LOVELAND UTILITIES COMMISSION

August 29, 2018 – 4:00pm

Service Center Willow Room – 200 N. Wilson Ave.

REGULAR MEETING AGENDA

CALL TO ORDER

NEW EMPLOYEE INTRODUCTIONS

Blake Hornung – Water Metering Supervisor

APPROVAL OF MINUTES – 7/18/2017

CITIZENS REPORT (*See procedural instructions on the following page.)

INFORMATIONAL ITEMS

1. Financial Report Update – Jim Lees

STAFF REPORTS

2. Raw Water Supply Firm Yield Analysis Report by Spronk Water Engineers – Larry Howard

COMMISSION & COUNCIL REPORTS

DIRECTOR'S REPORT

ADJOURN

The password to the public access wireless network (colguest) is accesswifi

City of Loveland

* Citizens Report Procedures

Anyone in the audience may address the LUC on any topic relevant to the commission. If the topic is a Consent Agenda item, please ask for that item to be removed from the Consent Agenda; pulled items will be heard at the beginning of the Regular Agenda. If the topic is a Regular Agenda item, members of the public will be given an opportunity to speak to the item during the Regular Agenda portion of the meeting before the LUC acts upon it. If the topic is a Staff Report item, members of the public should address the LUC during this portion of the meeting; no public comment is accepted during the Staff Report portion of the meeting.

Anyone making comment during any portion of tonight's meeting should identify himself or herself and be recognized by the LUC chairman. Please do not interrupt other speakers. Side conversations should be moved outside the Service Center Board Room. Please limit comments to no more than three minutes.

Notice of Non-Discrimination

The City of Loveland is committed to providing an equal opportunity for services, programs and activities and does not discriminate on the basis of disability, race, age, color, national origin, religion, sexual orientation or gender. For more information on non-discrimination or for translation assistance, please contact the City's Title VI Coordinator at TitleSix@cityofloveland.org or 970-962-2372. The City will make reasonable accommodations for citizens in accordance with the Americans with Disabilities Act (ADA). For more information on ADA or accommodations, please contact the City's ADA Coordinator at adacoordinator@cityofloveland.org or 970-962-3319.

Notificación en Contra de la Discriminación

"La Ciudad de Loveland está comprometida a proporcionar igualdad de oportunidades para los servicios, programas y actividades y no discriminar en base a discapacidad, raza, edad, color, origen nacional, religión, orientación sexual o género. Para más información sobre la no discriminación o para asistencia en traducción, favor contacte al Coordinador Título VI de la Ciudad al TitleSix@cityofloveland.org o al 970-962-2372. La Ciudad realizará las acomodaciones razonables para los ciudadanos de acuerdo con la Ley de Discapacidades para americanos (ADA). Para más información sobre ADA o acomodaciones, favor contacte al Coordinador de ADA de la Ciudad en adacoordinator@cityofloveland.org o al 970-962-3319".

The password to the public access wireless network (colguest) is accesswifi

Commission Members Present: Dan Herlihey, David Schneider, Gary Hausman (Chair), Gene Packer, Larry Roos, John Butler, Randy Williams, Sean Cronin, Tom Vail (Alternate)

Commission Members Absent: Stephanie Fancher-English

Council Liaison: Steve Olson

City Staff Members Present: Brieana Reed-Harmel, Courtney Whittet, Daniel Daneshka, Derek Turner, Frank Lindauer, Jim Lees, Joe Bernosky, John Beckstrom, Michelle Erickson, Ryan Greene, Ryan Van Pelt, Tracey Hewson

Guest Attendance: Jason Mumm, Gail Burnhart, Dick Mallot, Paul Crosby

CALL TO ORDER: Gary Hausman called the meeting to order at 4:00 pm.

APPROVAL OF MINUTES: Hausman asked for a motion to approve the minutes of the June 20, 2018 meeting.

Comments: Dave Schneider would like his comments under Commission/Council Reports to reflect he was referring to the EPA changing the definition of Waters of the United States.

Motion: Dave Schneider made the motion to approve the minutes with the addition of his comments.
Second: John Butler seconded the motion. The minutes were approved unanimously.

CITIZENS REPORT

Dick Mallot: Loveland Loves BBQ – Water & Power came out and helped them get set up with electricity and it was greatly appreciated.

INFORMATIONAL ITEMS

Item 1: Water Legislative Update

This item is intended to give a brief provide information on which water related bills passed the Colorado General Assembly this last session. Loveland Water and Power relies primarily on the Colorado Water Congress (CWC) for information on water-related legislation.

Informational Item only. No action required.

CONSENT AGENDA

Item 2: 2nd Quarter 2018 Goal Update Report – Joe Bernosky

This is a quarterly review of our progress on our 2018 utility goals.

Recommendation: Review the information presented and approve the 2018 2nd Quarter Goals Update Report.

Item 3: WAPA and BOR Agreement – Frank Lindauer

This Letter Agreement confirms recent discussions among staff from the City of Loveland, Colorado (Loveland), Bureau of Reclamation (Reclamation), and Western Area Power Administration (WAPA) regarding replacement and upgrade of Loveland's three-phase 13.8/2.4-kV, 150 KVA pole-mounted transformer bank, at Loveland's Sylvandale Tap, to a three-phase 13.8/12.47-kV, 750 KVA pad-mounted transformer.

Recommendation: Adopt a motion recommending that the City Council approve an Intergovernmental Agreement with WAPA and Reclamation for Upgrade and Replacement of the 150 kVA Pole-Mounted Transformer Bank at Sylvandale Tap.

Motion: Dan Herlihey made the motion to accept consent agenda item #3 as written. Item #2 was tabled until next month to allow time for review of the information.
Second: John Butler seconded the motion. The motion was approved unanimously.

REGULAR AGENDA

Item 4: 2018 Water and Wastewater Cost-of-Service Rate Study Results – Jim Lees

The purpose of this item is to get recommendations to take to City Council from the Loveland Utilities Commission (LUC) on four items:

1) Rates by customer class for 2019 for both the Water and Wastewater Utilities
2) 10-year rate tracks and borrowing alternatives for both the Water and Wastewater Utilities
3) An update to the Raw Water Development Fee
4) A possible addition of a modified System Impact Fee (SIF) for so-called Tiny Homes, where lot size and finished square footage is significantly less than that of a typical single-family home

Recommendation: Get recommendations to take to City Council from the LUC on four items:

1) Rates by customer class for 2019 for both Water and Wastewater –
   a) Water - Scenario #2
   b) Wastewater - Scenario #2

Motion: John Butler made the motion.
Second: Dan Herlihey seconded the motion. The motion was approved unanimously.

2) 10-year rate tracks and borrowing alternatives for both Water and Wastewater – Scenario #2.

Motion: Dave Schneider made the motion.
Second: Dan Herlihey seconded the motion. The motion was approved 5-3.

3) Update to the Raw Water Development Fee as proposed.

Dave Schneider made the motion with the addition that the update occur over the course of 3 years.
Randy Williams seconded the motion. The motion was approved 5-3.

4) A possible addition of a modified System Impact Fee (SIF) of so-called Tiny Homes, where lot size and square footage is significantly less than that of a typical single-family home –
   Pending further study.

Comments: Invitation to City Council Study Session regarding Rates/Fees on August 14, 2018 at 6:00 pm.

Item 5: Platte River Power Authority (PRPA) Fiber Asset Ownership – Brieana Reed-Harmel

The purpose of this item is to get direction from the Loveland Utilities Commission (LUC) on a preferred 10-year rate track and borrowing scenario for both the Water and Wastewater Utilities to bring back to the July, 2018 LUC meeting to get a formal recommendation in conjunction with the cost-of-service results for 2019.

Staff Report only. This was mistakenly put on the Regular Agenda. No action required.

Item 6: Consideration of PRPA Notice of Transfer for Windy Gap Units - *Executive Session pursuant

to City Charter Section 4-4(c) and Section 24-6-402(4)(a)(e) & (g), C.R.S.* – Derek Turner

Pursuant to the December 14, 2017 Agreement Regarding Exercise of Rights of First Refusal to Acquire Windy Gap Water Units from Platte River Power Authority, the City received on July 2, 2018 a Notice of Transfer of Windy Gap Units by PRPA, initiating a 63-day period during which the City of Loveland must exercise or waive its right of first refusal to the units proposed for transfer.

Motion: Dan Herlihey made the motion to enter into Executive Session.
Second: John Butler seconded the motion. The motion was approved unanimously at 6:23 pm.

Motion: Dan Herlihey made the motion to end Executive Session.
Second: Randy Williams seconded the motion. The motion was approved unanimously at 6:37pm.

Recommendation: Adopt a Motion Recommending that the City Manager waive the City's right of first refusal for the Windy Gap Units that are the subject of the July 2, 2018 Notice of Transfer.

Motion: Dan Herlihey made the motion.
Second: John Butler seconded the motion. The motion was approved unanimously.

STAFF REPORTS

Item 7: Quarterly Financial Report Update – Jim Lees

This item summarizes the monthly and year-to date Preliminary financials for June 2018.

Staff Report only. No action required.

COMMISSION/COUNCIL REPORTS

Item 7: Commission/Council Reports
Discuss events that the Loveland Utility Commission Board members attended, special topics and any City Council items related to the Water and Power Department from the past month.

Dan Herlihey:
Dave Kavanagh:
Dave Schneider: Shared a picture of overhead lines going through the middle of a Walmart parking lot.
Gene Packer: Got the opportunity to help interview for new commission members, had a lot of great applicants.
Gary Hausman:
John Butler: Great knowledge in the room amongst the commission members, might be beneficial to do study sessions once a month or even just a few times a year.
Larry Roos:
Randy Williams:
Sean Cronin: South Platte Regional Opportunities Working Group is working towards securing funding through the basin roundtables, perhaps some future opportunities to obtain additional water. This is the 5th year anniversary of 2013 flood, Water Education Colorado (previously Foundation for Water Education) is putting on a tour on Sept 18th will be coming through Loveland.
Stephanie Fancher-English:

Councilor Steve Olson:
City Council Study Session – June 26
Nothing of Interest

City Council Regular Meeting – July 3

Public Comment - Three capital projects related to coordinate timing with other City projects: Boyd Parallel Interceptor, Wilson Avenue Flood Mitigation and North Lake Park Double Switch.

Loveland Communication Advisory Board (LCAB) member appointments.

City Council Regular Meeting – July 10
Nothing of Interest

City Council Regular Meeting – July 17
A resolution approving the amended and restated ownership, operations and maintenance agreement for the Home Supply Dam and related facilities

DIRECTOR'S REPORT

Item 8: Director's Report – Joe Bernosky

ADJOURN The meeting was adjourned at 6:56. The next LUC Meeting will be August 29, 2018 at 4:00 pm.

Respectfully submitted,

Courtney Whittet
Recording Secretary
Loveland Utilities Commission
/s/ Gary Hausman, LUC Chairman

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 1
MEETING DATE: 8/29/2018
SUBMITTED BY: Jim Lees
STAFF TITLE: Utility Accounting Manager

ITEM TITLE:

Financial Report Update – Jim Lees

DESCRIPTION:

This item summarizes the monthly and year-to date Preliminary financials for July 2018.

SUMMARY:

The July 2018 financial reports are submitted for Commission review. The following table summarizes the sales and expense results for the month of July, and the July Year-To-Date results in comparison to the same periods from 2017. The summarized and detailed monthly financial statements that compare July Year-To-Date actuals to the 2018 budgeted figures are attached.

	July				July Year-To-Date			
	2018	2017	$ Ovr/(Und) vs. 2017	% Ovr/(Und) vs. 2017	2018	2017	$ Ovr/(Und) vs. 2017	% Ovr/(Und) vs. 2017
WATER								
Sales	$2,388,722	$2,162,929	$225,792	10.4%	$8,771,361	$7,833,368	$937,994	12.0%
Operating Expenses	$1,358,820	$958,029	$400,791	41.8%	$8,068,024	$11,597,530	($3,529,506)	-30.4%
Capital (Unrestricted)	$14,331	$306,879	($292,548)	-95.3%	$464,826	$872,749	($407,923)	-46.7%
WASTEWATER								
Sales	$1,132,545	$1,004,059	$128,487	12.8%	$7,195,527	$6,431,757	$763,770	11.9%
Operating Expenses	$1,003,839	$627,850	$375,989	59.9%	$4,985,042	$3,921,811	$1,063,230	27.1%
Capital (Unrestricted)	$1,303,417	$309,731	$993,685	320.8%	$5,326,817	$1,256,865	$4,069,952	323.8%
POWER								
Sales	$7,000,833	$6,424,627	$576,206	9.0%	$37,572,760	$34,487,766	$3,084,994	8.9%
Operating Expenses	$6,661,970	$6,077,463	$584,507	9.6%	$34,591,671	$32,422,643	$2,169,028	6.7%
Capital (Unrestricted)	$877,576	$1,527,582	($650,006)	-42.6%	$5,866,696	$8,327,246	($2,460,550)	-29.5%

RECOMMENDATION:

Staff item only. No action required.

ATTACHMENTS:

- Attachment A: City of Loveland Financial Statement-Raw Water
- Attachment B: City of Loveland Financial Statement-Water
- Attachment C: City of Loveland Financial Statement-Wastewater
- Attachment D: City of Loveland Financial Statement-Power

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Attachment A

City of Loveland
Financial Statement-Raw Water
For Period Ending 07/31/2018

		TOTAL BUDGET FYE 12/31/2018	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
1	**REVENUES & SOURCES**					
2	High Use Surcharge	74,667	10,606	43,554	(32,948)	-75.6%
3	Raw Water Development Fees/Cap Rec Surcharge	514,952	214,240	300,391	(86,151)	-28.7%
4	Cash-In-Lieu of Water Rights	527,084	476,748	307,468	169,280	55.1%
5	Native Raw Water Storage Fees	31,598	311,727	18,431	293,296	1591.3%
6	Loan Payback from Water	32,500	0	18,958	(18,958)	-100.0%
7	Raw Water 3% Transfer In	491,220	263,141	251,358	11,783	4.7%
8	Interest on Investments	351,950	201,598	205,303	(3,705)	-1.8%
9	**TOTAL REVENUES & SOURCES**	**2,023,971**	**1,478,060**	**1,145,463**	**332,597**	**29.0%**
10	**OPERATING EXPENSES**					
11	Loan to Water	0	0	0	0	0.0%
12	Windy Gap Payments	7,100	7,044	7,100	(56)	-0.8%
13	**TOTAL OPERATING EXPENSES**	**7,100**	**7,044**	**7,100**	**(56)**	**-0.8%**
14	NET OPERATING REVENUE/(LOSS) (excl depr)	2,016,871	1,471,016	1,138,363	332,653	29.2%
15	RAW WATER CAPITAL EXPENDITURES	5,564,900	1,028,484	3,302,300	(2,273,816)	-68.9%
16	**ENDING CASH BALANCES**					
17	Total Available Funds		18,100,571			
18	Reserve - Windy Gap Cash		0			
19	Reserve - 1% Transfer From Rates		6,348,970			
20	Reserve - Native Raw Water Storage Interest		1,634,325			
21	**TOTAL RAW WATER CASH**		**26,083,867**			

NOTE: YTD ACTUAL DOES NOT INCLUDE ENCUMBRANCES TOTALING: -

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Attachment B

City of Loveland
Financial Statement-Water
For Period Ending 07/31/2018

		TOTAL BUDGET FYE 12/31/2018	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
1	****UNRESTRICTED FUNDS****					
2	**REVENUES & SOURCES**					
3	Water Sales	16,373,998	8,771,361	8,378,648	392,713	4.7%
4	Raw Water Transfer Out	(491,220)	(263,141)	(251,358)	(11,783)	4.7%
5	Wholesale Sales	161,307	96,614	94,094	2,520	2.7%
6	Meter Sales	94,722	50,589	55,258	(4,670)	-8.5%
7	Interest on Investments	89,770	18,994	52,367	(33,373)	-63.7%
8	Other Revenue	1,408,745	300,535	490,392	(189,857)	-38.7%
9	Federal and State Grants	0	75,804	0	75,804	0.0%
10	Internal Loan Monies Received	750,000	750,000	750,000	0	0.0%
11	External Loan Monies Received	0	0	0	0	0.0%
12	**TOTAL REVENUES & SOURCES**	**18,387,322**	**9,800,755**	**9,569,401**	**231,354**	**2.4%**
13	**OPERATING EXPENSES**					
14	Source of Supply	2,810,906	1,133,488	1,803,968	(670,480)	-37.2%
15	Treatment	3,636,785	1,711,652	2,120,778	(409,126)	-19.3%
16	Distribution Operation & Maintenance	4,207,648	1,811,781	2,568,507	(756,726)	-29.5%
17	Administration	2,517,512	362,383	1,488,208	(1,125,825)	-75.6%
18	Customer Relations	421,932	150,367	264,940	(114,573)	-43.2%
19	PILT	1,111,790	595,575	544,779	50,796	9.3%
20	1% for Arts Transfer	73,314	3,191	69,964	(66,773)	-95.4%
21	Services Rendered-Other Departments	1,480,676	865,841	865,841	0	0.0%
22	Internal Loan Debt Expense	827,500	795,300	795,000	300	0.0%
23	External Loan Debt Expense	1,015,150	638,445	592,172	46,273	7.8%
24	**TOTAL OPERATING EXPENSES**	**18,103,213**	**8,068,024**	**11,114,157**	**(3,046,133)**	**-27.4%**
26	NET OPERATING REVENUE/(LOSS)(excl depr)	284,109	1,732,732	(1,544,756)	3,277,488	-212.2%
27	CAPITAL EXPENDITURES	3,394,406	464,826	2,774,969	(2,310,143)	-83.2%
28	REVENUES LESS OPER EXP LESS CAPITAL	(8,712,729)	(1,225,824)	(7,971,658)	6,745,834	-84.6%
30	ENDING CASH BALANCE (% OF OPER EXP)		**5,973,496**			
31	WATER DEBT FUNDS ENDING CASH BALANCE		**34,162**			
32	MINIMUM BALANCE (15% OF OPER EXP)		42,616			
33	**OVER/(UNDER) MINIMUM BALANCE**		**5,930,880**			
34	****RESTRICTED FUNDS****					
35	**REVENUES & SOURCES**					
36	SIF Collections	6,168,963	980,250	1,882,860	(902,610)	-47.9%
37	SIF Interest Income	51,660	30,972	30,135	837	2.8%
38	SIF Federal and State Grants	0	75,804	0	75,804	0.0%
39	Internal Loan Monies Received	0	0	0	0	0.0%
40	**TOTAL SIF REVENUES & SOURCES**	**6,220,623**	**1,087,026**	**1,912,995**	**(825,969)**	**-43.2%**
41	SIF Capital Expenditures	7,527,489	606,788	4,564,856	3,958,068	100
42	1% for Arts Transfer	38,462	4,265	19,562	(15,297)	-78.2%
43	Legal Agreements & Shared Costs	276,440	17,885	176,179	(158,294)	-89.8%
44	**TOTAL SIF CAPITAL EXPENDITURES**	**7,842,391**	**628,938**	**4,760,597**	(4,131,659)	-86.8%
45	**SIF REVENUE LESS EXPENDITURES**	**(1,621,768)**	**458,088**	**(2,847,602)**	**3,305,690**	**100**
46	SIF ENDING CASH BALANCE		**3,766,574**			
47	**TOTAL ENDING CASH BALANCE**		**9,740,070**			
	NOTE: YTD ACTUAL DOES NOT INCLUDE ENCUMBRANCES TOTALING:		5,870,800			

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Attachment C

City of Loveland-LIVE
Financial Statement-Wastewater
For Period Ending 07/31/2018

		TOTAL BUDGET FYE 12/31/2018	YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
1	****UNRESTRICTED FUNDS****					
2	**REVENUES & SOURCES**					
3	Sanitary Sewer Charges	12,620,160	7,195,527	7,177,391	18,136	0.3%
4	High Strength Surcharge	393,240	279,252	206,700	72,552	35.1%
5	Interest on Investments	88,800	89,029	51,800	37,229	71.9%
6	Other Revenue	763,090	36,327	441,266	(404,939)	-91.8%
7	Bond Proceeds	15,659,620	4,030,620	4,030,540	80	0.0%
8	Federal Grants	0	0	0	0	0.0%
9	State Grants	0	0	0	0	0.0%
10	**TOTAL REVENUES & SOURCES**	**29,524,910**	**11,630,754**	**11,907,697**	**(276,943)**	**-2.3%**
11	**OPERATING EXPENSES**					
					0	0.0%
12	Treatment	4,310,725	2,246,106	2,570,811	(324,705)	-12.6%
13	Collection System Maintenance	3,389,734	1,340,527	2,056,101	(715,574)	-34.8%
14	Administration	1,734,963	280,804	1,059,364	(778,560)	-73.5%
15	Customer Relations	50,855	20,771	31,271	(10,500)	-33.6%
16	PILT	910,940	523,234	510,126	13,108	2.6%
17	1% for Arts Transfer	255,989	49,026	230,830	(181,804)	-78.8%
18	Services Rendered-Other Departments	758,706	444,173	444,173	0	0.0%
19	Debt Service	88,819	80,400	51,814	28,586	55.2%
20	**TOTAL OPERATING EXPENSES**	**11,500,731**	**4,985,042**	**6,954,490**	**(1,969,448)**	**-28.3%**
21	NET OPERATING REVENUE/(LOSS)(excl depr)	18,024,179	6,645,713	4,953,207	1,692,506	34.2%
22	CAPITAL EXPENDITURES	24,916,928	5,326,817	22,194,300	(16,867,483)	-76.0%
23	REVENUES LESS OPER EXP LESS CAPITAL	(6,892,749)	1,318,896	(17,241,093)	18,559,989	-107.6%
24	ENDING CASH BALANCE (91% OF OPER EXP)		**10,495,062**			
25	WASTEWATER DEBT FUNDS ENDING CASH BALANCE		373			
26	MINIMUM BALANCE (15% OF OPER EXP)		1,725,110			
27	OVER/(UNDER) MINIMUM BALANCE		**8,769,952**			
28	****RESTRICTED FUNDS****					
29	**REVENUES & SOURCES**					
30	SIF Collections	2,386,151	780,680	1,215,774	(435,094)	-35.8%
31	SIF Interest Income	89,010	81,411	51,926	29,485	56.8%
32	SIF Bond Proceeds	8,691,380	2,470,380	8,691,380	(6,221,000)	-71.6%
33	**TOTAL SIF REVENUES & SOURCES**	**11,166,541**	**3,332,471**	**9,959,080**	**(6,626,609)**	**-66.5%**
34	SIF Capital Expenditures	17,573,793	3,987,781	14,645,763	(10,657,982)	-72.8%
35	1% for Arts Transfer	177,664	36,713	150,727	(114,014)	-75.6%
36	Debt Service	49,406	49,562	28,819	20,743	72.0%
37	**TOTAL SIF CAPITAL EXPENDITURES**	17,800,863	**4,074,057**	14,825,309	(10,751,252)	-72.5%
38	**SIF REVENUE LESS EXPENDITURES**	(6,634,322)	7,406,528	(4,866,229)	12,272,757	-252.2%
39	SIF ENDING CASH BALANCE		**6,467,592**			
40	**TOTAL ENDING CASH BALANCE**		**16,962,654**			
	NOTE: YTD ACTUAL DOES NOT INCLUDE ENCUMBRANCES TOTALING		28,142,418			
	Wastewater Treated at WWTP (in million gallons)	N/A	1,307	N/A		
	Wastewater Billed To Customers (in million gallons)	1,768	996	993	2	0.2%

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Attachment D

City of Loveland
Financial Statement-Power
For Period Ending 7/31/2018

		TOTAL BUDGET		YTD ACTUAL	YTD BUDGET	OVER <UNDER>	VARIANCE
	****UNRESTRICTED FUNDS****						
1	REVENUES & SOURCES:						
2	Electric revenues	$65,421,010		$37,572,760	$37,098,740	$474,020	1.3%
3	Wheeling charges	$260,000		$158,368	$151,667	$6,702	4.4%
4	Interest on investments	$258,420		$119,328	$150,745	($31,417)	-20.8%
5	Aid-to-construction deposits	$1,530,000		$564,921	$892,500	($327,579)	-36.7%
6	Customer deposit-services	$310,000		$77,102	$180,833	($103,732)	-57.4%
7	Late Payment Penalty Fees	$450,000		$267,240	$262,500	$4,740	1.8%
8	Connect Fees	$170,000		$99,079	$99,167	($88)	-0.1%
9	Services rendered to other depts.	$0		$0	$0	$0	0.0%
10	Other revenues	$306,230		$365,022	$178,634	$186,388	104.3%
11	Federal Grants	$365,000		$291,047	$212,917	$78,130	36.7%
12	State Grants	$61,000		$48,508	$35,583	$12,924	36.3%
13	Year-end cash adjustments	$0		$0	$0	$0	0.0%
14	**TOTAL REVENUES & SOURCES**	**$69,131,660**		**$39,563,374**	**$39,263,286**	**$300,089**	**0.8%**
15	OPERATING EXPENSES:						
16	Hydro oper. & maint.	$1,309,821		$26,774	$755,666	($728,892)	-96.5%
17	Solar oper.& maint.	$90,000		$6,868	$51,923	($45,055)	-86.8%
18	Purchased power	$44,079,146		$26,332,183	$25,642,531	$689,652	2.7%
19	Distribution oper. & maint.	$5,601,230		$2,958,640	$3,231,479	($272,839)	-8.4%
21	Customer Relations	$1,528,241		$315,417	$881,678	($566,261)	-64.2%
22	Administration	$3,732,454		$687,960	$2,153,339	($1,465,378)	-68.1%
23	Payment in-lieu-of taxes	$4,579,440		$2,602,265	$2,610,281	($8,016)	-0.3%
24	1% for Arts Transfer	$83,488		$42,247	$47,588	($5,342)	-11.2%
25	Services rendered-other depts.	$2,767,799		$1,619,318	$1,614,549	$4,769	0.3%
26	**TOTAL OPERATING EXPENSES (excl depn)**	**$63,771,619**		**$34,591,671**	**$36,989,034**	**($2,397,363)**	**-6.5%**
27	NET OPERATING REVENUE/(LOSS) (excl depn)	$5,360,041		$4,971,703	$2,274,252	$2,697,451	$0
28	CAPITAL EXPENDITURES:						
29	General Plant/Other Generation & Distribution	$9,809,838		$4,676,184	$5,920,213	($1,244,029)	-21.0%
30	Aid-to-construction	$1,530,000		$1,020,779	$640,385	$380,394	59.4%
31	Service installations	$310,000		$169,733	$178,846	($9,113)	-5.1%
32	**TOTAL CAPITAL EXPENDITURES**	**$11,649,838**		**$5,866,696**	**$6,739,444**	**($872,748)**	**-12.9%**
33	**REVENUES LESS OPER EXP LESS CAPITAL**	($6,289,797)		($894,993)	($4,465,192)		
34	**ENDING CASH BALANCE (22% of Oper Exp)**			**$14,046,138**			
35	MINIMUM BAL. (27% of OPER EXP)			$17,218,337			
36	OVER/(UNDER) MINIMUM BALANCE			($3,172,199)			
37	****RESTRICTED FUNDS****						
38	PIF Collections	$3,115,400		$1,622,524	$1,817,317	($194,792)	-10.7%
39	PIF Interest Income	$12,350		$49,570	$7,204	$42,365	588.1%
40	Water Loan Payback	$795,000		$795,300	$795,000	$300	0.0%
41	Federal Grants	$0		$0	$0	$0	0.0%
42	State Grants	$0		$0	$0	$0	0.0%
43	**TOTAL REVENUES**	**$3,922,750**		**$2,467,394**	**$2,619,521**	**($152,127)**	**-5.8%**
44	PIF Feeders	$3,700,000		$884,960	$2,134,615	($1,249,655)	-58.5%
45	PIF Substations & Solar	$1,850,000		$0	$1,079,167	($1,079,167)	-100.0%
46	**TOTAL EXPENDITURES**	**$5,550,000**		**$884,960**	**$3,213,782**	**($2,328,822)**	**-72.5%**
47	**PIF REVENUES LESS EXPENDITURES**	($1,627,250)		$1,582,434	($594,261)		
48	**ENDING PIF CASH BALANCE**			**$5,266,581**			
49	**TOTAL ENDING CASH BALANCE**			**$19,312,719**			

NOTE: YTD ACTUAL does NOT include encumbrances totalling $4,792,689

50	Energy Purchased (in million kWh) from PRPA	744		435	432	4	5.5%
51	Energy Sold to Customers (in million kWh)	715		421	413	8	2.0%

1

LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 2
MEETING DATE: 8/29/2018
SUBMITTED BY: Larry Howard
STAFF TITLE: Water Resources Manager

ITEM TITLE:

Raw Water Supply Firm Yield Analysis Report by Spronk Water Engineers – Larry Howard

DESCRIPTION:

The Raw Water Supply Firm Yield Analysis Report provides the modeling results and related information forming the basis of the Raw Water Master Plan (RWMP). Spronk Water Engineers has been working on updating the modeling used for the 2012 RWMP including additions which have been made over the last few years. The resulting information will be presented at the LUC meeting.

SUMMARY:

An outline of the results to be presented is included as Attachment A. Greg Sullivan and Katryn (Katie) Leone from Spronk Water Engineers will present the updated modeling results, which indicate the City's firm yield supplies, with Chimney Hollow Reservoir in place, are close to matching the City's projected annual raw water demand of 30,000 acre-feet.

RECOMMENDATION:

Formal action not required as this information will be incorporated into the Raw Water Master Plan. Staff item only.

ATTACHMENTS:

- Attachment A: Water Supply Yield Update by Spronk Water Engineers

2

Attachment A

Discussion Outline

- Purpose of Yield Model Update
- 2011 and 2018 Results
- City Raw Water Planning Policy and Drought Frequency
- Model Overview
- Yield of Current Water Supply
- Yield of Additional Supplies
- Questions/Discussion

Draft

2

Purpose of Yield Model Update

- Incorporate changes since 2011, including:
  - Additional water sources and water rights
  - Changes in existing and proposed infrastructure
- Refine the model as a planning tool for use by the City
- Update the estimated firm yield of the City water supplies
  - 2011 Firm Yield 27,390 af/y
- Estimate the change in firm yield from additional water supplies/storage or alternative operations

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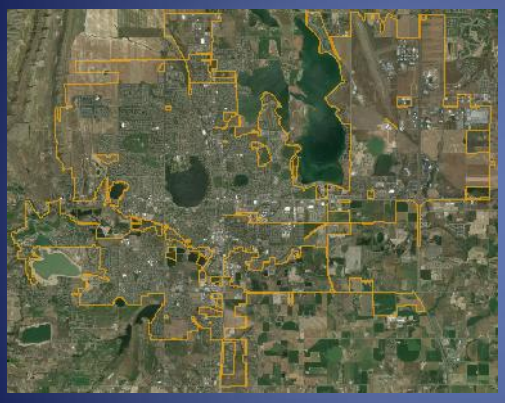
3

Since 2011:



Loveland - 2018

- City growth
- 2013 Big Thompson River Flood
- More CBT units
- More ditch shares
- Loveland Gard Right
- Increase in Windy Gap Firming Project Reservoir Participation

Draft

4

City Raw Water Planning Policy

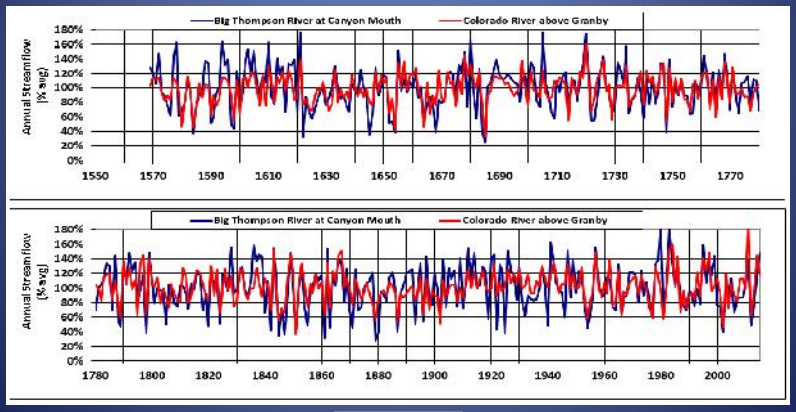
- Policy
  - Requires that raw water planning should provide sufficient water supply to meet demands without curtailment during a 1-in-100 year drought.
- Investigation
  - Determined the frequency of occurrence of the 2002 drought based on streamflow records and tree ring data back to 1569.

Draft

5

Big Thompson and Colorado River Flows

- Normalized Historical and Reconstructed Annual Flows
  - Big Thompson River at Canyon Mouth (virgin flow)
    - Reconstructed 1569-1946, Historical 1947-2015
  - Colorado River above Granby (virgin flow)
    - Reconstructed 1569-1949, Historical 1950-2015



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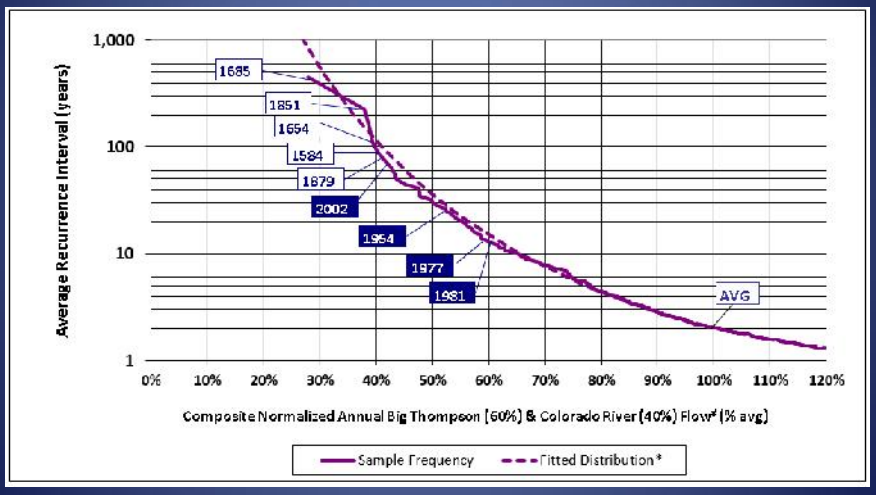
6

Water Supply & Drought

- Average Low Flow Recurrence Interval
  - From Historical and Reconstructed Flows



* Log Pearson Type III Distribution fit to data.

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7

Average Low Flow Recurrence Interval

- There is little difference between the 1-in-90 and 1-in-100 year flows.
- Difference is less than streamflow measurement error and analysis uncertainty.

Average Frequency	Flow (% avg)	Composite* Annual Flow (acre-feet)	(cfs)
1 in 100 years	41%	74,000	102
1 in 90 years	42%	76,000	105

* 60% Big Thompson River and 40% Colorado River.

- Conclusion
  - The firm yield analysis based on a study period that includes 2002 is consistent with the City's water supply planning policy.

Draft

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Loveland Water Facilities

- Diversion Facilities
  - Loveland Pipeline (direct flow diversions)
    - Current Capacity 71.3 cfs; enlarged in model to 90 cfs to allow diversion of full demand
  - Hansen Feeder Canal Turnout to Green Ridge Glade Reservoir
- Storage Facilities
  - Green Ridge Glade Reservoir - 6,785 acre-feet
  - Kauffman Gravel Pit - 1,300 acre-feet
- Loveland Treatment Plants
  - Water (WTP) - 38 MGD
  - Wastewater (WWTP) – 10 to 12 MGD

Draft

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Simulated Loveland Water Sources

- Pipeline Rights
  - Early Transfers: 3.44 cfs
  - Early Transfer from BTD&M Ditch 6.0 cfs
  - Domestic Appropriations: 2 rights, 3.0 cfs total
- Transferred Ditch Water Rights
  - Rist & Goss Transfer
  - 82CW202A, 01CW108 & 03CW354 (“202A”) and Related Transfers
  - 02CW392 (“392”) Transfers
  - Loveland Gard Right

Draft

10

Simulated Loveland Water Sources

- Transmountain Water
  - Colorado - Big Thompson (CBT) Project
    - 12,178 units (392 units added since 2011)
    - Since the last model runs, the City has acquired an additional 12 units of CBT bringing the total to 12,190 units
  - Windy Gap Project
    - 40 units; Windy Gap Firming Project participation 9,587 af
- Other Sources
  - Green Ridge Glade Reservoir junior storage water rights
  - Free River
  - Decant Water from Water Treatment Plant
- Exchanges
  - 02CW393 and 02CW394

Draft

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Simulated Loveland Water Sources

Summary of Ditch Shares/Inches

Ditch	202A Transfers	392 Transfers	Other Transfers	Untransfered	Loveland Total	Ditch Company Total	Loveland % Total
Big Thompson Ditch & Mfg Co.	2.583	3.811	0.0	0.000	6.4	20.8	30.8%
Barnes Ditch	1306.750	24.500	0.0	0.000	1331.3	1944.2	68.5%
Chubbuck Ditch	596.600	815.001	0.0	0.000	1411.6	1590.4	88.8%
George Rist (Buckingham) Ditch	6.100	89.250	0.0	24.750	120.1	200.0	60.1%
Louden Ditch	191.500	61.547	0.0	12.955	266.0	600.0	44.3%
Rist & Goss	0.000	0.000	W-7412 & 86CW50 (1)	0.000	N/A	N/A	N/A
South Side Ditch	57.500	23.000	0.0	28.750	109.3	265.0	41.2%
Home Supply Ditch	0.000	0.000	Loveland Gard Right (2)	30.000	0.0	2001.0	0.0%

(1) The W-7412 decree equates to 3.74 cfs and 323.8 af/yr. The 86CW50 decree equates to 2.136 cfs and 117.5 af/yr, which is further limited by monthly volumetric limits.
(2) The Loveland Gard Water Right equates to 1.0 cfs from the beginning of the irrigation season until noon on July 14th each year and 0.5 cfs from noon on July 14th through midnight on August 31st each year.

Draft

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Yield Model Overview

- Description
  - Simulation of Loveland's municipal water supply and demand over an extended historical period.
- Study Period
  - January 1951 – December 2015
  - Added Jan 2007 - Dec 2015 to study period
- Time-step
  - Daily
  - Daily historical records
    - USGS
    - SEO
    - Bureau of Reclamation
    - Loveland Municipal Records

Draft

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Yield Model Overview

- Selected Input Variables (specified by model user)
  - Annual Municipal Demand plus 500 af/y of permanent augmentation leases and 90 af/y of parks irrigation
  - Existing Water Supplies & New Supplies
    - Ditch company shares
    - CBT units
    - Windy Gap units
    - Windy Gap Firming Project storage capacity
    - Upstream storage capacity (GRG Res)
    - Downstream storage capacity (e.g., gravel pit storage)

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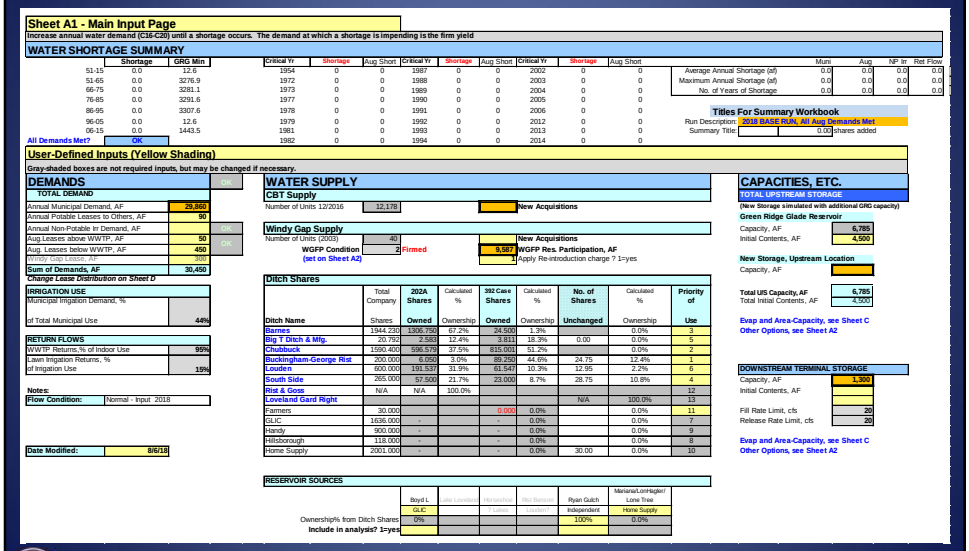
Yield Model Input Page



Sheet A1 - Main Input Page

Increase annual water demand (C16-C20) until a shortage occurs. The demand at which a shortage is impending is the firm yield

WATER SHORTAGE SUMMARY

	Shortage	GRG Min
51-15	0.0	12.6
51-65	0.0	3276.9
66-75	0.0	3281.1
76-85	0.0	3291.6
86-95	0.0	3307.6
96-05	0.0	12.6
06-15	0.0	1443.5

All Demands Met? OK

Critical Yr	Shortage	Aug Short	Critical Yr	Shortage	Aug Short	Critical Yr	Shortage	Aug Short
1954	0	0	1987	0	0	2002	0	0
1972	0	0	1988	0	0	2003	0	0
1973	0	0	1989	0	0	2004	0	0
1977	0	0	1990	0	0	2005	0	0
1978	0	0	1991	0	0	2006	0	0
1979	0	0	1992	0	0	2012	0	0
1981	0	0	1993	0	0	2013	0	0
1982	0	0	1994	0	0	2014	0	0

	Muni	Aug	NP Irr	Ret Flow
Average Annual Shortage (af)	0.0	0.0	0.0	0.0
Maximum Annual Shortage (af)	0.0	0.0	0.0	0.0
No. of Years of Shortage	0.0	0.0	0.0	0.0

Titles For Summary Workbook
Run Description: 2018 BASE RUN, All Aug Demands Met
Summary Title: 0.00 shares added

User-Defined Inputs (Yellow Shading)

Gray-shaded boxes are not required inputs, but may be changed if necessary.

DEMANDS

TOTAL DEMAND

Annual Municipal Demand, AF	29,860
Annual Potable Leases to Others, AF	90
Annual Non-Potable Ir Demand, AF	
Aug Leases above WWTP, AF	50
Aug. Leases below WWTP, AF	450
Windy Gap Leases, AF	380
Sum of Demands, AF	30,450

Change Lease Distribution on Sheet D

IRRIGATION USE

Municipal Irrigation Demand, % of Total Municipal Use	44%

RETURN FLOWS

WWTP Returns,% of Indoor Use	95%
Lawn Irrigation Returns, % of Irrigation Use	15%

Notes:
Flow Condition: Normal - Input 2018

Date Modified: 8/6/18

WATER SUPPLY

CBT Supply
Number of Units 12/2016: 12,178 — New Acquisitions

Windy Gap Supply
Number of Units (2003): 40 — New Acquisitions
WGFP Condition: 2 Firmed (set on Sheet A2) — 9.687 WGFP Res. Participation, AF
1 Apply Re-introduction charge ? 1=yes

Ditch Shares

Ditch Name	Total Company Shares	202A Shares Owned	Calculated % Ownership	392 Cas.e Shares Owned	Calculated % Ownership	No. of Shares Unchanged	Calculated % Ownership	Priority of Use
Barnes	1944.230	1306.750	67.2%	24.500	1.3%		0.0%	3
Big T Ditch & Mfg.	20.750	2.500	12.4%	3.811	18.3%	0.00	0.0%	5
Chubbuck	1590.400	596.579	37.5%	815.001	51.2%		0.0%	2
Buckingham-George Rist	200.000	6.050	3.0%	89.259	44.6%	24.75	12.4%	1
Louden	600.000	191.537	31.9%	61.547	10.3%	12.95	2.2%	6
South Side	265.000	57.500	21.7%	23.000	8.7%	28.75	10.8%	4
Rist & Goss	N/A	N/A	100.0%					12
Loveland Gard Right						N/A	100.0%	13
Farmers	30.000			0.000	0.0%		0.0%	11
GLIC	1636.000	-		-	0.0%		0.0%	7
Handy	900.000	-		-	0.0%		0.0%	9
Hillsborough	118.000	-		-	0.0%		0.0%	8
Home Supply	2001.000	-		-	0.0%	30.00	0.0%	10

RESERVOIR SOURCES

	Boyd L	Lake Loveland	Horseshoe	Red Barrett	Ryan Gulch	Marianal/Lon Hagler/ Lone Tree
	GLIC		7 Lakes	Loveland?	Independent	Home Supply
Ownership% from Ditch Shares	0%				100%	0.0%
Include in analysis? 1=yes						

CAPACITIES, ETC.

TOTAL UPSTREAM STORAGE
(New Storage simulated with additional GRG capacity)

Green Ridge Glade Reservoir

Capacity, AF	6,785
Initial Contents, AF	4,500

New Storage, Upstream Location

Capacity, AF	
Total US Capacity, AF	6,785
Total Initial Contents, AF	4,500

Evap and Area-Capacity, see Sheet C
Other Options, see Sheet A2

DOWNSTREAM TERMINAL STORAGE

Capacity, AF	1,300
Initial Contents, AF	
Fill Rate Limit, cfs	20
Release Rate Limit, cfs	20

Evap and Area-Capacity, see Sheet C
Other Options, see Sheet A2

Draft

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Yield Model Results

- Available Water Supply for Current Loveland Sources[1]
  - Divertable portion of Loveland share of the historical yields (af/y)

Source	1951 - 2015 Average	Dry Year (2002)
LPL (3.44 cfs)	2,490	2,490
Early BTDM (6cfs)	2,180	1,242
(2) Domestic (3 cfs)	679	117
(3,4) 202A Transfers	9,447	2,711
(4) 392 Transfers	4,937	1,428
Loveland Gard Right Transfer	156	149
CBT	9,077	8,250
(5) Windy Gap	6,891	0
Total	35,858	16,387

(1) Table does not include yield from Green Ridge Glade Reservoir, free river diversions, or exchanges of reusable effluent.
(2) Diverted April - October with irrigation priority.
(3) Includes Rist & Goss Ditch transferred yield.
(4) Loveland's pro-rata portion of historical diversions, less 15% left in ditch.
(5) From 2003 Boyle Engineering report (updated 2008) and NCWCD records.

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Yield Model Results

- Firm Yield of Current Loveland Supply
  - Procedure
    - Increase annual municipal demand until the model is unable to meet the demand at some time in the study period.
    - Keep the augmentation and parks irrigation demand constant.
  - Results
    - Without WGFP: Firm Yield = 24,870 af/y
    - With WGFP: Firm Yield = 28,600 af/y
    - With WGFP & d/s Gravel Pit: Firm Yield = 30,450 af/y
      "Base Run"* (29,860 af muni. + 590 af aug.)

*The "Base Run" is the run against which alternatives are evaluated (e.g., future acquisitions)

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Yield Model Results

- Average and Dry Year "Base Run" Yields

Source	Municipal Use 1951 - 2015 Average	Municipal Use Dry Year (2002)	Augmentation and Potable Leases 1951 - 2015 Average	Augmentation and Potable Leases Dry Year (2002)
Loveland Pipeline Rights[1]	5,286	3,837	16	12
202A Transfers	7,682	2,338	23	7
Rist&Goss Transfer	273	126	1	0
392 Transfers	1,216	495	4	1
Loveland Gard Right Transfer	50	99	0	0
Free River	1,409	36	4	0
WWTP Effluent[2]	1,130	2,987	209	253
CBT	9,244	8,678	28	26
GRG Release	3,570	11,263	46	51
Windy Gap (Direct)[3]	0	0	-	-
WTP Decant	-	-	25	33
Downstream Gravel Pit Release	-	-	234	206
Total	29,860	29,860	590	590

(1) Includes municipal and domestic rights.
(2) WWTP effluent used by exchange for municipal uses and directly for augmentation uses.
(3) Windy Gap water is not diverted directly at the Loveland Pipeline in the Base Run; it is diverted into Green Ridge Glade Reservoir and is part of the total reservoir releases

Draft

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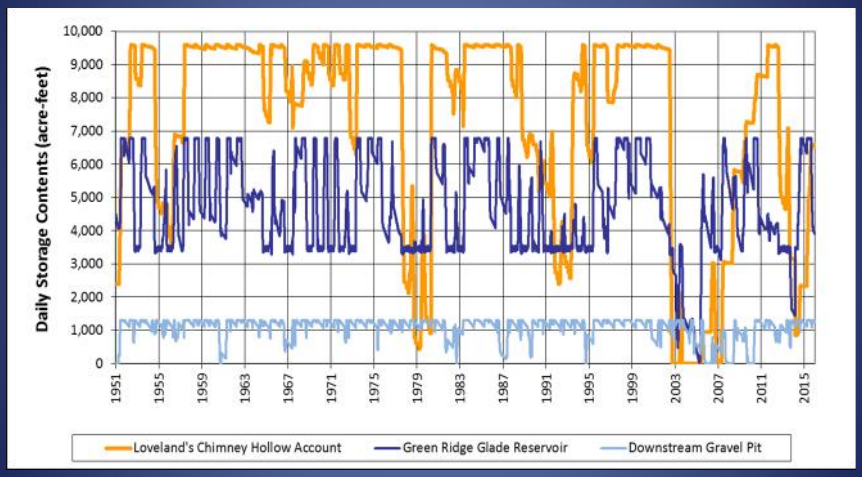
Yield Model Results

- Simulated Reservoir Contents (ac-ft)



Windy Gap Firming Project Participation of 9,587 af, Green Ridge Glade Reservoir Capacity of 6,785 af, Downstream Gravel Pit Capacity of 1,300 af

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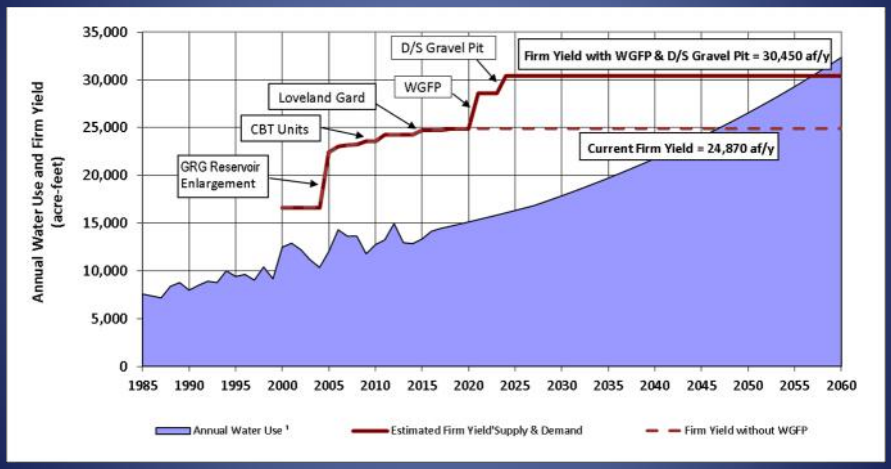
Demand and Firm Yield Results



[1] Actual water use through 2017 and projected by City staff using an aggressive growth rate (2.0%) through 2060 with conservative conservation rate (0.5%) for 10 years and then a conservation rate of (0%).

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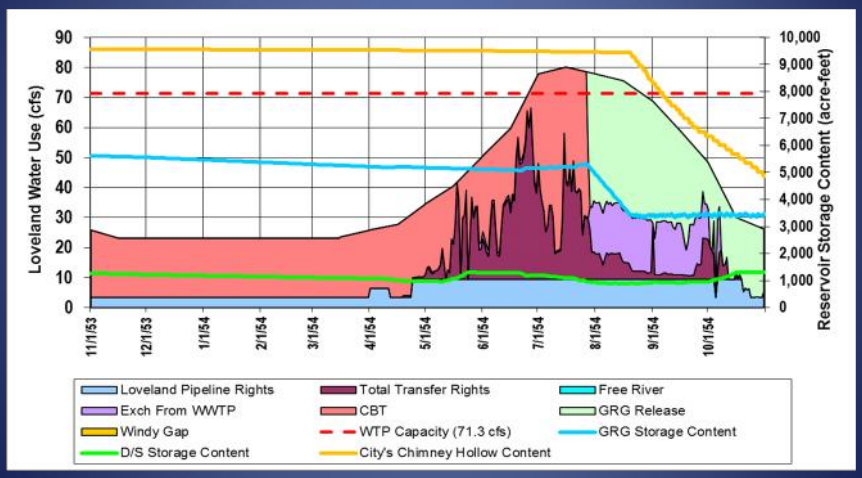
Yield Model Results

- Simulated Loveland Water Supply - 1954



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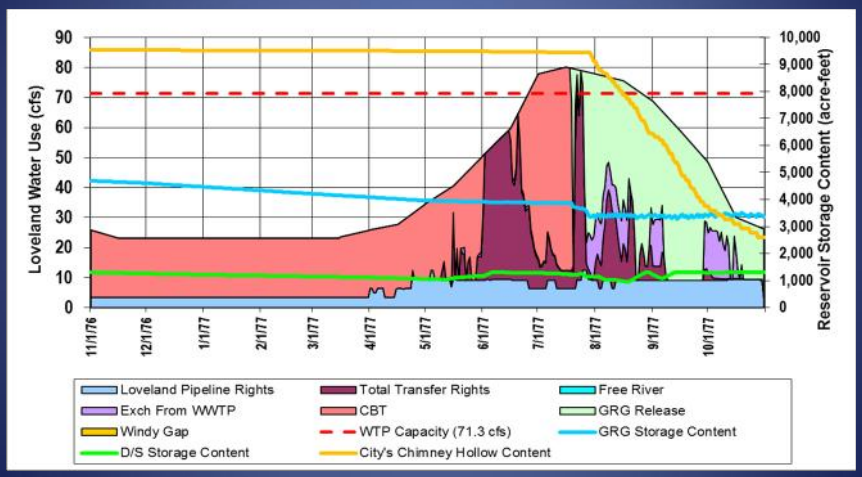
Yield Model Results

- Simulated Loveland Water Supply - 1977



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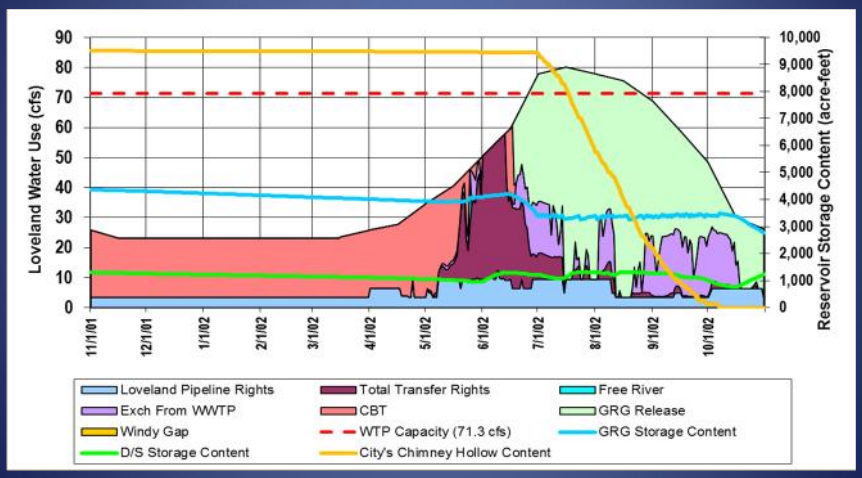
Yield Model Results

- Simulated Loveland Water Supply - 2002



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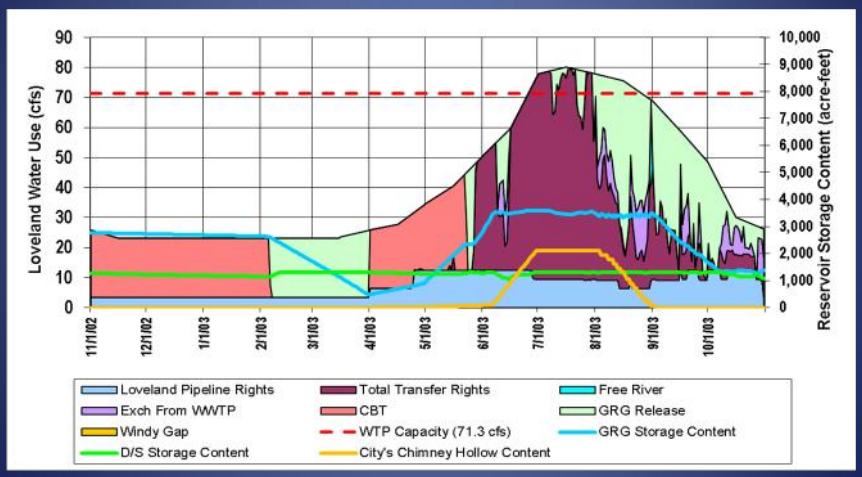
Yield Model Results

- Simulated Loveland Water Supply - 2003



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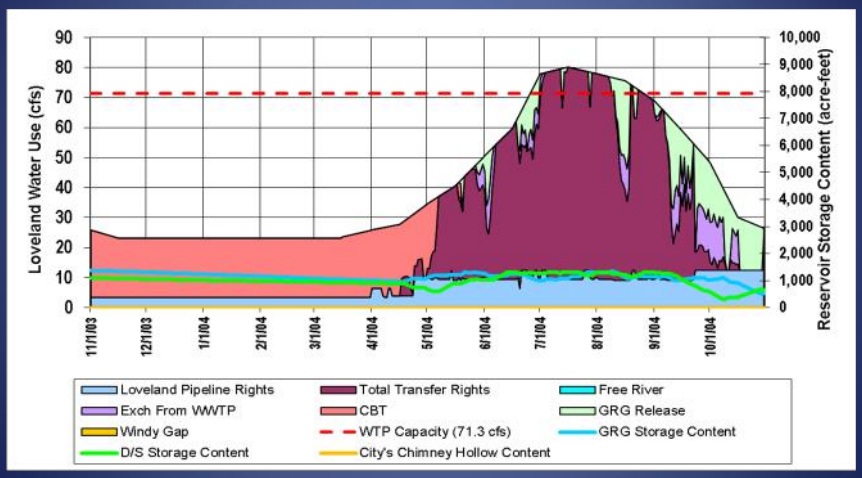
Yield Model Results

- Simulated Loveland Water Supply - 2004



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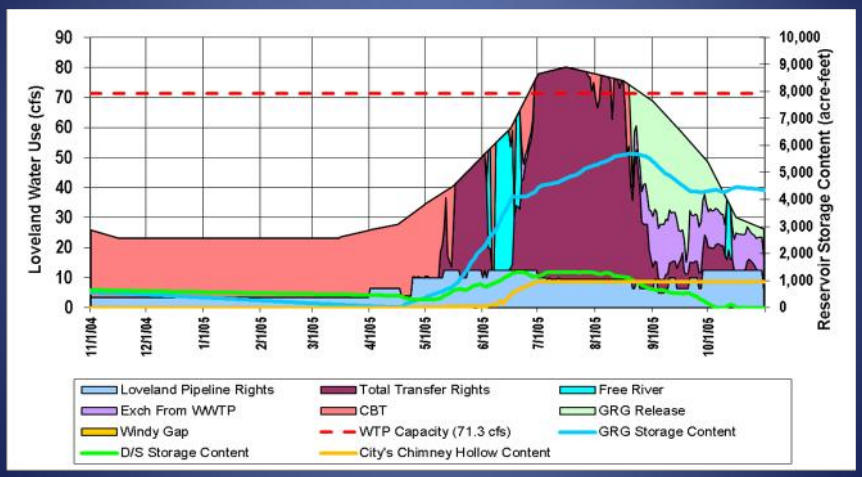
Yield Model Results

- Simulated Loveland Water Supply - 2005



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26

Selected Factors that Affect Firm Yield

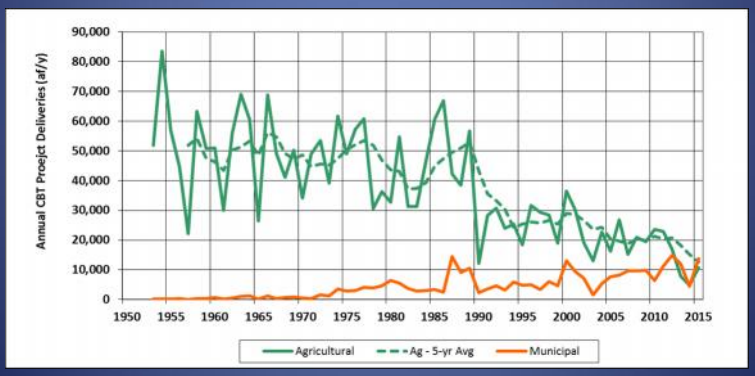
- What Can Affect the Firm Yield?
  - Out of Loveland's Control
    - In priority yields of Loveland's individual water sources
    - Fluctuations in river flows (affects exchange potential)
    - Competing exchanges by others
    - Droughts more severe than during study period (e.g., from climate change)
  - Within Loveland's Control
    - Additional participation in WGFP
    - Additional supplies (e.g., ditch shares or transmountain)
    - Additional storage capacity

Draft

27

Yield Model Results

- Transmountain Water Deliveries
  - The presence of transmountain deliveries to agricultural users in the Big Thompson River enhances the river exchange potential.
  - Reductions in CBT delivery to agriculture reduces exchange potential.



Data from Northern Colorado Water Conservancy District

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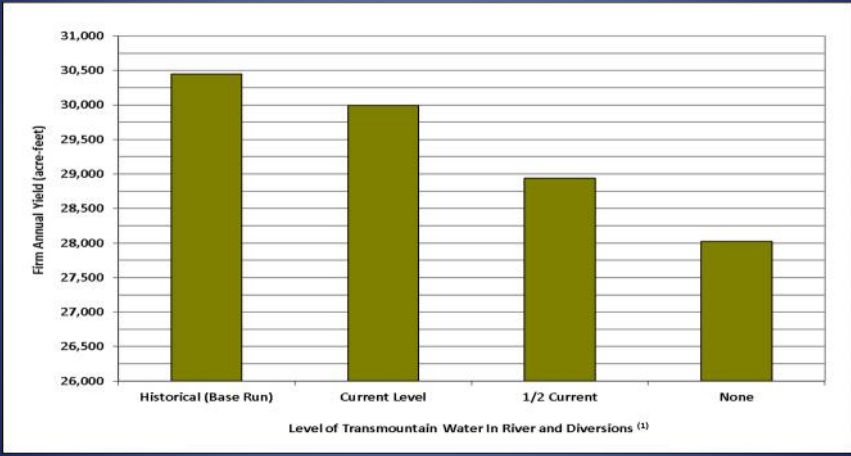
Yield Model Results

- Firm Yield vs. Transmountain Water Supply



[1] Exchange potential adjusted to remove all or portions of the reported historical transmountain water deliveries from the streamflow and diversion records.

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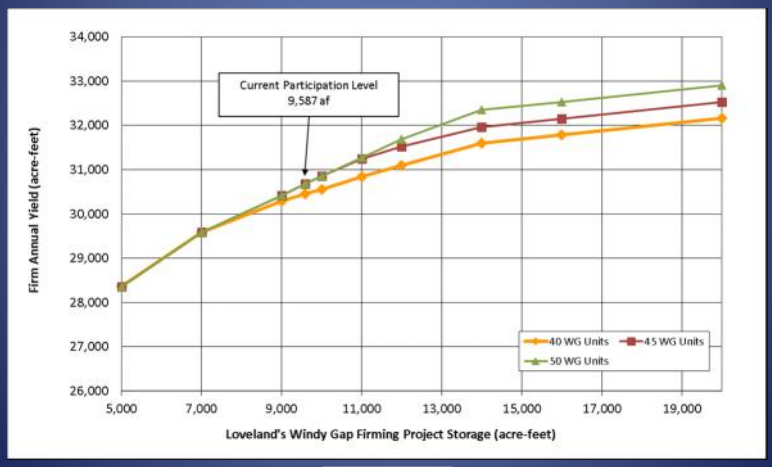
Yield Model Results

- Increased Firm Yield from Windy Gap Firming Project
  - Loveland's current ownership is 40 WG units



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Yield Model Results

- Windy Gap Project Yield Notes:
  - Windy Gap has no firm historical yield as a stand-alone supply.
  - However, combined with Loveland's other water sources it adds firm yield by increasing Loveland's carryover storage going into the critical drought period.
  - Additional units do not increase firm yield at lower participation levels because City's space in Chimney Hollow Reservoir is full at the beginning of the drought period and there is no space for additional units to be stored.

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Yield Model Results

- Firm Yield of Additional Supplies/Storage
  - Procedure
    - Irrigation Company or Transmountain Sources - Add 500 af/y of average annual yield of each irrigation company or transmountain source to the City's existing supply.

  and/or

    - Storage – Add storage capacity (upstream or downstream).
    - Determine the increase in demand that can be satisfied every year with the additional supply/storage. This increase in demand represents the incremental firm yield provided by the additional supply/storage.
    - Convert results to unit figures (e.g., firm yield per share)

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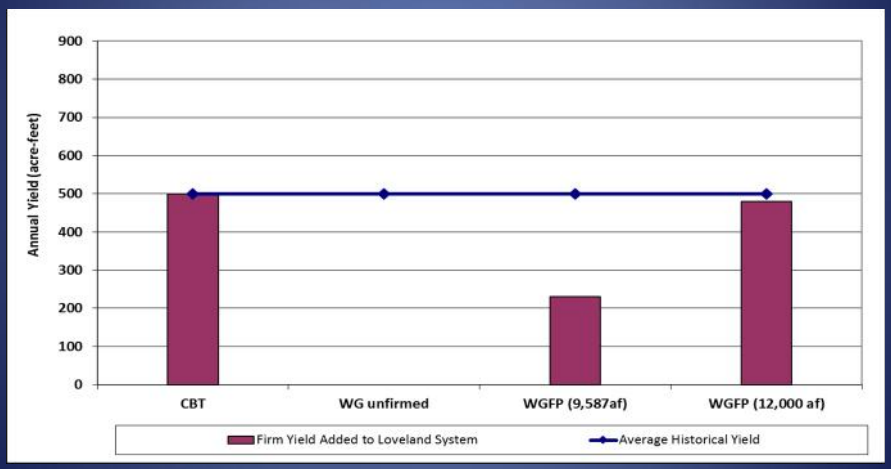
Yield Model Results

- Add'l Firm Yield from 500 ac-ft of Average Transmountain Supply



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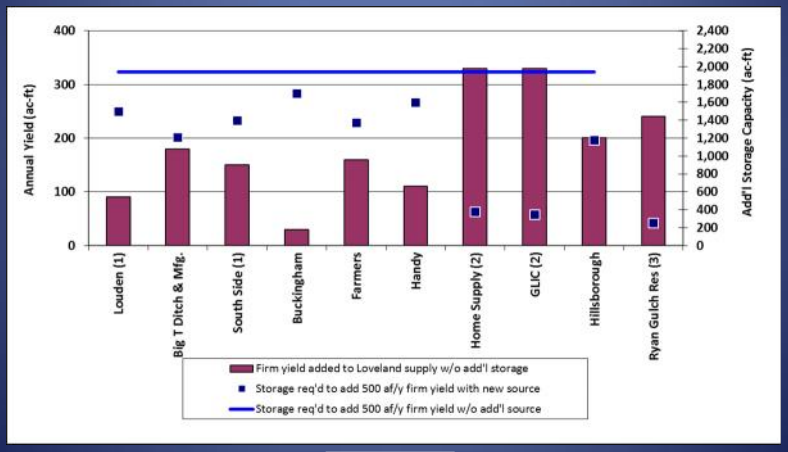
Yield Model Results

- Storage Required to Firm 500 af/y Average Irrigation Co. Supply
- Additional storage required to add 500 acre-feet of firm yield



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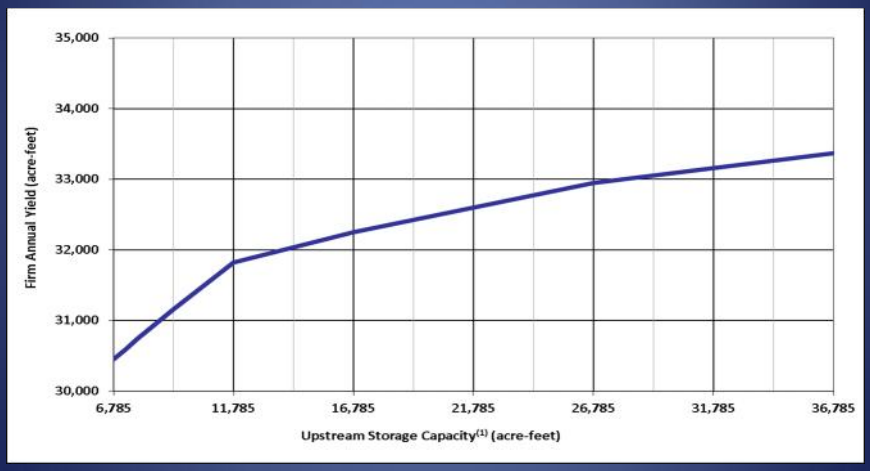
Yield Model Results

- Firm Yield vs. Upstream Storage (GRG Reservoir)



[1] Including 6,785 af in Green Ridge Glade Reservoir

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Yield Model Results

- Summary of Incremental Firm Yield Analysis

Water Source	Added Supply	Total Yield of Additional Supply: Ave Historical Yield (af/y)	Total Yield of Additional Supply: Firm Yield (af/y)	Unit Yield (e.g., yield per share): Unit Ave Historical Yield (af/y)	Unit Yield (e.g., yield per share): Unit Firm Yield (af/y)	Storage to Firm 500 AF	Firming Ratio
(1) **Additional Ditch Supply (shares or inches)**							
Louden	41.962	500	90	11.91	2.14	1,500	3.0
Big T Ditch & Mfg.	2.644	500	180	189.09	68.07	1,210	2.4
South Side	104.409	500	150	4.79	1.44	1,440	2.9
Barnes	151.000	500		3.31	0.00		
Chubbuck	172.337	500		2.90	0.00		
George Rist	86.789	500	30	5.76	0.35	1,700	3.4
Farmers	7.817	500	160	63.97	20.47	1,370	2.7
Handy	55.202	500	110	9.06	1.99	1,600	3.2
Home Supply	50.310	500	330	9.94	6.56	680	1.4
GLIC	58.423	500	330	8.56	5.65	350	0.7
Hillsborough	4.594	500	200	108.84	43.53	1,260	2.5
Ryan Gulch Res	100%	320	240	320.00	240.00	310	1.0
(1) **Additional Transmountain Supply (units)**							
CBT	668.1	500	610	0.75	0.91		
WG Unfirmed	6.98	500	0	71.63	0.00		
WGFP (9,587) (4)	5.67	500	230	88.18	40.56		
WGFP (12,000) (4)	5.67	500	480	88.18	84.66		
(2) **Additional Storage Capacity (af)**					Firming Ratio(3)		
Upstream	1,000	--	290	--	3.4		

Notes:
(1) Increase in Loveland's current firm yield resulting from addition of 500 af/y of average annual yield.
(2) Increase in Loveland's current firm yield resulting from addition of upstream storage.
(3) Firming ratio computed as the increased storage capacity divided by the firm yield.
(4) Based on Loveland participation in the Windy Gap Firming Project (WGFP) at 9,587 and 12,000 af of East Slope storage.

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Conclusions and Recommendations

- Windy Gap Firming Project – Participation in the Windy Gap Firming Project will increase the firm yield of the City's water supply.
- CBT Units – Acquisition of CBT units is effective in increasing the City's firm yield.
- Windy Gap Units – Acquisition of Windy Gap units in conjunction with increased Windy Gap Firming Project Participation increases the City's firm yield.
- Ditch Shares – The additional firm yield from acquisition of additional ditch shares with junior priorities is marginal, especially without more storage.
- Storage – The recently acquired Kaufman Pit will increase the City's firm yield. Additional storage in an upstream location would also increase the firm yield.
- Alternate Operations – Alternate ways of operating some of the City's existing water supplies can affect the firm yield (e.g. changing the order of water source use).

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Conclusions and Recommendations

- Drought Policy - Loveland should continue its policy of maintaining a water supply that is capable of withstanding a 100-year drought. However, the City should consider refining this policy to require that planning be based on a study period that includes the droughts of the 1970's and 2000's to avoid uncertainty regarding how to define the 100-year drought.
- Use of Yield Model - The City should use the Loveland Water Supply Yield Model as a planning tool to develop water acquisition strategies to meet its future water demands.
- Water Conservation – The incremental benefits of water conservation measures on Loveland's demand are anticipated to decrease over time, as water users become more efficient overall.

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Discussion of Yield Analysis

- Questions or Comments?

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LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 3
MEETING DATE: 8/29/2018
SUBMITTED BY: Joe Bernosky
STAFF TITLE: Director

ITEM TITLE:

Commission & Council Report

SUMMARY:

Discuss events that the Loveland Utility Commission Board members attended, special topics and any City Council items related to the Water and Power Department from the past month.

- City Council Report

RECOMMENDATION:

Commission/Council report only.

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LOVELAND UTILITIES COMMISSION

AGENDA ITEM: 4
MEETING DATE: 8/29/2018
SUBMITTED BY: Joe Bernosky
STAFF TITLE: Director

ITEM TITLE:
Director's Report

GENERAL & PREVIOUS LUC MEETING FOLLOW UP ITEMS:

EVENTS:
Please note the following events that LUC members may wish to attend:

Northern Water Tours: Northern Water will conduct full-day tours of the Colorado-Big Thompson and Windy Gap projects again this summer. Northern Water is sponsoring two East Slope tours that highlight our conservation activities, water operations and proposed storage projects. The two West Slope tours travel through Rocky Mountain National Park to the collection facilities for the C-BT and Windy Gap projects. There is no charge for the tours and a box lunch is provided. All tours leave from and return to Northern Water's headquarters in Berthoud. If you would like to attend, please register online at www.northernwater.org. Click the Calendar link at top of the Home page. On the calendar, choose one of the tour dates listed below and follow theregistration instructions. If you are unable to register online, please call the registration line at 970-622-2220.

The dates and approximate times for the remaining 2018 tours are:

East Slope (7:30 a.m. – 4:30 p.m.)
Tuesday, Sept. 25, 2018

RMSAWWA/RMWEA Joint Annual Conference: The 2018 RMSAWWA/RMWEA Joint Annual Conference will be held in Denver, Colorado from September 16 - 19, 2018. Join your peers and colleagues in the water industry for 4 days of exhibits, technical presentations and networking opportunities. Dedicated volunteers from the Rocky Mountain Section of the American Water Works Association (RMSAWWA) and Rocky Mountain Water Environment Association (RMWEA) have worked countless hours to make this year's conference a tremendous success. This year's conference features more than 120 exhibitor booths, technical sessions jam-packed with the most up-to-date information and numerous opportunities to network with hundreds of representatives of the Rocky Mountain water industry. The theme of the 2018 RMWEA/RMSAWWA Joint Annual Conference Technical Program will be: What's Brewing in Rocky Mountain Water? Contact Courtney Whittet for registration information.

Rawhide Tour: You are cordially invited to tour Rawhide Energy Station during its once every-three-year maintenance shutdown. This event will take place on October 11, 10:30 – 3:00. Attendees will leave the Service Center at 10:30, have lunch at Rawhide, and then tour the plant. City council will also be attending. Transportation will be provided. Please RSVP to Kathy Gross, at Kathy.Gross@cityofloveland.org or 970-962-3543.

Water Literate Leaders of Northern Colorado: The Colorado Water Institute, in cooperation with Community Foundation of Northern Colorado has launched a non-partisan Water Literate Leaders of Northern Colorado program. Modeled after highly successful programs such as Leadership Northern Colorado, this program is for those who hold or aspire to political office, or other roles, including boards and commissions, which can impact regional water policy. Dates: September 13, October 11, November 8, December 13 of 2018, and January 10, February 14, March 14, April 11, May 9 of 2019, 8 am—1 pm including lunch at Community Foundation offices, 4745 Wheaton Drive, Fort Collins. Class fee of $150, kept low thanks to generous

support from City of Greeley, City of Fort Collins, Town of Windsor, and City of Loveland. Maximum of 20 participants. For more information and to apply, visit http://waterliterateleaders.colostate.edu/

OPERATIONS:

Water Operations:

Wastewater Hydraulic Model: The City of Loveland maintains a hydraulic model that runs on the computer and simulates the routing of wastewater throughout the collection system and to the wastewater treatment plant. The model is a complex tool that helps the City better operate the system and also plan for future infrastructure and demands. Due to changes in the system the City recently interviewed professional engineering firms that regularly build and update similar models. Following interviews, the City selected the engineering consulting firm HDR to assist with the latest update. Throughout the remainder of 2018 and into the Spring of 2019 the City and HDR will update the wastewater model in advance of a wastewater master plan update planned for 2019.

Interchange Lift Station: The Interchange Lift Station (wastewater) project located south of the Promenade Shops is 99.9% complete. The contractor, Integrated Water Services (IWS) has a small punch list of items to complete prior to completion. Presently, in mid-July the first customer is being tied into the system. Adjacent to the lift station will be a new 100-room hotel, Courtyard at Centerra, which will also drain to the lift station upon its opening in the fall of 2018.

Raw Water Bypass: Included in the Namaqua Hills Pump Station Improvement Project is the installation of a raw water bypass at the Water Treatment Plant (WTP). This work includes the installation of a raw water bypass pipe, valve, meter, and appurtenances to allow raw water to bypass the WTP and flow back into the Big Thompson River. This bypass project will allow the City to meet augmentation requirements. The City has contracted with Lillard and Clark to perform this work in the sleeve valve vault structure at the WTP. The work is almost complete minus a few electrical items.

30" Morning Drive Waterline Extension: The City continues to see increased water demands as evidenced in the WTP production records, longer pump run times, and fluctuating tank levels. The City's gravity pressure zone is fed from two water storage tanks. One of these water tanks, the 4 MG 29th St. water tank also serves as the suction source of water for the City's largest pressure zone (P1). Additionally, in the coming years it will also serve as the suction source of water for the P2 pressure zone. Given that a great deal of the City's water demand is met through this water tank and nearby pump station it is important that a consistent water supply network be in place. Therefore, a 30" diameter master planned waterline is to be extended from near the Morning Drive Pump Station to the 29th Street Tank. This waterline will provide redundancy as well as be utilized to meet high flow demand. The waterline along with numerous valves and fittings are encompassed in the Morning Drive 30" Waterline Extension Project. The City contracted with Connell Resources to install this water main. Mobilization and construction is scheduled to start on August 20, 2018.

Modulating Valve Vault Rehabilitation Project: The City of Loveland's water is conveyed from the WTP to the City through three different transmission waterlines. These waterlines enter a series of vaults west of the City where flow is controlled through a valve operated by WTP staff. This valve and others, within the vault along with associated piping, is in need of rehabilitation to ensure years of reliability and also to address safety concerns. After a study in 2017, the City has contracted with Stantec Consulting to complete a final design in 2018. The final design replaces valves, some of which are over 70 years old, simplifies piping arrangements, makes electrical upgrades, and replaces an aging vault lid. Construction of the project will begin in early 2019 and is anticipated to cost approximately $800,000.

Digester Gas Sampling: The wastewater treatment plant uses a process called "anaerobic digestion" to help with the cleanup of wastewater sludge. Anaerobic digestion happens due to a collection of biological processes in which microorganisms break down biodegradable material in the absence of oxygen. When the microorganisms break down the organic matter (sludge), it causes natural gases to release. The types of gases released are methane (CH4), carbon dioxide (CO2), and hydrogen sulfide (H2S). H2S gas is important to monitor because it is an extreme health concern that may cause death at certain

concentrations and it can also cause serious corrosion of equipment associated with the digestion process.

To help reduce the amount of H2S gas being released by the anaerobic digesters at the wastewater treatment plant, the addition of a ferric chloride feeding system will be added during the current expansion project. The water quality lab has begun collecting H2S gas samples from the current anaerobic digesters 1 and 2. By doing so, the lab will have background data collected prior to the addition of the ferric chloride feeding system. Once the ferric chloride feeding system is online, the lab will then be able to help determine the proper dosing levels of ferric chloride to help reduce H2S gas that is released.

Power Operations:

Line Crews –

Projects: Over the past two months, the Line Crews have been doing multiple projects throughout Loveland. Several highlights include replacement of the primary underground residential primary cable in several neighborhoods, which include:

- Madison Avenue between 6th and 7th Street – single-phase primary replacement working with Colorado Bore and GE Construction.
- 3rd Street between Lori and Blossom Drives – single-phase primary replacement working with Colorado Bore.
- Cheyenne Avenue and E 16th Street – single-phase primary replacement. Primary and transformers moved from backyard to front yards for improved crew access.
- Cheyenne Avenue between E. 16th Street and E. 18th Street. Backyard secondary main line and pedestal replacements. System improvement and upgrade due to tree growth over and around old secondary cables and pedestals. Crews worked with Colorado Bore on this project.

Boise Avenue/Eisenhower: Slow progress is being made on the underground primary system rebuild associated with the storm drain infrastructure being installed from Eisenhower Boulevard to Boise Avenue. This work has required continued support by the line crew assigned to this project, due to the complexity of the work for the storm drain installation.

911 Circuit Rebuild: Crews continue to move forward on the 911 canyon circuit rebuild. Construction from West Substation to the top of Ute Pass has pretty much been completed. Crews are still working to complete the conductor replacement over the west side of the pass. The last steel pole over Ute Pass was removed by helicopter in mid-June as crews installed 10 new poles, by helicopter, working in joint operations with Power Contracting.

Electric Metering –

Downtown Meters: After many months of waiting the Electric Metering Group has finally been able to install and energize a total of 173 electric meters at the new downtown Foundry commercial development. During this long building process the metering group has been very involved with all reviews that were specfic to power and electric metering. Many revisions had to be made to ensure that everything being installed was consistant with the City of Lovelands Requirements for Electric Service Standards. The Foundry commercial project has been one of the largest meter deployments within a two square block radius in City history. With so many underground electricity infrastructure needs, it will be reflected upon as a big accomplishment.

Lightning Strike/Rebuild: With all of the thunderstorms in the earlier part of July, the Electric Metering Group was tasked with determining how to rebuild a primary metering installation that was hit with lightning within the Big Thompson Canyon west of Loveland. After being hit with 100,000+ volts of electricity, the metering equipment was no longer functional which results in not being able to accurately calculate the energy usage that the metering equipment was associated with. The metering group decided to rebuild the electric service using secondary metering equipment and to abandon the primary setup as it was dated and replacement parts would have been special order and require a lengthy lead-time.

UTILITY APPLICATION SERVICES:

Job Cost Accounting Software: Innoprise will be onsite 8/21 to demo their revamped Work Management System.

Meter Data Management System (MDMS): The RFP was released on 7/16.We are excited to see the responses!

Servers: We are replacing two of our existing servers. ASWP2 and DBWP2. ASWP2 is our web service server which provides web based maps, and DBWP2 is primarily for our WIMS application. These are at end of life.

Project & Request Tracking: One of the Technology Roadmap recommendations was to establish a tracking system for our team's work. Since the beginning of 2017 we have configured Cityworks for this purpose. The big projects, tracked as work orders, are reported to, be approved and prioritized by our UAS team. There are currently 27 approved projects in our queue. 17 of which currently have the status of In Progress. The smaller, maintenance-type jobs are tracked as service requests. So far this year we have completed 96 requests within an average of 6.62 days. Theseare the numbers broken down by type:

- Application Requests – 2.26 days
- Application Support – 11.59 days
- Data Requests – 7.94 days
- Hardware Support – 11.22 days
- Map Requests – 5.42 days
- Report Requests – 1.33 days

UTILITY ACCOUNTING:

Power Demand and Energy Up Again – We saw a significant increase in peak demand and an increase in power usage in June compared to a year ago, and year to date, that is the story as well. Loveland's share of PRPA's peak was 152,452 kW, up 5.1% from June of last year, and up an impressive 10.2% from the average of the last 5 years peaks in June. The 152,452 kW slightly eclipsed the previous all-time peak demand, which was set in July of 2016 at 150,441 kW. Purchased energy was up 3.0% vs. June of 2017. Overall, in comparing the year-to-date total of the January-June monthly peak demands to the same period in 2017, this year is up 5.6%, and purchased energy is up 4.2% year-to-date

Purchased Power Expense Ahead vs. Budget – As was mentioned in the update above, a new all-time-high monthly electric peak occurred in June, and that was on the heels of May peak demand being more than 20% higher than the average peaks of the past 5 Mays. These two monthly peaks have contributed mightily to the 5.6% increase in the year-to-date billed peak total compared to the same period of last year. The 5.6% increase has led to purchased power expense being over budget by $557,000. We have received word from PRPA that a new all-time-high peak demand was established in July, so this budget overrun will likely increase, but will hopefully be offset by higher power sales.

Water Sales Update – With one month of summer usage now accounted for, the average water usage per customer has seen a modest uptick from recent years. This year's YTD average through June is 7,906 gallons per customer. The 7,906 gallons is 4.1% higher than the June YTD average usage of the past five years. With this good start, water sales are ahead of budget by $146,000 through June.

CUSTOMER RELATIONS:

Slow the Flow: Slow the Flow, LWP's irrigation inspection program kicked off last month. Appointments are free to residents and HOAs with in ground sprinkler systems and available on a first come first serve basis. Additional information and appointments can be found by visiting www.cityofloveland.org/departments/water-and-power/residential/conserve/sprinkler-inspections

Fall Garden In A Box: LWP is offering a small number of fall gardens, in addition to our summer offering. Gardens are on sale now and available on a first come first serve basis. Additional information and purchasing of gardens can be found at www.resourcecentral.org/gardens/shop/.

Broadband Education and Outreach: Both internal and external broadband communications are underway. Staff has been busy answering questions from the community, and identifying and executing opportunities for engagement. Eighteen events/speaking engagements have been completed and several more already scheduled. We continue to add to the community engagement platform where visitors can find information, leave comments, ask questions and participate in speed tests. This month we also completed two Let's Talk Tuesday Facebook Q&A with one being co-hosted by Loveland Water and Power and Facebook group I Love Loveland.

Public Outreach for Projects: Staff is planning the following public outreach projects:

- Continuing to populate our webpage, social media sites and media releases for the upcoming outages in the canyon
- Handling customer calls and concerns
- Coordinating with Public Works to design a campaign for the Boyd Sewer Project and the subsequent road closure of Boise Avenue which will include a Facebook live visit with Carlos Medina, Project Manager, to further explain the project to the public.

Development Review Team Marketing and Customer Experience: Staff is working on presentations for both the marketing and customer experience teams for the scrub meeting at the DRT with management staff on July 25.

Selling Energy Efficiency for Maximum Impact Series: Staff has been attending the Selling Energy Efficiency for Maximum Impact Series hosted by Franklin Energy and Platte River Power Authority. This training helps facility managers, contractors, manufacturers and utility representatives understand what factors play a role in the decision-making process and how to influence key stakeholders to learn about the approaches to marketing and "selling" efficient products and equipment.

Home Supply Celebration: LWP will be hosting a celebration luncheon for City Council, LUC, staff and Home Supply Representatives at the Loveland water treatment plant on July 27, 2018, at 11 a.m. The lunch will be to celebrate the renewal of our partnership with the Home Supply Ditch Company.

Efficiency Works Business LED Lighting Incentives: The Efficiency Works Business Program offers incentives to install Light Emitting Diode (LED) technology to replace older, inefficient lighting systems or to upgrade lighting systems in new construction. After assessing current market conditions, Platte River Power Authority and partnering cities will be working to update our lighting rebates. We will also offer a 25% bonus rebate on new lighting fixtures upgraded to LED, when replacing existing fixtures.

Facebook Insights (July 2018):

- Reach (unique users) – 11,611 people
- Engagement (unique users) – 1,034 people
- Impressions (total count) – 35,994 people

Media:

- The Reporter Herald – July, 18, 2018: Loveland City Council approves Home Supply dam agreement
- The Reporter Herald – July 20, 2018: Loveland cuts spending in face of revenue shortfall
- The Denver Post – July 20, 2018: Loveland cuts spending in face of revenue shortfall
- The Reporter Herald – July 20, 2018: Impact statement released on Northern Colorado reservoir project
- The Reporter Herald – July 26, 2018: Broken water main to close lane on 29th Street until next week
- The Reporter Herald – July 27, 2018: Water managers contemplate future of Loveland's water supply
- The Coloradoan – July 30, 2018: Fort Collins staff crafting goal for 100% renewable electricity by 2030
- The Reporter Herald – July 30, 2018: Loveland: 29th Street water leak likely fixed by Friday
- The Reporter Herald – August 14, 2018: Summer utility bills surprise some Loveland customers, despite efforts to conserve