



NEVADA

BIOSOLIDS MANAGEMENT 2018 - STATE SUMMARY

This summary, a dashboard of state statistics, & further data are at www.biosolidsdata.org

In Nevada...

- Water reuse is top priority for WRRFs in this arid climate, from Las Vegas to Reno and all points between.
- Wastewater solids are mostly sent to landfills, although there is one separate preparer making and using biosolids compost.

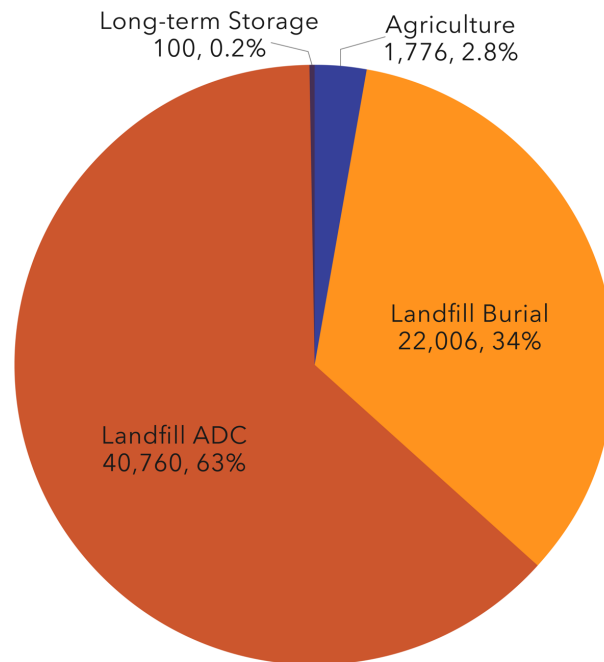
Biosolids Management in Nevada

Nevada is an arid state and water reclamation is overwhelmingly the primary mission of wastewater treatment processes. Biosolids recycling is not a priority. As noted in the national data for 2004, agriculture is not encouraged because of its competing demand for water. Over 95% of Nevada's wastewater solids are buried or used as alternative daily cover (ADC) at landfills. Landfills are the primary destinations for solids from water resource recovery facilities (WRRFs) of all sizes - from the largest in the state to small plants in rural areas.

There is one biosolids composting operation (a separate preparer), Bently Ranch, that takes solids from several local WRRFs and uses the resulting Class A EQ product as fertilizer on their range and farm land. There was no other beneficial use of biosolids in Nevada in 2018, and there is no other land application of biosolids happening as of 2021.

A few WRRFs east of Reno - one of the state's metro areas - have arsenic levels exceeding federal regulatory limits in 40 CFR Part 503, Table 1, so landfilling is their best option.

Nevada Biosolids Use & Disposal 2018
(dry metric tons, %)
Total: 64,600



State Regulations, Permitting, Oversight

In Nevada, the U.S. EPA, Region 9, administers the federal biosolids rule, 40 CFR Part 503. The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control (BWPC), administers the federal NPDES permitting program for discharge to surface waters, and enforces Nevada’s Water Pollution Control Law. BWPC regulates discharge to ground waters through State Ground Water Permits. BWPC also grants permits for biosolids land application as soil amendment on a case-by-case basis that requires directly contacting the BWPC. U.S. EPA regulates industrial pretreatment. Nevada has no formal state-level biosolids regulations.

Pressures on Biosolids and Land Application

NDEP’s website states that it “supports biosolids re-use in order to take advantage of this beneficial soil amendment and to keep material with high liquid content out of the State’s landfills.” But at all levels of government and utilities, the main priority for water resource reclamation and recycling is the water, which is critical for irrigation, turf, landscaping, industry, and numerous other demands in the state’s arid climate. The solids get less attention. Additionally, there is plenty of inexpensive landfill space in this largely rural/desert state, so there’s no pressure to recycle biosolids to save room in landfills for other or future wastes.

Septage Management

NDEP oversees larger septic systems (>5,000 gal/day); the Nevada Division of Public and Behavioral Health, Environmental Health section oversees individual, on-site septic systems in conjunction with county health authorities. Land application of septage is allowed in Nevada; there may be some active septage land application, but this is not tracked. Septage application is regulated by the federal biosolids rule, 40 CFR Part 503. Much of the state’s septage goes to WRRFs; for example, Clark County’s Flamingo facility treated more than 5 million gallons in 2018. NBDP notes that, if 20% of NV households are on septic systems, they would likely generate ~11 million gallons of septage annually.

Nevada Septage Management

| | |
|--|------------------------------------|
| Quality of state septage data | no data |
| Septage haulers based in state: | no data |
| In-state separate preparers (not WRRFs) taking septage: | no data |
| WRRFs required to take septage? | no |
| WRRFs that accept septage: | at least Clark County WRRF |
| Septage received at WRRFs in 2018 (gallons): | incomplete data |
| Other outside wastes accepted at WRRFs: | no data |
| Is fats/oil/grease (FOG) a significant issue? | no data |
| Is it regulated? | no data |
| How? | |
| Is there a proactive program to collect FOG? | no |
| Can septage be land applied in state? | yes |
| If yes, what treatment is required? | follow 40 CFR Part 503 regulations |
| Most recent septage regulations update: | no data |
| Full-time equivalent (FTE) at state agency for septage: | no data |
| Notes: NBDP estimates that 20% of NV households are on septic systems, generating ~11 million gallons of septage. | |

Major WRRFs, Separate Preparers, and Notable Projects

- The Clark County Water Reclamation District (WRD) operates six WRRFs in southern NV, serving Las Vegas and Henderson, Nevada’s two largest cities, as well as some smaller surrounding communities. Reclaimed water from WRD facilities is used for irrigation on municipal properties and golf courses, coolant for power generators, and dust control. Among the WRD’s facilities is the largest WRRF in

Nevada: the Flamingo Water Resource Center (WRC), which serves 970,000 people. This WRRF has a campus of more than 600 acres, and treated 105.9 MGD of wastewater and 5.74 million gallons of septage in 2018. Its effluent is treated to a very high quality and discharged into Lake Mead, which is the drinking water source for most of the county, including Las Vegas and Henderson, and feeds into the lower Colorado River. The Flamingo WRC is a prime example of Nevada’s focus on using reclaimed water. Solids from the WRD facilities go to the Apex Landfill, the largest landfill in the U.S., at an average cost of \$22.18 per wet ton. The Apex Landfill is operated by Republic Services and features a renewable energy generation facility, capturing methane from the landfill to produce electricity. The City of Las Vegas and Clark County POTWs send biosolids to Apex Landfill in part because Apex requires biosolids be included as part of the over-all contract with these agencies. Notably, while the City of Las Vegas WRRF has anaerobic digesters, the large Clark County WRRF doesn’t have any treatment other than adding some lime to stabilize it (but not to achieve Class B) prior to dewatering; this makes that WRRF one of relatively few in the U.S. with minimal to no treatment of solids.

- Bently Ranch is the only separate preparer in Nevada. They take biosolids from five local WRRFs (some in neighboring CA) and mix them with community-generated biomass (yard debris, woodchips, grass, etc.) before composting to Class A EQ quality. The resulting compost is used as fertilizer on Bently Ranch’s pasture and cropland, including 2700 acres of hops, barley, wheat, rye, and oats, which are used by their sister company, the Bently Heritage Estate Distillery.
- Truckee Meadows Water Reclamation Facility (TMWRF) is jointly owned and operated by the cities of Reno and Sparks (two of the five largest cities in Nevada). TMWRF removes nitrogen and phosphorus before water is discharged. Solids from the facility are anaerobically digested, and methane from the AD process is captured and used to heat the facility’s buildings and digesters. After dewatering, solids are disposed of in a local landfill. In the past, these biosolids – Class B – were land applied at a northern Nevada farm, but that has not happened over the past decade or so.
- The North Las Vegas Water Reclamation Facility was completed in 2011 to serve the growing city of North Las Vegas (the fourth-largest city in the state). Wastewater solids from the WRF go to landfill. As with other NV WRRFs, the priority is reclaiming water: the North Las Vegas WRF is the largest WRRF in the U.S. utilizing a submerged membrane bioreactor to clean water for reuse. Effluent is used for irrigation; any excess goes to Lake Mead.

References

Some information in this report came from U.S. EPA Region 9. Additional information was obtained from:

Bently Ranch:

<https://bentlyranch.com/farm>

Clark County WRD:

<https://www.cleanwaterteam.com/about-us/what-we-do>

<https://www.youtube.com/watch?v=mVXfYleJ6bU>

<https://www.cleanwaterteam.com/about-us/who-we-are>

Sparks, NV:

<https://cityofsparks.us/resources/resource/tmwrf/>

Nevada Division of Environmental Protection:

<https://ndep.nv.gov/water/water-pollution-control/permitting/individual-permits-mpdes-state-permits>

<https://ndep.nv.gov/land/waste/solid-waste/special-waste-management>

https://ndep.nv.gov/uploads/documents/guidance_nvregs_whp.pdf

Apex Landfill:

<https://lochsa.com/apex-renewable-energy-generation-facility/>

North Las Vegas, NV:

<http://www.cityofnorthlasvegas.com/departments/utilities/index.php>