



City of LaVerkin

435 North Main St., LaVerkin Utah, 84745

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

www.laverkin.org

LA VERKIN CITY WATER BOARD AGENDA

Wednesday, June 23, 2021, 3:00 p.m.

435 North Main Street, LaVerkin, UT

- I. Call to Order:**
- II. Council appointment of new Board Members:**
- III. Chair Election:**
- IV. Approval of Minutes:** February 24, 2021 minutes
- V. Reports:**
 - A. Water Contracts-Kyle Gubler
 - B. Water Purchase-Kyle Gubler
 - C. Financials-Kyle Gubler
 - D. Culinary Water Management update-Derek Imlay
 - E. Irrigation Water Management update-Derek Imlay
- VI. Business:**
 - A. Discussion and direction on updating the 2009 Irrigation Master Plan including a possible rate increase.
 - B. Discussion and direction on implementing a short-term rental water rate increase.
 - C. Discussion and direction on a yearly \$.10 water rate increase.
 - D. Discussion and direction on a water efficient landscape ordinance.
 - E. Discussion and direction on implementing stages of water conservation.
- VII. Public Concerns for Board Consideration:** Identification of issues for consideration of future meetings.
- VIII. Board member concerns:**
- IX. Adjourn:**

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 City Recorder does hereby certify that the agenda was sent to each member of the board, sent to the Spectrum newspaper, posted on the LaVerkin City website www.laverkin.org, the Utah Public Meeting Notice website <http://pmn.utah.gov>, and the city office buildings at 435 N. Main and 111 S. Main on June 18, 2021.

Christy Ballard
City Recorder

La Verkin City
Operational Budget Report
51 51 Water - 07/01/2020 to 05/31/2021
91.67% of the fiscal year has expired

	Prior YTD	Current Period	Current YTD	Annual Budget	Percent Used
Income or Expense					
Income From Operations:					
Operating income					
5140 Water Revenue	870,436.40	85,493.83	920,722.27	975,000.00	94.43%
5310 Connection Fees	925.00	425.00	8,375.00	7,000.00	119.64%
5410 Penalties & Fines	30,787.50	1,942.83	21,759.60	25,000.00	87.04%
5490 Miscellaneous	(36.43)	0.00	0.00	0.00	0.00%
Total Operating income	902,112.47	87,861.66	950,856.87	1,007,000.00	94.42%
Operating expense					
Administration					
6660.110 Admin SALARIES & WAGES	117,247.85	11,670.64	137,463.76	148,000.00	92.88%
6660.130 Admin EMPLOYEE BENEFITS	57,635.63	5,748.53	65,336.29	90,500.00	72.19%
6660.210 Admin BOOKS, SUBSCRIPTIONS & MEMBERS	1,486.37	150.00	3,617.46	1,650.00	219.24%
6660.230 Admin TRAVEL & TRAINING	2,945.40	(380.00)	2,620.00	3,000.00	87.33%
6660.240 Admin OFFICE EXPENSE, SUPPLIES & POS	4,292.51	874.09	5,404.70	5,850.00	92.39%
6660.280 Admin UTILITIES	7,299.45	364.65	5,479.55	6,000.00	91.33%
6660.290 Admin TELEPHONE & COMMUNICATION	4,533.94	395.45	4,412.03	5,000.00	88.24%
6660.315 Admin SOFTWARE OR INFORMATION	10,442.57	150.63	6,886.37	6,750.00	102.02%
6660.410 Admin PRODUCT OR SERVICES PURCHASE	44,703.52	3,288.64	37,373.12	35,750.00	104.54%
6660.440 Admin CONNECTION COSTS	73,789.85	6,817.33	75,454.84	81,000.00	93.15%
6660.460 Admin CONTRACTED SERVICES	597.22	0.00	282.00	1,000.00	28.20%
6660.510 Admin INSURANCE	7,483.73	7,707.13	7,743.32	12,000.00	64.53%
Total Administration	332,458.04	36,787.09	352,073.44	396,500.00	88.80%
Maintenance					
6340.110 O&M SALARIES & WAGES	87,970.10	7,507.40	87,768.60	95,850.00	91.57%
6340.130 O&M EMPLOYEE BENEFITS	61,878.33	5,595.86	62,828.90	76,500.00	82.13%
6340.250 O&M EQUIPMENT OPERATING SUPPLIES &	21,564.71	2,606.47	16,870.66	26,500.00	63.66%
6340.410 O&M PRODUCT OR SERVICE PURCHASE	0.00	0.00	3,614.60	75,000.00	4.82%
6340.420 O&M PURIFICATION AND TREATMENT COS	1,682.00	0.00	960.00	2,000.00	48.00%
6340.440 O&M NEW SERVICES	141,829.02	28,515.84	125,472.35	147,450.00	85.09%
6340.450 O&M SYSTEMS MAINTENANCE	34,576.29	1,743.00	31,062.51	35,000.00	88.75%
6340.690 O&M DEPRECIATION	118,727.29	0.00	0.00	135,000.00	0.00%
6340.740 O&M EQUIP EXP / CAPITAL IMPR	0.00	0.00	0.00	12,000.00	0.00%
Total Maintenance	468,227.74	45,968.57	328,577.62	605,300.00	54.28%
Total Operating expense	800,685.78	82,755.66	680,651.06	1,001,800.00	67.94%
Total Income From Operations:	101,426.69	5,106.00	270,205.81	5,200.00	5,196.27%
Non-Operating Items:					
Non-operating income					
5520 Impact Fees	17,736.00	1,478.00	63,554.00	60,000.00	105.92%
5810 Transfer from General Fund	8,000.00	0.00	0.00	8,000.00	0.00%
Total Non-operating income	25,736.00	1,478.00	63,554.00	68,000.00	93.46%
Non-operating expense					
6340.820 O&M INTEREST EXPENSE	3,195.00	3,000.00	3,000.00	4,000.00	75.00%
6660.820 Admin INTEREST EXPENSE 1999 WATER BO	0.00	0.00	0.00	2,200.00	0.00%
6660.821 Admin INTEREST EXPENSE 2010 Water Reve	13,860.66	0.00	11,948.00	15,000.00	79.65%
9130.2 Transfer to DS CONT 2015 REFUNDING BOND	54,400.00	0.00	0.00	52,000.00	0.00%
Total Non-operating expense	71,455.66	3,000.00	14,948.00	73,200.00	20.42%
Total Non-Operating Items:	(45,719.66)	(1,522.00)	48,606.00	(5,200.00)	-934.73%
Total Income or Expense	55,707.03	3,584.00	318,811.81	0.00	0.00%

La Verkin City
Operational Budget Report
53 53 Irrigation - 07/01/2020 to 05/31/2021
91.67% of the fiscal year has expired

	Prior YTD	Current Period	Current YTD	Annual Budget	Percent Used
Income or Expense					
Income From Operations:					
Operating income					
5110 Irrigation Revenue	82,826.60	17,853.23	92,778.01	90,000.00	103.09%
5310 Irrigation CONNECTION FEES	1,950.00	150.00	8,068.00	7,000.00	115.26%
5410 Irrigation PENALTIES	896.37	0.00	750.22	1,000.00	75.02%
5530 Irrigation ASSESSMENT	30,891.31	10.00	30,916.56	31,000.00	99.73%
Total Operating income	116,564.28	18,013.23	132,512.79	129,000.00	102.72%
Operating expense					
6310.110 Irrigation SALARIES & WAGES	55,189.73	4,838.56	56,930.71	62,000.00	91.82%
6310.130 Irrigation EMPLOYEE BENEFITS	30,111.96	2,658.71	30,257.79	42,000.00	72.04%
6310.240 Irrigation OFFICE EXPENSE, SUPPLIES & PO	792.77	169.56	1,111.11	1,200.00	92.59%
6310.250 Irrigation EQUIPMENT OPERATING SUPPLIES	4,777.33	432.44	3,212.32	4,250.00	75.58%
6310.290 Irrigation TELEPHONE & COMMUNICATIONS	466.39	126.93	1,328.69	1,700.00	78.16%
6310.315 Irrigation COMPUTER EQUIPMENT	638.04	64.00	2,359.00	2,500.00	94.36%
6310.450 Irrigation WATER MAIN REPAIR	9,984.05	841.56	6,300.40	9,000.00	70.00%
6310.510 Irrigation INSURANCE	7,467.37	7,707.11	7,743.31	3,000.00	258.11%
6310.690 Irrigation DEPRECIATION	20,231.86	0.00	0.00	22,500.00	0.00%
Total Operating expense	129,659.50	16,838.87	109,243.33	148,150.00	73.74%
Total Income From Operations:	(13,095.22)	1,174.36	23,269.46	(19,150.00)	-121.51%
Non-Operating Items:					
Non-operating income					
5520 Irrigation IMPACT FEES	14,832.00	1,545.00	32,744.00	19,150.00	170.99%
Total Non-operating income	14,832.00	1,545.00	32,744.00	19,150.00	170.99%
Total Non-Operating Items:	14,832.00	1,545.00	32,744.00	19,150.00	170.99%
Total Income or Expense	1,736.78	2,719.36	56,013.46	0.00	0.00%

<u>Riverwood</u>	<u>Jan</u>	<u>Feb</u>	<u>March</u>	<u>April</u>	<u>May</u>
<u>2020</u>	<u>10,110.000</u>	<u>10,419.000</u>	<u>9,697.000</u>	<u>15,462.000</u>	<u>15,426.000</u>
<u>2021</u>	<u>9,800.000</u>	<u>10,200.000</u>	<u>9,558.000</u>	<u>16,050.000</u>	<u>20,321.000</u>

<u>Cotton well</u>	<u>Jan</u>	<u>Feb</u>	<u>March</u>	<u>April</u>	<u>May</u>
<u>2020</u>	<u>946,210</u>	<u>2,621.000</u>	<u>2,458.000</u>	<u>2,801.000</u>	<u>3,818.000</u>
<u>2021</u>	<u>2,593.000</u>	<u>2,358.000</u>	<u>3,134.000</u>	<u>3,525.000</u>	<u>4,320.000</u>

<u>Irrigation Acre feet</u>	<u>March</u>	<u>April</u>	<u>May</u>		
<u>2020</u>	<u>155</u>	<u>142</u>	<u>271</u>		
<u>2021</u>	<u>87</u>	<u>218</u>	<u>300</u>		

Irrigation Master plan

- The Last Irrigation Master plan done was in 2009.
- For the City to look at adjusting our current Irrigation rates we need to have a new study done.
 - ✓ Looking at and adding and firming definitions.
 - ✓ On the City's side the way we allocate a share.
 - Not in ¼ - ½ - ¾ - 1' but in what can be Irrigated.

A different water base rate and tiers for

- Vacation rentals
- Bed and breakfast
- 2nd homes
- Anyone that has a City business license.

WCWCD .10 cents yearly water rate increase That started in 2016 and will go on for the next 10 years.

- This rate increase started taking place in 2016 and is anticipated to go for 10 years or 2026.
- As of these years increase it stands at an increase of .60.
- LaVerkin was not affected until the new agreement was put into place.
 - ✓ Do we start now with the 2021 .10 cent increase or?
 - In talking with Hurricane yesterday they have just barely adopted the .10 cent yearly increase to take effect the same time the District does. Hurricane is not going back to 2016 but starting now at .10 cents and going forward.
 - ✓ Do we make it retroactive to 2016 .60 cents?

Discussion on WCWCD proposed landscape ordinance

- Required in all subdivision going forward?
 - ✓ Put on the Mylar of the subdivision so that between the developer and the recorded mylar the homeowner would be more aware.
 - ✓ WCWCD landscaping ordinance
- Section 6 Applicability of Water Efficient Landscape Ordinance
 - ✓ The provisions of this ordinance shall apply to all new and rehabilitated landscaping for public agency projects, private development projects, developer-installed landscaping in multi-family and single-family residential projects, and homeowner provided landscape improvements within the front, side, and rear yards of single and two-family dwellings.
 - ✓ If a high-water use landscape (e.g., predominantly turf) has been converted to a lower-water use landscape, the landscape cannot be returned to a high-use landscape.

○ Section 8 Irrigation Design Standards

- ✓ *Pressure Regulation. A pressure regulating valve shall be installed and maintained by the consumer if the static service pressure exceeds 80 pounds per square inch (psi). The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and shall be set at the manufacturer's recommended pressure for the sprinklers.*

○ Section 9 Landscapes in New Single-Family Residential Developments

- ✓ *Homebuilders and/or developers subdividing lots and/or constructing new single-family residential homes shall offer a water-efficient landscaping option to prospective home buyers, such as the Locascapes design style. The water-efficient landscaping option shall meet the Landscape Design Standards and Irrigation Design Standard of this ordinance, and the turf area shall not exceed 35 percent of the total landscaped area.*

○ Section 10 Prohibition on Restrictive Covenants Requiring Turf

- ✓ *Any Homeowners Association governing documents, such as bylaws, operating rules, covenants, conditions, and restrictions that govern the operation of a common interest development, are void and unenforceable if they:*

○ Section 11 Landscapes in Commercial, Industrial, and Institutional Developments

- ✓ *Commercial, industrial, and institutional landscapes shall meet the Landscape Design Standards and Irrigation Design Standards of this ordinance, and the turf area shall not exceed 20 percent of the total landscaped area, outside of active recreation areas. (City would have to readdress its SR9 landscaping ordinance)*

○ Section 12 Documentation for Commercial, Industrial, and Institutional Projects

- ✓ *Landscape Documentation Package. A copy of a Landscape Documentation Package shall be submitted to and approved by the City prior to the issue of any permit. A copy of the approved Landscape Documentation Package shall be provided to the property owner or site manager and to the local retail water purveyor. The Landscape Documentation Package shall be prepared by a professional landscape architect (PLA) and shall consist of the following items:*
 - *(Addition cost to the homeowner as well as time spent by the city for review)*

Questions:

- 1) *Is this the route the City needs to go (To some degree) to secure water for future growth in LaVerkin City?*
- 2) *If any landscaping ordinance is passed (a) who will enforce it from the City? (b) Dose this become a full-time job.*

Discussion on possible implementation of stage 1 of our water conservation plan.

PROCEDURES

When the public works director and city manager agree that the conditions meet the guidelines for initiating any stage of the plan, as set forth in this chapter, they shall: 1) notify the mayor, council, and water board, and 2) recommend that the mayor and/or city council declare the water conservation plan and applicable stage in effect.

Stage 1: Voluntary Restrictions on Nonessential Water Use:

Reduction Goal: Ten percent (10%) of peak use.

Water between the hours of eight o'clock (8:00) P.M. and eight o'clock (8:00) A.M.

(Notice the watering time change. Under the time-of-day water schedule we allow watering from 6 pm to 11 am, Now it would change to 8 pm to 8 am)

Inside use:

- *Fix dripping and leaking faucets and toilets*
- *Do not let the water run while shaving.*
- *Do not flush the toilet unnecessarily.*
- *Take shorter showers or fill bathtub only part way.*
- *Consider installing low flow showerheads.*
- *Do not run the water while brushing teeth.*
- *Do not run the tap to make water hot or cold.*
- *Wash only full loads of dishes and laundry.*
- *Consider replacing any appliance that utilizes water with a low flow type appliance if such appliance is not already low flow.*
- *Reduce or eliminate the use of the garbage disposal.*
- *Wash fruits and vegetables in a basin instead of under running water.*
- *Adjust temperatures in buildings with water cooled air conditioners to require less water.*

Outside:

- *Reduce the use of culinary water for irrigation.*
- *Raise your lawn mower cutting height.*
- *Delay planting any new grass, sod, or other new landscaping.*
- *Do not fill swimming pools.*

- *Use a hose with a shutoff nozzle.*
- *Sweep sidewalks and steps rather than hosing.*
- *Aerate turf areas.*
- *apply only the amount required for good plant health.*
- *Monitor soil moisture to determine if watering is needed.*
- *Avoid watering on windy days or midday.*
- *Keep fire hydrants closed.*
- *Repair leaks in hoses, pipes, faucets, and connections.*
- *Limit operation of nonrecycling fountains*
-

ENFORCEMENT AND VIOLATION PENALTIES:

The LaVerkin City utility billing department shall be charged with monitoring culinary water usage. Upon documentation of a customer's violation of the required water conservation reduction amounts, the billing department shall impose the following penalties:

A. **Stage 1:**

- *Violations: Notice of violation with request for greater attention to water usage reduction.*

Notes:

- 1) *If we go into stage # 1, would we send out a flyer to everyone?*
- 2) *Put on the City social media.*
 - a) *Facebook*
 - b) *Website*
 - c) *Radio time?*

WATER EFFICIENT LANDSCAPE ORDINANCE
ORDINANCE NUMBER (City ordinance number)

Section 1. Preamble

- A. Whereas, <CITY NAME> desires to promote the design, installation and maintenance of landscapes that are both attractive and water efficient;
- B. Whereas, <CITY NAME> can accomplish these goals by adopting this ordinance; and,
- C. Whereas, <CITY NAME> has the authority to adopt this ordinance pursuant to Utah Code Annotated (2010) §10-3-702, and hereby exercises its legislative powers in doing so.

Section 2. Ordaining Clause

Be it ordained by the <CITY NAME>, that the Water Efficient Landscape Ordinance, Number <CITY ORDINANCE NUMBER>.

Section 3. Title, Water Efficient Landscape Requirements

- A. An ordinance amending the Zoning Code of the City of <CITY NAME> so as to add a Water Efficient Landscape Ordinance of minimum landscape requirements. This ordinance shall be referred to as "<CITY NAME> Water Efficient Landscape Ordinance."

Section 4. Purpose

The City Council has found that it is in the public interest to conserve the public's water resources and to promote water efficient landscaping. The purpose of this ordinance is to protect and enhance the community's environmental, economic, recreational, and aesthetic resources by promoting efficient use of water in the community's landscapes, reduce water waste and establish a structure for designing, installing, and maintaining water efficient landscapes throughout the City.

Section 5. Definitions

The following definitions shall apply to this ordinance:

Active Recreation Area: An area that is dedicated to active play where turf grass may be used as the playing surface. Examples of active recreation areas include sports fields, play areas, and other similar uses.

Check Valve: A device used in sprinkler heads or pipe to prevent water from draining out of the pipe through gravity flow.

Controller: A device used in irrigation systems to automatically control when and how long sprinklers or drip irrigation systems operate.

Drip Irrigation: An irrigation system that delivers water by adding water at the plant's base and root zone, usually measured in gallons per hour. Drip irrigation exhibit a droplet, trickle, umbrella or short stream pattern. Additional benefits include minimal evaporation and overspray as well as lower water use for lower cost and better water conservation.

Drip Emitter: Drip irrigation fittings that deliver water slowly at the root zone of the plant, usually measured in gallons per hour.

Grading Plan: The grading plan shows all finish grades, spot elevations, drainage as necessary and existing and new contours with the developed landscaped area.

Ground Cover: Material planted in such a way as to form a continuous cover over ground that can be maintained at a height not more than twelve (12) inches.

Hardscape: Patios, decks, and paths. Does not include driveways and sidewalks.

Irrigation Plan: The irrigation plan shows the components of the irrigation system with water meter size, backflow prevention, precipitation rates, flow rate, and operating pressure for each irrigation circuit, and identification of all irrigation equipment.

Landscape Architect: A person who holds a professional license to practice landscape architecture in the state of Utah. Per State Code, licensed landscape architects, licensed architects, licensed land surveyors, and licensed engineers can professionally stamp plans that fall under the practice of landscape architecture. This includes commercial landscape and irrigation plans. Each municipality has the authority to require that only a licensed landscape architect can stamp plans that fall under the practice of landscape architecture.

Landscape Area: Lot size minus the home footprint, driveway, sidewalks and patios

Landscape Designer: A person who may or may not hold professional certificates for landscape design/architecture and cannot legally create commercial landscape plans. Landscape Designers generally focus on residential design and horticultural needs of home landscapes.

Landscape Documentation Package: The preparation of a graphic and written criteria, specifications, and detailed plans to arrange and modify the effects of natural features such as plantings, ground and water forms, circulation, walks and other features to comply with the provisions of this ordinance. The Landscape Documentation Package shall include a project data sheet, a site plan, a planting plan, an irrigation plan, construction details, and a grading plan.

Landscape Zone: A portion of the landscaped area having plants with similar water needs, areas with similar microclimate (e.g., slope, exposure, wind, etc.) and soil conditions, and areas that will be similarly irrigated. A landscape zone can be served by one irrigation valve, or a set of valves with the same schedule.

Landscaping: Any combination of living plants, such as trees, shrubs, vines, ground covers, annuals, perennials, ornamental grass, or seeding; natural features such as rock, stone, or bark chips; and structural features, including but not limited to, fountains, outdoor art work, screen walls, fences or benches.

Localscapes®: A locally adaptable and environmentally sustainable urban landscape style that requires less irrigation than traditional Utah landscapes (see www.localscapes.com).

Mulch: Any material such as rock, bark, wood chips or other materials left loose and applied to the soil.

Park Strip: A typically narrow landscaped area located between the back-of-curb and sidewalk.

Planting Plan: A planting plan shall clearly and accurately identify the type, size, and locations for new and existing trees, shrubs, planting beds, ground covers, turf areas, driveways, sidewalks, hardscape features, and fences.

Pop-up Spray Head: A sprinkler head that sprays water through a nozzle in a fixed pattern with no rotation.

Precipitation Rate: The depth of water applied to a given area, usually measured in inches per hour.

Pressure Regulating Valve: A valve installed in an irrigation mainline that reduces a higher supply pressure at the inlet down to a regulated lower pressure at the outlet.

Pressure Compensating: A drip irrigation system that compensates for fluctuating water pressure by only allowing a fixed volume of water through drip emitters.

Rotor Spray Head: A sprinkler head that distributes water through a nozzle by the tractions of a gear or mechanical rotor.

Spray Sprinkler: An irrigation head that sprays water through a nozzle.

Stream Sprinkler: An irrigation head that projects water through a gear rotor in single or multiple streams.

Turf: A surface layer of earth containing mowed grass with its roots.

Water-Conserving Plant: A plant that can generally survive with available rainfall once established although supplemental irrigation may be needed or desirable during spring and summer months.

Section 6: Applicability of Water Efficient Landscape Ordinance

The provisions of this ordinance shall apply to all new and rehabilitated landscaping for public agency projects, private development projects, developer-installed landscaping in multi-family and single-family residential projects, and homeowner provided landscape improvements within the front, side, and rear yards of single and two-family dwellings.

- A. If a high-water use landscape (e.g. predominantly turf) has been converted to a lower-water use landscape, the landscape cannot be returned to a high-use landscape.

Section 7: Landscape Design Standards

- A. Plant Selection. Plants shall be well-suited to the microclimate and soil conditions at the project site. Both native and locally-adapted plants are acceptable. Plants with similar water needs shall be grouped together as much as possible.

Areas with slopes greater than 25 percent, or 4:1 grad, shall be landscaped with deep-rooting, water-conserving plants, that do not include turf.

Park strips and other landscaped areas less than eight (8) feet wide shall be landscaped with water-conserving plants, that do not include turf.

- B. Mulch. After completion of all planting, all irrigated non-turf areas shall be covered with a minimum of 3- to 4-inch layer of mulch to retain water, inhibit weed growth, and moderate soil temperature. Non-porous material shall not be placed under the mulch.
- C. Soil Preparation. Soil preparation will be suitable to provide healthy growing conditions for the plants and to encourage water infiltration and penetration. Soil preparation shall include scarifying the soil to a minimum depth of six (6) inches and amending the soil with organic material as per specific recommendations of the Landscape Designer / Landscape Architect based on the soil conditions. In some cases, soil testing will provide additional recommendations for amending the soil.
- D. Tree Selection. Tree species shall be selected based on growth characteristics and site conditions, including available space, overhead clearance, soil conditions, exposure, and desired color and appearance. Trees shall be suited for water-efficient landscapes. Trees shall be selected as follows:

1. Broad canopy trees shall be selected where shade or screening of tall objects is desired;
2. Low-growing trees shall be selected for spaces under utility wires;
3. Select trees from which lower branches can be trimmed to maintain a healthy growth habit where visual clearance and natural surveillance is a concern;
4. Narrow or columnar trees shall be selected for small spaces, or where awnings or other building features limit growth, or where greater visibility is desired between buildings and the street for natural surveillance;
5. Street trees shall be planted within existing and proposed park strips, and in sidewalk tree wells on streets without park strips. Tree placement shall provide canopy cover (shade) and avoid conflicts with existing trees, retaining walls, above and below ground utilities, lighting, and other obstructions; and
6. Trees less than a two-inch caliper shall be double-staked until the trees mature to a two-inch caliper.

Section 8. Irrigation Design Standards

- A. Pressure Regulation. A pressure regulating valve shall be installed and maintained by the consumer if the static service pressure exceeds 80 pounds per square inch (psi). The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and shall be set at the manufacturer's recommended pressure for the sprinklers.
- B. Irrigation Controller. It is recommended that landscaped areas use a WaterSense labeled smart irrigation controller, which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions. All controllers shall be equipped with automatic rain delay or rain shut-off capabilities.
- C. Each valve shall irrigate a landscape with a similar site, slope, and soil conditions and plant materials with similar watering needs. Turf and non-turf areas shall be irrigated on separate valves. Drip emitters and sprinklers shall be placed on separate valves.
- D. Drip emitters shall be provided for each tree.
- E. Drip irrigation shall be used to irrigate plants in non-turf areas.
- F. Pop-up spray heads shall be at a minimum of four (4) inches in height to clear turf.

- G. Sprinklers shall have matched precipitation rates with each control valve circuit.
- H. Sprinkler heads shall be attached to rigid lateral lines with flexible material (swing joints) to reduce potential for breakage.
- I. Check valves shall be required where elevation differences cause low-head drainage. Pressure compensating valves and sprinklers shall be required where a significant variation in water pressure occurs within the irrigation system due to elevation differences.
- J. Filters and end-flush valves shall be provided as necessary for drip irrigation lines.
- K. Landscape watering with culinary (treated) water is prohibited from 10 a.m. to 8 p.m. to maximize irrigation efficiency.
- L. Program valves for multiple repeat cycles where necessary to reduce runoff, particularly on slopes and soils with slow infiltration rates.

Section 9. Landscapes in New Single-Family Residential Developments

- A. Homebuilders and/or developers subdividing lots and/or constructing new single-family residential homes shall offer a water-efficient landscaping option to prospective home buyers, such as the Locascapes design style. The water-efficient landscaping option shall meet the Landscape Design Standards and Irrigation Design Standard of this ordinance, and the turf area shall not exceed 35 percent of the total landscaped area.
- B. Homebuilders and/or developers who construct model homes for a designated subdivision shall have at least one model home with water-efficient landscaping, such as the Locascapes design style. The water-efficient landscaping option shall meet the Landscape Design Standards and Irrigation Design Standards of this ordinance, and the turf area shall not exceed 35 percent of the total landscaped area.
- C. Model homes shall have landscaping and irrigation plans approved by the City Planning Department prior to issuance of building permits, for which no variance may be granted, and which meet the aforementioned requirements.
- D. Model homes shall include an informational brochure on water-efficient landscaping or Locascapes. Locascapes brochures can be obtained from the Washington County Water Conservancy District.

Section 10. Prohibition on Restrictive Covenants Requiring Turf

- A. Any Homeowners Association governing documents, such as bylaws, operating rules, covenants, conditions, and restrictions that govern the operation of a common interest development, are void and unenforceable if they:
 - 1. Require the use of turf in landscape areas less than 8 feet wide or require turf in other areas that exceed 35 percent of the landscaped area; or
 - 2. Prohibit, or include conditions that have the effect of prohibiting, the use of water-conserving plants as a group; or
 - 3. Have the effect of prohibiting or restricting compliance with this ordinance or other water conservation measures.

Section 11. Landscapes in Commercial, Industrial, and Institutional Developments

- A. Commercial, industrial, and institutional landscapes shall meet the Landscape Design Standards and Irrigation Design Standards of this ordinance, and the turf area shall not exceed 20 percent of the total landscaped area, outside of active recreation areas.

Section 12. Documentation for Commercial, Industrial, and Institutional Projects

Landscape Documentation Package. A copy of a Landscape Documentation Package shall be submitted to and approved by the City prior to the issue of any permit. A copy of the approved Landscape Documentation Package shall be provided to the property owner or site manager and to the local retail water purveyor. The Landscape Documentation Package shall be prepared by a professional landscape architect (PLA) and shall consist of the following items:

- A. Project Data Sheet. The Project Data Sheet shall contain the following:
 - 1. Project name and address;
 - 2. Applicant or applicant agent's name, address, phone number, and email address;
 - 3. Landscape architect's name, address, phone number, and email address; and
 - 4. Landscape contractor's name, address, phone number and email address, if available at this time.
- B. Planting Plan. A detailed planting plan shall be drawn at a scale that clearly identifies the following:

1. Location of all plant materials, a legend with botanical and common names, and size of plant materials;
 2. Property lines and street names;
 3. Existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements;
 4. Existing trees and plant materials to be removed or retained;
 5. Scale: graphic and written;
 6. Date of design;
 7. Designation of landscape zones, and
 8. Details and specifications for tree staking, soil preparation, and other planting work.
- C. Irrigation Plan. A detailed irrigation plan shall be drawn at the same scale as the planting plan and shall contain the following information:
1. Layout of the irrigation system and a legend summarizing the type and size of all components of the system, including manufacturer name and model numbers;
 2. Static water pressure in pounds per square inch (psi) at the point of connection to the public water supply;
 3. Flow rate in gallons per minute and design operating pressure in psi for each valve and precipitation rate in inches per hour for each valve with sprinklers, and
 4. Installation details for irrigation components.
- D. Grading Plan. A grading plan shall be drawn at the same scale as the planting plan and shall contain the following information:
1. Property lines and street names, existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements, and
 2. Existing and finished contour lines and spot elevations as necessary for the proposed site improvements, as well as drainage.

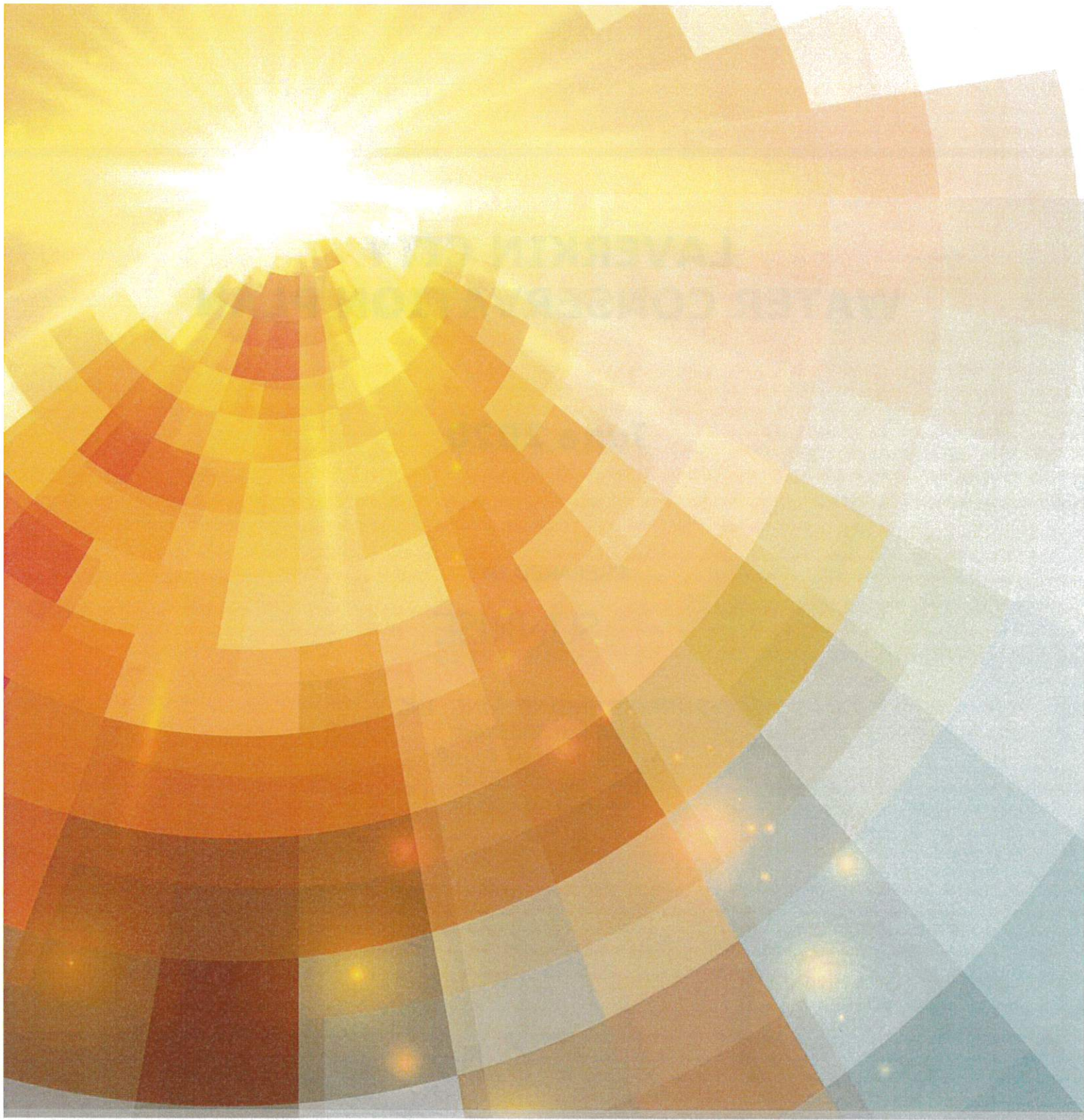
Section 13. Plan Review, Construction Inspection, and Post-Construction Monitoring for Commercial, Industrial, and Institutional Projects

- A. As part of the building permit approval process, a copy of the Landscape Documentation Package shall be submitted to the City for review and approval before construction begins.
- B. All installers and designers shall meet state and local license, insurance, and bonding requirements, and be able to show proof of such.
- C. During construction, site inspection of the landscaping may be performed by the City Building Inspection Department.
- D. Following construction and prior to issuing the approval for occupancy, an inspection shall be scheduled with the Building Inspection Department to verify compliance with the approved landscape plans. The Certificate of Substantial Completion shall be completed by the property owner, contractor or landscape architect and submitted to the City.
- E. The City reserves the right to perform site inspections at any time before, during or after the irrigation system and landscape installation, and to require corrective measures if requirements of this ordinance are not satisfied.

Section 14. Effective Date

This ordinance shall be effective as of <EFFECTIVE DATE>

Dated: _____	<CITY NAME>
	By: _____
	Its: _____ Mayor
[Municipal Recorder Attestation and Seal]	



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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APPENDICES

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

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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:

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

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.

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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

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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.

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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

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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

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

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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.

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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.

SECTION 2 – WATER CHALLENGES AND GOALS

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.

SECTION 3 – CONSERVATION MEASURES

- 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.

SECTION 4 – CURRENT PRICING STRUCTURE

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.

SECTION 5 – ADDITIONAL CONSERVATION MEASURES

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.

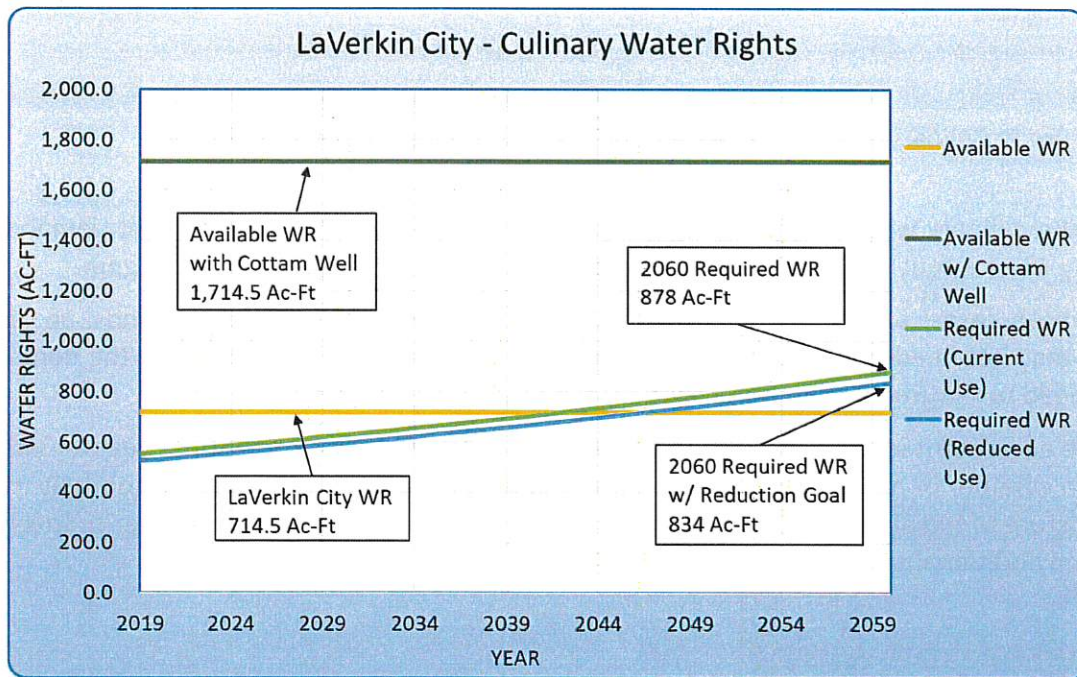


Figure A: Culinary Water Right Demands over the Planning Period

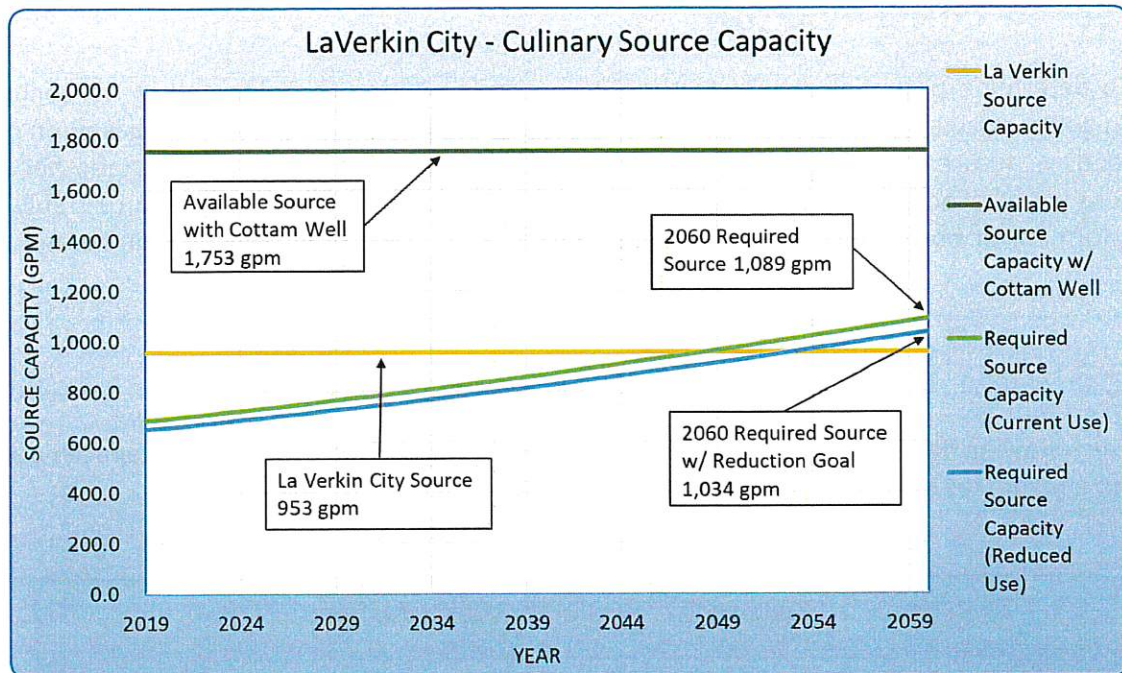


Figure B: Culinary Water Source Capacity Demands over the Planning Period

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.

SECTION 6 – EFFECT OF CONSERVATION

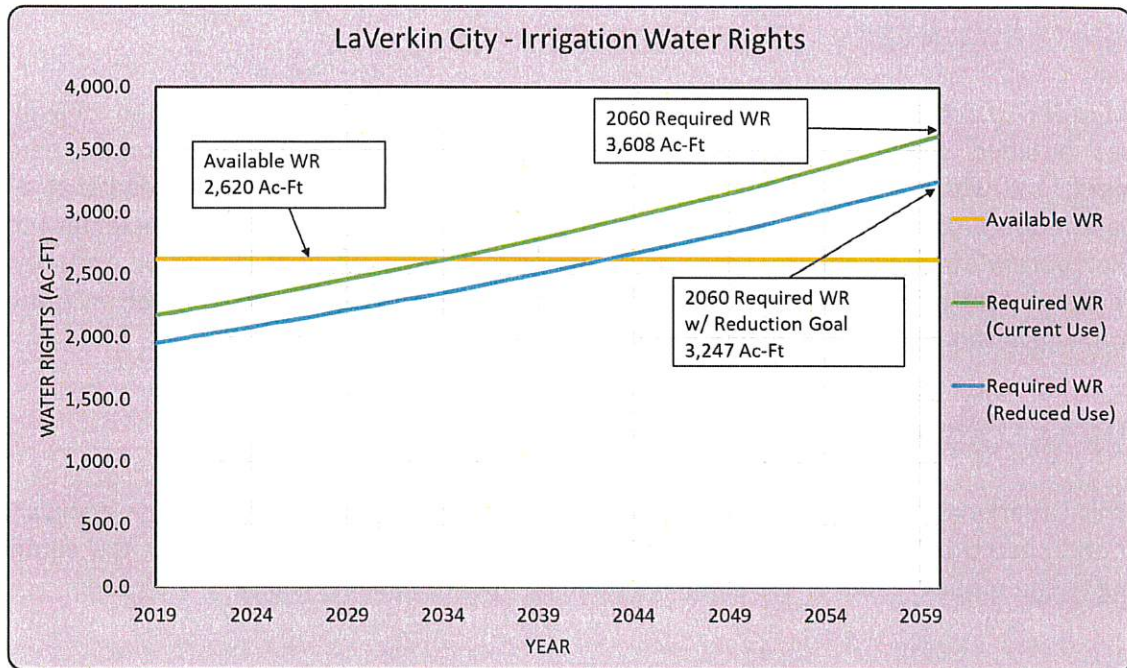


Figure C: Irrigation Water Right Demands over the Planning Period

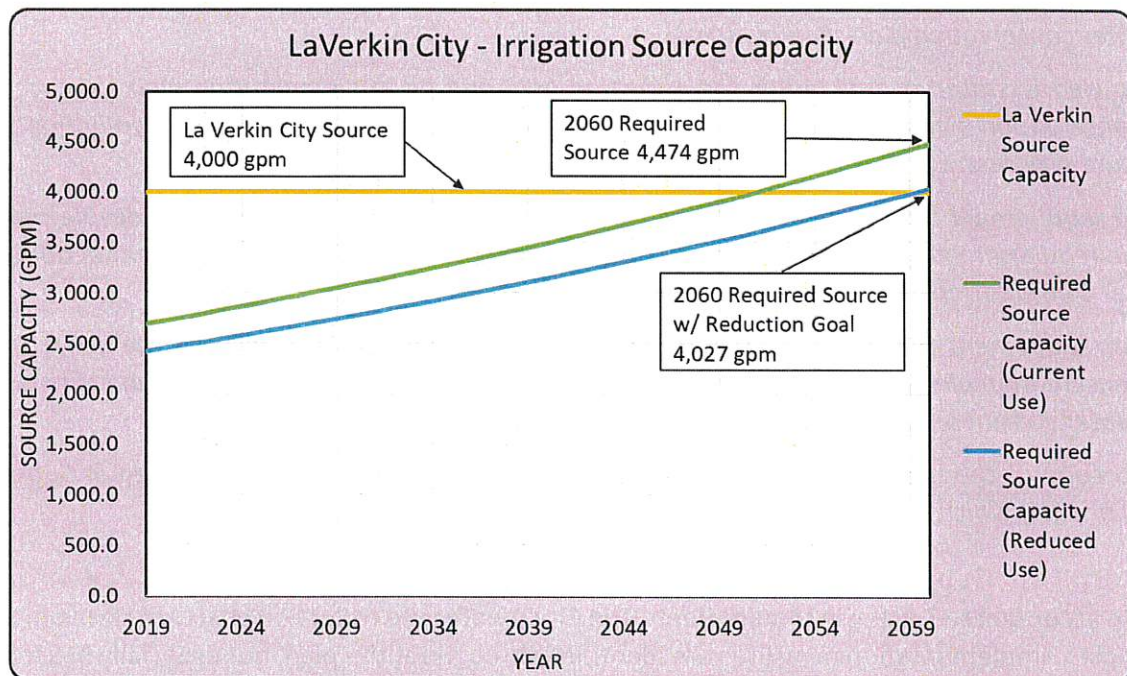


Figure D: Irrigation Water Source Capacity Demands over the Planning Period

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

SECTION 7 – PLAN IMPLEMENTATION

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

Points

- Talk about WCWCD request for a consistent time of day watering ordinance.
 - WCWCD Watering from 8 pm to 10 am
 - Our time-of-day ordinance if water from 6 pm to 10 am (City is already following) and we should stay with our ordinance.
- Go over our time-of-day ordinance.
- The mayor should send out a letter of a message either in a mailer (Coordinate with Kyles mailer) or on the City web site talking about the need to conserve water along with the Time-of-Day watering restrictions and additional steps the citizens could take to conserve water.
 - Crew should be prepared to call, put door hangers on doors or talk directly with the citizen if home to help educate them if they are water outside the time-of-day watering restrictions.
- Hand out the bullet points for the (4) water stages.

In the event of an unforeseeable event such as an extended drought, earthquake, reservoir or well failure or other major disruption of the water supply, the city will implement the attached four (4) stage culinary water conservation management plan (the "plan").

PROCEDURES

When the public works director and city manager agree that the conditions meet the guidelines for initiating any stage of the plan, as set forth in this chapter, they shall: 1) notify the mayor, council, and water board, and 2) recommend that the mayor and/or city council declare the water conservation plan and applicable stage in effect.

Stage 1: Voluntary Restrictions on Nonessential Water Use:

Reduction Goal: Ten percent (10%) of peak use.

Water between the hours of eight o'clock (8:00) P.M. and eight o'clock (8:00) A.M.

Inside use:

- *Fix dripping and leaking faucets and toilets*
- *Do not let the water run while shaving.*
- *Do not flush the toilet unnecessarily.*
- *Take shorter showers or fill bathtub only part way.*
- *Consider installing low flow showerheads.*
- *Do not run the water while brushing teeth.*
- *Do not run the tap to make water hot or cold.*
- *Wash only full loads of dishes and laundry.*
- *Consider replacing any appliance that utilizes water with a low flow type appliance if such appliance is not already low flow.*
- *Reduce or eliminate the use of the garbage disposal.*
- *Wash fruits and vegetables in a basin instead of under running water.*
- *Adjust temperatures in buildings with water cooled air conditioners to require less water.*

Outside:

- *Reduce the use of culinary water for irrigation.*
- *Raise your lawn mower cutting height.*
- *Delay planting any new grass, sod, or other new landscaping.*
- *Do not fill swimming pools.*
- *Use a hose with a shutoff nozzle.*
- *Sweep sidewalks and steps rather than hosing.*
- *Aerate turf areas.*
- *apply only the amount required for good plant health.*
- *Monitor soil moisture to determine if watering is needed.*
- *Avoid watering on windy days or midday.*
- *Keep fire hydrants closed.*
- *Repair leaks in hoses, pipes, faucets, and connections.*
- *Limit operation of nonrecycling fountains*

PROCEDURES

When the public works director and city manager agree that the conditions meet the guidelines for initiating any stage of the plan, as set forth in this chapter, they shall: 1) notify the mayor, council, and water board, and 2) recommend that the mayor and/or city council declare the water conservation plan and applicable stage in effect.

The city manager and/or the mayor and city council shall then implement the following mandatory water conservation measures in addition to voluntary conservation:

Stage 2: Mandatory Restrictions on Nonessential Water Use:

Reduction Goal: Fifteen (15) to twenty percent (20%) of peak use.

Large irrigators using culinary water, including, but not limited to, city parks and schools shall reduce irrigation by twenty five percent (25%)

Water between the hours of eight o'clock (8:00) P.M. and eight o'clock (8:00) A.M.

- *washing streets, driveways, or other paved areas is prohibited.*
- *Noncommercial car washing requires using a hose with an automatic shutoff nozzle.*
- *Filling of private swimming pools or hot tubs is prohibited.*
- *culinary water for ornamental fountains, waterfalls, or reflection pools is prohibited.*
- *Delay planting any new grass or sod.*

PROCEDURES

When the public works director and city manager agree that the conditions meet the guidelines for initiating any stage of the plan, as set forth in this chapter, they shall: 1) notify the mayor, council, and water board, and 2) recommend that the mayor and/or city council declare the water conservation plan and applicable stage in effect.

The city manager and/or the mayor and city council shall then implement the mandatory water conservation measures required in stage 2 as well as the following additional mandatory conservation measures in addition to voluntary conservation:

Stage 3: Mandatory Restrictions on All Culinary Water Use:

Reduction Goal: Twenty-five (25) to thirty percent (30%) of peak use.

- *The use of fire hydrants for purposes other than fire protection will be prohibited.*
- *Water use for noncommercial washing of automobiles and trucks shall not be permitted.*
- *Users will be allowed seventy percent (70%) of use levels of the baseline year use. All users will reduce demand by thirty percent (30%).*
- *Culinary water will not be used to irrigate city parks or schools.*
- *Spray irrigation and hand watering may occur for a total of fifteen (15) minutes per landscaped area.*
- *Culinary drip irrigation systems, bubbler, or soaker hoses may be operated for maximum of two (2) hours.*

Some exceptions are allowed in stage # 3

PROCEDURES

When the public works director and city manager agree that the conditions meet the guidelines for initiating any stage of the plan, as set forth in this chapter, they shall: 1) notify the mayor, council, and water board, and 2) recommend that the mayor and/or city council declare the water conservation plan and applicable stage in effect.

The city manager and/or the mayor and city council shall then implement the following mandatory water conservation measures, in addition to voluntary conservation:

Stage 4: Water Rationing Plan for All Available Culinary Water Resources

Reduction Goal: Forty (40) to sixty percent (60%) of peak use.

- *General: It is imperative that water customers within the city of LaVerkin area achieve an immediate and further reduction in the water use to extend existing water supplies and, at the same time, assure that sufficient water is available to preserve the public health, sanitation, and provide fire protection service.*

The objective of this local water rationing plan is to affect an immediate forty percent (40%) reduction in water use. Should drought conditions continue, further reductions in usage might be required. If it is necessary to implement further reductions, this plan will be modified to meet the crisis.

The plan provides for equitable reductions in water use on the part of each water customer. The success of this plan depends on the cooperation of all water customers. During this stage, the approval of any new building permits will be prohibited until the conservation restrictions are lifted.

- *Nonessential Use: It is the primary responsibility of each water customer to meet its mandated water use reduction goal in whatever manner possible. The following culinary water uses are declared nonessential and shall be prohibited within the city of LaVerkin, in addition to the restrictions specified in stages 2 and 3:*
 - *Watering lawns with culinary water.*
 - *Culinary watering of outdoor gardens, landscaped areas, trees, shrubs, and other outdoor plants, except by means of a bucket, pail, or handheld hose, equipped with an automatic shutoff nozzle between the hours of eight o'clock (8:00) P.M. and eight o'clock (8:00) A.M.*
 - *Use of water for flushing sewers or hydrants by municipalities or any public or private individual or entity, except as deemed necessary and specifically approved by the city in the interest of public health and/or safety.*
 - *Use of fire hydrants for construction purposes.*
 - *Use of fire hydrants by the fire department for testing fire apparatus and for fire department drills, except as deemed necessary and specifically approved by the city in the interest of public safety.*
 - *Water Use Restrictions for All Culinary Water Customers: Customers include residential, commercial, industrial, institutional, public, and all other users, except for healthcare facilities.*

- *Water Use Restrictions for Healthcare Facilities: Healthcare facilities shall comply with all restrictions imposed on water customers as may be applicable to each individual institution to the extent compliance will not endanger the health of the patients or residents of the institution.*
- *Each healthcare facility shall survey its water usage patterns and requirements and implement such additional conservation measures as may be possible without endangering the health of patients or residents to achieve a twenty five percent (25%) reduction in the institution's water usage. That level of conservation will be recommended to the city for billing and record. The established level that does not endanger the health of the patients will be provided to the city for record.*

Exceptions are provided for in Stage # 4

ENFORCEMENT AND VIOLATION PENALTIES:

The LaVerkin City utility billing department shall be charged with monitoring culinary water usage. Upon documentation of a customer's violation of the required water conservation reduction amounts, the billing department shall impose the following penalties:

A. **Stage 1:**

- *Violations: Notice of violation with request for greater attention to water usage reduction.*

B. **Stage 2:**

- *First violation: Notice of violation with one billing period from date of notice to cure and reduce water usage.*
- *Second violation: Fine of twenty-five dollars (\$25.00).*
- *Third violation: Fine of fifty dollars (\$50.00).*
- *Fourth violation: Fine of one hundred dollars (\$100.00).*

C. **Stage 3:**

- *First violation: Notice of violation with one billing period from date of notice to cure and reduce water usage.*
- *Second violation: Fine of fifty dollars (\$50.00).*
- *Third violation: Fine of one hundred dollars (\$100.00).*
- *Fourth violation: Fine of two hundred dollars (\$200.00).*

D. **Stage 4:**

- *First violation: Notice of violation and fine of one hundred dollars (\$100.00).*
 - *Second violation: Fine of two hundred dollars (\$200.00).*
 - *Third violation: Fine of four hundred dollars (\$400.00) plus misdemeanor citation.*
 - *Fourth violation: Fine of six hundred dollars (\$600.00), misdemeanor citation and water shutoff.*
- (Ord. 2005-23, 5-17-2005)*

TIME OF DAY LANDSCAPE WATERING RESTRICTIONS:

A. Purpose: It is in the public interest to conserve water resources and to promote efficient use of water on public and private amenity landscapes; and to protect and enhance the community's economic, environmental, recreational, and aesthetic resources by reducing water waste and promoting water use efficiency in amenity landscape irrigation.

B. Restrictions: Sprinkler irrigation of public and private amenity landscapes should be limited to those periods where the maximum benefit can be obtained from the water used.

1. Where feasible, such irrigation should be limited to the hours of six o'clock (6:00) P.M. to ten o'clock (10:00) A.M. and to times of low wind, to avoid excessive loss of water through evapotranspiration.

o WCWCD Time of day watering (no watering from 10 a.m. to 8 p.m.)

2. Water users are strongly encouraged to avoid overwatering and/or wasting of water; and to apply water at the times and using the methods most appropriate for the soils and ground cover involved, with due consideration for the limited nature of water as a resource and the need for such water by others.

C. Definitions: For purposes of this section, the following words or phrases shall have the meanings set forth hereinbelow:

AMENITY LANDSCAPE: A parcel of land upon which landscaping materials are present for purposes other than necessity.

EVAPOTRANSPIRATION: The loss of water from a land area due to the transpiration of plants and evaporation from soil.

PRIVATE LANDSCAPE: A parcel of land, owned by a private person or entity, upon which grass and/or plants require irrigation.

PUBLIC LANDSCAPE: A parcel of land, owned by public entities, upon which grass and/or plants require irrigation.

SPRINKLER IRRIGATION: The application of water to land and/or plants by distributing water under pressure through spray, rotary, or drip heads.

TRANSPIRATION: The loss of water vapor through the pores or stoma of plants.

WATER: Culinary and secondary (irrigation class) water, whether provided by, though, or by means of the city, or any servicing water conservancy district, within the boundaries of LaVerkin City.

D. When Applicable; Conflicts: This section shall be applicable at all times, to both culinary and secondary (irrigation class) water; provided, that where a water shortage is declared, and there is a conflict between the provisions of this section and the applicable provisions of section 8-6-4 of this chapter, the provisions of the latter section shall prevail. (Ord. 2008-16, 9-17-2008)

Water conservation tips

Bathroom

- *Avoid flushing the toilet unnecessarily. Dispose of tissues, insects, and other similar waste in the trash rather than the toilet.*
- *Consider purchasing a low-volume toilet that uses less than half the water of older models.*
- *Take short showers instead of baths. Turn on the water only to get wet and lather and then again to rinse off.*
- *If you do take baths fill the tub only halfway full.*
- *Fix dripping and leaking faucets and toilets*
- *Do not let the water run while shaving.*
- *Replace your showerhead with an ultra-low-flow version.*
- *Do not run the water while brushing teeth.*
- *Do not run the tap to make water hot or cold.*

Kitchen

- *Wash only full loads of dishes.*
- *Don't rinse dishes before placing them in the dishwasher, just remove large particles of food.*
- *Choose appliances that are more energy and water efficient.*
- *Instead of using the garbage disposal, throw food in the garbage or start a compost pile to dispose it.*
- *Wash fruits and vegetables in a basin instead of under running water.*
- *Store drinking water in the refrigerator. Do not let the tap run while you are waiting for water to cool.*
- *Retrofit all household faucets by installing aerators with flow restrictors.*

Laundry

- *Operate clothes washers only when they are fully loaded or set the water level for the size of your load.*

Outdoor water use

- *Raise your lawn mower cutting height.*
- *Delay planting any new grass, sod, or other new landscaping.*
- *Use a hose with a shutoff nozzle.*
- *Sweep sidewalks and steps rather than hosing.*
- *Aerate turf areas.*
- *apply only the amount required for good plant health.*
- *Monitor soil moisture to determine if watering is needed.*
- *Repair leaks in hoses, pipes, faucets, and connections.*
- *washing streets, driveways, or other paved areas is prohibited.*
- *Don't install ornamental water features (such as fountains) unless they use re-circulated water.*

