

# **WCSD – Verdi Elementary School**

**Water Conservation Plan  
1/14/2019**

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## **Introduction**

The water supply in Nevada is a precious commodity and plays an important role in determining Nevada's future. Nevada is the one of the driest states in the nation as well as one of the fastest growing ones. Nevada's future, both from an economic and a quality of life view, depends heavily upon the wise management of the water supply.

Groundwater, in general, provides about 40 percent of the total water supply used in Nevada. In some areas, groundwater provides the entire water supply. Groundwater usage may vary considerably from year-to-year as it is sometimes pumped to supplement surface water sources.

Water use in Nevada can be classified as:

- Domestic (household, both indoor and outdoor) – Met by public supply or private supply (e.g. wells).
- Commercial (businesses) – Met by public supply or private supply (e.g. non-community systems).
- Industrial (manufacturing/construction) – Met by public supply or private supply (e.g. non-community systems).
- Thermoelectric (electric/fossil fuel/geothermal power generation) – Met by public supply in a minor fraction.
- Mining (mining processes) – Supply source varies widely from operation to operation and is dependent upon the mineral being recovered and the recovery process employed.
- Irrigation (land use) – Met by self-supplied or supplied by irrigation companies or districts.
- Livestock (farm needs) – Supply source varies.

While all classifications of water usages have shown an increase over the years, it has historically been irrigation water use which has accounted for the majority of the water use in Nevada.

It has been estimated that the domestic water use accounts for less than 15 percent of the water used in Nevada, but this is expected to rise to nearly 25 percent as the population increases (based upon existing water use patterns and conservation measures). It is expected that Nevada's population will become increasingly concentrated in its primary urban areas of Las Vegas (Clark County), Reno/Sparks (Washoe County) and Carson City, with varied spillover effects on neighboring counties.

It is vitally important that all residents understand the fundamental science of water, how it is managed in the state, and the issues affecting its management. Water education must become a priority and must include education of children as they are our future.

Because Nevada does not have a comprehensive state-wide conservation program, it is reliant upon the individual water suppliers for developing their own conservation programs. In 1991, Nevada enacted a law requiring adoption of conservation plans by water suppliers. Minimum standards for plumbing fixtures were adopted in 1991 (Assembly Bill 359) by Nevada and in 1992 minimum flow standards for plumbing fixtures were adopted by the federal government (National Energy and Policy Conservation Act).

Conservation is an essential part of ensuring adequate water supply as it is no longer feasible to develop new sources. It has proven to be a cost-effective way to reduce demands and/or to extend a given water supply. It can easily be pursued by all water users regardless of the water system type. Key to evaluating the program's effectiveness is the water use measurement (through meters and other measurement devices). Various conservation measures can be put into place and the achievement of the goals set with these measures is vital to combating the expected increase in water usage.

## **Statutory Requirements**

This water conservation plan was prepared for the **WCSD, Verdi Elementary School** in accordance with Nevada Revised Statute (NRS) 540. As outlined in NRS 540.141, the provisions of this plan must include:

- a. Public Education
- b. Conservation Measures
- c. Water Management
- d. Contingency Plan
- e. Evaluation Measurements
- f. Conservation Estimates

In addition to the provisions of the water conservation plan, listed above, NRS 540.141 also requires a rate analysis to be performed and included with the submittal.

This plan is being submitted to the Nevada Department of Conservation and Natural Resources (DCNR), Division of Water Resources (DWR) for review and approval prior to its adoption by **WCSD, Verdi Elementary School**, as required by NRS 540.131.

This plan is available for inspection during normal business hours at **7495 S. Virginia St, Reno NV 89511**. The original Water Conservation Plan for **WCSD, Verdi Elementary School** was developed on **January 14, 2019**.

In accordance with NRS 540.131, this plan will be reviewed from time-to-time to reflect changes and must be updated every five (5) years to comply with NRS 540.131 and NRS 540.141. The next update of this plan is to be on, or before, **January 14, 2024**.

## **System Description**

**The Verdi Elementary School Public Water System is a small water system owned by the Washoe County School District and is located at 250 Bridge Street, Verdi NV 89439. The purpose of the water system is to provide drinking water to the Verdi Elementary School, as well as the Washoe County Public Library. The system consists of one ground well, Arsenic filtration, primary and secondary chlorination and distribution piping. Pressure is achieved through three bladder pressure tanks. There is a dedicated arsenic filter room located on the East side of the Library building. The untreated well water enters here, is filtered, chlorinated, metered and then distributed to the library and school buildings. The supply for the Verdi Elementary School water system is comprised entirely of groundwater. Groundwater in this area is generally acceptable except for a naturally occurring Arsenic level that exceeds 10 ppb of the primary drinking water standard. Water production is provided by one ground water well. The well is located at the Northeast section of the property in an enclosed fence and is equipped with a submersible pump driven by a variable speed control center, with a pressure transducer located in the filter room. The system is set for 60 psi. The well is protected by a 2” Wilkins 375 XL reduced pressure backflow device. Past operating manuals indicate that the well has an 8” casing, is 602’ deep, and is perforated from 522’ to 602’ The horsepower of the motor is unavailable. There are two small inline filters on the incoming raw water line to capture sand and sediment. These filters have an automatic drain system. Monthly Bacteriological, (Bac-T) and Bi-Annual Arsenic Samples are taken.**

**Table 1 – Source of Supply**

<b>Well No.</b>	<b>Depth (feet)</b>	<b>Production (gpm)</b>
<b>1</b>	<b>602 approx.</b>	<b>NA</b>

## **Plan Provisions**

In accordance with NRS 540.131, this plan will be reviewed from time-to-time to reflect changes and must be updated every five (5) years to comply with NRS 540.131 and NRS 540.141. The next update of this plan is to be on, or before, January 14, 2024.

**WCSD, Verdi Elementary School** will appoint a staff member, Mark Erwin, to oversee the conservation efforts and this staff member will be responsible for implementation of conservation programs, monitoring of water use, and will review /revise the conservation plan when needed.

This water conservation plan is available for inspection during normal business hours at 7495 S. Virginia St. Reno NV 89511. Educational material to educate the public about water use and how to save water is available through WaterSense, a voluntary partnership program by the U.S. Environmental Protection Agency (EPA). The WaterSense website address is <https://www.epa.gov/watersense>.

In an effort to promote voluntary conservation and aid in Nevada's future, **WCSD, Verdi Elementary School** will enact the voluntary conservation measures found in the *Conservation Measures* section.

As required by NRS 540.141, the water conservation plan must include the following provisions:

- a. Conservation Measures
- b. Evaluation Measures

### **Conservation Measures**

In an effort to promote conservation and voluntarily conserve water, **WCSD, Verdi Elementary School** is adopting water-use regulations to promote water conservation during non-emergency situations. These regulations include the following non-essential water use.

- **WCSD, Verdi Elementary School** will repair a broken or defective plumbing systems within a reasonable response time based upon notification or discovery.
- Use of water through a hose for washing buildings, structures, sidewalks, walkways or other hard-surfaced areas in a manner which results in excessive run-off or waste.
- Low flow fixtures are being installed as part of the WCSD conservation program and an expected 15 – 20% water savings is expected at this facility and throughout the District.
- **WCSD, Verdi Elementary School** will primarily focus on the irrigation restrictions for the surrounding Landscaping through the use of Xeriscaping future and upgraded landscaping, drip irrigation and reducing the watering periods for the playground areas, ball fields and areas of congregation that have irrigation installed.

In the event these conservation measures are insufficient to control the water shortage, **WCSD, Verdi Elementary School** may wish to implement the mandatory measures discussed in the *Contingency Plan* section below.

## **Water Management**

**WCSD, Verdi Elementary School** does actively monitor unaccounted water losses because the system is metered and is only utilized to detect flow at times when there should be none.

**WCSD, Verdi Elementary School** does conduct an efficiency survey of its water fixtures and update older inefficient fixtures.

**WCSD, Verdi Elementary School** does not have a formal leak detection program.

**WCSD, Verdi Elementary School** does not have the ability to treat or use effluent water on site.

## **Contingency Plan**

The objective of the contingency plan would be to manage the available resources to ensure continued supply of potable water during periods of drought or extended drought.

It is envisioned that voluntary conservation will be sufficient to ensure an adequate supply of water and reduce water usage. However, if a sustained drought (lack of precipitation) is encountered, it may be necessary to implement mandatory restrictions in order to ensure an adequate supply of water to meet essential needs.

**WCSD, Verdi Elementary School** plans for drought response would be a single stage drought response: (1) warning stage,

In Stage 1, the warning stage, **WCSD, Verdi Elementary School** would increase monitoring of its' water supplies and would begin creating public awareness of the water supply situation and the need to conserve. Conservation measures at this stage would be mandatory.

When a drought is declared over, voluntary conservation measures (see *Conservation Measures* section) will be reinstated and water supplies would continue to be monitored.

The schedule for carrying out the plan will be monitored by the water operator of record for the Washoe County School District and will be responsible for notifying and monitoring water restriction during drought condition when the plan must be enacted,

The system currently has meters installed, but are not for the purpose of supplying customers. The meters are to show flow usage only and allow the ability to diagnose and recognize water waste and system leaks.

The facility may need to add additional facilities to the site for the purpose of educational classrooms, but will most likely be in the addition of pre-manufactured mobile classrooms. The Mobile units are manufactured off site and installed on site with all of the water conservatory fixtures pre-installed.



There are no current tiered structures and no plans to create one in the future. The water is solely supplied to the Staff and students of the facility to support the Washoe County School District buildings free of charge.

### **Evaluation Measurements**

**WCSD, Verdi Elementary School** can evaluate the effectiveness of the plan element from the perspective of the entire system.

### **Conservation Estimates**

During the Stage 1 phase of the conservation plan, it is estimated that conservation measures could be expected to provide a **15 - 20%** reduction in water use.

## **Appendices**

**APPENDIX A**  
**CONSERVATION MEASURES**

## **Stage 1 – Warning** **Stage**

- **WCSD, Verdi Elementary School** would begin creating public awareness of the water supply situation and the need to conserve.
- **WCSD, Verdi Elementary School** would inform Staff of voluntary/mandatory conservation measures, (non-essential water uses, listed below).

Non-essential water uses are:

- Use of water through a hose for washing buildings, structures, sidewalks, walkways or other hard-surfaced areas in a manner which results in excessive run-off or waste.
- Low flow fixtures are being installed as part of the WCSD conservation program and an expected 15 – 20% water savings is expected at this facility and throughout the District.