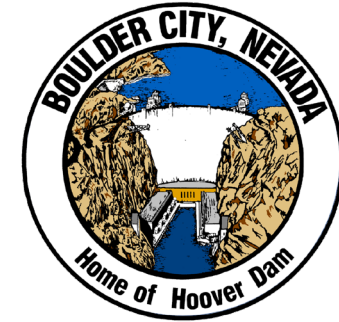


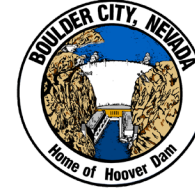
CITY OF BOULDER CITY

UTILITIES DEPARTMENT

DRAFT INTEGRATED RESOURCES PLAN, 12/7/2022



**2023 - 2027 ELECTRIC UTILITY
INTEGRATED RESOURCE PLAN
DRAFT DOCUMENT FOR PUBLIC REVIEW AND COMMENT**



Presented at

Utility Advisory Committee
Regular Public Meeting

December 7, 2022

Presented by

Joe Stubitz, P.E.

Utilities Director

WHAT? WHY?



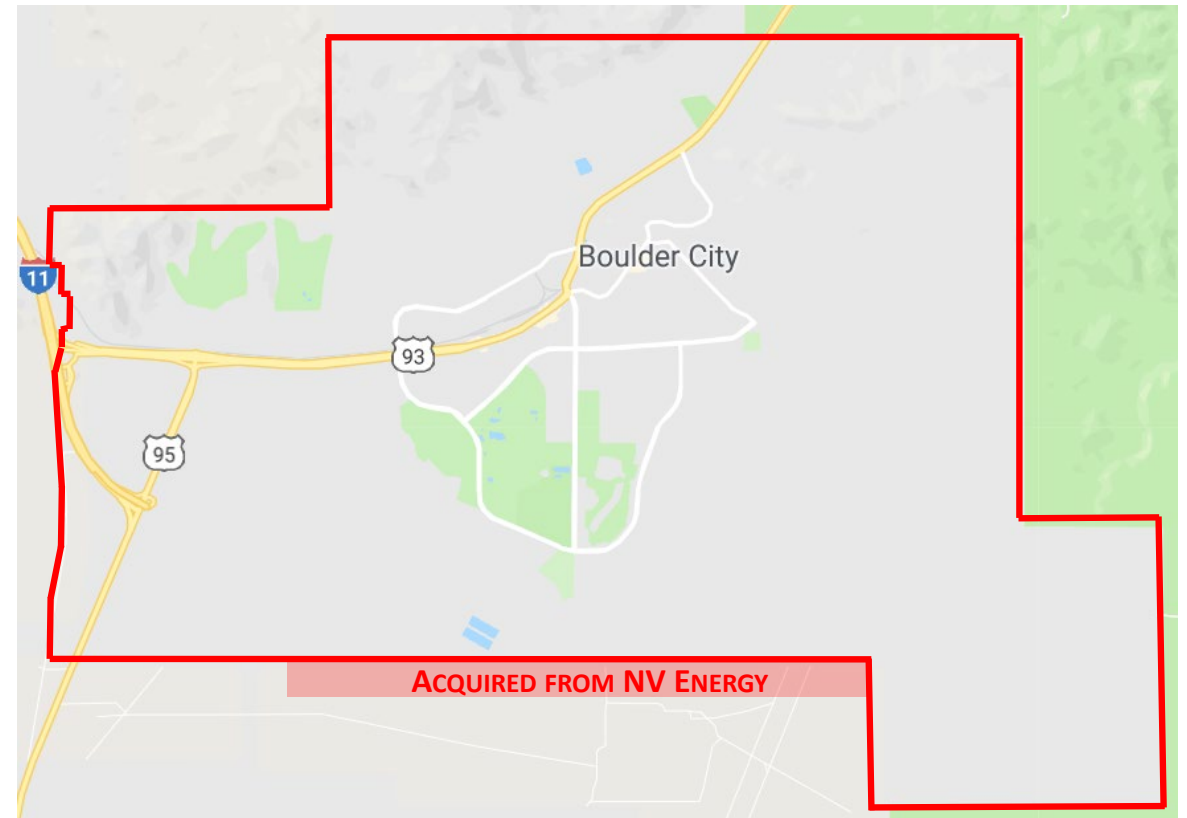
- Integrated resource planning is a planning process for new energy resources that evaluates the full range of alternatives, including:
 - Supply-side resources – generation, purchased power contracts
 - Demand-side resources – energy efficiency and other programs that reduce the need to acquire supply-side resources

As a recipient of federal hydro-power, the City must comply with the requirements of the EPAMP (Energy Planning and Management Program) law, including public participation in the IRP process.

UTILITY OVERVIEW



Serves 35 of 207 square miles of the incorporated area of Boulder City.
Subject to the jurisdiction of the Boulder City Council rather than the Public Utilities Commission of Nevada
Does not own or operate generation

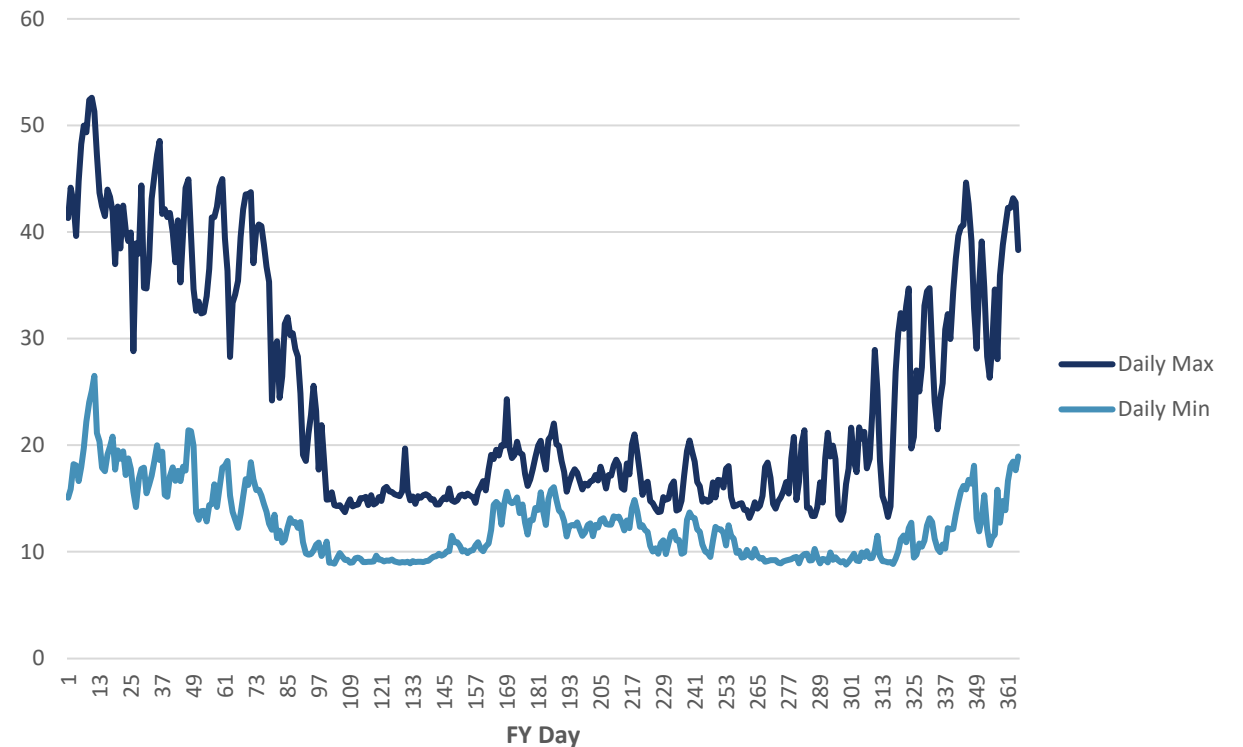


UTILITY OVERVIEW

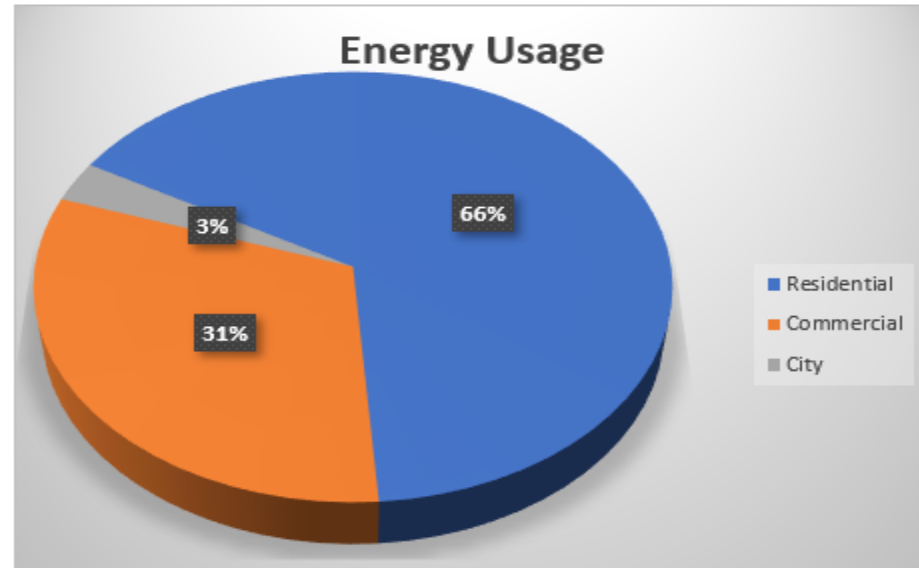
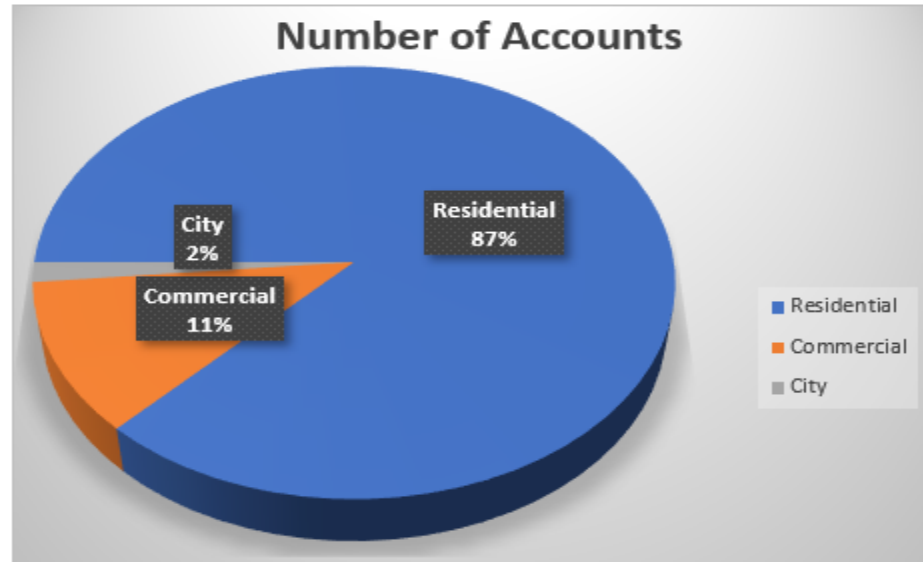


- Summer air conditioning load drives the City's peak demand.
- Peak demand is about 290% of Average for residential and about 200% of average for commercial

FY 21-22 Load Profile



OUR CUSTOMERS BY CATEGORY



121 (1.5%) of accounts
CITY
4,636 MWH (3% of energy sales)

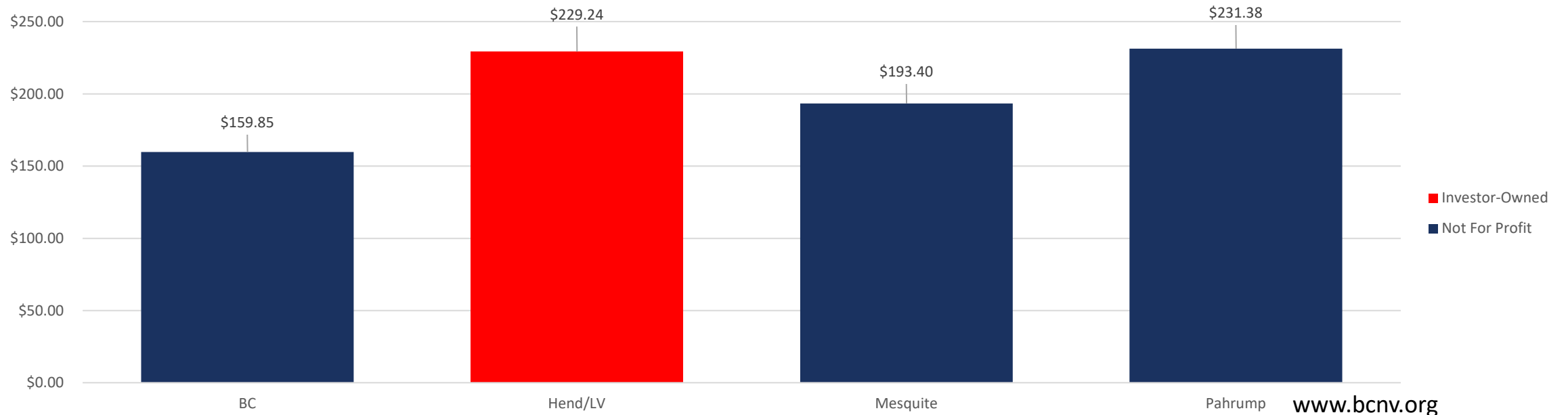
926 (11.4%) of accounts
COMMERCIAL
47,116 MWH (31% of energy sales)

7,088 (87%) of accounts
RESIDENTIAL
100,013 MWH (66% of energy sales)



COMPARISON OF POWER COSTS FOR A TYPICAL 1500 SF RESIDENCE

Average monthly cost of electric service
1,500 sf residence - average 1,643 kWh used per month



OUR CUSTOMERS BY RATE CLASS



Class	Description	Applies to	# Accts	Service Charge
RS	residential	single-family units	7097	\$10.00
RM	residential master-metered	five or more units	2	\$50.00
GS	general service	service where no other schedule applies	906	\$15.00
LGS	large general service	over 300 kW demand in 3 of last 12 months	6	\$50.00
TOU	time-of-use	over 500 kW demand in 3 of last 12 months	2	\$200.00
BCH	Boulder City Hospital	Boulder City Hospital	1	\$25.00
MUN	municipal	City of Boulder City	107	\$10.00
SL	sports field lighting	pole-mounted HID fixtures, minimum 10 kW	1	\$50.00
AL	area lighting	all customers	223	\$8.77-\$17.55
LL	landscape lighting irrigation control	HOAs and PUDs	7	\$8.77-\$17.55

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LOW-INCOME ENERGY ASSISTANCE

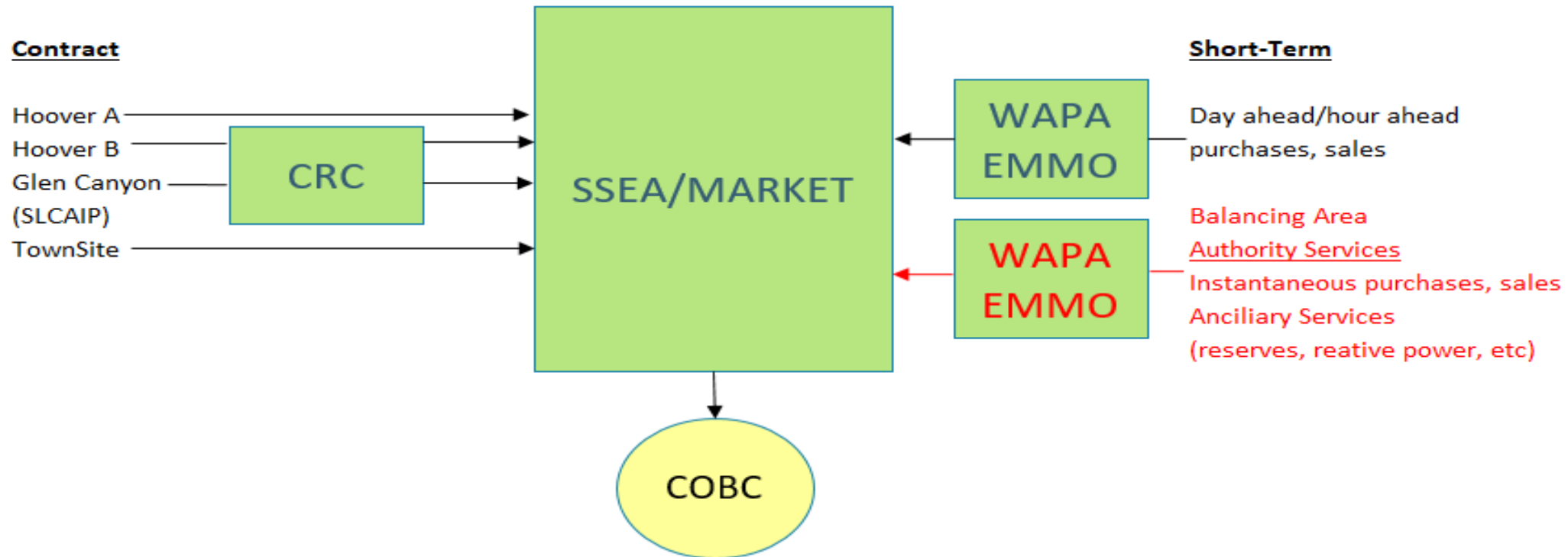
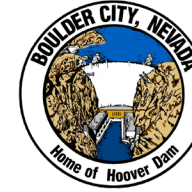
- State of Nevada
 - Main funding source: 0.0039% Universal Energy Charge (UEC)
 - Provided an average of \$533 per eligible household in SFY 2021
- Boulder City
 - 35% discount on monthly energy and service charge
 - In SFY 2021, COBC accounted for 5% energy sales of Nevada's non-profit utilities, but provided 65% of LIEA provided by those utilities

LIEA (Low Income Energy Assistance) Metrics – SFY21	Boulder City	Other NV non-profit utilities	Total	BC % Total
Total energy sales (Million \$)	\$16,284	\$276,000	\$292,284	5.6%
LIEA total provided (\$)	\$96,370	\$26,956	\$123,326	78.1%
LIEA customers assisted	207	10	217	95.4%

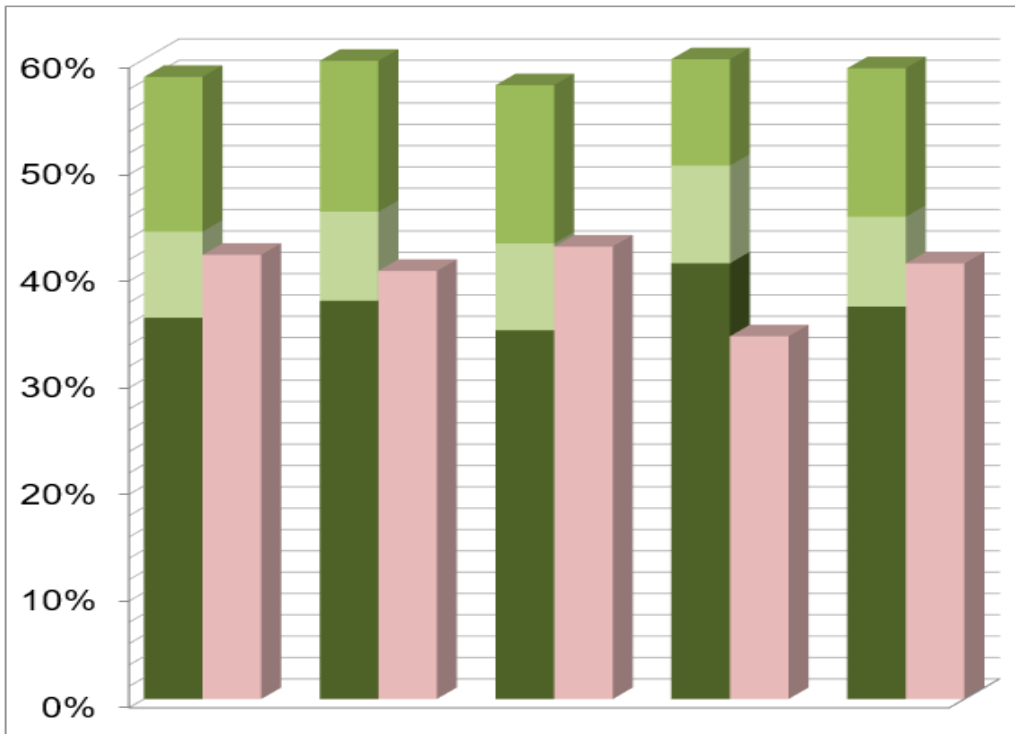
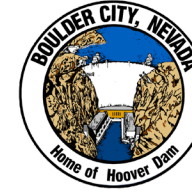
Description	Capacity	Expiration
Hoover Schedule A	20.0 MW	2067
Hoover Schedule B	8.5 MW	2067
SLCAIP	5.5 MW (S) 7.3 MW (W)	2057
Townsite Solar	5 MW	2052
Market Energy (SSEA)	Varies	Varies

EXISTING SUPPLY-SIDE RESOURCES

WHOLESALE POWER ACTIVITIES



ENERGY PURCHASES CY 2017-2021



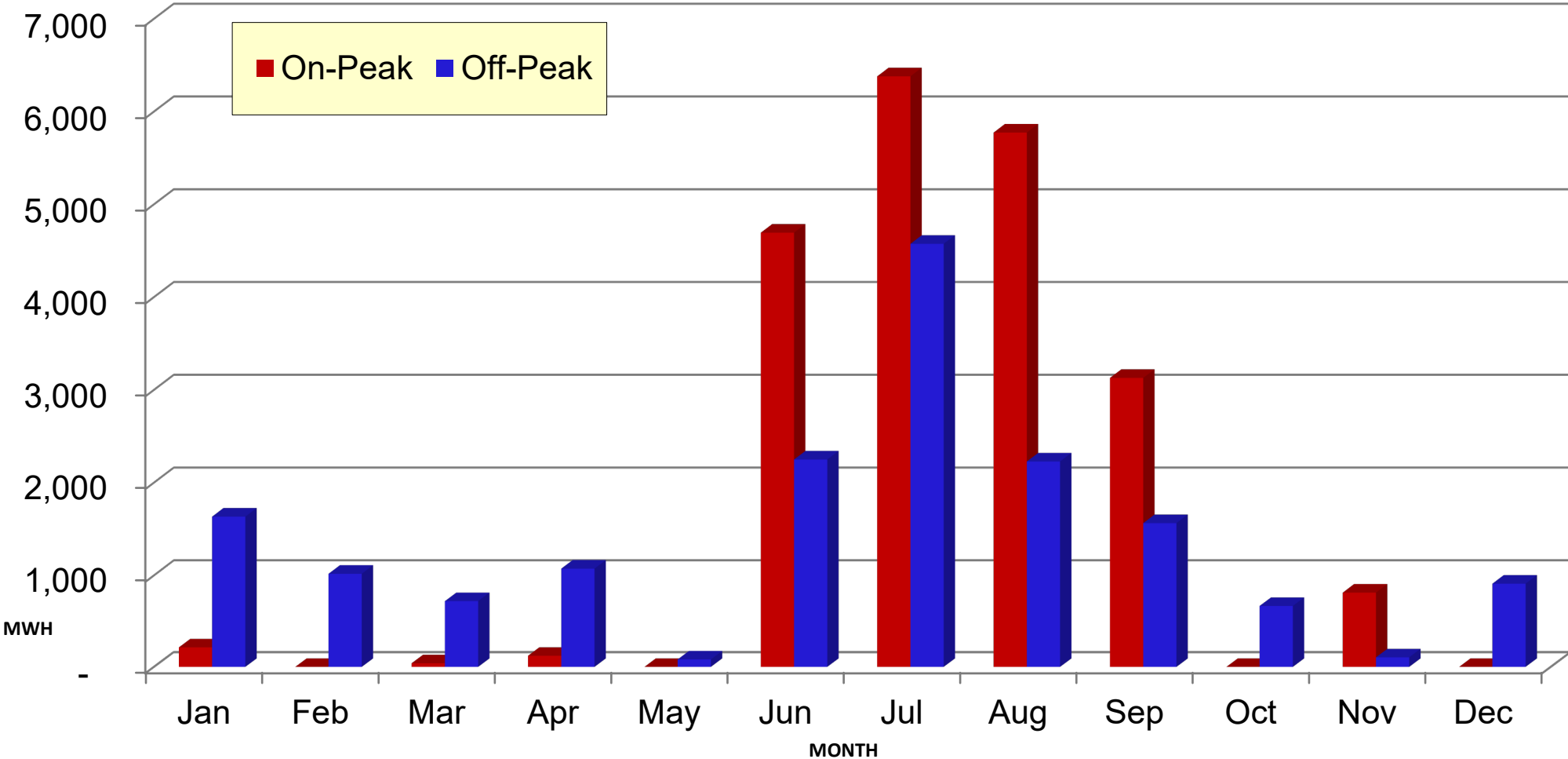
Energy Purchased (MWH)	Calendar Year				
	2017	2018	2019	2020	2021
Hoover A	58,241	60,597	53,546	58,861	58,017
Hoover B	13,150	13,537	12,627	13,191	13,272
SLCAIP	23,617	22,946	22,959	22,975	21,931
SSEA Market	67,850	65,125	65,707	48,990	64,375



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Forecasted SSEA Net Contracted MWH Purchased & Sold - 2023

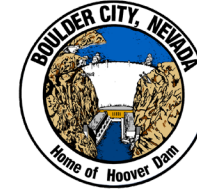


EXISTING DEMAND SIDE RESOURCES

- Tiered Rates
- Energy Efficiency Rebates
- Solar Net Metering

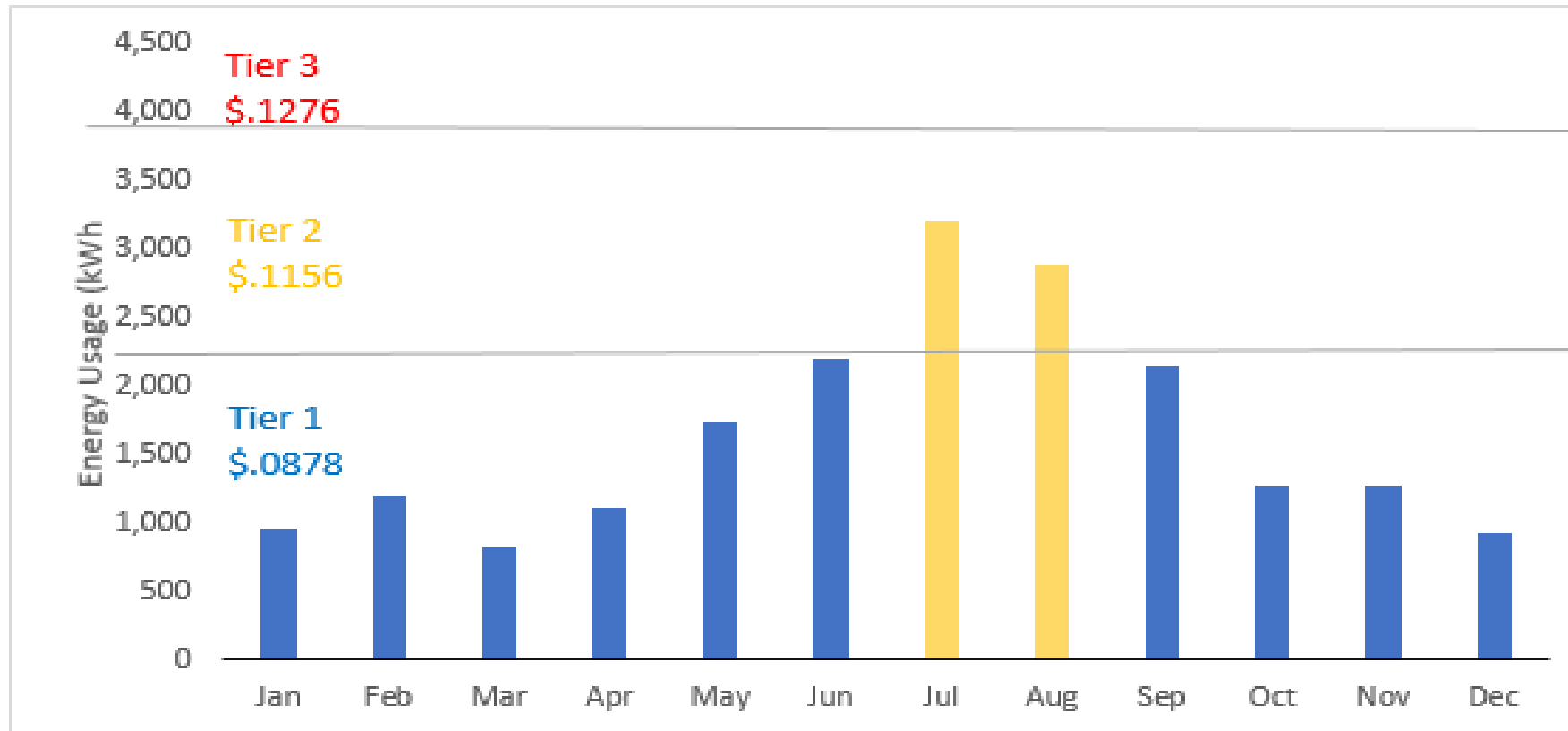
Net Meters	2017	2018	2019	2020	2021
Residential Meters	13	11	27	32	39
Commercial Meters	4	2	2	1	2
MWH Saved	682	808	1182	1089	1047

TIERED RATES

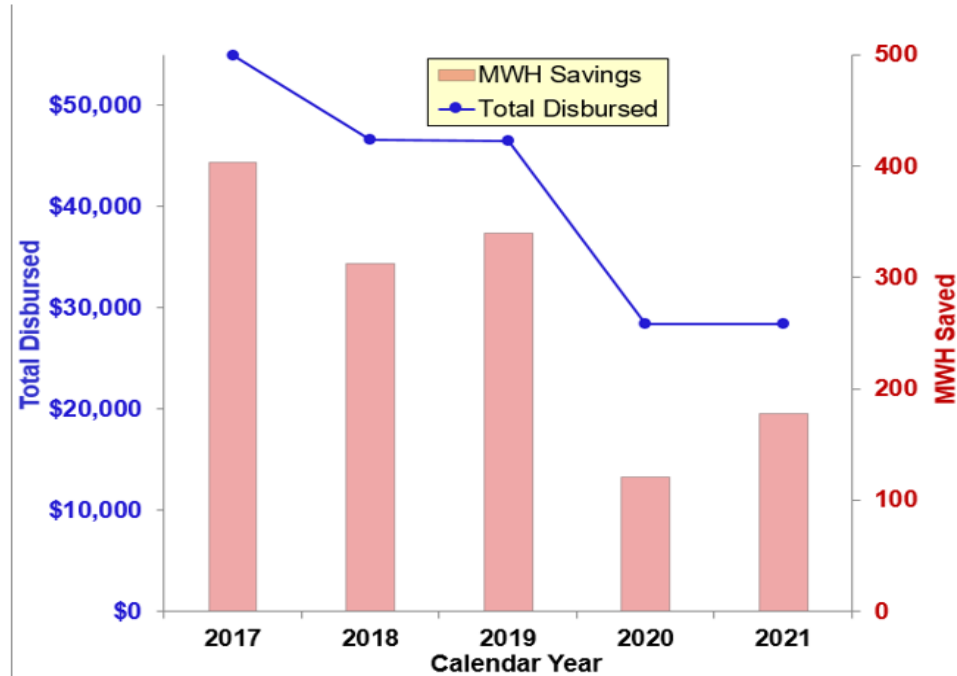
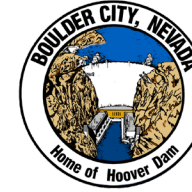


Rate Class	Applies to	Rate - ¢ per kWh	% of kWh sales in class
RS	1st 2000 kWh	8.78	90.7%
	2001-4000 kWh	11.56	7.20%
	kWh > 4000	12.76	2.10%
RM	All kWh	10.77	100%
GS	1st 3000 kWh	10.38	83.3%
	kWh > 3000	11.73	16.7%
LGS	All kWh	13.17	100%
TOU	Summer On-Peak	16.52	34.6%
	Summer Off-Peak	11.73	35.2%
	Non-Summer	13.17	30.2%

TIERED RATES



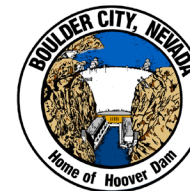
ENERGY EFFICIENCY REBATES CY 2017-2021



Calander Year	2017	2018	2019	2020	2021	Average
Number of Rebates	139	132	129	77	81	112
Total Disbursements	\$54,951	\$46,621	\$46,433	\$28,403	\$28,408	\$40,963
MWH Saved	403.5	312.5	339.4	120.6	177.7	270.7
MW Saved	1.28	0.16	0.17	0.06	0.09	0.35
\$/MWH	136.2	149.2	136.8	235.5	159.9	163.5



TRENDS AFFECTING RESOURCE NEEDS



Calendar Year	Population		Peak Demand		Energy Consumed	
	Est. (1)	Change	MW	Change	MWH	Change
2013	15,850		50.3		165,374.3	
2014	15,852	+0.0%	50.8	+1.0%	161,970.2	-2.1%
2015	16,011	+1.0%	49.7	-2.2%	166,220.0	+2.6%
2016	16,570	+3.5%	48.1	-3.3%	162,798.3	-2.1%
2017	16,508	-0.4%	49.2	+2.4%	159,389.2	-2.1%
2018	16,104	-2.4%	49.9	+1.3%	162,206.0	+1.8%
2019	16,398	+1.8%	47.4	-5.0%	154,841.0	-4.5%
2020	16,505	+0.7%	46.3	-2.3%	144,017.0	-7.0%
2021	16,410	-0.6%	50.8	+9.7%	157,596.0	+9.4%
2022	16,500	+0.5%	50.9	+0.4%	164,426.0	+4.3%
5-yr avg. annual change		+0.0%		+0.8%		+0.8%



LOAD FORECAST ASSUMPTIONS

Homes constructed 2023-2027	Growth Scenario		
	Low	Midrange	High
Currently approved subdivisions	0	0	0
Subdivisions not currently approved	0	50	100
Privately-owned pre-existing lots	15	25	35

- Commercial load growth (load addition in per cent of existing load) matches residential load growth.
- The existing trend of conservation and efficiency improvements (1.2% per year) will continue over the forecast period.



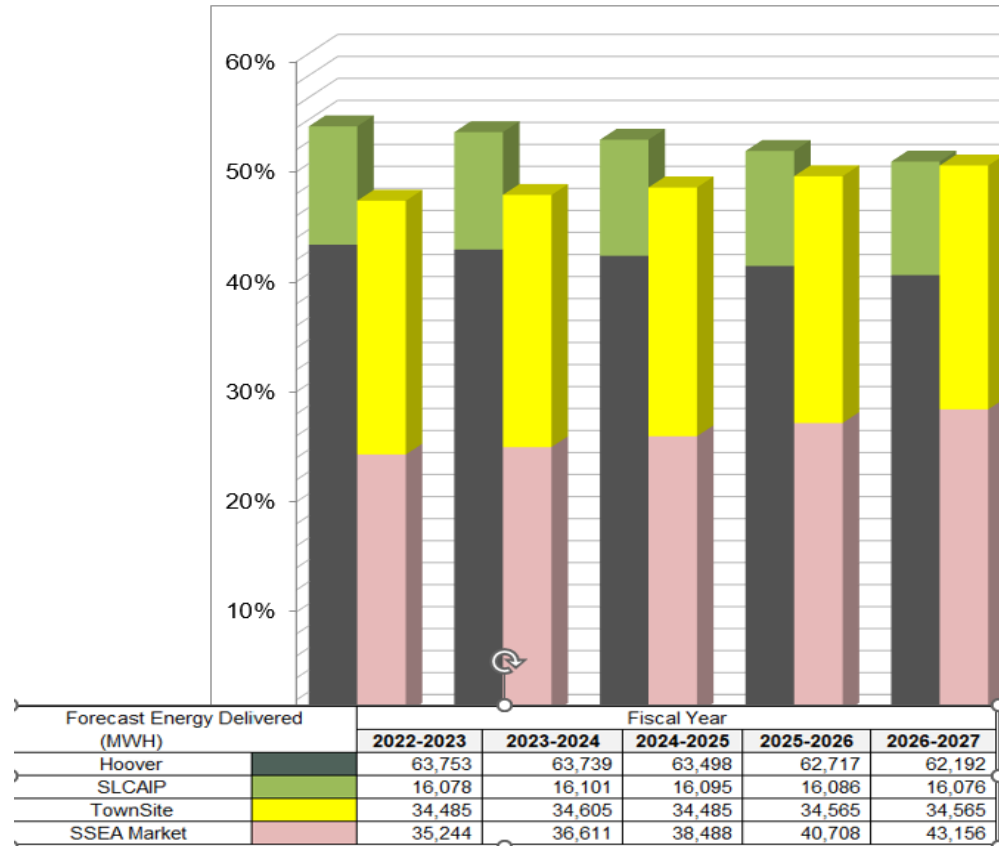
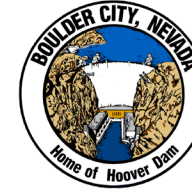
LOAD FORECAST

- The City's energy consumption is expected to grow between 0.0% and +1.0% per year over the next five years.
- Barring an unforeseen large load addition, energy consumption in the City will be less in CY 2023 than it was in CY 2021.

Five Year Forecast Energy Requirement (MWH)

Growth assumption	Low	→	High
Base year (2021) energy	157,596	157,596	157,596
Load addition	9,173	12,912	17,524
Conservation/efficiency (1.2%/yr.)	-9,456	-9,456	-9,456
Net load growth 2018-2022	-283	3,457	8,069
2023 Forecast	157,313	161,053	165,665
Annual growth rate % base year MWH	0.0%	0.4%	1.0%

FUTURE SUPPLY-SIDE RESOURCES



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ENVIRONMENTAL CONSIDERATIONS

- Environmental evaluation is not required for supply-side resources, as none are planned to be acquired during the five-year planning period.



- Environmental protection will be enhanced by COBC's:
 - Existing and planned demand-side resources.
 - Electric vehicles. 15 vehicles in the City fleet are electric. In 2023, it is estimated these vehicles will provide 9,185 gallons of fuel savings to the City.

6/26/2018

Slide 23

FUTURE DEMAND-SIDE RESOURCES

Overhead Transformer Replacements

- The City plans to retire 4.16 kV Substations 1 and 2 by 2026.
- The project will require replacing 330 pole-top transformers with dual-voltage (4.16-12.47 kV) units.
- Almost all transformers to be replaced were manufactured in between 1930 & 1970, are significantly less efficient than the replacement transformers.
- System losses will be reduced about **1,116 MWH per year** after all replacements are done.



6/26/2018

ACTION PLAN

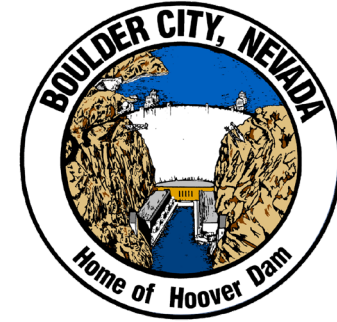


- Continue full funding of the Energy Efficient Appliance Program through calendar year 2023, and subject to the direction of the City Council, in years thereafter
- Continue to measure the effectiveness of its demand-side programs by reporting expenditures and estimated peak demand and energy savings on an annual basis.

CITY OF BOULDER CITY

UTILITIES DEPARTMENT

DRAFT INTEGRATED RESOURCES PLAN, 12/7/2022



Thank you?
Questions?
Web links?