

RAW WATER SUPPLY OPTIONS FOR CITY OF LOVELAND

Larry Howard, Water Resources

Loveland Utilities Commission

May 20, 2015

TODAY'S QUESTION IS:

Should the City apply a Dollar Cost Averaging Concept to purchases of CBT units?

WINDY GAP OPTION

Water Right	Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
Windy Gap (40 Units) w/o storage	0 AF	\$8,600,000 \$2,158/AF	Unfirmed	WG units may be available to buy or sell over time.

Pros	Cons
<ul style="list-style-type: none"> •No change needed in Water Court. •Reuse anywhere after Loveland's 1st use. 	<ul style="list-style-type: none"> •Highest initial annual operating cost. •Zero firm yield without storage. •Potential CBT delivery system failure. •Potential Colorado River call.

WINDY GAP FIRING OPTION

Water Right	Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
Windy Gap Firing Project (WGFP) @ current 7000 AF Level	3000 AF	\$22,000,000	\$7,333	City is currently subscribed for 7000 AF
Additional 1,400 AF of WGFP storage	373 AF	\$4,410,000	\$11,800	WGFP storage is a one time decision and it is fast approaching the deadline

Pros	Cons
<ul style="list-style-type: none"> •Provides firm yield for WG units already owned or acquired later. •Near completion of anticipated permitting. •Likely the lowest cost storage space available for WG water or native rights. 	<ul style="list-style-type: none"> •Permitting is never over until it's over. •Permitting, mitigation & construction costs are escalating.

NATIVE WATER IN WGFP

Water Right	Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
Native Water in WGFP	2.5 AF : 1 AF Storage Ratio			Native rights need storage—could that be in the WGFP?

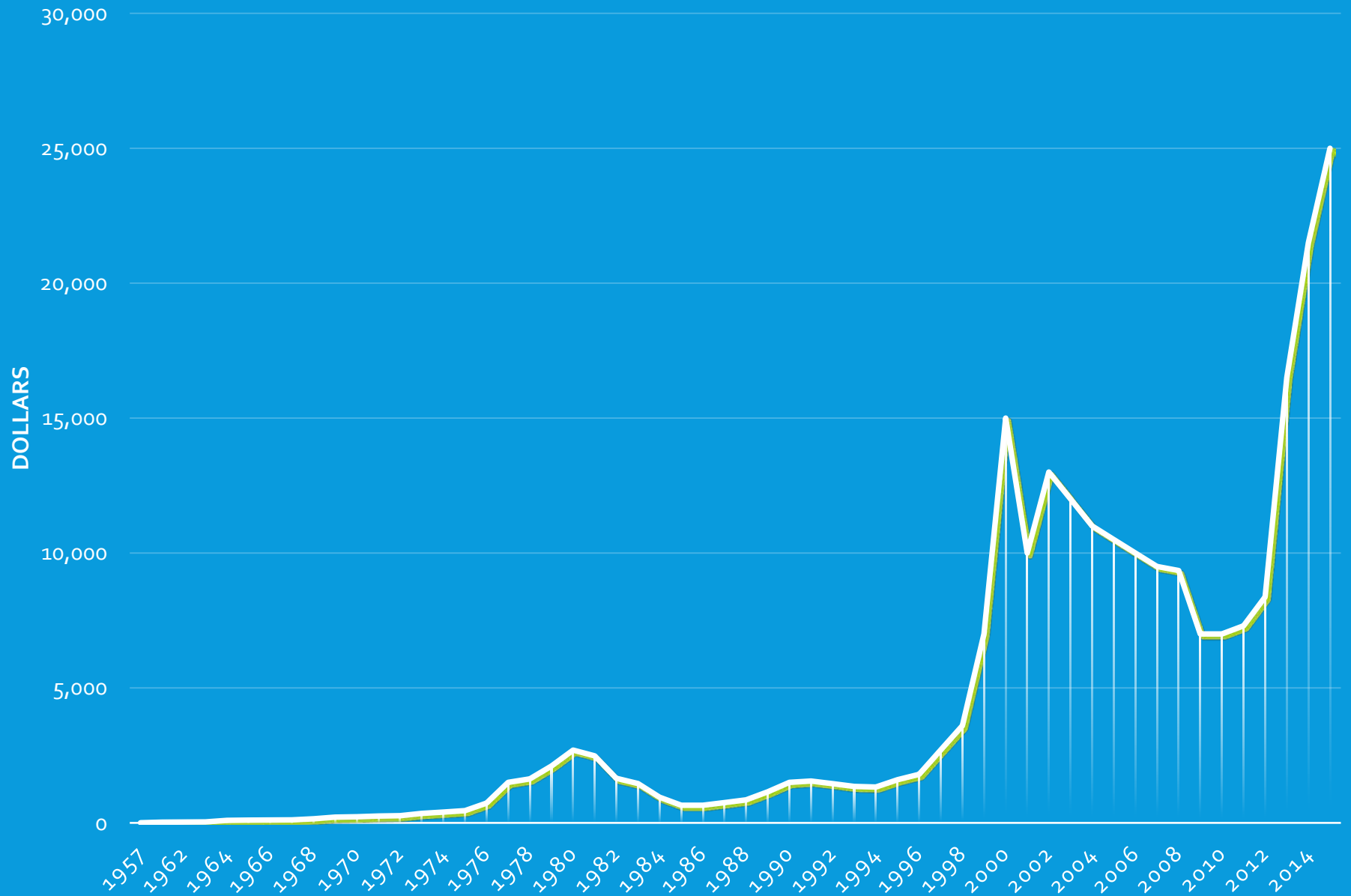
Pros	Cons
<ul style="list-style-type: none"> • Provide firm yield from future native shares. • Likely the least cost storage alternative. 	<ul style="list-style-type: none"> • NEPA process required. • Carriage contract required. • Subject to available carriage capacity.

DOWNSTREAM STORAGE OPTION

Water Right	Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
Downstream Storage	0.75 AF : 1 AF 2,000 AF	\$4,000,000	2,000	Depends of the location of available storage

Pros	Cons
<ul style="list-style-type: none"> •Upstream exchange capability enhanced. •Potential 'Purple Pipe' or raw water irrigation water source. •Sale or trade to downstream entity possible. •Gravel pits are currently developing storage vessels in the appropriate area. 	<ul style="list-style-type: none"> •Limited opportunity to exchange upstream. •Upstream exchange reduces river flows through town.

CBT UNITS MARKET PRICE HISTORICAL TRENDS



CBT UNITS OPTION

Water Right	Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
Colorado Big Thompson Units	1 AF/unit	\$26,250	\$26,250	Currently available at historic prices. Supply is steadily decreasing.

Pros	Cons
<ul style="list-style-type: none"> •City is well below its CBT ownership cap. •No change needed in Water Court. •Can use anywhere in Northern's District. •Already stored and available on demand. 	<ul style="list-style-type: none"> •Limited supply available. •Cannot be used for augmentation plans. •Single use only--not reusable. •Potential Colorado River call. •Potential delivery system failure. •Current prices are at historic highs.

NATIVE RIGHT W/ STORAGE OPTION

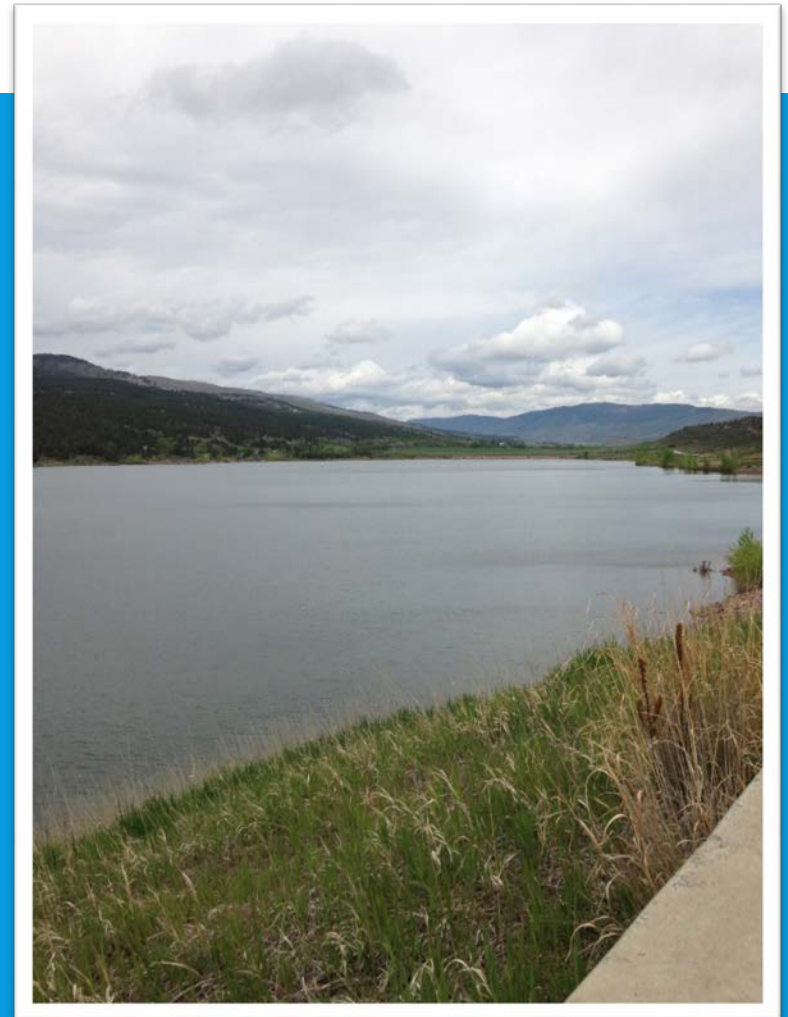
Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
12 AF/sh	\$243,996	\$20,333	Limited feasibility storage options identified through extensive studies

Pros

- Keeps City portfolio diversified.
- Desirable for developers owning shares.

Cons

- Water Court action required to add to decrees.
- CBT Conveyance Contract likely to be needed for storage.
- NEPA process required to use CBT conveyance.
- Ever-tightening state administrative regulation.



NATIVE RIGHTS W/O STORAGE OPTION

Firm Yield	Price \$	Price per Firm AF	Window of Opportunity
2.5 AF/sh	\$40,000	\$16,000	Some benefit as a direct flow right or with existing storage

Pros

- Provides lower cost option for Developers
- Keeps City portfolio diversified.

Cons

- Most likely developers will pay storage fee to realize the significantly higher yields.
- Ever-tightening state administrative regulation.



CONCLUSION

Should the City apply a Dollar Cost Averaging Concept to purchases of CBT units?

