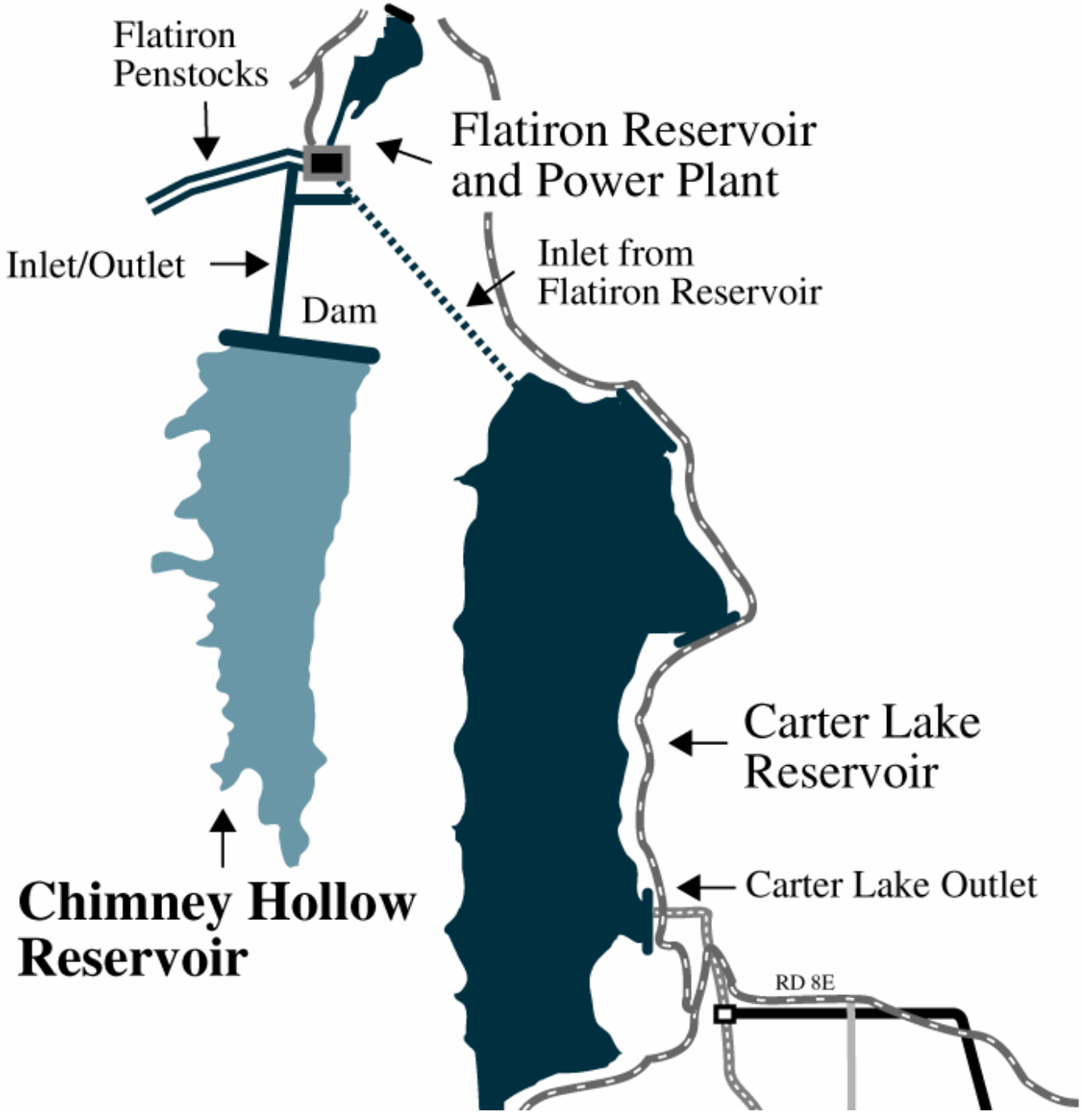
Proposed Rate Increase for Loveland

- **9.0% Rate Increase for Water**
- **11.0% Rate Increase for Wastewater**
  - Consistent with Council-approved Water Enterprise rate track
  - To address aging infrastructure, reliability and redundancy
  - CIP scaled back to accommodate new CIS expense ($1.1 million), increase in health insurance expense (up $289K from 2017) and Cost Allocations (up $202K from 2017) to stay within rate track
  - Rate increase across-the-board for all rate classes

2017 Water Average Residential Bill Comparison

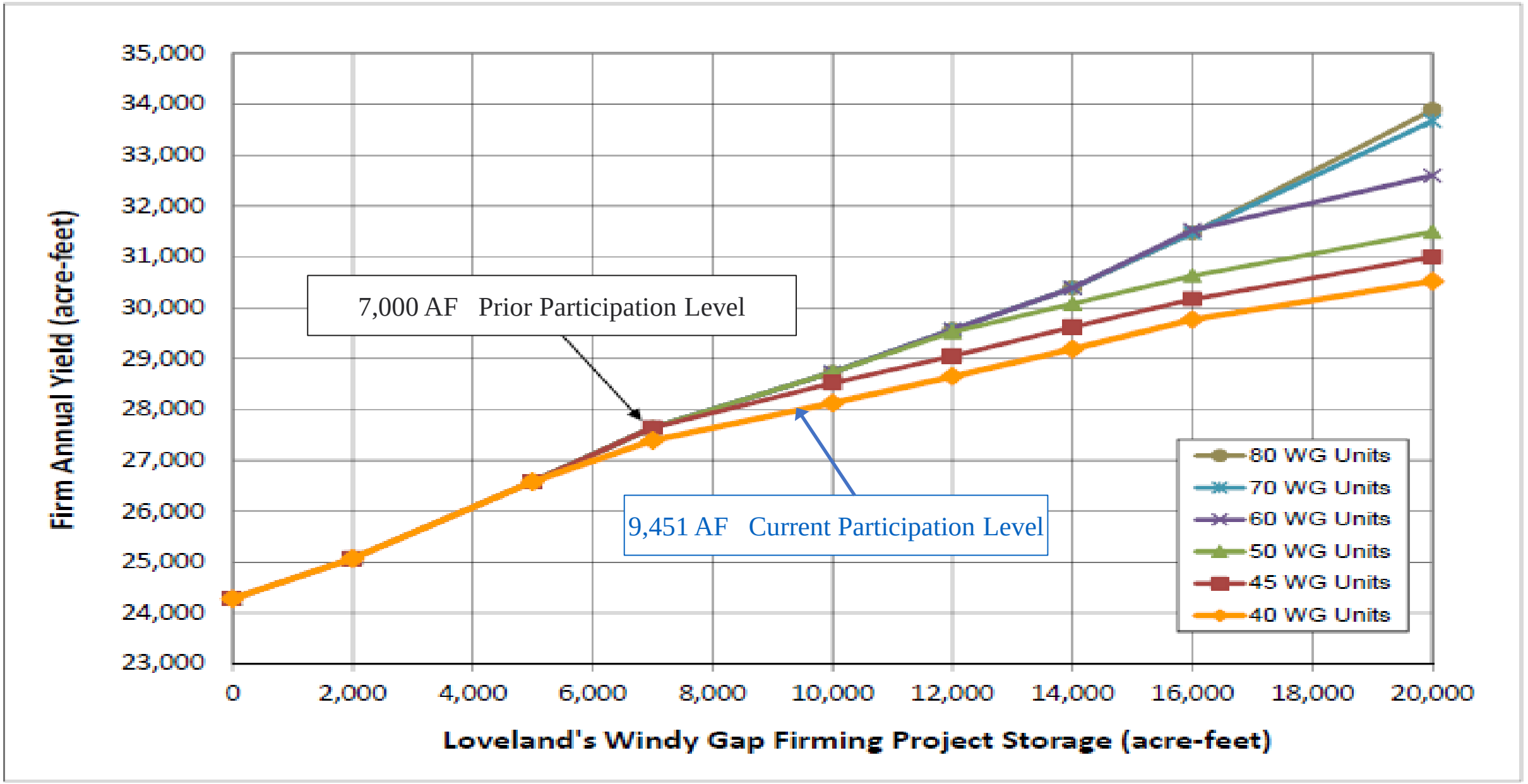


Windy Gap Project



Proposed Chimney Hollow
Reservoir Site – WG Firming

Increased Firm Yield from Participation in the Windy Gap Firming Project City of Loveland



LIRFs

- Lawn
- Irrigation
- Return
- Flows

Reuse Treated Effluent or Raw Water

- Reuse typically only for irrigation or industrial uses
- Limitations on amount legally available (usually only trans-basin water)
- Requires a separate “purple pipe” system
- Water still “safe” for intended use but not clean enough to drink

Reduce Un-accounted for Water

- Water Meter Calibration
- Leak Detection
- Replace Water Lines

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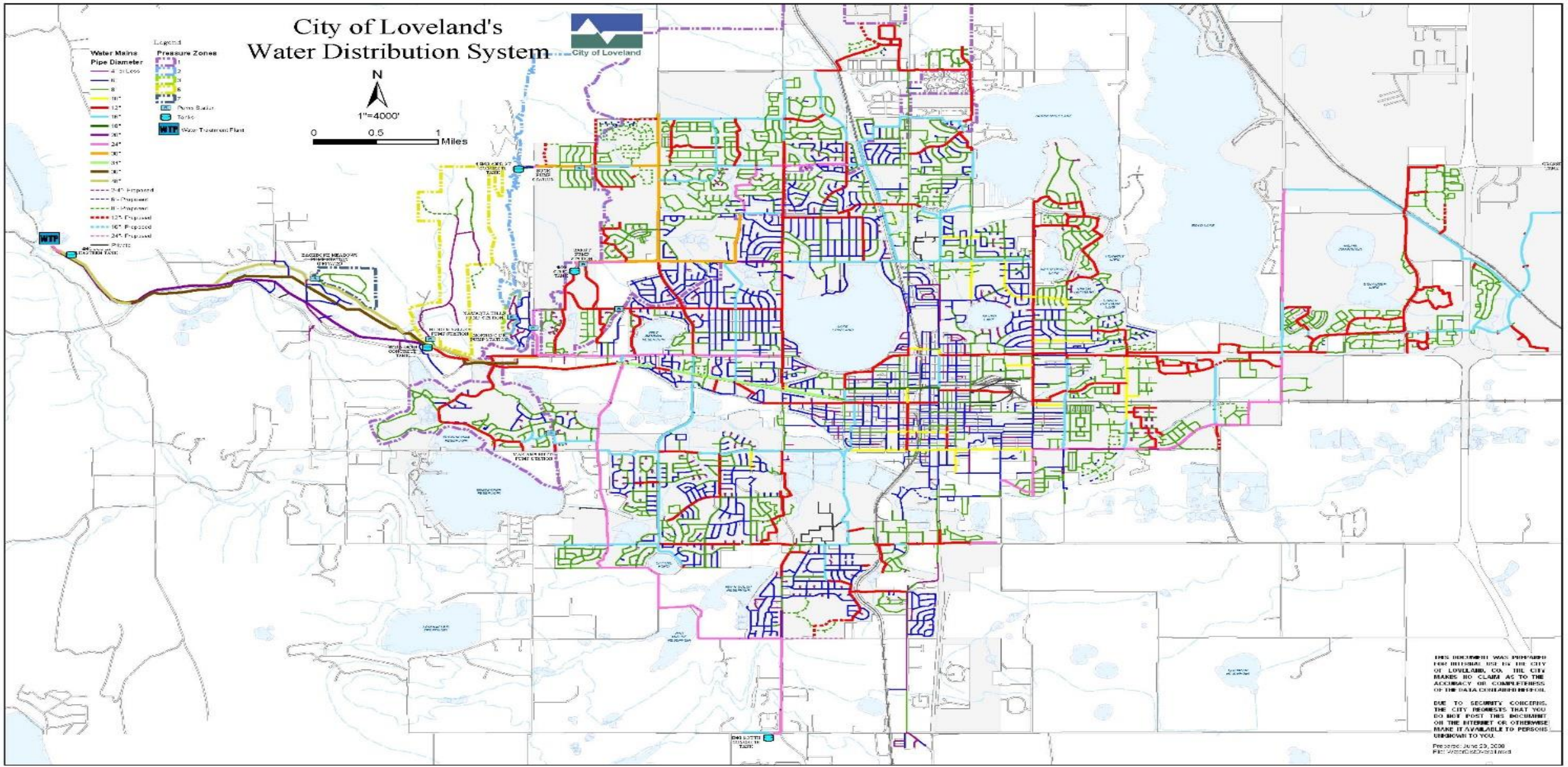
Photo by Dick Stenzel

Water Distribution System