

2534 Development – Water Planning

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Why is this of interest?

- Transition from agricultural use to a 600 acre developed community.
- Numerous water implications including:
 - How water resources on original farm were or were not utilized in development.
 - Creative solutions:
 - (1) Types of water rights utilized for different purposes,
 - (2) Non-potable irrigation system,
 - (3) Established 2534 specific water bank,
 - (4) Land planning, design, and construction around ditch infrastructure, and
 - (5) Ongoing maintenance of water facilities.
- Environmental considerations: non-potable irrigation and proximity to Big Thompson River.

What is 2534?

- Approximately 600 acre, mixed use, master planned community.
- Location: Southeast corner of I-25 & US 34.
- Annexed into Johnstown, CO.
- Land Uses: Retail, Office, Medical, Light Industrial, Multi-Family Residential, Single Family Residential, and Open Space.
- Master Developers: Gerrard Development and Thompson Ranch Dev. Co.
- Chrisland's Roles: (1) Development Consultant, (2) Real Estate Brokerage, and (3) Purchaser of approximately 70 acres.



Search Google Maps



Sign



Verizon



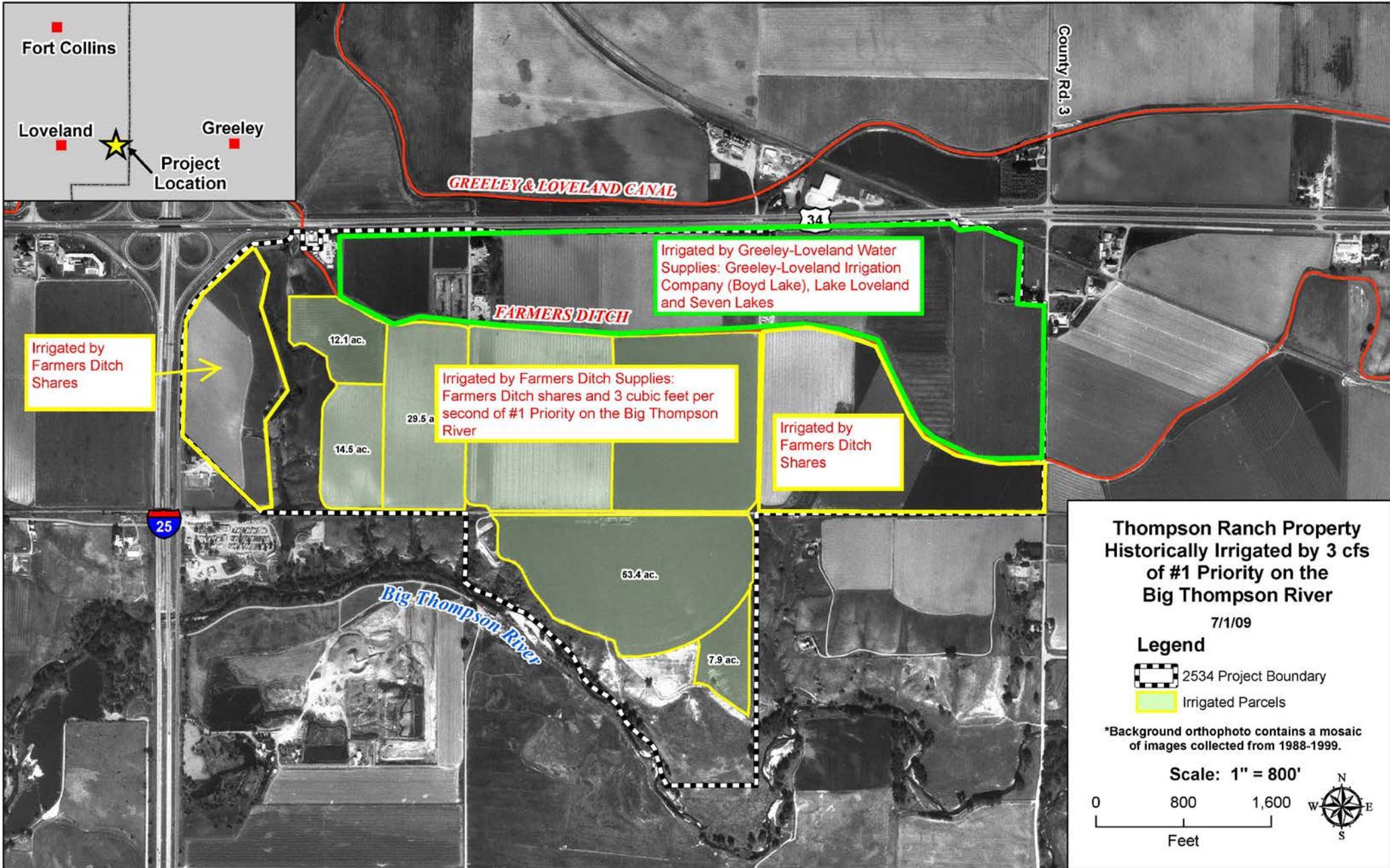
Map

Google





11/22/17



Fort Collins
 Loveland
 Greeley
 Project Location

GREELEY & LOVELAND CANAL

County Rd. 3

34

Irrigated by Greeley-Loveland Water Supplies: Greeley-Loveland Irrigation Company (Boyd Lake), Lake Loveland and Seven Lakes

FARMERS DITCH

Irrigated by Farmers Ditch Shares

12.1 ac.

Irrigated by Farmers Ditch Supplies: Farmers Ditch shares and 3 cubic feet per second of #1 Priority on the Big Thompson River

12.1 ac.

14.5 ac.

29.5 a

Irrigated by Farmers Ditch Shares

25

Big Thompson River

53.4 ac.

7.9 ac.

**Thompson Ranch Property
 Historically Irrigated by 3 cfs
 of #1 Priority on the
 Big Thompson River**

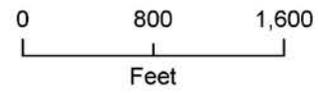
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Legend

-  2534 Project Boundary
-  Irrigated Parcels

*Background orthophoto contains a mosaic of images collected from 1988-1999.

Scale: 1" = 800'



Overview of Water Supplies

- Greeley-Loveland Water Supplies:
 - Irrigated portion of farm.
 - Among the largest ditch companies in the Big Thompson River Basin.
 - Depends heavily on reservoir storage (Boyd Lake, Lake Loveland, Horseshoe Reservoir) to meet water demands. Uses reservoir storage to supplement other water supplies in drought conditions.
 - Greeley is the primary municipal water provider who uses the Greeley-Loveland System for potable water supplies.
 - Johnstown, where 2534 is located, does not have any ownership in the Greeley-Loveland System.
 - Therefore, not optimal to use at 2534 but, is valuable in communities like Greeley and Evans.

Farmers' Ditch Water Supplies

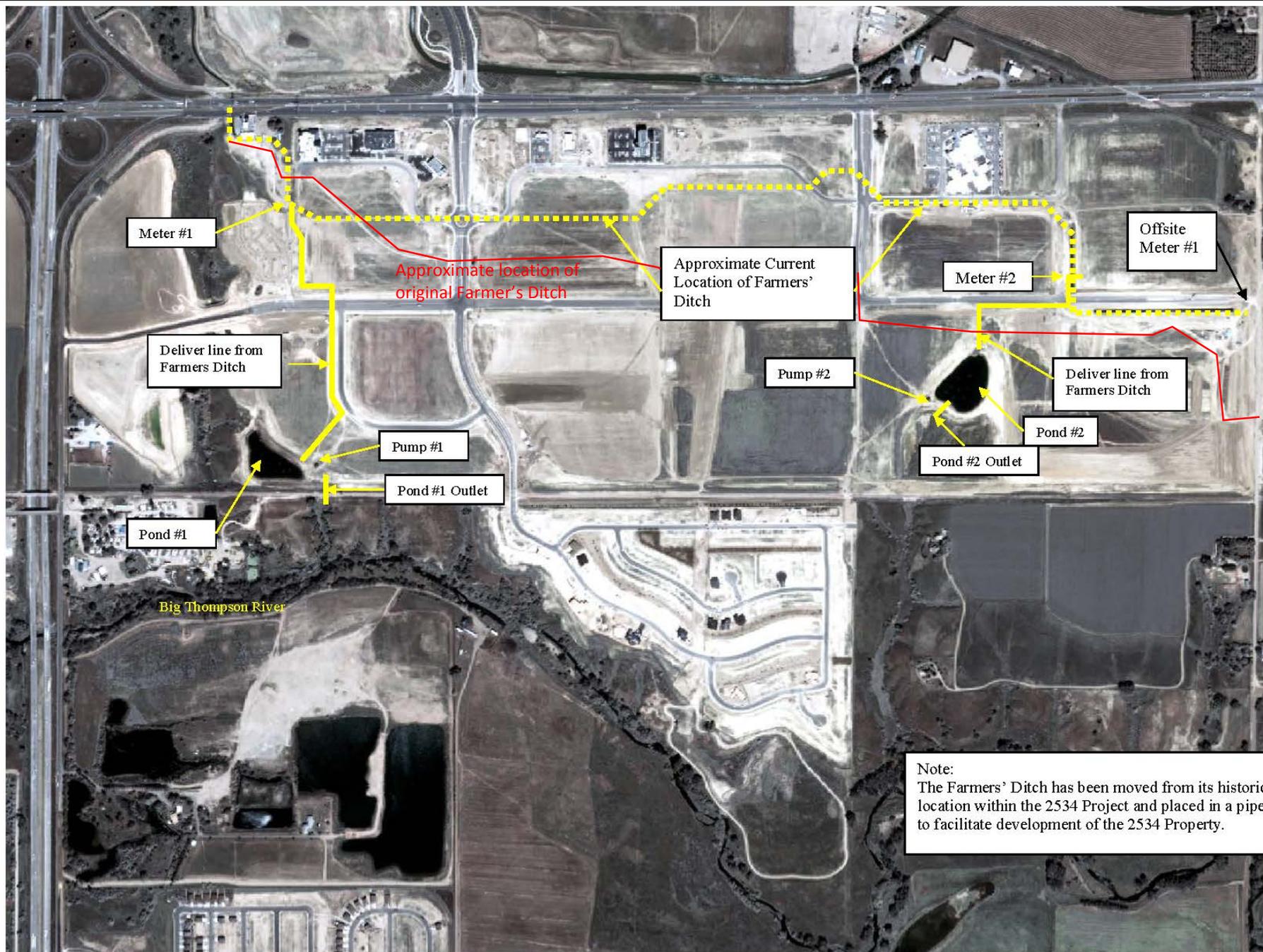
- Two primary water supplies at 2534 Project from Farmers' Ditch:
 - Farmers' ditch shares: Relatively junior water supply (yields well in wet/average years, but not much in drought/dry conditions).
 - 3 cubic feet per second of #1 Priority on the Big Thompson River: Part of the oldest water right on the Big Thompson River, yields very well in all conditions including dry/drought conditions. This water only irrigated part of the 2534 Project (Thompson Ranch Property).
 - Not accepted for domestic (potable) use in Johnstown but, possible to continue to irrigate with (where historically used for the same).

Key Considerations in Use of Water Supplies

- Integration into Johnstown's Water System:
 - Cannot easily integrate historic water supplies (Greeley-Loveland and Farmer's) on 2534 land into Johnstown's potable water system (would require pipelines/pump stations or exchanging water up the Big Thompson River). Both are costly/difficult.
 - 3 cfs of #1 Priority (via Farmer's Ditch) could be used as non-potable source, but was only used on a portion of the property historically – cannot use on other parts of the property without going through a water court process.
 - Johnstown uses water from the Home Supply Ditch Company for potable use, which diverts near the mouth of the Big Thompson Canyon but, we don't own any (at this point).
- Value/potential other uses of historic water:
 - Cities of Greeley/Evans use Greeley-Loveland Water for potable purposes, potential to sell water to developers going to these entities.

Final Plan for Water Resources at 2534

- Sold Greeley-Loveland water to developers going to City of Evans.
- Used proceeds to purchase Home Supply water that can be dedicated/used by Town of Johnstown for potable water supplies.
- Went through a water court process to allow 3 cubic feet per second of #1 Priority water to be used as a non-potable water source on entire 2534 Project. Water Court (07CW14) case as filed in 2007 and decreed in 2012. Decree establishes terms and conditions for future use of water supplies to protect other water rights in the Big Thompson and South Platte River Basins. Monthly water accounting must be provided to the Colorado Division of Water Resources to show the terms/conditions of 07CW14 are being met.
- End Result: 2534 has water resources to now meet potable and non-potable needs in Johnstown and at a cost advantage over other sources.



Meter #1

Approximate location of original Farmer's Ditch

Approximate Current Location of Farmers' Ditch

Offsite Meter #1

Meter #2

Deliver line from Farmers Ditch

Pump #2

Deliver line from Farmers Ditch

Pump #1

Pond #2

Pond #1 Outlet

Pond #2 Outlet

Pond #1

Big Thompson River

Note:
The Farmers' Ditch has been moved from its historic location within the 2534 Project and placed in a pipe to facilitate development of the 2534 Property.

2534 Non-Potable System Infrastructure

- Farmers Ditch piped through the 2534 Development for two reasons: (1) delivery to ponds for non-potable system and (2) development considerations.
- Two delivery points to two ponds with pump stations.
 - Either pump station has capacity to supply the entire project with water for redundancy purposes.
- Water deliveries and pond levels are measured with continuous sensors as required by 07CW14 Decree.
- All outdoor irrigation at 2534 is met through non-potable system. System controls allow for remote control/sensing of system operations.
- Net results: (1) More environmentally friendly as we're not using potable / treated water for irrigation and (2) lower cost to businesses and households at 2534.

Ditch Headgate



Measuring Structure

Non-Potable Pump Station



Non-Potable Pond



2534 Water Bank

- Johnstown does not offer cash-in-lieu (i.e. developers or end users must purchase water rights and dedicate them to the Town).
- Cost prohibitive for Developer to dedicate all water on a development this size, potentially many years in advance.
- This creates obstacles for development: (1) individual deal level and (2) big picture scarcity / availability.
- Solution: 2534 Developers dedicated water to Johnstown in return for credits in 2534 Water Bank:
 - Reserves in place for additional large projects. Reserves replenished over time but, 100% of water not required to be dedicated.
 - Potable Water Supply: Home Supply Ditch Company Shares (cost savings over CBT pricing).
 - Non-Potable Water Supply: Decreed yield of 3 cubic feet per second of #1 Priority on Big Thompson River (environmentally friendly and cost effective).
- End users buy potable and non-potable water from 2534 Water Bank. End users don't have to buy ditch shares, only credits that have already been approved by Johnstown.

Advantages of Non-Potable Use to End Users

- Environmentally friendly: Not irrigating with potable (treated) water.
- Lower cost raw water: Non-potable raw water from the 2534 Water Bank is priced at 75% of price of potable raw water. Blended rate for purchase of raw water is currently about half the cost of Colorado-Big Thompson Project Units on an ac-ft basis.
- Lower water rates: Non-potable water rates at 2534 are lower than potable rates in Johnstown.

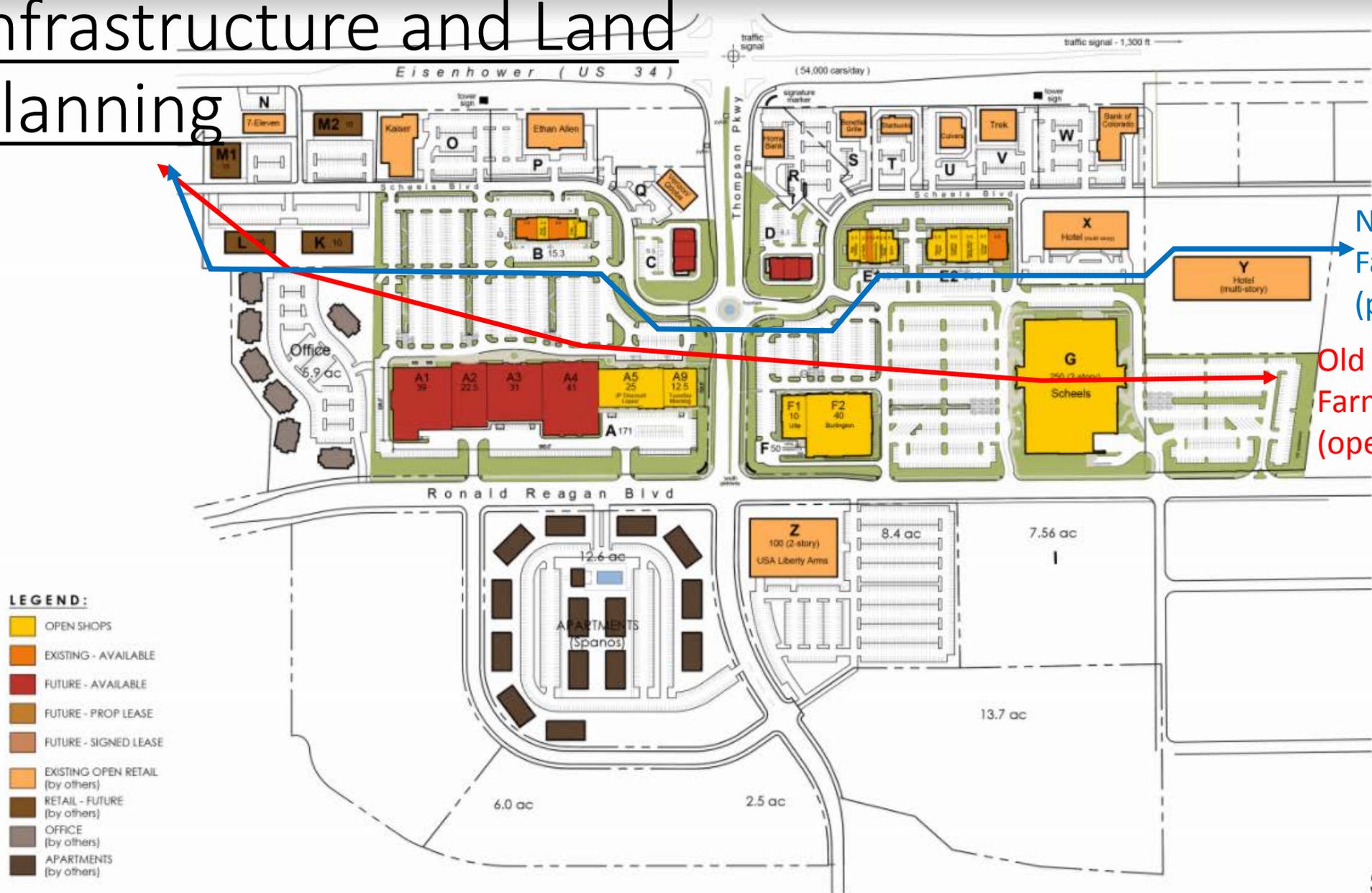
Challenges/Disadvantages of Non-Potable System

- Uncertainty on operating season: The 2534 Non-Potable System does not start operations until the Farmers' Ditch has adequate demand from farmers and the 2534 Project to warrant starting deliveries of water. Typically this is from May 15th to October 15th, but under a wet spring, the ditch may not start operations until late May or early June. While this does not typically create problems with the health of landscapes, it can create problems with users who wish to start irrigation earlier in the year for aesthetic purposes.
- Operational challenges – Pulling water out of non-potable ponds has created problems with plugging of non-potable heads from items such as snails or other debris in lines.
- Items to consider if developing such a system: how are upfront costs and on-going maintenance items funded?

Water related considerations applied to infrastructure and land use planning

- Infrastructure:
 - The size of potable water transmission lines from Johnstown's system is decreased due to non-potable use and resulting relatively steady potable water use through the year.
 - Decreases the amount of water treatment capacity Johnstown needs to service 2534 Project.

Infrastructure and Land Planning



- LEGEND:**
- OPEN SHOPS
 - EXISTING - AVAILABLE
 - FUTURE - AVAILABLE
 - FUTURE - PROP LEASE
 - FUTURE - SIGNED LEASE
 - EXISTING OPEN RETAIL (by others)
 - RETAIL - FUTURE (by others)
 - OFFICE (by others)
 - APARTMENTS (by others)

New Alignment of Farmer's Ditch (pipe)

Old Alignment of Farmer's Ditch (open ditch)

Site Plan
Marketing Plan - February 26, 2018

JOHNSTOWN PLAZA

SEC of I-25 & US 34, Johnstown, Colorado

Carson Development, Inc

DeGasperi & Associates Architecture / Point Consulting

Proximity to Big Thompson River

- Minimized river crossings: 2 existing bridge locations + 1 new location for water and sanitary sewer



Proximity to Big Thompson River

- Established Natural Open Space along Big Thompson River.
- Allows for wide life corridor along the river.
- Created an amenity for the development (open space and trail system).
- Avoiding creating hazardous issues with flooding near the Big Thompson River (on-site and downstream).
- Reduced the water use for the overall project (i.e. not irrigating turf park).



Take Away Points (1 of 2)

Developed a plan for:

- (1) Types of water rights and how they are utilized for different purposes;
- (2) Created a more environmentally friendly non-potable irrigation system that reduces development costs (tap fees, raw water, water rates, pipeline sizes, and potable water treatment capacity);
- (3) Developer established 2534 specific water bank to accommodate a project of this size (when Town couldn't or wouldn't);
- (4) Piped Farmer's Ditch and non-potable infrastructure in locations that would not interfere with Land Use Plan; and
- (5) Attempted to minimize impact on Big Thompson River while utilizing it as a natural amenity.

Take Away Points (2 of 2)

Results:

- (1) Created a great place for people to work, receive health care and other services, shop, play, and live;
- (2) Minimized impacts on water resources and Big Thompson River; and
- (3) Generated revenue for the Town, County, State, School District, Fire Department, etc.

Questions?