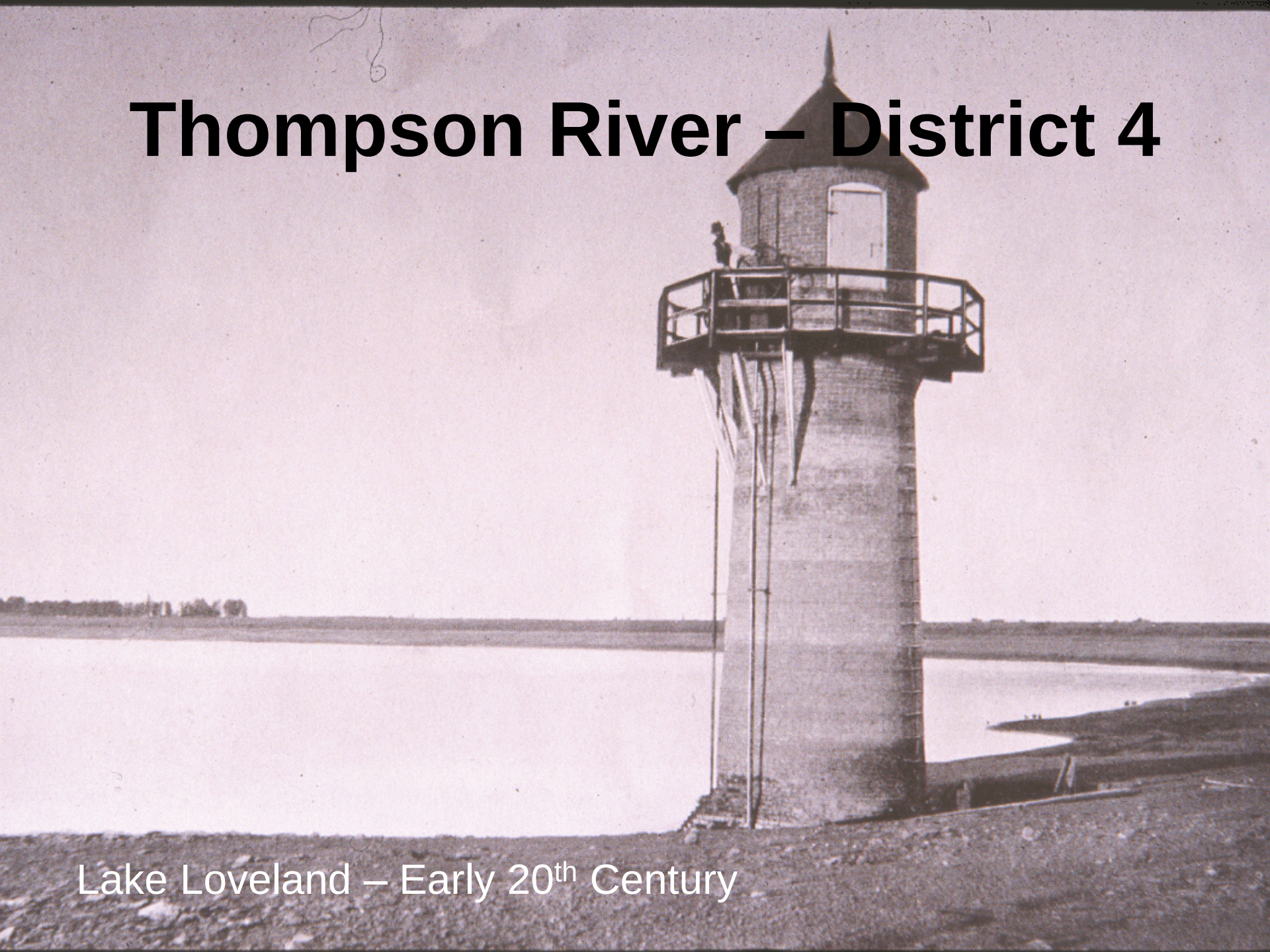
Thompson River – District 4



Lake Loveland – Early 20th Century

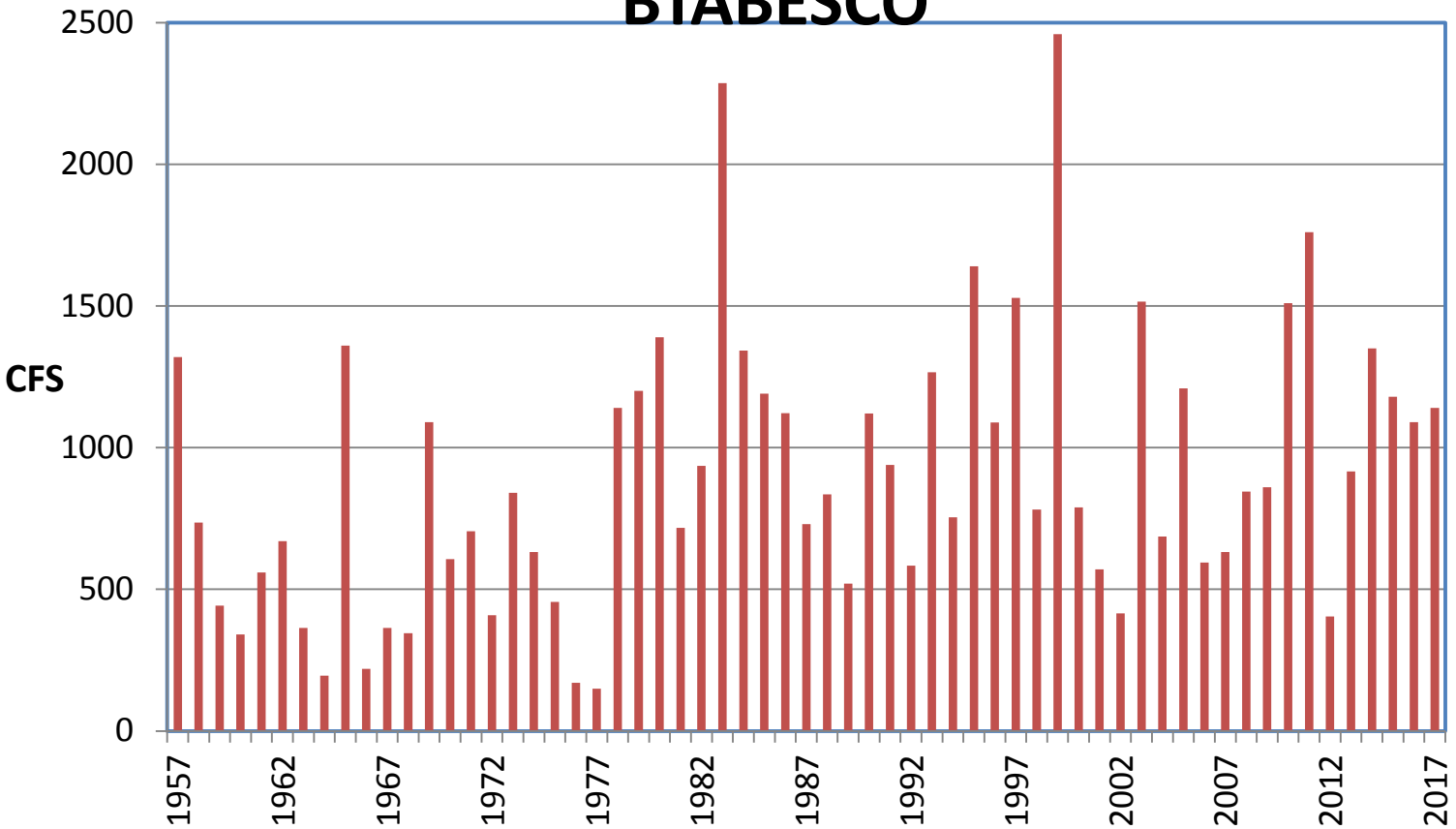
Water Sources for the Big Thompson River

- Native Water
  - Direct Use
  - Storage
- CBT / Windy Gap water
  - This is the only significant source of transbasin water for the Big Thompson Basin

Native Big Thompson water

- Approximately 80% of the Big T's water is from snowmelt
- Catchment Areas
  - RMNP (East side of Continental Divide) is the main catchment basin for the Big Thompson
  - The N Fork of the Big T and Buckhorn Creek contribute from the north side of the basin
  - Little Thompson catchment area is lower in elevation, south side of the basin
  - Seepage returns to the rivers downstream
- Highly variable flows and volumes annually

Peak Flow at Big T Inlet to Lake Estes - BTABESCO

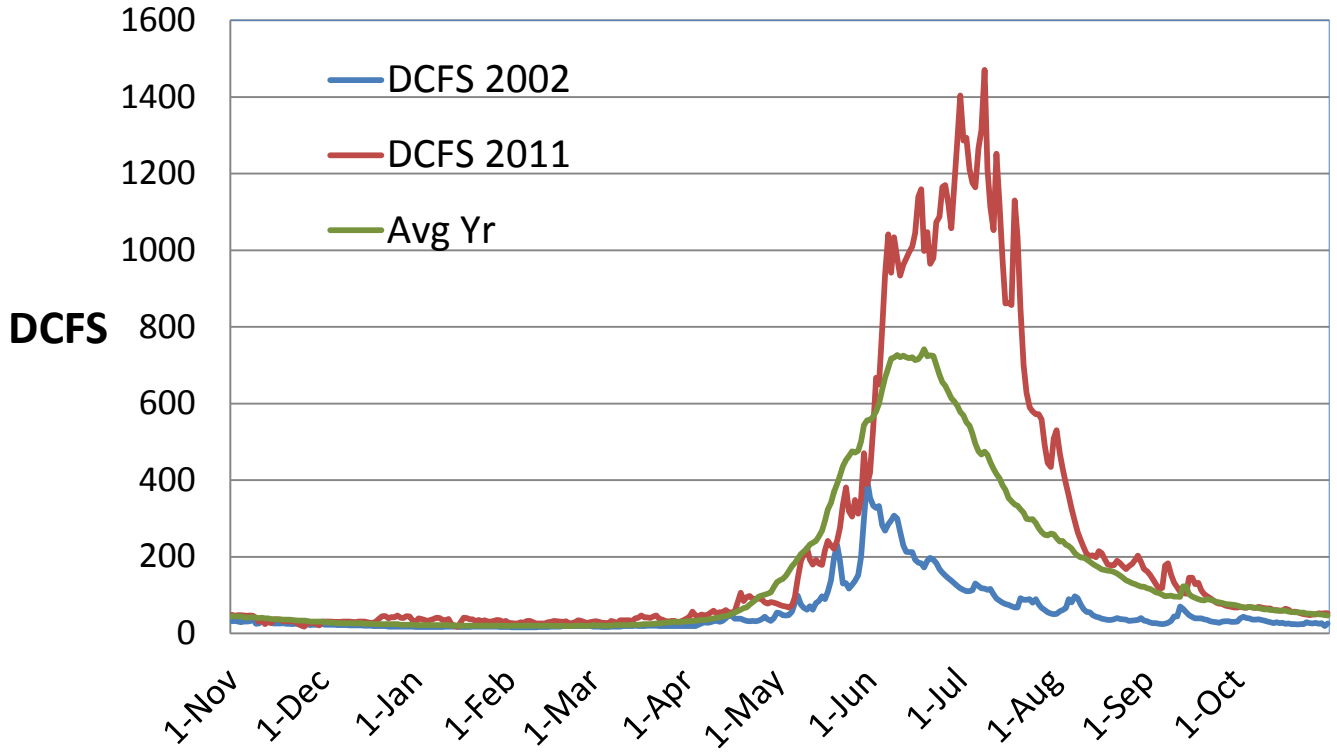


Average Peak Flow Above Lake Estes: 901 cfs

2017 Peak 1140 cfs between 1 am – 4am on 6/11/2017

Source: BTABESCO

Hydrograph of Big Thompson Supply
BTABESCO + BTNFDRCO



2002 Dry Year: Peak May 31st at 401 cfs (369 + 32)

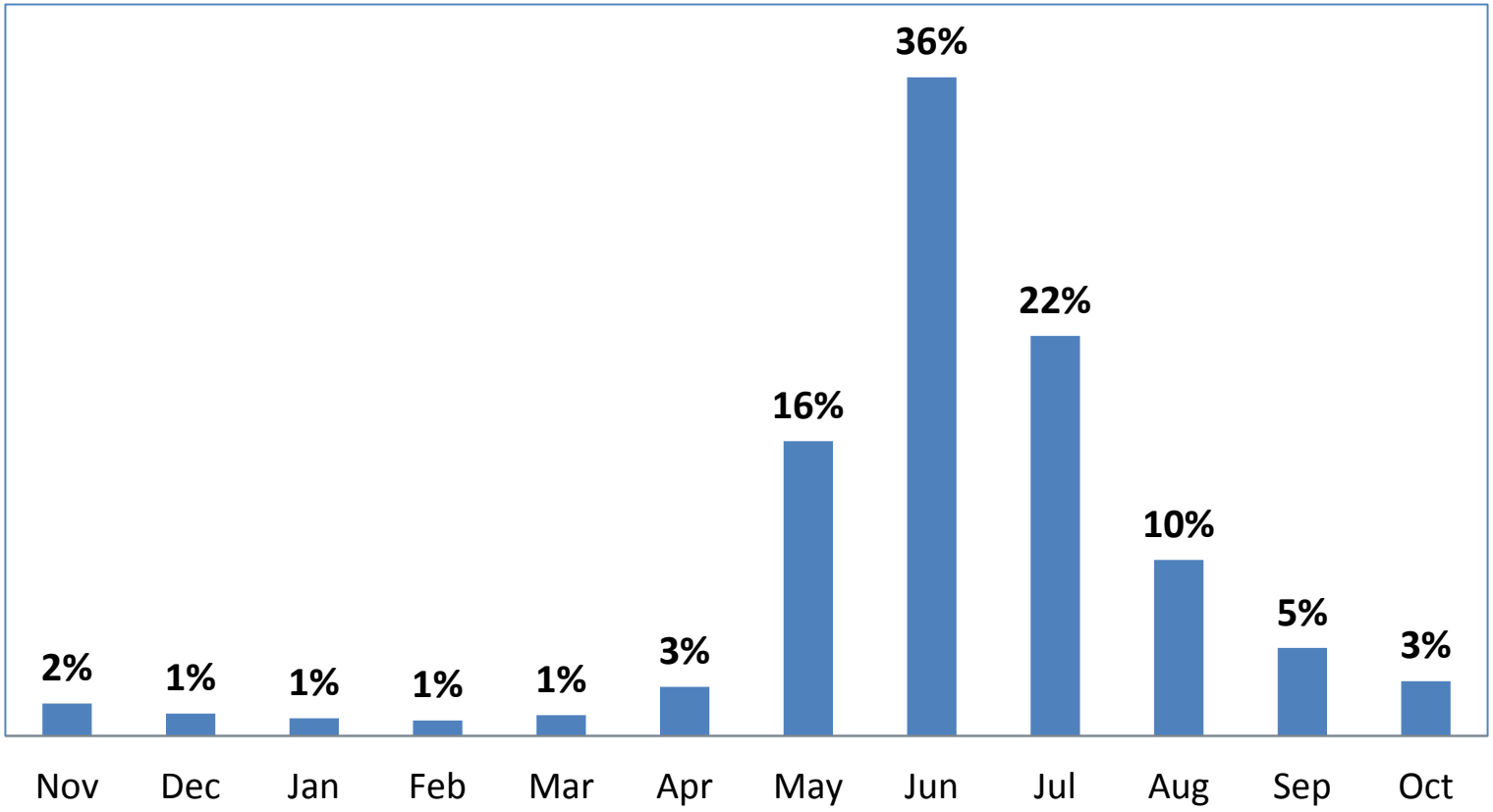
2011 Wet Year: Peak July 9th at 1471 cfs (1280+ 191)

Average Year: Peak June 19th at 742 cfs (610+ 132)

Native Big T water

- 59% of total flow occurs between May 16 – July 15 on average
  - Average DCFS is 562 cfs
- 10% of total flow occurs between Nov 1 – April 31 on average
  - Average DCFS is 31 cfs
- 21% of total flow occurs between July 16 – Sept 15 on average
  - Average DCFS is 194 cfs

Distribution of Native Flow of the Big Thompson



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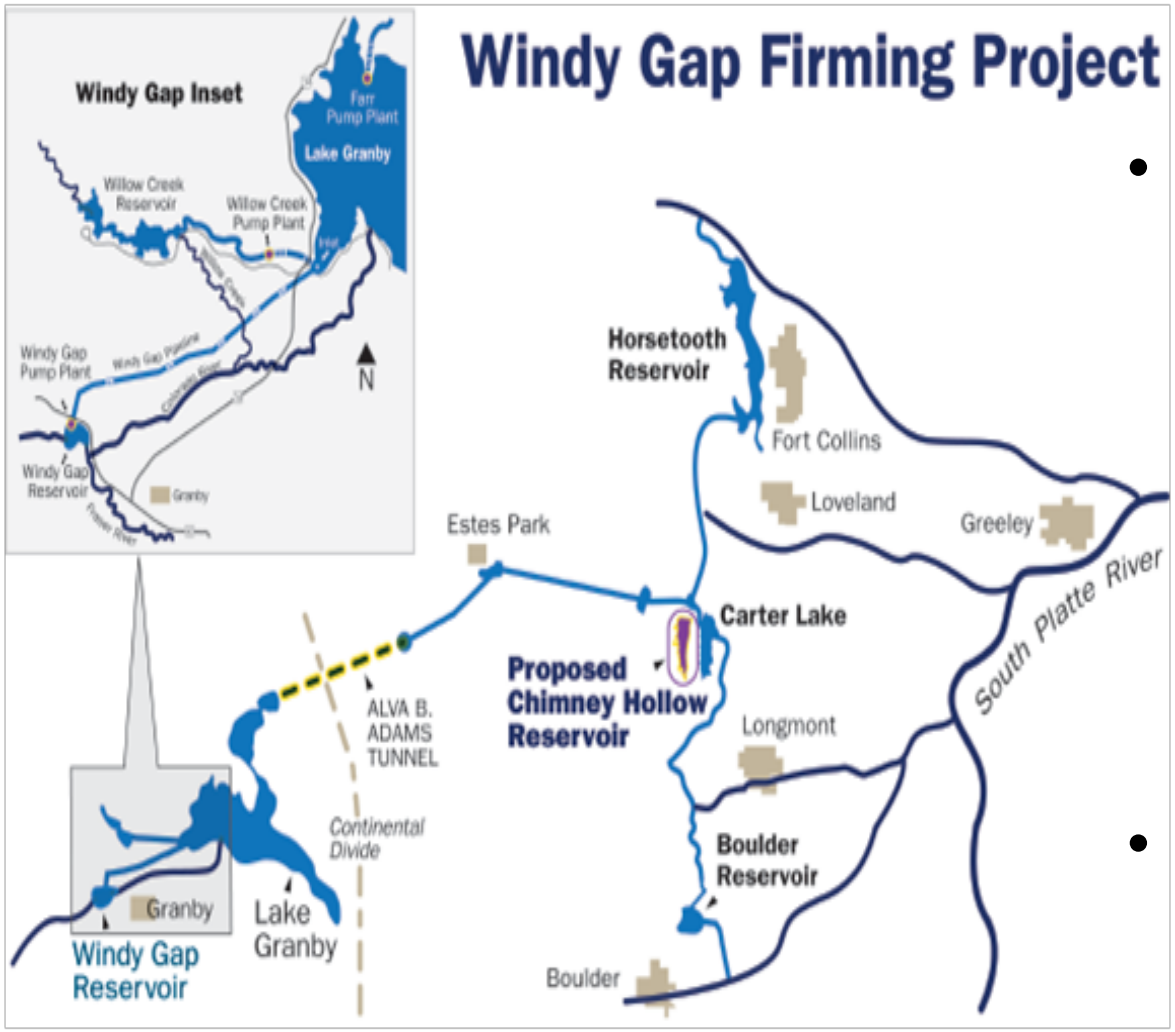
CBT / WINDY GAP SYSTEM

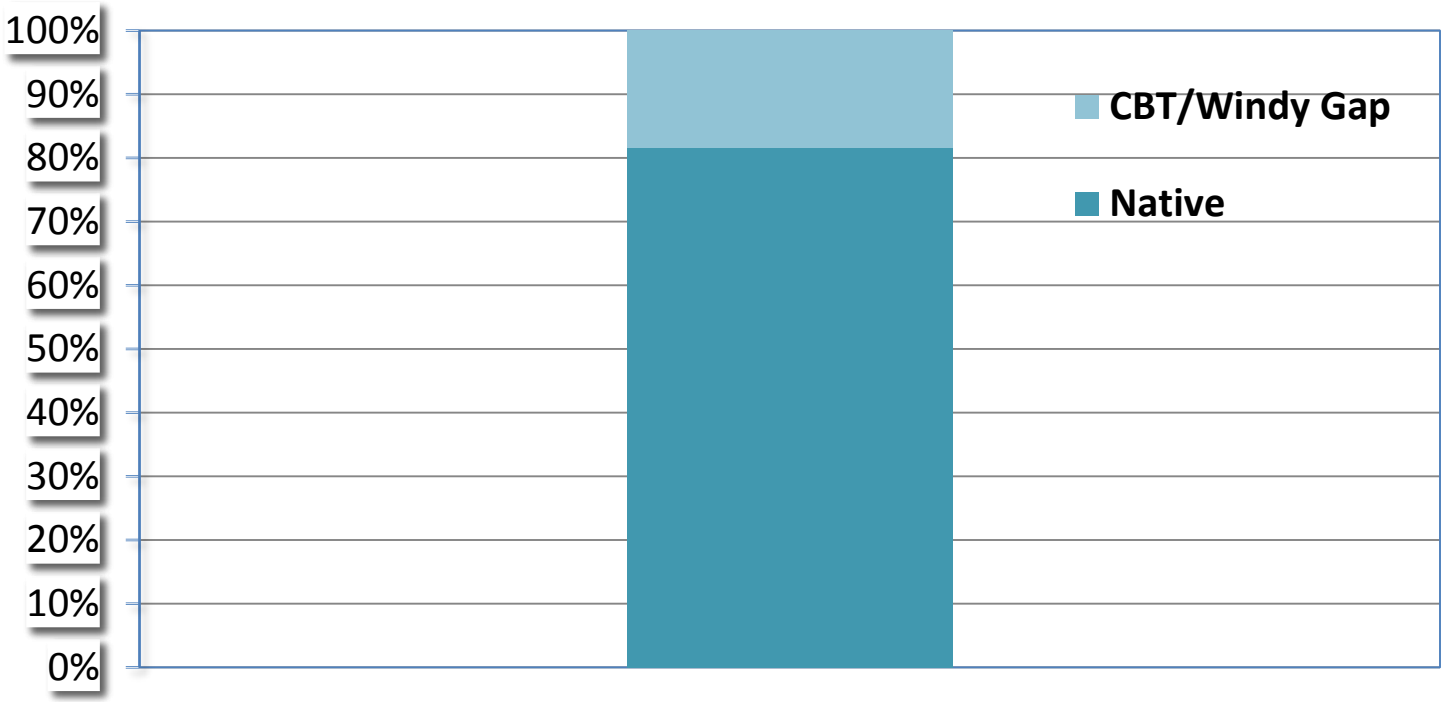
- Only major transbasin diversion into the Big T is the Adams Tunnel from Lake Granby
- Lake Estes: CBT and native water come together; it is not a storage container
- USBR controls the movement of transbasin water from the West slope through to Horsetooth & Carter
- NCWCD organizes and controls the release of CBT & Windy Gap to users

CBT / WINDY GAP SYSTEM



- Chimney Hollow Reservoir
  - Has received final approval
  - Will be built 2018 – 2023
  - Capacity: approx 90,000 AF
- Total CBT/Windy Gap storage = 370,000 AF

Total Average
Big T River Water Supply



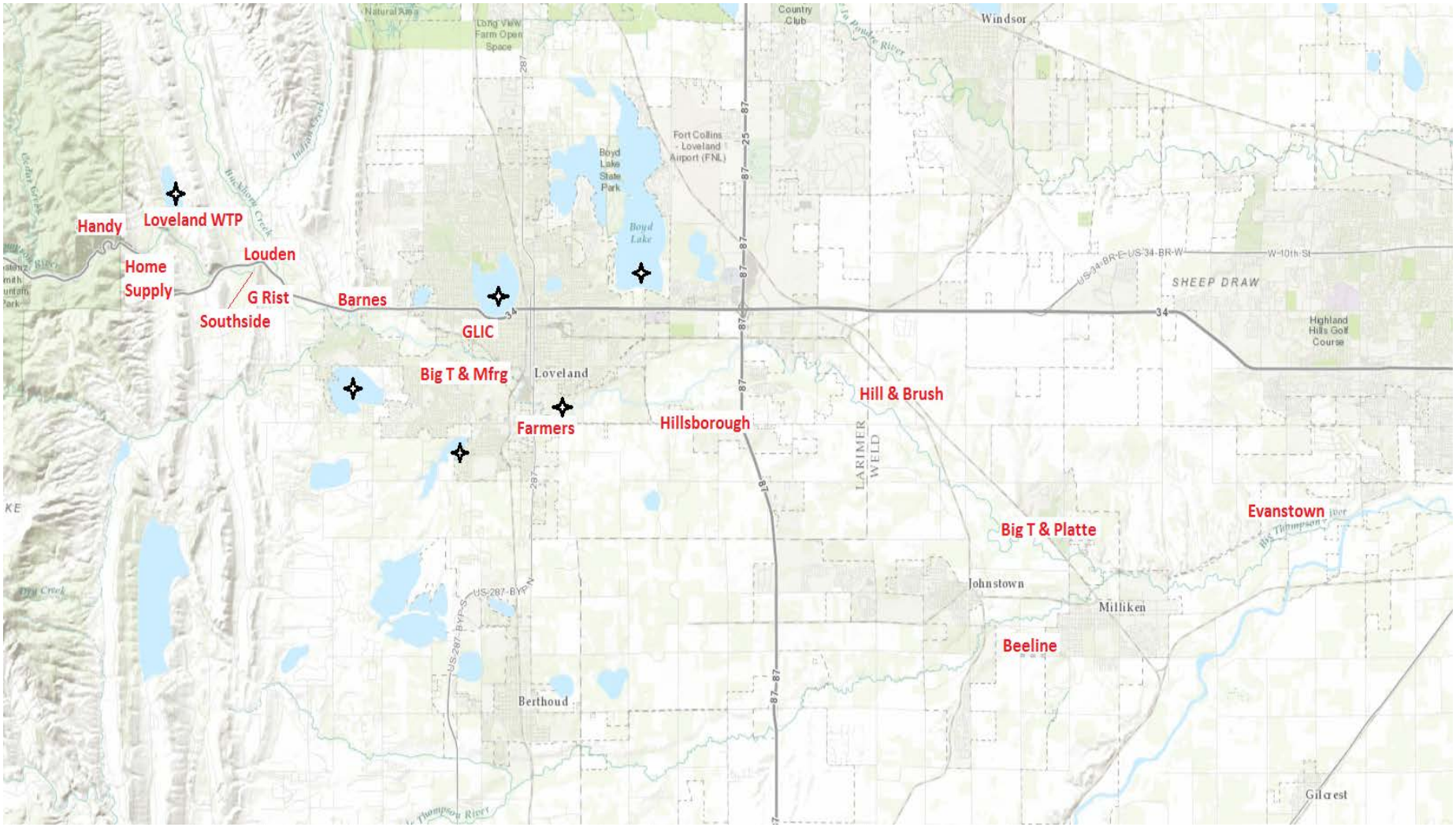
Approximately: 19.5% water use on Big Thompson River from CBT

Native water: BTABESCO + BTNFDRCO (Big T above Lake Estes + N Fork)

CBT: HBDMC diversion records 1999-2016

Excludes: Little Thompson & LTWD

Major Ditches on the Big Thompson



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Largest Diverters

- **GLIC system largest and most complex**
  - spans from Loveland Lake to Greeley
  - Includes Boyd Lake, Horseshoe Lake, Lake Loveland (70,000 AF decreed storage)
  - Water from this system owned & used by City of Loveland, City of Greeley as well as the ditch company
- **Home Supply**
  - Spans from W side of Loveland to I-25 and to the Little Thompson
  - Includes Lonetree, Mariano, Lon Hagler
- **City of Loveland**
  - Green Ridge Glade

Municipalities & Water Districts

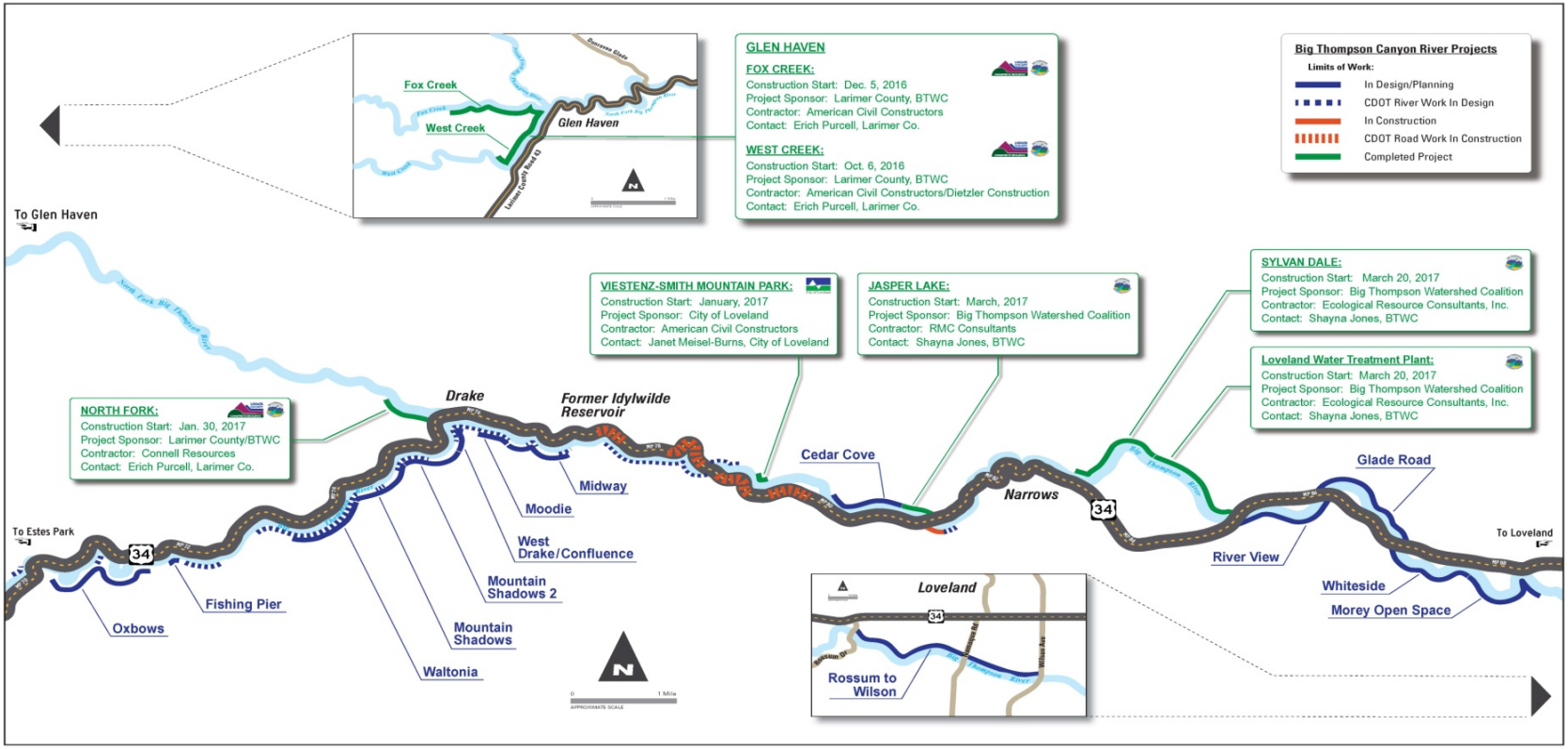
- Receive water from the Big Thompson
  - City of Loveland
  - City of Greeley
  - Estes Park
  - Berthoud
  - Johnstown
  - Milliken
- Little Thompson Water District – CBT only
- Central Weld County Water District - Milliken

In-stream Flow Requirements

- Decreed in-stream flows
  - Only in the Canyon (main & N Fork)
  - Junior water rights
- USBR Fish Flow Provisions
  - Same or greater than the decreed in-stream flows
- No minimum stream flow requirements downstream of Dille/ Dam Store
  - WC can/does dry-up the river in Loveland
- City of Loveland

Restoration Projects on the Big T

http://www.bigthompson.co/



US 34 Big Thompson Canyon
River Project Design & Construction Status

May, 2017

Big T Priorities

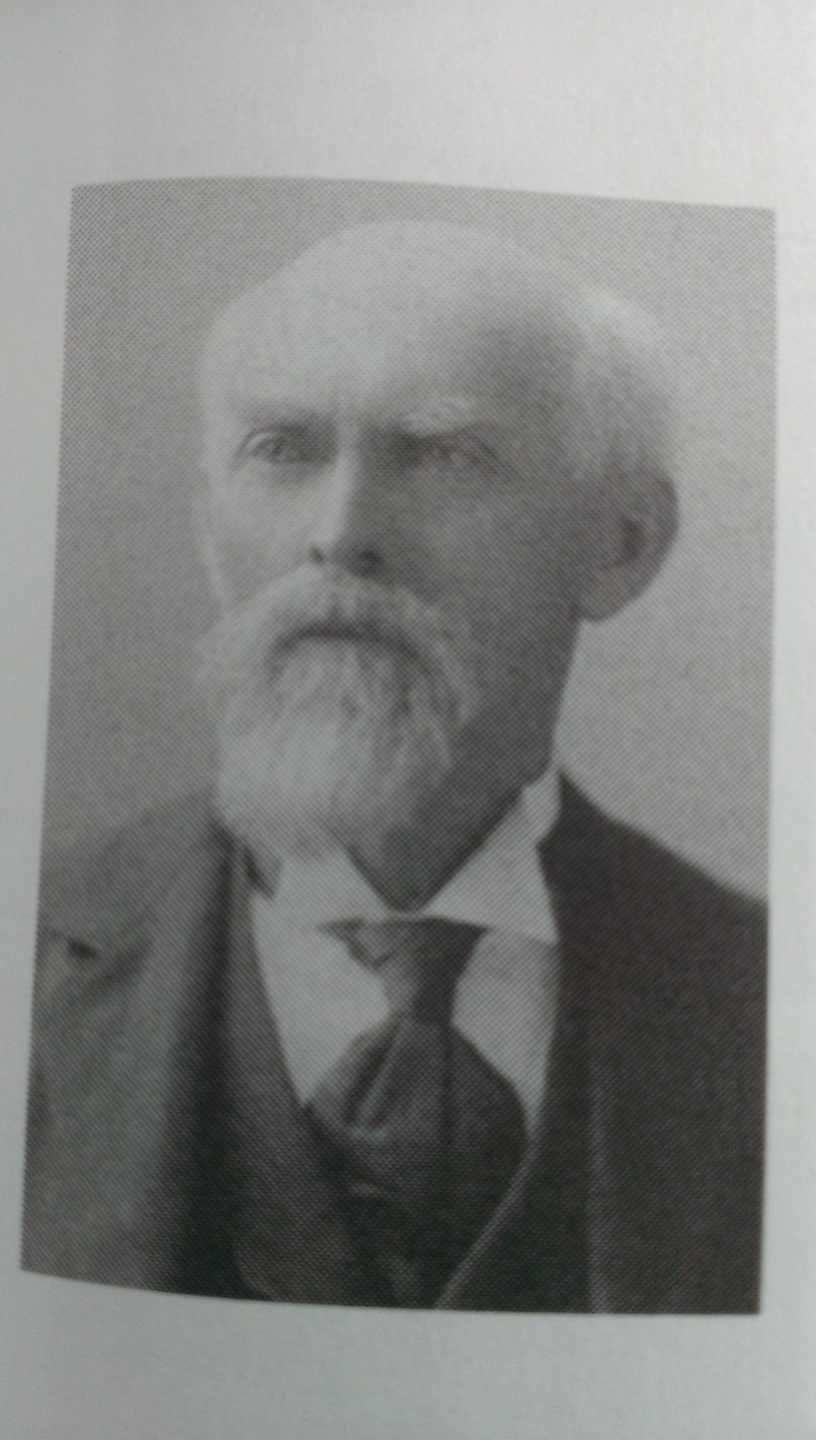
- Big Thompson Ditch = # 1 priority = 96.5 cfs
  - Ditch has not existed since early 1900s
  - Owners had an absolute flowrate (not a mutual ditch co)
  - 63.3 cfs now taken at the Hillsborough headgate
- Big T & Manufacturing = #2 priority
  - 28.3 cfs (through Aug 31),
  - 23.2 cfs (Sept 1)

- Total 124.8 cfs / 119.7 cfs

Big T priorities

- Mid-August
  - Average native flow = 135 cfs
  - Average CBT = 98 cfs (42% of total flow)
- Start of Sept
  - Average native flow = 117 cfs
  - Average CBT 143 cfs (55% of total flow)
- Hillsborough ditch gets 63.3 cfs, Big T & M ditch avg 15 cfs
- If not the Hillsborough or Big T&M, then all other users reliant on storage / seep / CBT
- OR ditch is off


Parting Thought



He who expects the letter of the law in relation to irrigation to be executed with the precision of clockwork, and that infallible results will be obtained, has a small conception of the tangled web of difficulties in the way, and a meagre knowledge of the uncertainties of the element to be manipulated.

J.P. Maxwell, State Engineer
1890

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