

City of La Verkin

435 North Main St., La Verkin Utah, 84745

(435) 635-2581 Fax (435) 635-2104

www.laverkin.org

La Verkin City Council Meeting Agenda Wednesday, November 4, 2020, 6:00 p.m. Council Chambers, 111 S. Main, La Verkin, Utah

- A. Meeting Called to Order:** Invocation and/or thought by Invitation; Pledge of Allegiance
- B. Consent Agenda:** (Items on the consent agenda may not require discussion. These items will be a single motion unless removed at the request of the Mayor or City Council.)
1. Declarations of conflict of interest
 2. Agenda
- C. Citizen Comment & Request for Future Agenda Items:** No action may be taken on a matter raised under this agenda item. This item is reserved for the citizens of La Verkin who have items not listed on this agenda. There is a time limit of 20 minutes with each individual taking no more than 3 minutes.
- D. Public Hearing:**
1. 2020 Water Conservation Plan
- E. Business:**
1. Discussion and possible action to approve Proclamation 2020-04, a proclamation designating October as Domestic Violence Awareness month.
 2. Discussion and possible action to approve the final plat for the Terrana Subdivision, a 3-lot subdivision located at approximately 100 E 270 N.
 3. Discussion and possible action to approve Resolution No. R-2020-18; a resolution adopting the La Verkin City Water Conservation Plan, an update to the La Verkin City Water Management and Conservation Plan.
 4. Discussion and possible direction regarding the Memorandum of Understanding between La Verkin City and Gail G. Earl.
 5. Discussion and direction on the annual La Verkin City Christmas Eve Program.
 6. Presentation and possible discussion regarding several homes in the Overlook Subdivision.
- F. Mayor & Council Reports:**
- Mayor Hirschi:*
Wilson: Ash Creek Sewer District, Public Works, Water, La Verkin Hot Springs
Wise: Planning Commission/Zoning, Beautification/Trails Committee, Economic Development/Tourism
Justice: Washington County Solid Waste, Homeland Security/CERT, Confluence Park
Gubler: Public Safety, Recreation/City Festivals
Hardy: Southwest Mosquito Abatement, Historical Preservation
- G. Adjourn:**

Notice of Electronic or telephone participation:

NOTICE OF POSSIBLE ELECTRONIC OR TELEPHONIC PARTICIPATION One or more members of the City Council may participate electronically or telephonically pursuant to UCA 52-4-7.8

In compliance with the American with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify Christy Ballard, City Recorder, (435) 635-2581, at least 48 hours in advance.

Certificate of Posting

The undersigned City Recorder does hereby certify that the agenda was sent to each member of the governing body, sent to the Spectrum newspaper, posted on the State website at, posted on the La Verkin City website at www.laverkin.org and at the City office buildings

111 S. Main and 435 N. Main on November 2, 2020.

Christy Ballard, City Recorder

PROCLAMATION

WHEREAS, it is a basic human right to live a life free from violence and abuse; and

WHEREAS, domestic violence is a serious problem that occurs in all cultures and communities and does not discriminate by age, gender, social class, race, ethnicity, religious affiliation or sexual orientation; and

WHEREAS, one in three women and one in seven men in Utah will experience intimate partner violence in their lifetime; and that 60-75% of families with intimate partner violence have children who are also impacted by the violence; and

WHEREAS, seniors are also victims of domestic and sexual violence and are part of the most under-reported group, and

WHEREAS, domestic violence-related homicides account for over 40% of homicides in Utah; and 80 Utah children will witness the murder or attempted murder of their mother every year; and

WHEREAS, awareness and intentional collaboration are required to find solutions to abuse and intimate partner violence; and

WHEREAS, it is the role of local government to provide for the health, safety, and welfare of its citizens; and

NOW THEREFORE I, Richard M. Hirschi, Mayor of the City of La Verkin, Utah, in partnership with DOVE Center, do hereby proclaim October as

DOMESTIC VIOLENCE AWARENESS MONTH

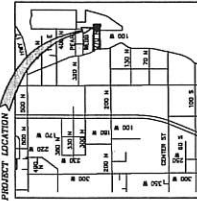
in the City of La Verkin, we urge all residents to use October as Domestic Violence Awareness Month to learn how they can break the silence and end domestic violence in our community.

IN WITNESS WHEREOF, I have hereunto set my hand and affix my signature, in and for the City of La Verkin, Utah this _____ day of _____, 2020.

Richard M. Hirschi, Mayor

Attested to by:

Christy Ballard, City Recorder

[illegible]

UBEST #	BOUNDARY DESCRIPTION

[illegible]

OWNERS DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT UNDERSIGNED OWNERS OF ALL OF THE DESCRIBED TRACT OF LAND HAVING CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS AND STREETS TO BE HEREFTER KNOWN AS:

ACKNOWLEDGMENT

STATE OF UTAH) S.S.
COUNTY OF WASHINGTON)
ON THIS ____ DAY OF _____ A.D. 2020

TERRANA SUBDIVISION

LOCATED IN SECTION 24 T41S, R13W
LAVERKIN CITY, WASHINGTON COUNTY, UTAH



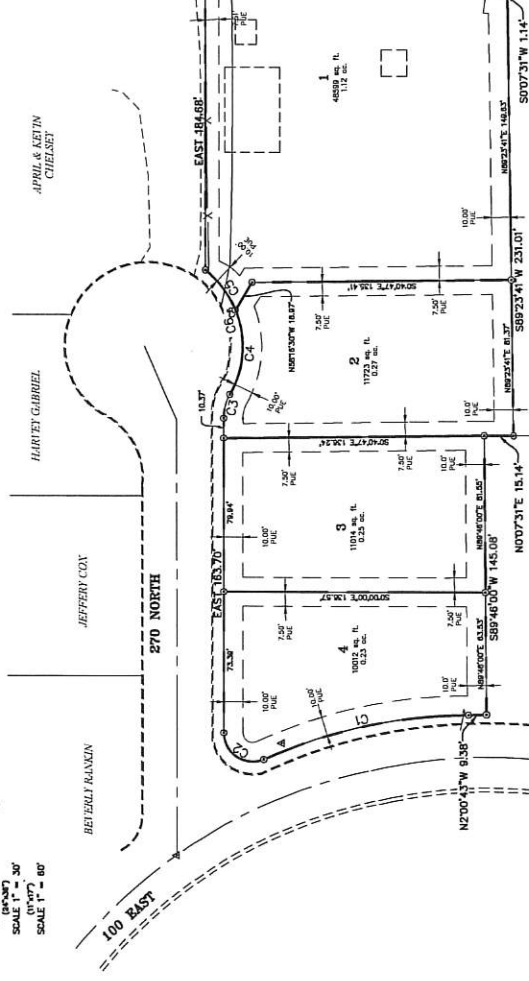
ROCK CANYON RESOURCES, LLC
RESOURCES, LLC
55 SO. 300 WEST, SUITE 3
HURRICANE, UTAH 84737
435.467.3391
435.635.4124



1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

LEGEND

- FOUND SECTION MONUMENT
(AS DESCRIBED)
- SET SURVEY CONTROL MONUMENT,
2" DIA BRASS CAP IN CONCRETE
- BOUNDARY AND LOT CORNERS,
SET 5/8" X 20" REBAR.
- CALCULATED POINT
(NOT SET)
- UTILITY EASEMENTS



CURVE TABLE					
CURVE	LENGTH	RADIUS	CHORD DIST.	CHORD BRG.	DELTA
C1	110.01'	261.26'	108.20'	N1721'23"W	24.07'24"
C2	28.44'	15.00'	24.87'	N33'36"30"E	115'30"25"
C3	13.90'	25.00'	12.91'	S79'10"29"E	28'50"08"
C4	45.74'	50.00'	44.18'	S66'17"16"E	52'24"30"
C5	28.36'	50.00'	28.37'	N18'13"37"E	30.72'24"
C6	79.34'	80.00'	68.18'	N47'00"00"W	47'00"00"

LA VERKIN CITY WATER DEPARTMENT

LA VERRIN CITY WATER DEPARTMENT

DATE _____ DEPARTMENT CHAIRMAN _____

ASH CREEK SSD CERTIFICATE

HONORBY CERTIFY THAT THIS OFFICE HAS EXAMINED THIS PLAN AND IT IS CORRECT IN ACCORDANCE WITH

CONSTRUCTION AND FILE IN THIS OFFICE

ATTN: CITY RECORDER

PLANNING COMMISSION

ELAVN

MISSION APPROVAL

A.D. 2020

LAURENCE, UTAH

TIME

FEE \$

DEER'S CERTIFICATE

THIS OFFICE HAS EXAMINED
DIRECT IN ACCORDANCE WITH
THIS OFFICE.

PAGE _____

COUNTY RECORDER

APPROVAL A

APPROVED AS TO FORM

DAY OF

WASHINGTON COUNTY, MICHIGAN

WASHINGTON COUNTY INDEX

ROCK CANYON
RESORT

HOCK CANYON
55 SO. 300 WEST, SUITE 100
HURRICANE, UTAH 84503

RESOLUTION NO. R-2020-_____

A RESOLUTION OF THE LaVERKIN CITY COUNCIL, ADOPTING THE LaVERKIN CITY WATER CONSERVATION PLAN (June 26, 2020), AN UPDATE TO THE LaVERKIN CITY WATER MANAGEMENT AND CONSERVATION PLAN; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of LaVerkin (“the City Council”) recognizes (a) the vital role of water in the development and sustainability of the community and its residents and businesses, and (b) the limited nature of this precious natural resource; and

WHEREAS, the City of LaVerkin (“the City”)—in an effort to conserve, preserve, enhance, protect, and encourage the efficient use of water—has, in recent years, *inter alia*, (a) adopted the water conservation plan and regulations found at Chapter 6 of Title 8 of the *LaVerkin City Code*; (b) purchased, upgraded, and provided for the filtering of a secondary water system for the community; (c) established time-of-date ordinances to reduce loss through trans- evaporation; (d) enacted ordinances to encourage the use of said secondary system in order preserve and conserve the City’s higher-quality culinary water; (e) obtained and installed a SCADA system to monitor the City’s water and associated facilities; (f) replaced major water conveyance lines to decrease loss through leakage; (g) replaced the old water meters present in a large portion of the community with updated and more-accurate electronic-read water meters; and (h) raised its water rates significantly to improve funding for desired renewal and replacement projects and to prepare for a significant infrastructure project to replace key sections of water pipe identified as being old, requiring frequent repair or maintenance, or improving the overall service provided by the culinary water system; and

WHEREAS, the City continues to operate a culinary water system and a secondary water system; and

WHEREAS, State law requires that the City adopt and update its *Water Conservation Plan* (WCP) no less frequently than every five years; and

WHEREAS, the City’s WCP (previously known as the City’s *Water Management and Conservation Plan*) was last updated in 2010 [January 19, 2010, Res. No. R-2010-03] and 2014 [December 17, 2014, Res. No. R-2014-120; and

WHEREAS, the proposed *LaVerkin City Water Conservation Plan (June 26, 2020)* (“LVC-WCP”) has been prepared, reviewed, and made the subject of a duly-called public hearing [upon reasonable advance notice, as required by Section 73-10-32, *Utah Code Annotated* (2020)] that was held earlier this evening (*i.e.*, _____, 2020), at which public input was solicited and considered; and

RESOLUTION NO. R-2014-____

WHEREAS, upon its review of the LVC-WCP and upon consideration of the public input received at the aforementioned public hearing, the City Council **declares and affirms** that it:

- (a) understands the need to use water in an efficient manner, in order to allow for future sustained growth of the community and
- (b) encourages the implementation of the goals, methods, programs, and mechanisms identified in the LVC-WCP, in order to further facilitate and promote conservation and efficient use of the City's culinary and secondary water resources.

NOW THEREFORE BE IT RESOLVED by the City Council of LaVerkin, Utah, as follows:

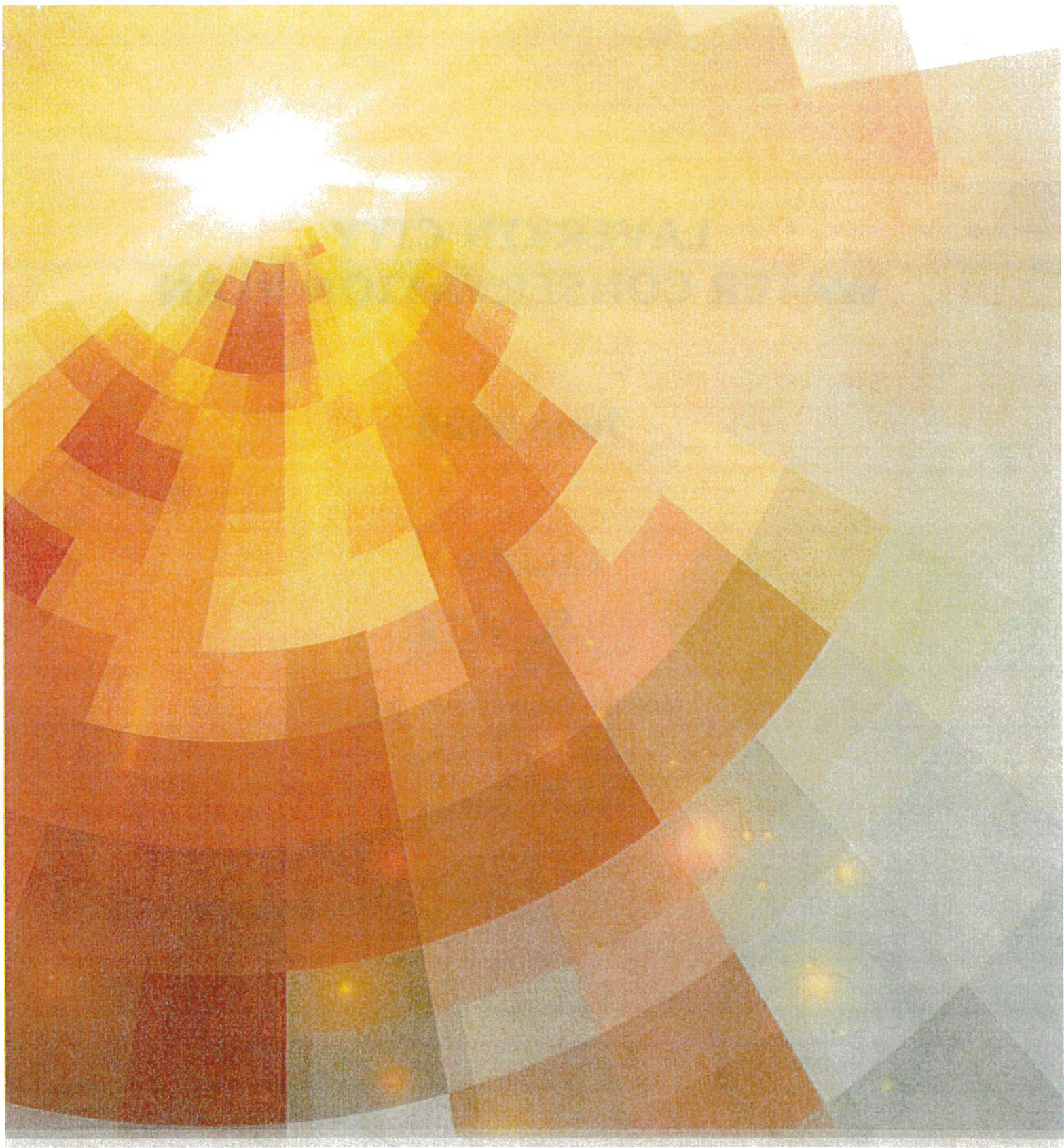
- 1. That the above recitals are incorporated herein as though fully set forth.
- 2. That the *LaVerkin City Water Conservation Plan (June 26, 2020)* ("LVC-WCP"), presented on the _____ day of _____, 2020 be and is hereby adopted.
- 3. That the LVC-WCP will (a) be reviewed, and amended as appropriate, no less than every five years, and (b) continue to play a vital role in the future development of the City of LaVerkin and the development and efficient use of its water resources.
- 4. That (a) if any part of this resolution shall be declared invalid, such declaration shall not affect the validity of the remainder of this resolution; (b) all resolutions or policies in conflict herewith are hereby repealed; and (c) this resolution shall take effect immediately upon passage.

PASSED, ADOPTED AND APPROVED this _____ day of _____, 2020.

RICHARD L. HIRSCHI, Mayor

ATTEST:

CHRISTY BALLARD, City Recorder



LaVerkin City Water Conservation Plan

June 26, 2020



LAVERKIN CITY WATER CONSERVATION PLAN

June 2020

PREPARED BY:



SUNRISE ENGINEERING, INC.

11 North 300 West
Washington, UT 84780
TEL: 435-652-8450
FAX: 435-652-8416



Joseph Phillips, P.E.
Project Engineer



Johnathan Jacobsen, E.I.T.
Project Manager

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APPENDIX A: NOTICING REQUIREMENTS, MEETING MINUTES, AND RESOLUTION FORMALLY ADOPTING THE WATER CONSERVATION PLAN

1. BACKGROUND INFORMATION

A. INTRODUCTION

In response to the increasing demands and concerns pertaining to water resources throughout the State of Utah, the state legislature has passed and revised the Water Conservation Plan Act (House Bill 71 and Section 73-10-32 UCA). This act requires agencies with more than 500 water service connections to prepare and submit a water conservation plan to the Division of Water Resources. The Act also stipulates that the plans be updated no less frequently than every 5 years.

This water conservation plan has been prepared to meet these requirements and to address the concerns of leaders and citizens of both LaVerkin City and the State of Utah. It is intended that the plan will help LaVerkin City prepare for and meet the future water needs of their community and effectively manage their water resources.

B. LAVERKIN CITY

LaVerkin City (the City) is located in Washington County, Utah, about 20 miles northeast of St. George. The southern boundary of LaVerkin is marked by the Virgin River, while the LaVerkin Creek separates the City from Toquerville to the north. The City sits up on the LaVerkin Bench and overlooks the valley below where the Virgin River, Ash Creek, and LaVerkin Creek converge. The City functions as the gateway leading to Zion National Park as it sits at the intersection of Utah SR-9 and SR-17.

The City's history is deeply rooted in the development of its water resources. The LaVerkin Bench Project was the beginning of what has now developed into LaVerkin City. In 1889, the LaVerkin Fruit and Nursery Company was incorporated. The objective of this company was to build the LaVerkin Bench Canal and tunnel so that water could be brought up from the Virgin River to the bench to establish nursery orchards and vineyards, manufacture wine and liquor, promote fruit and stock raising, and for general farming. It took an extreme amount of hard tedious labor, perseverance and enthusiasm to build the canal and the 840-foot tunnel. Water was originally turned into the canal in 1891.

The City has come a long way since the original LaVerkin Bench Canal was completed. LaVerkin currently owns and operates its own culinary and irrigation water systems which provide water to the residences and businesses in the City.

C. POPULATION

A critical element in analyzing and planning for a community's future water demands is a projection of the City's population growth rate. This projection gives the planner an idea of the future water demands based on current water usage trends. This projection also provides a basis for water

usage reduction goals and objectives. Reviewing historic growth trends can provide valuable information for projecting future growth patterns.

Over the past several decades, LaVerkin City has experienced periods of rapid growth. The table below shows the official census historic growth rates as well as an estimate of the current population. In the decades prior to the year 2000, high growth rates were experienced. Since that time, growth rates have declined. The downturn of the economy in recent years has likely influenced growth in the community.

Table 1: Population Growth Rates

Year	Source	Population	Average Annual Growth Rate	
1970	Census Population	463	-	-
1980	Census Population	1,174	1970 - 1980	9.75%
1990	Census Population	1,786	1980 - 1990	4.28%
2000	Census Population	3,392	1990 - 2000	6.62%
2010	Census Population	4,065	2000 - 2010	1.83%
2020	Census Estimate	4,573	2010 - 2020	1.25%

The City's current population estimate is **4,573 people**. For the last 20 years, the City has grown at a rate of 1.5% annually. It is expected that the City will continue to grow and expand at a rate consistent with the last ten years. For planning purposes, a 1.25% average annual growth rate will be projected throughout the planning period. This growth may continue to change the utilization of the land and may put strain on the City's water supply and distribution systems in order to meet increasing demands. By means of careful preparation and efficient utilization of available water supply, these increased demands can be met.

D. GROWTH PROJECTIONS

As mentioned previously, a 1.25% average annual residential growth rate is projected throughout the planning period. However, it is typical that residential connections and city-owned or business ERUs do not all increase at the same growth rate. Because of this, projected ERUs for the city-owned and business categories have been determined using a different growth rate.

Residential connections are assumed to increase according to the 1.25% residential growth rate previously presented. City-owned and business ERUs have been estimated using a 0.75% growth rate. Connections of these types generally increase at a lower rate (and sometimes oscillate), but it is believed that as the residential population experiences a consistent growth pattern, these categories may also experience steady growth increases.

The number of future culinary ERUs has been calculated using the compound interest formula and inserting the projected growth rates, the existing number of culinary water ERUs (residential, city-owned, and business), and the number of years in the planning period. This formula is as follows:

$$F = P(1+i)^N$$

F = Future ERUs

P = Present ERUs

i = Projected Growth Rate

N = Years

The projected yearly population and number of culinary water ERUs has been calculated and included in the table below.

Table 2 Projected Population & Culinary Water ERUs

Year	Est. Residential Growth Rate	Estimated Residential ERU's	Estimated Business ERU's	City/Other ERU's	Total Estimated ERU's	Estimated Population
2020	1.25%	1,505	269	194	1,968	4,573
2021	1.25%	1,523	271	196	1,990	4,630
2022	1.25%	1,542	273	197	2,012	4,688
2023	1.25%	1,562	275	199	2,036	4,747
2024	1.25%	1,581	277	200	2,058	4,806
2025	1.25%	1,601	279	202	2,082	4,866
2026	1.25%	1,621	281	203	2,105	4,927
2027	1.25%	1,641	283	205	2,129	4,988
2028	1.25%	1,662	286	206	2,154	5,051
2029	1.25%	1,683	288	208	2,179	5,114
2030	1.25%	1,704	290	210	2,204	5,178
2031	1.25%	1,725	292	211	2,228	5,243
2032	1.25%	1,746	294	213	2,253	5,308
2033	1.25%	1,768	296	214	2,278	5,374
2034	1.25%	1,790	299	216	2,305	5,442
2035	1.25%	1,813	301	218	2,332	5,510
2045	1.25%	2,053	324	234	2,611	6,238
2055	1.25%	2,324	349	253	2,926	7,064
2060	1.25%	2,473	363	262	3,098	7,516

E. CURRENT WATER SUPPLY

i. CULINARY WATER

According to the 2017 LaVerkin City Culinary Water Master Plan, the City has approximately 714.43 acre-feet of culinary water that can be diverted annually from several water sources. Additionally, through an agreement with the Washington County Water Conservancy District (WCWCD), LaVerkin City has access to an additional 1,000 acre-feet supplied through Cottam Well. Table 3 shows the available culinary water rights.

SECTION 1 – BACKGROUND INFORMATION

Table 3: LaVerkin City & Other Culinary Water Rights

LaVerkin Culinary Water Rights		Flow		
W.R. #	Source	gpm	cfs	AcFt
81-1073	Upper Ash Creek Springs	134.6	0.300	72.0
81-2287	Toquerville Springs	149.5	0.333	241.1
81-687	Upper Ash Creek Springs	220.4	0.491	71.4
81-1602	Ash Creek Spring & Upper Ash Creek Spring	448.8	1.000	330.0
Total La Verkin City Water Rights		953.3	2.124	714.5

Other Available Culinary Water Rights		Flow		
W.R. #	Source	gpm	cfs	AcFt
N/A	* WCWCD - Cottam Well	800.0	1.783	1,000.0
Total Other Available Water Rights		800.0	1.783	1,000.0

II. IRRIGATION WATER

The City has 2,620.0 acre-feet of irrigation/other water rights that can be diverted annually from the Virgin River. Table 4 shows the available LaVerkin City irrigation/other water rights.

Table 4: LaVerkin City Irrigation/Other Water Rights

LaVerkin Irrigation/Other Water Rights			Flow		
W.R. #		Source	gpm	cfs	AcFt
a13530	Irrigation	Virgin River	3,576.9	7.970	1,630.0
81-4334	Irrigation	Virgin River	1,346.4	3.000	990.0
Total Irrigation/Other Water Rights			4,923.3	11.0	2,620.0

F. EXISTING WATER CONNECTIONS

I. CULINARY WATER

LaVerkin City currently has 1,968 total culinary water connections. These include 1,505 residential connections, 269 business connections, and 194 other connections. However, all of these connections are not consistently active or in use.

II. IRRIGATION WATER

The City also has 1,551 irrigation water connections. The irrigation system is not currently metered.

G. EXISTING WATER USAGE

I. CULINARY WATER

Culinary water usage data from 2016 through 2019 was analyzed to determine water usage trends in LaVerkin City. The following table shows the total water deliveries categorized by type for the past 4 years.

Table 5: Total Culinary Water Deliveries by Type

Year	Annual Water Usage Data (1,000 gal)			
	Residential	Commercial	Other	Total
2016	130,945	12,210	13,840	156,995
2017	154,634	14,271	11,520	180,425
2018	148,423	23,227	15,223	186,873
2019	136,960	24,646	17,811	179,417

The culinary water usage data was further broken down to determine the average usage per connection. The following tables present the average yearly, monthly, and daily usage for each type of connection for the past 4 years.

Table 6: Average Usage Per Connection - Residential

Year	Average Residential Usage Per Connection		
	Yearly (gal)	Monthly (gal)	Daily (gal)
2016	94,201	7,850	258
2017	109,008	9,084	299
2018	102,917	8,576	282
2019	92,193	7,683	253

Table 7: Average Usage Per Connection – Commercial

Year	Average commercial Usage Per Connection		
	Yearly (gal)	Monthly (gal)	Daily (gal)
2016	196,930	16,411	540
2017	230,177	19,181	631
2018	374,629	31,219	1,026
2019	376,765	31,397	1,032

Table 8: Average Usage Per Connection - Other

Year	Average Other Usage Per Connection		
	Yearly (gal)	Monthly (gal)	Daily (gal)
2016	1,064,654	88,721	2,917
2017	886,154	73,846	2,428
2018	1,171,000	97,583	3,208
2019	975,151	81,263	2,672

The usage numbers per connection presented above are based on the number of active connections for each year. Usage for residential-owned connections has steadily gone down over the past 4 years, while usage for commercial connections has continued to increase. As shown, the average usage for residential connections in 2019 was 253 gallons per day.

Based on the LaVerkin City 2019 population estimate of 4,573 people, and the 2019 total usage numbers presented previously, the City's total per capita daily potable water usage is **107.5 gpcd** (gallons per capita per day). This is significantly lower than the State average of 164.0 gpcd for potable water use. The total residential per capita daily potable water usage is **82.1 gpcd**. The State residential average is much higher at 111.0 gpcd.

II. IRRIGATION WATER

Irrigation water usage data was also analyzed from 2016 to 2019. The following table shows the total irrigation water deliveries in LaVerkin for the past 4 years.

Table 9: Total Irrigation Water Deliveries

Year	Irrigation Usage Data	
	Acre-Feet	1,000 Gal
2016	1,683	548,505
2017	1,857	605,105
2018	1,719	560,193
2019	2,169	706,771

The irrigation water usage data was also broken down to determine the average usage per connection. The following table presents the average yearly, monthly, and daily usage per irrigation connection for the past 3 years. As shown, the average usage for irrigation connections in 2019 was 1,248 gallons per day.

Table 10: Average Usage Per Connection - Irrigation

Year	Average Irrigation Usage Per Connection		
	Yearly (gal)	Monthly (gal)	Daily (gal)
2017	409,963	34,164	1,123
2018	382,907	31,909	1,049
2019	455,687	37,974	1,248

Based on the LaVerkin City 2019 population estimate of 4,573 people, and the 2019 total usage numbers presented previously, the City's total irrigation per capita daily water usage is **423.4 gpcd** (gallons per capita per day). This is significantly higher than the State average of 75.0 gpcd. Because the data available for irrigation water connections did not provide a breakdown of residential vs. other connection types, a residential irrigation comparison was not completed. Notably, historical records suggest that the LaVerkin Bench was developed as an agricultural area for the cultivation of orchards, vineyards, and fields. The City is still characterized by large lots and agricultural areas, so the higher-than-State-average irrigation values are to be expected.

H. WATER SOURCE CAPACITY

CULINARY WATER

According to the 2017 LaVerkin City Culinary Water Master Plan, the City has approximately 953 gpm of source capacity. All of these sources are spring flows from the Toquerville, Ash Creek, and Upper Ash Creek Springs. It should be noted that the capacity of the springs exceeds 953 gpm, but the City's water rights limit the source usage by the City.

In addition, through an agreement with WCWCD, the City has access to additional water using the Cottam Well. The pump rate of the Cottam Well is 800 gpm. LaVerkin's existing culinary water source capacity has been summarized in Table 11.

Table 11: Existing Culinary Water Source Capacity

LaVerkin City Culinary Sources	Total Flow	
	CFS	gpm
Upper Ash Creek Springs	0.300	135
Toquerville Springs	0.333	149
Upper Ash Creek Springs	0.491	220
Ash Creek Spring & Upper Ash Creek Spring	1.000	449
Source Total =	2.124	953
Other Available Culinary Sources	Total Flow	
	CFS	gpm
Cottam Well	1.783	800
Source Total =	1.783	800

IRRIGATION WATER

Irrigation water is taken directly from the Virgin River, and the amount is limited by the City's water rights. In 2010, LaVerkin City constructed the Chance Hardy Filter Station which filters the water before it is directed to the irrigation distribution system. The design plans for the filter station indicate a design capacity of 4,000 gpm. LaVerkin's existing irrigation water source capacity has been shown in Table 12.

Table 12: Existing Irrigation Water Source Capacity

LaVerkin City Culinary Sources	Total Flow	
	CFS	gpm
Chance Hardy Filter Station	8.913	4,000
Source Total =	8.913	4,000

I. WATER BUDGET

A water budget can be used to estimate the leakage or slippage of water from a water system. The leakage rate can be determined by comparing the amount of water that comes into a water system, with the amount of water that leaves the system. In order to establish and track a water budget, water metering devices must be present on all water sources feeding the system, and on all points where water leaves the system.

Table 13: Water Budget

Year	Source (ACFT)	Usage (ACFT)	Leakage Rate
2016	637.7	506.68	20.55%
2017	687.42	568.39	17.32%
2018	615.2	576.63	6.27%
2019	591.92	556.81	5.93%

Table 13 shows the City's culinary water budget for the last four years. The estimated overall average leakage rate for the City over the last four years is in excess of 12%. There are many factors besides water leaks which can affect this number. These include inaccurate meter readings, aging (inaccurate) meters, non-metered hydrant flows, fluctuating tank levels, etc.

Fluctuating tank levels affect the water budget more on short period comparisons than on long term comparisons. This is because the volume of water stored in tanks is significant when compared to daily or monthly water usage totals, but its effect is dampened over longer periods (such as annually) when the changes in storage volume are compared to the overall water usage for the longer period. Tank fluctuations can be accounted for by monitoring and tracking water levels in the tanks on the same

schedule as meter readings. It is recommended that the City begin tracking and documenting the water level in their tanks as meters are read to help increase the accuracy of the water budget.

J. CURRENT & FUTURE WATER NEEDS

i. WATER RIGHTS

CURRENT NEEDS

The State of Utah Public Administrative Rules for Public Drinking Water Systems, require that a community should have adequate water rights to supply at minimum, one year's supply of water at the average demand. LaVerkin's historical water usage shows that the average water use for a residential unit is 253 gallons per day (See Section 1.g). This number includes indoor culinary use as well as some outdoor use for customers who do not have access to the City's secondary (irrigation) water system.

By multiplying the average culinary usage in LaVerkin by the number of existing ERUs, the current required amount of water rights can be determined. This calculation is shown in Table 14 below, indicating that the existing required amount of culinary water rights for LaVerkin City is 558 acre-feet. Subtracting this number from the amount of available culinary water rights yields an existing surplus of 1,157 acre-feet.

Table 14: Existing Required Culinary Water Right

Average Demand (Total Use)						
1,968	ERU's X	253 gpd X	1 day X	1 hr	=	346 gpm
		ERU	24 hr	60 min.		
1,968	ERU's X	253 gpd X	365 day X	1 Acft.	=	558 Acft
		ERU	1 yr	325,852 gal		
Total Required Water Right					558 Acft	346 gpm
Existing Culinary System Water Right Surplus					1,157 Acft	1,407 gpm

The same process can be followed to determine the current required amount of irrigation water rights. This number has been calculated as shown in Table 15 using the number of existing irrigation connections and the average irrigation usage per connection of 1,248 gallons per day. Subtracting this number from the amount of available irrigation water rights yields an existing surplus of 452 acre-feet.

SECTION 1 – BACKGROUND INFORMATION

Table 15: Existing Required Irrigation Water Right

Average Demand (Total Use)						
1,551	Connections X	1,248 gpd X	1 day X	1 hr	=	1,344 gpm
		ERU	24 hr	60 min.		
1,551	Connections X	1,248 gpd X	365 day X	1 Acft.	=	2,168 Acft
		ERU	1 yr	325,852 gal		
Total Required Water Right					2,168 Acft	1,344 gpm
Existing Irrigation System Water Right Surplus					452 Acft	3,579 gpm

FUTURE NEEDS

Based on recent changes in Utah law, it is recommended that future water rights be determined based on 40-year growth projections. Based on current water usage trends and the projected growth patterns outlined in Table 2 of Section 1.d, the projected 40-year required culinary and irrigation water rights calculations are shown in Tables 16 and 17 below.

Table 16: Projected 40-Year Required Culinary Water Right

Average Demand (Total Use)						
3,098	ERU's X	253 gpd X	1 day X	1 hr	=	544 gpm
		ERU	24 hr	60 min.		
3,098	ERU's X	253 gpd X	365 day X	1 Acft.	=	878 Acft
		ERU	1 yr	325,852 gal		
Total Required Water Right					878 Acft	544 gpm
Existing Culinary System Water Right Surplus					836 Acft	1,209 gpm

Subtracting the quantity of projected culinary water rights from the amount of available culinary water rights, yields a surplus for the 40-year projected demand of 836 acre-feet. It should be noted that the City's agreement with WCWCD indicates that the 1,000 acre-feet available through WCWCD is for up to 1,000 new connections in the agreed-upon service area from the date the agreement was made. The City will need to carefully keep track of the number of new connections and water used for these connections to ensure that the agreed upon terms are being followed.

Table 17: Projected 40-Year Required Irrigation Water Right

Average Demand (Total Use)						
2,581	Connections X	1,248	gpd X	1 day X	1 hr	= 2,237 gpm
		ERU		24 hr	60 min.	
2,581	Connections X	1,248	gpd X	365 day X	1 Acft.	= 3,608 Acft
		ERU		1 yr	325,852 gal	
Total Required Water Right						3,608 Acft 2,237 gpm
Existing Irrigation System Water Right Deficit						(988) Acft 2,686 gpm

Subtracting the quantity of projected irrigation water rights from the amount of available irrigation water rights, yields a deficit for the 40-year demand of 988 acre-feet. In order to meet the projected irrigation water right demands, additional irrigation water rights may be needed. However, as the city continues to follow the trend of converting agricultural land to residential, outdoor water usage may decline. With the outdoor water use declining, the projected deficit may decrease over time.

II. WATER SOURCE CAPACITY

CURRENT NEEDS

The State of Utah Public Administrative Rules for Public Drinking Water Systems require that a community should have adequate water source capacity to supply a peak day demand of equal to twice the average amount of historical usage. LaVerkin's historical water usage shows that the average water use for a residential unit is 253 gallons per day (see Section 1.g). Doubling this amount results in a peak day demand of 506 gallons per day per ERU. This number includes indoor culinary use as well as some outdoor use for customers who do not have access to the City's secondary (irrigation) water system.

Multiplying the peak day culinary usage per ERU by the number of existing ERUs, the existing required culinary water source capacity can be determined. This calculation is shown in Table 18 below, indicating that the existing required culinary water source capacity for LaVerkin City is 692 gpm. Subtracting this number from the available culinary water source capacity yields an existing surplus of 1,062 gpm.

Table 18: Existing Required Culinary Water Source Capacity

Required Indoor/Outdoor Source						
1,968	ERU's X	506	gpd X	1 day X	1 hr	= 692 gpm
		ERU		24 hr	60 min.	
Total Required Source Capacity						692 gpm
Existing Culinary System Source Capacity Surplus						1,062 gpm

SECTION 1 – BACKGROUND INFORMATION

The same process can be followed to determine the current required irrigation water source capacity. This calculation is shown in Table 19 using the number of existing irrigation connections and the peak day irrigation usage per connection of 2,496 gallons per day (2 times average). Subtracting this number from the available irrigation water source capacity yields an existing surplus of 1,312 gpd.

Table 19: Existing Required Irrigation Water Source Capacity

Required Indoor/Outdoor Source					
1,551	Connections X	2,496	gpd X	1 day X	1 hr
		ERU		24 hr	60 min.
					= 2,688 gpm
Total Required Source Capacity					2,688 gpm
Existing Irrigation System Source Capacity Surplus					1,312 gpm

FUTURE NEEDS

It is recommended that future water source capacity needs be determined based on 20-year growth projections. Based on current water usage trends and the projected growth patterns outlined in Section 1.d, the projected 20-year required culinary and irrigation water source capacity calculations are shown in Tables 20 and 21 below.

Table 20: Projected 20-Year Required Culinary Water Source Capacity

Required Indoor/Outdoor Source					
2,467	ERU's X	506	gpd X	1 day X	1 hr
		ERU		24 hr	60 min.
					= 867 gpm
Total Required Source Capacity					867 gpm
Existing Culinary System Source Capacity Surplus					886 gpm

Subtracting the projected culinary water source capacity from the available culinary water source capacity, yields a surplus for the 20-year projected demand of 886 gpm.

Table 21: Projected 20-Year Required Irrigation Water Source Capacity

Required Indoor/Outdoor Source					
2,013	Connections X	2,496	gpd X	1 day X	1 hr
		ERU		24 hr	60 min.
					= 3,490 gpm
Total Required Source Capacity					3,490 gpm
Existing Irrigation System Source Capacity Surplus					510 gpm

Subtracting the projected irrigation water source capacity from the available irrigation water source capacity, yields a surplus for the 20-year demand of 510 gpm. In order to meet the projected irrigation water source capacity, the City may need to develop additional irrigation water source capacity.

2. WATER CHALLENGES AND GOALS

A. IDENTIFIED PROBLEMS

There are several conservation challenges with LaVerkin City's culinary and secondary water (irrigation) systems that can be addressed by standard conservation measures and goals as recommended by this plan. These challenges include:

1. The irrigation system is not currently metered. This reduces incentive for customers to conserve irrigation water and reduces accountability for those using more than their allotted share. Without accurate meter readings, the City cannot charge customers for the actual amount of water they use.
2. Culinary water meters are on a structured replacement program in order to replace older and at-risk meters on a continuous basis, but funding for the replacements has historically been limited. Older meters have a greater chance of producing inaccurate flow data and decreased revenues from billing. The City does replace old meters as they become aware of problems, and the City regularly considers ways to fund its meter replacement program, but many meters remain beyond their recommended life and may be contributing to the leakage/slippage rate experienced by the City.
3. Based on current usage trends, the City is approaching a shortage of irrigation water rights. Even with a reduction in irrigation water usage, it is anticipated that additional water rights may be required.
4. Citizens typically lack information and understanding of landscaping water requirements and efficient in-home water-use habits and practices. Very few residents know how much water is required to maintain healthy landscaped areas and how to consistently use water efficiently indoors. Most citizens' irrigation and indoor practices are based on convenience rather than plant needs and water supply considerations. Also, some plumbing fixtures in the user's systems are old, outdated, and less efficient than newer models.

Each of these problems can be resolved through implementation of the recommendations outlined in the "Conservation Measures" section of this plan.

B. WATER CONSERVATION GOALS

The following goals have been identified to help monitor and track the success of the various programs and conservation measures being implemented.

Goal 1 – Reduce culinary water usage by 5% by 2025.

This can reduce the average amount of culinary water used by each ERU from 253 gpd to 240 gpd. The per capita average daily culinary water usage can be reduced from 107.5 gpd to 102.4 gpd.

It should be noted that in 2009 the City established a goal to reduce culinary water usage by 10%. The average daily usage per ERU in 2009 was 371 gpd. Since that time the City has experienced a reduction in culinary usage of approximately 31.8%.

Goal 2 – Reduce irrigation water usage by 10% by 2025.

This can reduce the average amount of irrigation water used by each connection from 1,248 gpd to 1,123 gpd. The per capita average daily culinary water usage can be reduced from 423.4 gpd to 381.1 gpd.

Goal 3 – Reduce the average culinary water system leakage/slippage rate to 5% by 2025.

The City can continue to address water leaks and aging infrastructure by undertaking improvement projects to repair/replace those improvements believed to be high contributors of the high leakage/slippage rate.

Goal 4 – Begin irrigation system metering program.

Begin installing meters on some of the irrigation connections believed to belong to the high-water users. Installing meters on all connections may likely be a long-term project due to limited resources for such improvements.

The current City code does not require the installation of meters on the irrigation system, but does allow the City to install meters and enact a rate ordinance if decided by the City Council. The code does require that on subdivisions and planned community developments, "A one-inch (1") setter (70 series copper setter, VB74-10W-44-NL style) and a one-inch (1") meter idler (IDLER-10/34-NL), or equivalent thereof acceptable to the city, shall be installed to each lot."

3. CONSERVATION MEASURES

A. REPLACEMENT OF AGING INFRASTRUCTURE

Where budgets can allow, the City may undertake water improvement projects to eliminate and/or replace existing water infrastructure which is believed to have high leakage problems or contributes otherwise to wasting of water.

- a. The following projects have previously been completed or are ongoing toward this goal:
 - i. In 2010, the City completed the LaVerkin Water Improvement Project and replaced or upgraded approximately 9,400 lineal feet of pipe including an old section of 12-inch water line along State Street believed to be a major contributor to the high slippage rate.
 - ii. In 2014, the City completed the Silver Acres Reconstruction Project which included replacement of 2,400 lineal feet of old leaky water mains and also incorporated 2,200 lineal feet of new irrigation pipelines allowing 42 existing water users to utilize the City's irrigation system for outdoor water usage.
 - iii. The City has completed other minor water line replacement projects targeting high leakage or high maintenance segments of water and irrigation pipelines.
 - iv. In 2018, the City raised its water rates significantly to improve funding for its renewal and replacement projects and to prepare for a significant infrastructure project that can replace key sections of water pipe identified as being old, requiring frequent repair or maintenance, or improving the overall service provided by the system.
 - v. The City is currently considering an update to its irrigation system master plan, which was last completed in 2010.
- b. The City will work toward implementing an irrigation meter program for key irrigation connections.
- c. The City will work toward funding a structured culinary water meter replacement schedule to replace aging and inaccurate water meters.

B. REDUCING WASTE AND OVERWATERING

Where budgets will allow, the City will undertake the following efforts:

- a. Conduct water landscape audits of the following areas:
 - i. City managed landscaping,
 - ii. School district landscaping,
 - iii. Church landscaping, and
 - iv. Individual homes.
- b. Train or offer educational resources to City, school and church landscape caretakers to conduct and implement water auditing techniques.
- c. Initiate community-wide water audit education and implementation procedures.

- d. Provide and/or encourage the use of water-saving fixtures such as low flow shower heads and faucets and low-flush toilets, and leak detecting devices. This could be done through revising plumbing codes or providing fixtures to residents either by making them available to those who request them or requiring all homes to have them.
- e. Require through ordinance or the plumbing code that all newly constructed commercial buildings and residences to install plumbing devices that conserve water.
- f. Work with agriculture users to find ways of preserving farmland irrigation and to develop resources as a buffer for times of drought.

C. REUSE OF TREATED WATER

- a. Cooperate with other local entities to pursue ordinances or policies promoting the treatment of wastewater to be reused locally as appropriate and in conformance with State law. The ordinances or policies should, as a minimum, specify the time for compliance for systems now operating.

D. DUAL WATER SYSTEMS

- a. Require dual water systems in new subdivisions, public buildings with large landscape areas, and all parks and outdoor recreation areas.
- b. Incorporate dual water systems in currently-developed portions of the City when improvement and upgrades are made in those areas.

E. BILLING & CONSERVATION PRICING

- a. Provide an incentive to users to conserve water and not to use culinary water for landscape watering by continuing a tiered pricing schedule.
- b. Incorporate monthly charges based on meter size.
- c. Continue billing for water based on metered water use.

4. CURRENT PRICING STRUCTURE

The City has established the following pricing structures in an effort to encourage water conservation by customers and to provide accountability for high water users.

CULINARY WATER

The culinary water rate structure includes a base rate determined by the size of the customer's water meter and an increasing tiered rate increase as water usage increases. The culinary water rate is shown in Table 22 below:

Table 22: LaVerkin - Culinary Water User Rates

Meter Size	Base Rate	Tiered Rate above Base (per 1,000 gal)	Gallon Range for Tiered Rate Increase
5/8"	\$35.25	\$1.18	0 - 20,000 gallons
		\$1.47	21,000 - 35,000 gallons
		\$1.76	35,001 & over gallons
3/4"	\$50.25	\$1.18	0 - 20,000 gallons
		\$1.47	20,001 - 35,000 gallons
		\$1.76	35,001 & over gallons
1"	\$88.45	\$1.18	0 - 26,000 gallons
		\$1.47	26,001 - 52,000 gallons
		\$1.76	52,001 & over gallons
1-1/2"	\$197.57	\$1.18	0 - 58,000 gallons
		\$1.47	58,001 - 116,000 gallons
		\$1.76	116,001 & over gallons
2"	\$350.34	\$1.18	0 - 102,000 gallons
		\$1.47	102,001 - 204,000 gallons
		\$1.76	204,001 & over gallons
3"	\$786.83	\$1.18	0 - 230,000 gallons
		\$1.47	230,001 - 460,000 gallons
		\$1.76	460,001 & over gallons
4"	\$1,397.91	\$1.18	0 - 410,000 gallons
		\$1.47	410,001 - 820,000 gallons
		\$1.76	820,001 & over gallons
6"	\$3,143.86	\$1.18	0 - 922,000 gallons
		\$1.47	922,001 - 1,844,000 gallons
		\$1.76	1,844,001 & over gallons

SECTION 4 – CURRENT PRICING STRUCTURE

IRRIGATION WATER

The irrigation water fee schedule is different for shareholders and lease users. Both connection types use an increasing fee schedule. For shareholders, the increase is based upon the number of shares held. For lease users the increase is based upon the size of the customer's lot. The irrigation water fee schedule is shown in Table 23.

Table 23: LaVerkin - Irrigation Water Fee Schedule

Connection Type	Fee Type	Fee Amount	Billing Term/Cycle
Share Holder	Water Availability/Standby Fee	\$3.82	Per month - 9 months of year
	Contract Holder Assessment Fee	\$50.89	Billed annually in March
	Usage Fee - 1 Share or Less	\$25.45	Billed annually in March
	Usage Fee - More than 1 Share	\$12.72 x number of shares billed semi-annually in March and September.	
Lease User	Lots < 1/2 Acre	\$12.72	Per month - 9 months of year
	Lots 1/2 Acre to < 1 Acre	\$19.08	Per month - 9 months of year
	Lots 1 Acre	\$25.45	Per month - 9 months of year
	Lots > 1 Acre	Fee calculated in 1/2 acre increments, using the round up method. The user will be charged an additional \$12.72 per month per 1/2 acre.	

5. ADDITIONAL CONSERVATION MEASURES**A. PUBLIC EDUCATION**

The City has and may continue to take part in a long-term education program to educate the public about the importance of water conservation and how to go about it. The City recognizes that they must be involved in the program for it to be effective. The program may include the following components:

- a. Educational Programs.
 - i. Hold training for teachers that provides ideas and curriculum materials for use in the classroom.
 - ii. Develop assemblies that can be taken to elementary and secondary schools which educate students about water management and conservation.
 - iii. Participate in the yearly water fair in conjunction with WCWCD, the Division of Water Resources, Dixie College and others.
- b. Public Information.
 - i. Provide brochures with vital information about conservation, such as information on peak demand periods and what the household can do to reduce use during those periods.
 - ii. Promote conservation practices and information through the City's quarterly newsletter.
 - iii. Provide informational meetings at timely intervals for the citizens.
 - iv. Work with other entities to provide information at a booth at the County fair.
 - v. Offer public tours of water facilities owned by the City.
- c. Developer & Landscaper Awareness.
 - i. Create a demonstration plot of low water grasses & xeriscape plants that landscapers and developers can observe and duplicate in their work.
 - ii. Encourage use of drought resistant turf.

B. LANDSCAPE DESIGNS & IRRIGATION SYSTEMS

- a. Publish a list of plant species available which are low water users.
- b. Encourage local nurseries and other stores to stock and advertise low water use plants.
- c. Encourage stores that advertise and sell landscape irrigation systems to stock and advertise water efficient products.
- d. As part of an ongoing public information program, establish a water efficient landscape area on or near each elementary school in the City.
- e. Institute a water-conserving landscape awards program. Provide a plaque and picture for the winners as well as publicize their water efficient landscaping to encourage others to follow their example.

C. EMERGENCY CONSERVATION POLICIES & ORDINANCES

- a. Develop and implement an Emergency Conservation Plan and other ordinances and/or policies that encourage or provide for water conservation. The following efforts have previously been taken in this area:
 - i. Adoption of Ordinance 2005-23 which established a local water management plan and incorporated a 4-stage Culinary Water Conservation Management Plan.
 - ii. Adoption of Ordinance 2008-15 which established water availability and standby fees for the City's irrigation system and provides encouragement for residents to connect to and use the irrigation system for outdoor watering, thereby conserving the culinary water supply.
 - iii. Adoption of Ordinance 2008-16 which established a time of day water use ordinance to restrict water usage to the hours of 6:00 p.m. to 10:00 a.m. in order to increase water efficiency and reduce loss through evapotranspiration.
 - iv. Chapter 6, Title 8 of the LaVerkin City Code includes provisions making the wasting of water unlawful and includes penalties for the violation of such wasting.
- b. The City of LaVerkin may continue to update and enforce these and other ordinances relating to water conservation.

D. ADMINISTRATIVE POLICY MEASURES

- a. The existing water systems should be occasionally analyzed under the State of Utah Administrative Rules by completing periodic updates to the existing master plans. Further actions needed to comply to these rules should be explored and completed based on feasibility and practicality.
- b. The City may review and potentially renegotiate the Cottam Well agreement with WCWCD to encourage water conservation. The agreement currently allows 1,000 connections and 1,000 acre-feet from the well. Depending on specific language, the agreement should be renegotiated to hold the 1,000 acre-feet but allow as many connections as can be supported under water conservation measures.

6. EFFECT OF CONSERVATION

To determine potential savings to the City by implementing this plan and by achieving their reduction goals, calculations were performed to compare future water supply needs based on current usage trends vs. future water supply needs based upon meeting the reduction goals established. These calculations were based upon the population and growth projections outlined in Section 1, Table 2, and were performed for both the culinary and irrigation water systems for water rights and water source capacity.

A. CULINARY WATER

The following figures show the culinary water right demands and water source capacity demands vs. available resources over the respective planning periods.

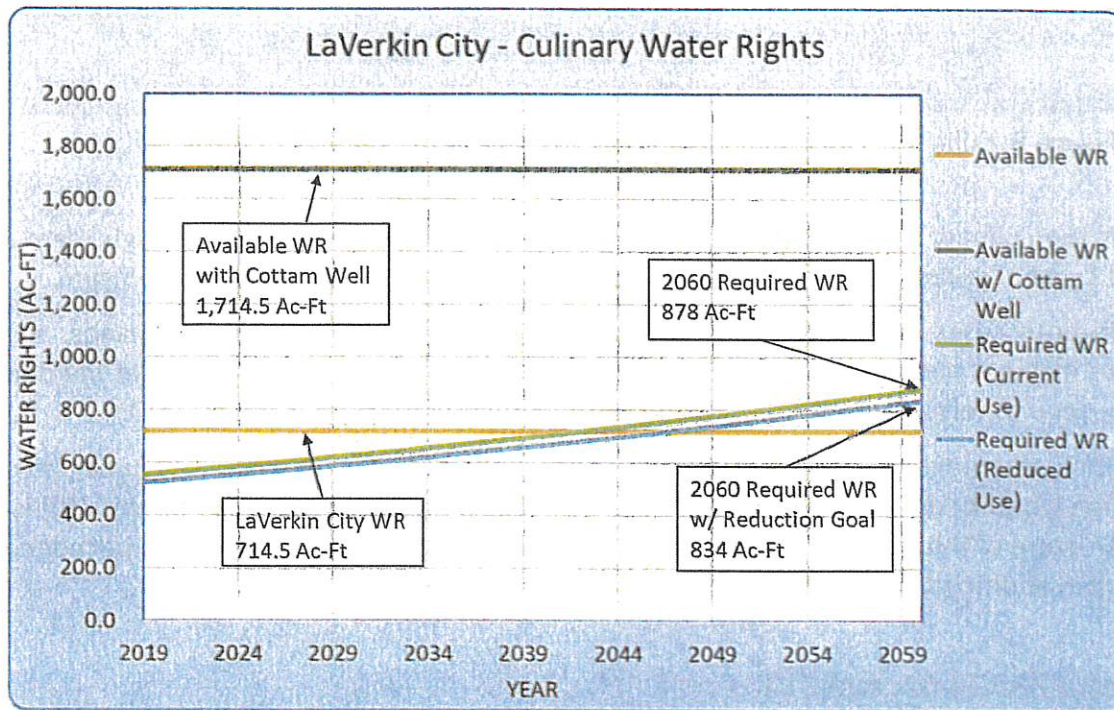


Figure A: Culinary Water Right Demands over the Planning Period

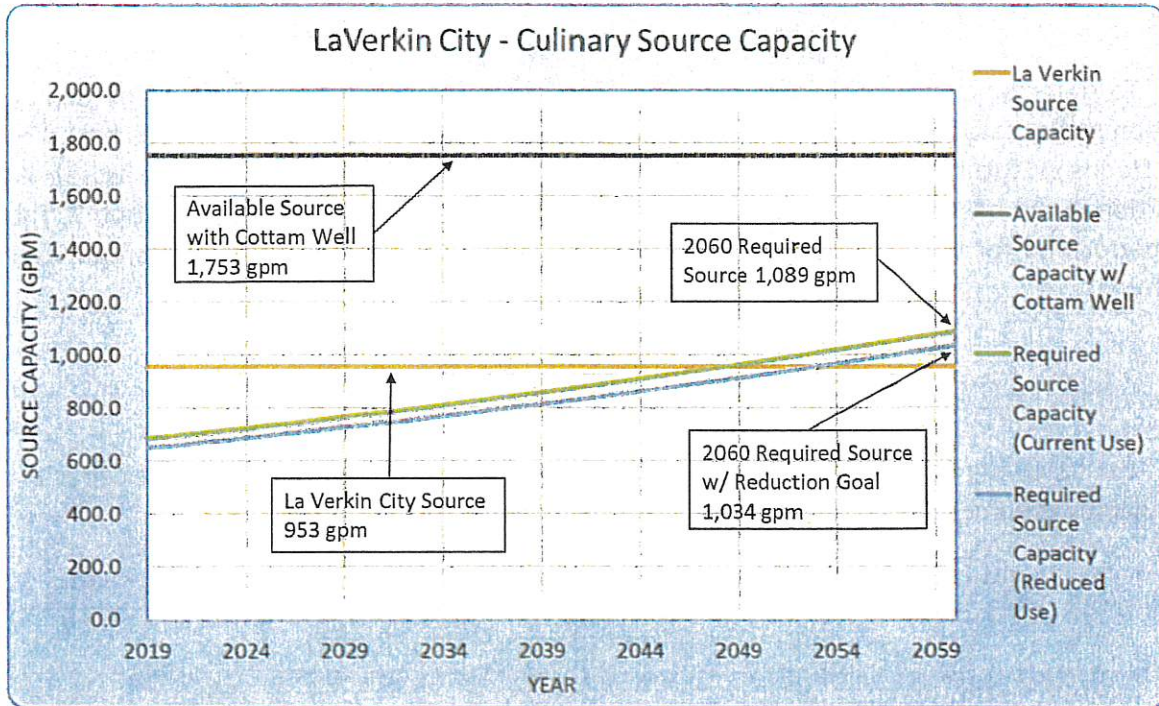


Figure B: Culinary Water Source Capacity Demands over the Planning Period

If the culinary water usage reduction goal is met, then the 2060 water right demand can be reduced by 44 acre-feet and the 2060 source capacity demand can be reduced by 55 gpm.

In both cases, adequate water resources are available to meet the demands, so additional resources may not need to be purchased or constructed. However, in order to meet the demands, the City may need to rely upon water purchased through their agreement with WCWCD.

The agreement with WCWCD stipulates that the City pays a set amount per year for each water connection whether or not the allowable water (15,000 gallons per connection per month) is used. Due to the structure of the agreement, any further reduction to the average daily usage per connection may not result in additional savings to the City.

B. IRRIGATION WATER

The following figures show the irrigation water right demands and water source capacity demands vs. available resources over the respective planning periods. If the irrigation water usage reduction goal is met, then the 2060 water right demand can be reduced by 361 acre-feet and the 2060 source capacity demand can be reduced by 447 gpm. If the irrigation reduction goal is able to be met, then the City may not need additional irrigation water rights until 2042 compared to 2034 if the average usage remains the same. In addition, as the community moves from agricultural to residential the demand for irrigation water rights will diminish.

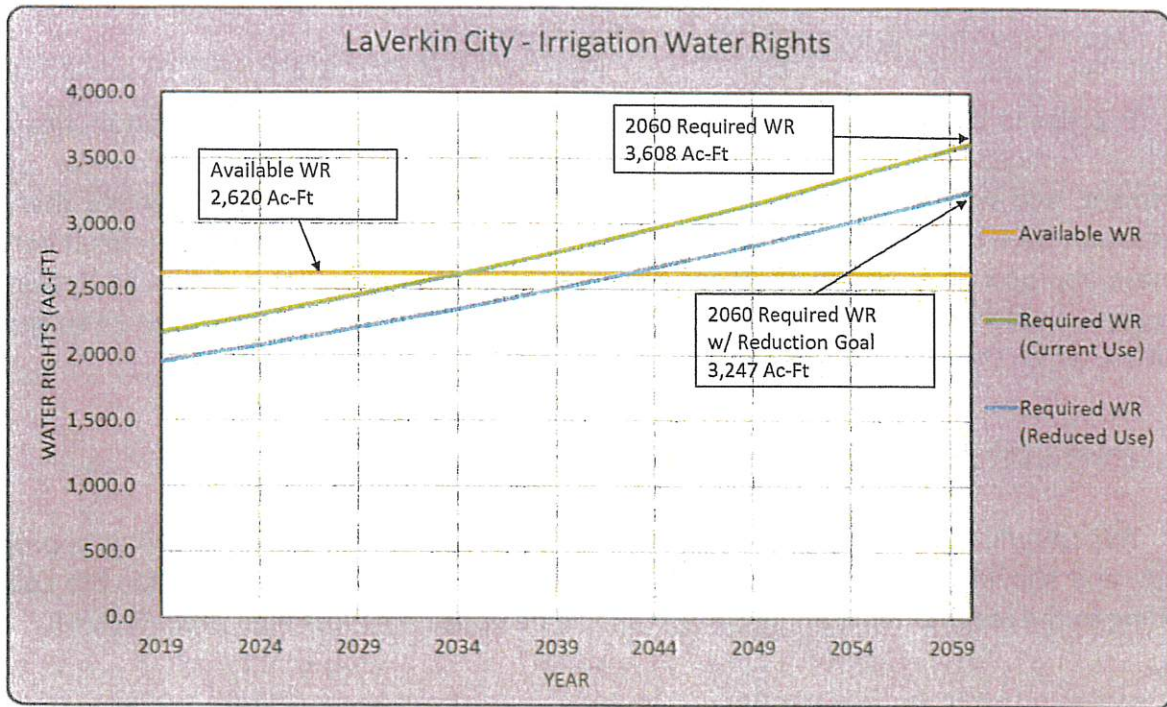


Figure C: Irrigation Water Right Demands over the Planning Period

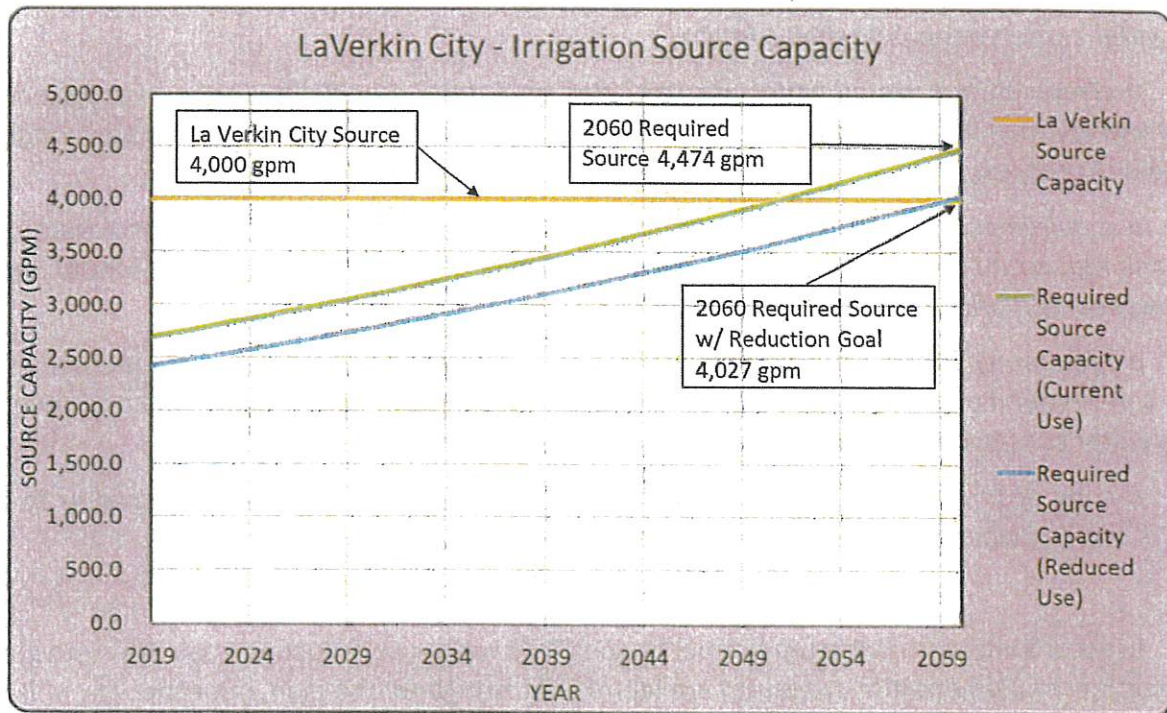


Figure D: Irrigation Water Source Capacity Demands over the Planning Period

7. PLAN IMPLEMENTATION

A. WATER CONSERVATION COORDINATOR

In order to achieve the goals established by this plan, each of the conservation measures and objectives outlined should be assigned with responsibility fixed to the appropriate person or department, and with a plan and timeline set for each objective. It is recommended that a Water Conservation Coordinator be designated within the City and given responsibility to implement the plan and make appropriate assignments. These designations and responsibilities should be documented in future versions of the plan. The plan also needs to be adopted by the City Council through an appropriate resolution, which should be included in Appendix A.

B. UPDATING THE WATER CONSERVATION PLAN

This LaVerkin City Water Conservation Plan should be updated and amended as appropriate by the City and should be used as a tool to assist in meeting future water needs for the community. According to the requirements of the State, it should be updated no less than every 5 years.

C. COMPLIANCE WITH UTAH CODE

Section 73-10-32(2)(a) of the Utah Code states:

Each water conservation plan shall contain:

- (i) a clearly stated overall water use reduction goal and an implementation plan for each of the water conservation measures it chooses to use, including a timeline for action and an evaluation process to measure progress;*
- (ii) a requirement that each water conservancy district and retail water provider devote part of at least one regular meeting every five years of its governing body to a discussion and formal adoption of the water conservation plan, and allow public comment on it;*
- (iii) a requirement that a notification procedure be implemented that includes the delivery of the water conservation plan to the media and to the governing body of each municipality and county served by the water conservancy district or retail water provider; and*
- (iv) a copy of the minutes of the meeting and the notification procedure required in Subsections (2)(a)(ii) and (iii) which shall be added as an appendix to the plan.*

In accordance with these requirements, the City's water use reduction goals are stated in Section 2 of this plan. Implementation measures are identified throughout the plan, but especially in Sections 3, 4, and 5. The timeline for action is within the five-year period before the next update of the City's water

conservation plan. Finally, the evaluation process by which progress is measured is the City's annual review of water use per culinary water ERU and irrigation connection.

Moreover, the City will properly notice, discuss, allow public comment, and formally adopt the water conservation plan at one of its upcoming regular meetings. The minutes of the meeting and the notification procedures required will be subsequently affixed to this plan as Appendix A.

APPENDIX A

NOTICING REQUIREMENTS, MEETING MINUTES, AND RESOLUTION FORMALLY ADOPTING THE WATER CONSERVATION PLAN

Memorandum of Understanding (LVC-Earl)

After meeting with Tausha Haight (Daughter) and Gail Earl on Tuesday September 29th here are a few changes they would like to see in the current MOU before they sign the document.

Item # 9:

They would like it to state a specific time frame for completion of the project.

Item # 10:

They would like to have the project be included in the 100 South Project which is the # 1 priority on the City's priority list.

Item # 11:

Want assurance that it has been approved by the city pending funding, and the city will continue to look for other funding sources if they are denied funding for the 100 South Project.

Additional Item #13:

That the city will take responsibility and cover any person injury or vehicle damage as well as any water damage that may occur on the property that has been impacted by the road conditions, until the project is completed.

MEMORANDUM OF UNDERSTANDING

This *Memorandum of Understanding* ("MOU") is made effective and entered into on this 2 day of September, 2020, between the **City of LaVerkin, Utah** ("the City") and **Gail G. Earl** ("**Ms. Earl**"), of LaVerkin, Utah, owner in fee or as surviving trustee of the Boyd J. Earl and Gail G. Earl Family Trust ("**Family Trust**"), dated May 29, 1999, owner(s) of the real property benefitting from the improvements project ("**Improvements Project**") covered by this MOU, and situated at 50 South 100 East, LaVerkin, Washington County, State of Utah ("**the Earl Property**"). The City and Ms. Earl are collectively referred to as the Parties hereto.

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WHEREAS, on or about the year 2000, the City completed a road improvement project ("**the Road Project**") on Valley View Drive (100 East) ("**100 East**"), in LaVerkin, Utah; and

WHEREAS, as a part of the Road Project, 100 East was paved and the road elevations were adjusted along the segment fronting on and adjacent to the Earl Property, said to result in access challenges to the Property (via the driveway and/or walkway) and the accumulation of gravel on the Property (particularly on the north driveway); and

WHEREAS, in an effort to mitigate the impact of the Project on the Property and increase the safety and appearance thereof, the Parties have evaluated the Property and indicated an intent and desire to enter into a *Memorandum of Understanding* ("MOU") concerning actions that each of the Parties are willing to agree to take accomplish such mitigation efforts; and

WHEREAS, the Parties have reviewed this MOU and find it to be in each of their best interests that this MOU be adopted, and the actions set forth herein be taken as herein set forth.

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NOW THEREFORE, in consideration of the foregoing recitals, the Parties agree as follows.

1. That the Improvements Project, as described herein and depicted in Construction Drawings, as shown in concept and attached hereto as **Attachment 1**, is appropriate and acceptable to the Parties, that the Earl family (as determined and expressed by Ms. Earl) likes and supports the Improvement Project as described and depicted; and that the Improvement Project may be designed and bid out in accordance with this MOU and the Construction Drawings.

Memorandum of Understanding (LVC-Earl)

2. That the Parties recognize that the improvements shown in concept in the Improvements Project are preliminary, and that the final improvements may differ slightly, depending on site design requirements.
3. That the driveway on the north side of the Property ("the North Driveway"), running west from 100 East, will be reconstructed and paved (with cement) by the City, at the City's expense, as per the specifications shown in the Construction Drawings, and include a decreased, gentler slope.
4. That a pedestrian stairway and accessway (and associated railing) from the roadway on 100 East, alongside the North Driveway, shall be constructed and installed by the City, at the City's expense, as shown in the Construction Drawings.
5. That an apron, the width of the existing driveway or path located along the south side of the Property ("the South Driveway"), running west from 100 East, will be asphalted by the City, at the City's expense, for twenty-five feet (25') west of 100 East.
6. That the City, at the City's expense, shall install a full high-back curb between the North Driveway and the South Driveway, along and adjacent to 100 East, running from a catch basin and associated storm grate to be situated and installed within one driveway and extending a catch basin and associated storm grate to be situated and installed within the other driveway, and draining to the City drain line located within the 100 East roadway to the east.
7. That, prior to the commencement of any of the improvements included in the Improvements Project, and in order to accommodate and facilitate the construction, maintenance, operation, access to, and use of the curb, catch basins, and storm grates, Ms. Earl, as Trustee and/or Owner of the Property, on behalf of herself and the Family Trust, shall grant and convey, in fee, all right, title, and interest in the Property, along its east perimeter, from one foot (1') inside (or west of) the curb to be installed to 100 East.
8. That Alpha Engineering (who worked on the Road Project back in 2000), in association with Sunrise Engineering, will be used to provide engineering services with regards to the Improvements Project, including but not limited to site engineering and such survey and legal documentation services as may be reasonable and prudent with regards to the property-interest conveyance identified in Section 7 above.

Memorandum of Understanding (LVC-Earl)

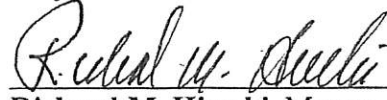
9. That there is no set, established, or anticipated time for the commencement and/or completion of the Improvements Project, which may be constructed and completed all at once or piecemeal (in phases).
10. That in considering the performance and completion of the Improvements Project, the City council may consider:
 - a. Performing and completing the Improvements Project at the time that the City's anticipated 100 South Project is being performed and completed, when necessary equipment, supplies, and materials are mobilized, accessible, and able to be effectively and efficiently used; and/or
 - b. Placing the Improvements Project on the Improvements List of the City.
11. That the Improvements Project, and its performance and completion, are subject to the availability of sufficient funding and manpower of the City, and the approval of the City Council.
12. That, upon completion of the improvements contemplated by this MOU, care and maintenance of such improvements shall be the responsibility of the Parties, according to their ownership of the property upon which the improvement(s) is/are situated; *provided that*, such care and maintenance of the property to be conveyed to the City (including the curb and drainage access/system) shall be commensurate with but not in preference to other public roadways and facilities owned and/or operated by the City).

DATED this 2 day of September, 2020.

Earl Family / Earl Family Trust

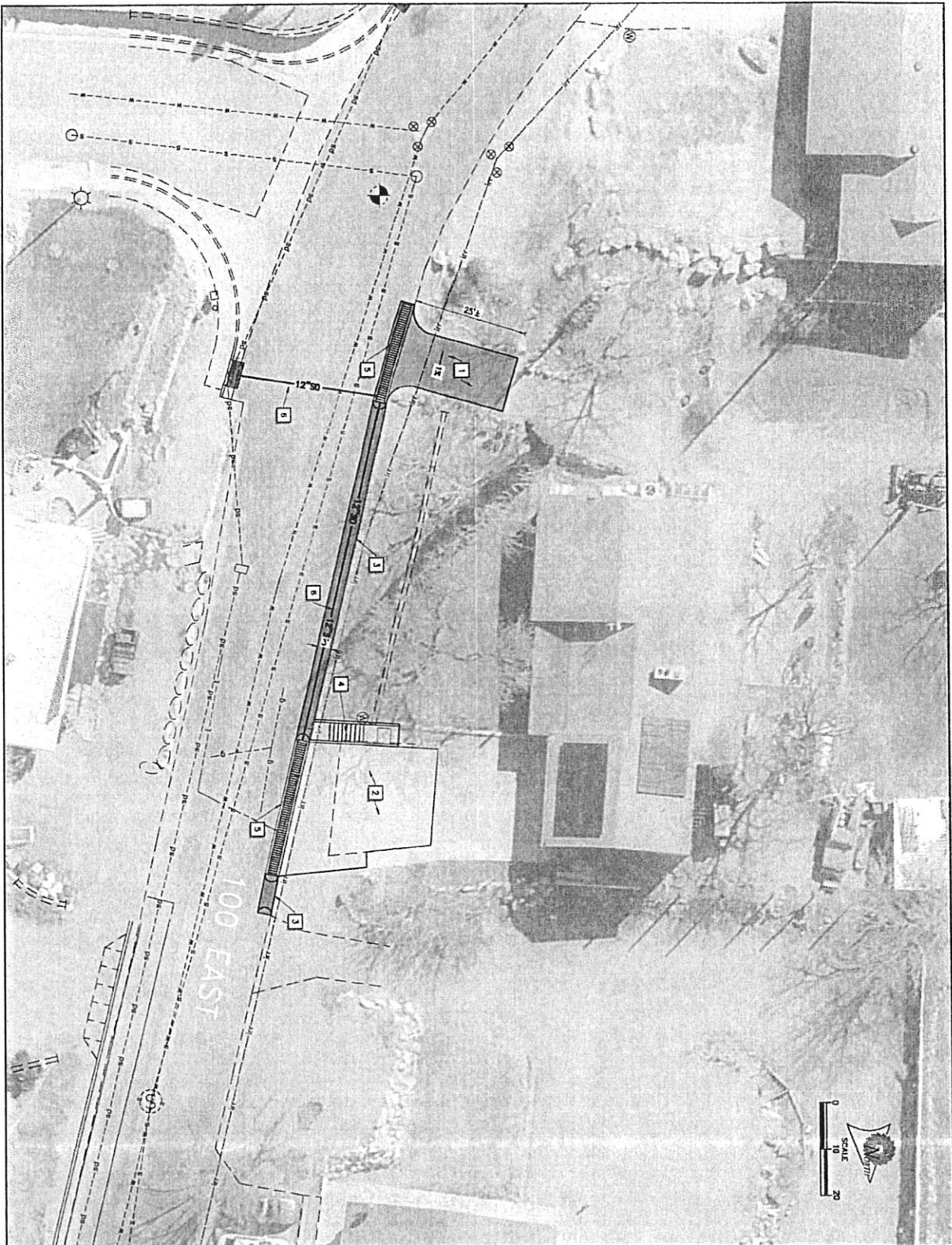
Gail G. Earl, Owner and Surviving
Trustee of the Boyd J. Earl and Gail G.
Earl Family Trust

City of LaVerkin


Richard M. Hirschi, Mayor

Attachment 1

Construction Drawings



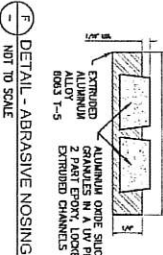
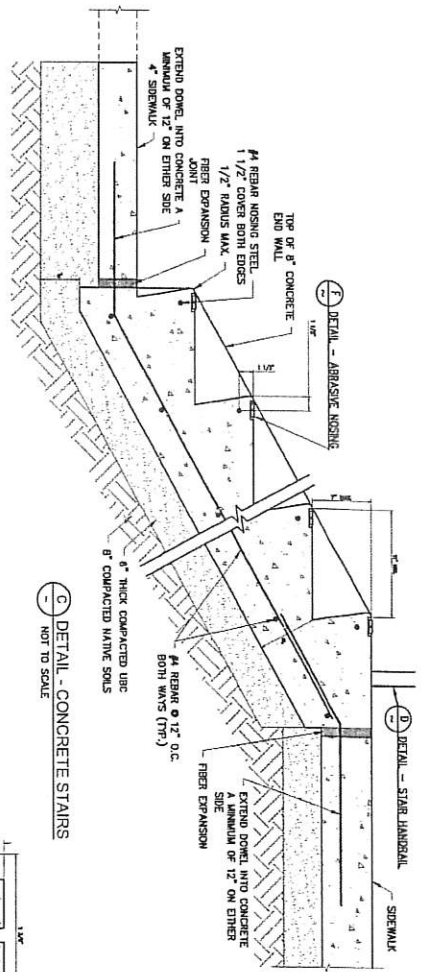
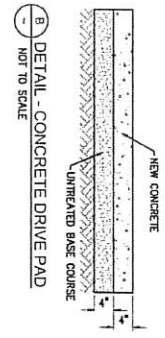
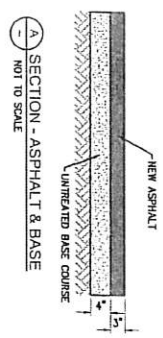
GENERAL NOTES:

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH LIVERMONT CITY STANDARDS FOR PUBLIC WORKS CONSTRUCTION.
2. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER.
3. CONTRACTOR SHALL PRESERVE ALL EXISTING UTILITIES IN PLACE. WHERE DAMAGE OCCURS TO THE PRE-EXISTING CONDITION OR BETTER.

SITE PLAN NOTES:

- 1 ASPHALT DRIVEWAY
- 2 CONCRETE DRIVEWAY
- 3 ASPHALT BERM
- 4 CONCRETE STAIRWAY
- 5 TRENCH DRAIN
- 6 12\"/>

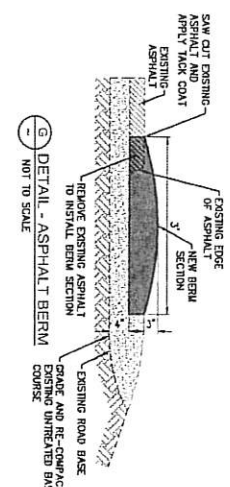
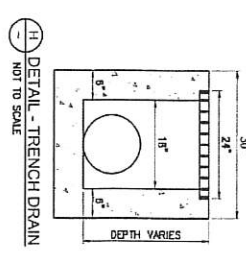
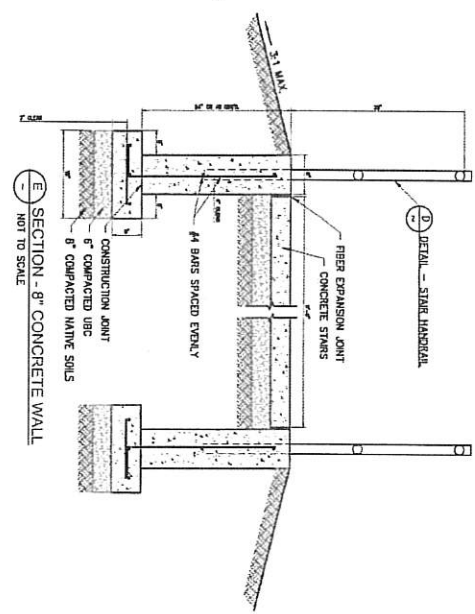
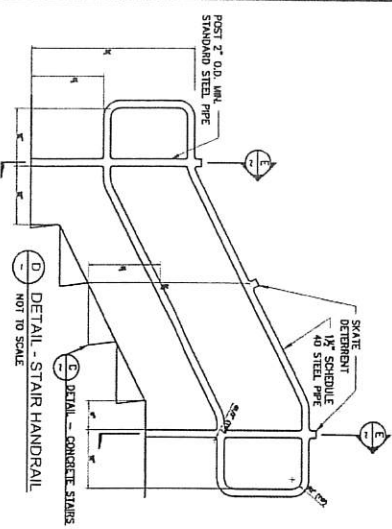
 SUNRISE ENGINEERING		1100 NORTH 100 WEST SUITE 100 LIVERMONT, NM 87040 TEL: 409-555-5555 FAX: 409-555-5556 WWW.SUNRISE-ENGINEERING.COM	
LIVERMONT CITY BOYD EARL ACCESS IMPROVEMENTS CONSTRUCTION DRAWINGS SITE PLAN			
SHEET NO. 000001	DRAWN BY JLM	CHECKED BY JLM	DATE 06/21/2020



- CONCRETE STAIRS NOTES:**
1. STAIRWAYS SHALL HAVE CONTINUOUS HANDRAILS ON BOTH SIDES OF STAIRS PER STAIR HANDRAIL DETAILS.
 2. PROVIDE 1/2 INCH RADIUS ON ALL EXPOSED CONCRETE EDGES.
 3. STAIRS SHALL BE CONSTRUCTED SUCH THAT WATER WILL NOT ACCUMULATE ON WALKING SURFACES.
 4. STAIRS SHALL NOT HAVE A VERTICAL RISE OF GREATER THAN 12 FEET BETWEEN LANDINGS.
 5. STAIR TREADS AND RISERS SHALL BE OF UNIFORM SIZE AND SHAPE. THE TREADS BETWEEN THE LARGEST AND SMALLEST RISER ON BETWEEN THE LARGEST AND SMALLEST TREAD SHALL NOT EXCEED 0.375 INCH IN ANY DIRECTION.
 6. THE RADIUS OF CIRCUMFERENCE AT THE LEADING EDGE OF THE TREAD SHALL NOT BE GREATER THAN 0.5 INCH.
 7. RISERS SHALL BE VERTICAL OR SLOPED FROM THE LEADING EDGE OF THE LEADING EDGE OF THE TREAD ABOVE AT AN ANGLE NOT MORE THAN 30 DEGREES FROM THE VERTICAL.
 8. THE LEADING EDGE (NOSING) OF TREADS SHALL PROJECT NOT MORE THAN 1/2 INCHES BEYOND THE TREAD BELOW AND ALL PROJECTIONS OF THE LEADING EDGES SHALL BE OF UNIFORM SIZE.
 9. THE WALKING SURFACE OF TREADS SHALL NOT BE SLOPED STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE) IN ANY DIRECTION.

ABRASIVE NOSING NOTES:

1. NOSING SHALL TERMINATE NO MORE THAN 3" FROM END OF STEPS.
2. 1/2-INCH MAXIMUM LENGTH.
3. COUNTER SUNK HOLES PRE-DRILLED FOR A #10 FASTENER SPACED 3" FROM ENDS AND APPROXIMATELY 12 TO 15 O.C.
4. UL 1894 LISTED, COMBINED WIDTH OF PROUD-LIMBSCRYPT MATERIAL SHALL NOT BE LESS THAN 1".
5. COLOR SHALL BE SELECTED BY OWNER.



- STAIR HANDRAIL NOTES:**
1. ALL PIPE SHALL BE SCHEDULE 40 STEEL POWER COATED BLACK AFTER FABRICATION.
 2. WELDED JOINTS SHALL BE GROUND SMOOTH.
 3. HANDRAIL SHALL BE POURED IN CONCRETE OR CORE BRULLED/STEELED AND GROUTED IN ELEMENTS, OR OBSTRUCTIONS.
 4. GRIPPING SURFACES SHALL BE UNINTERRUPTED BY NENEL POSTS, OTHER CONSTRUCTION ELEMENTS, OR OBSTRUCTIONS.
 5. TOP OF HANDRAIL GRIPPING SURFACE SHALL BE MOUNTED BETWEEN 34 AND 38 INCHES ABOVE STAIR NOSINGS.
 6. HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITINGS.
 7. HANDRAILS SHALL INCLUDE A SLAKE DETERRENT.

DATE: 10/1/2020

BY: [Signature]

FOR: [Signature]

SUNRISE
ENGINEERING

11000 W. 10TH AVE. SUITE 100
DENVER, CO 80231
TEL: 303.755.1100 FAX: 303.755.1101

PROJECT: BOYD EARL ACCESS IMPROVEMENTS

CONSTRUCTION DRAWINGS

DETAILS

01

