



**2018**

*Annual Sustainability  
Report*



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## ACKNOWLEDGMENTS



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Public Works Technician

Incline Village General Improvement District (IVGID)  
Department of Public Works  
Waste Not Program

This report is not possible without the support of the Incline Village and Crystal Bay community and all the hard-working individuals who make it possible to thrive here. The Waste Not Program was founded in 1992 by dedicated residents with a goal to increase conservation and recycling services available to residents and visitors of the area. Since then, the program has grown its capabilities and responsibilities to include sustainability as a key strategic principle. Invaluable residents, students and business owners, IVGID staff from all departments and previous Americorps Members have contributed to this report directly or indirectly through participation in local conservation programs.

**COVER PHOTO LOCATION: IVGID WETLANDS FACILITY IN CARSON VALLEY, NEVADA**



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*Incline Village and Crystal Bay Scenic Overlook at Herlan Peak*

## ABOUT THIS REPORT

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### Introduction

Public Works is a part of the Incline Village General Improvement District (IVGID) on the north shore of Lake Tahoe in the state of Nevada. IVGID is a quasi-public agency established under Nevada Revised Statute, Chapter 318 and chartered to provide water, sewer, trash, and recreation services for the unincorporated communities of Incline Village and Crystal Bay, Nevada. It is governed by an elected Board of Trustees which, acting on behalf of the electorate, sets policy and determines strategies to accomplish its Strategic Plan. Incline Village and Crystal Bay are located within Washoe County, the entity that had the authority to create IVGID.

The Department of Public Works follows leadership directive and policy pursuant to IVGID's Vision, Mission, Values and Strategic Plan. This report will focus on sustainability performance as it pertains to Administration and Public Works and does not include data for any recreation venues that IVGID owns.

## What is Sustainability Reporting?

The purpose of the IVGID Sustainability Program is to responsibly manage resources under IVGID's care, protect public health and balance its social and environmental duties to the citizens and community while providing cost-effective services to ratepayers. Sustainability holds importance to Incline Village Public Works in terms of environmental, social and economic security. This importance is highlighted by Lake Tahoe, the place where we live, work, invest, and play.



*Community Services Impacted by Winter Weather*

Community stakeholders, utility managers, and regulatory agencies are increasingly interested in utility sustainability, typically described in terms of economic, social and environmental effects. This is commonly referred to as the triple bottom line. Sustainability reporting initially began in the 1960s and 1970s as the environmental movement grew and corporate social responsibility alongside environmental impacts became primary considerations as investment selection criteria.

Water and wastewater treatment systems are designed to prevent pollution, conserve natural resources, support local commerce and protect the public health. The purpose of operating in a more sustainable manner is not to add more work, cost or complexity to an organization; rather, sustainability practices and reports encourage stakeholders to understand how operations integrate with the global economy, community and environment now and for future generations.

## Benefits of Sustainability Reporting

This report provides a vehicle for Public Works to respond to heightened stakeholder expectations for transparent disclosure of economic, social and environmental effects in terms of the essential organizational structure. According to the Water Environment Federation, Sustainability reports have many positive effects that are able to:

- Unify the management system within the organization;
- Reinforce organizational commitments and demonstrate progress;
- Focus on energy, water and materials management;
- Improve internal governance;
- Document direct cost savings that result from more efficient operations;
- Integrate long-term social, environmental and economic objectives within the organization;
- Set an example for other organizations or public agencies - thereby gaining recognition;
- Enhance the organization's profile and reputation;
- Promote transparency and accountability;
- Encourage stakeholder involvement;
- Improve investment options and value.

## Sustainability Report Highlights: Calendar Year 2018

*The Public Works Service Area utilized 833 million gallons of potable water for indoor and outdoor needs while 323 million gallons of wastewater were processed by the Water Resource Recovery Facility.*

*438 tons of Bio-Solids were delivered to Bently Ranch in 2018 for compost use.*

*The Public Works Solar Array generated 19 percent of the total electricity consumed by the Public Works Facility in 2018. This tallies a lifetime generation of 402,001 kWh while avoiding an estimated 600,000 pounds of carbon dioxide, equivalent to reducing the pollution emitted from 678,725 miles driven by an average passenger vehicle ([epa.gov/energy](http://epa.gov/energy)).*

*Public Works electricity consumption (provided by NV Energy) decreased by 11 percent in 2018 compared to 2009 while cost to NV Energy decreased by 32 percent over the same timeframe.*

*According to the Environmental Protection Agency's Portfolio Manager and Carbon Calculator, Public Works operations emitted 2,385 metric tons of carbon dioxide in 2018. This is the equivalent to greenhouse gases emitted by driving an average passenger vehicle 5,831,296 miles ([energystar.gov](http://energystar.gov)).*

*The highest recorded surface water temperature during a random sample event was 72 degrees Fahrenheit on July 31, 2018 while the lowest recorded surface water temperature was 34 degrees Fahrenheit on February 28, 2018.*

*Incline Creek discharge peaked at approximately 14 cubic feet per second in 2018 versus a peak of approximately 62 cubic feet per second in 2017.*

*Trash callouts have been reduced by 85 percent in 2018 compared to 2017 records from 420 to 63 actions taken by the Public Works Solid Waste Technician as a "zero tolerance" trash enforcement was implemented on August 1, 2017.*

*The 2018 community-recycling rate in Incline Village and Crystal Bay, Nevada is 28 percent of total community solid waste to landfill, compared to the 2018 Washoe County recycling rate of 30 percent and the 2018 State of Nevada recycling rate of 22 percent.*

*101 Household Hazardous Waste Events were held in 2018 serving 1,738 residential customers. 58,324 pounds of Household Hazardous Waste and 58,830 pounds of Electronic Waste were either recycled or properly disposed of.*

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# WORKPLACE CULTURE

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## Vision Statement

With passion for quality of life and our environment, Incline Village General Improvement District will enhance the reputation of our community as an exceptional place to live, work, invest, and play.

## Mission Statement

The Incline Village General Improvement District delivers exemplary recreational experiences and provides the highest level of water, sewer, and solid waste services while striving for fiscal and environmental sustainability.

## Value Statement

We are dedicated people providing quality service, for our community and environment, with integrity and teamwork.

## Mantra Statement

One District • One Team

## Core Values

The IVGID core values listed below identify the key characteristics of the organization and its employees.

- ◆ **Service**  
We will use teamwork to provide reliable services and superior value to our customers.
- ◆ **Teamwork**  
We will deliver service and value by collaborating with others in a positive work environment to achieve our goals in the best interest of the community.
- ◆ **Integrity**  
We will act in an honest, fair, consistent manner to do the right thing for the greatest good.
- ◆ **Responsibility**  
We will be professional in our actions, transparent with communication, and accountable to our decisions.
- ◆ **Excellence**  
We will perform to the best of our ability and seek to make tomorrow better than today.

# SYSTEM PROFILE

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## Main Function, Core Responsibilities and Services Offered

The Department of Public Works provides water and sewer services and manages the Solid Waste Franchise Agreement for the residential and commercial properties of Incline Village and Crystal Bay, Nevada. Public Works also provides engineering, conservation, fleet services, building maintenance, snow removal and best management practice (BMP) maintenance to our internal customers; Golf, Ski, Recreation and Administration. Waste Management, Inc. provides solid waste services through a franchise agreement.

The District is also responsible to its Federal, State and Local regulatory agencies. The production and delivery of safe drinking water and the proper treatment and disposal of wastewater is regulated by the U.S. Environmental Protection Agency and the laws administered by the Nevada Department of Environmental Protection and Washoe County District Health. This responsibility requires substantial reporting to demonstrate compliance with the laws, such as performing laboratory tests, doing system evaluations, having a watershed protection program, inspecting new construction as well as all the traditional activities to deliver water and treat wastewater.

We also serve contractors, developers, and property owners in plan checks, field inspections, backflow surveys, water right analysis, dumpster enclosures, bear boxes, project management (internal), engineering services (internal), water audits, water conservation education, recycling education and household hazardous waste disposal.



*Incline Beach*

## Service or Collection Area, Facility Locations and Infrastructure Inventory

The Public Works Facility is comprised of administrative offices, employee break and conference rooms, on-call quarters, storage warehouses, fleet maintenance garages, facility maintenance warehouses, a wash bay, heavy equipment garages, fuel pumping stations, and a hazardous and electronic waste collection area, in addition to various open air and closed storage spaces. Regular maintenance and Capital Improvement Projects make infrastructure strong and resilient.



*Sierra Nevada College Students participate in an Annual Sustainability & Wastewater Tour*



*Public Works Service Area*

**IVGID owns and operates the Burnt Cedar Water Disinfection Plant (BCWDP) located on the North Shore of Lake Tahoe. In order to treat and supply an average of 1 billion gallons of water annually, water infrastructure assets include:**

- An ultra violet and ozone treatment plant able to treat 8.5 million gallons a day.
- 100 miles of water mains between 4-inches to 24-inches in diameter.
- 2,031 gate valves.
- 13 water tanks with 7 million gallons of storage.
- 14 water pumping stations with 26 pressure zones.
- Service connections to over 4,300 water meters.
- Total water infrastructure replacement value: **\$275,000,000**



**IVGID constructed the Wastewater Resource Recovery Facility (WRRF) in 1962.**

**Wastewater infrastructure assets Include:**

- 105 miles of gravity pipelines and 14 miles of sewer force main between 6-inches to 24-inches in diameter.
- 1,926 sewer utility holes and 19 sewer pump stations.
- A wastewater resource recovery facility able to treat 2.1 million gallons a day.
- 21 miles of effluent pipeline to Carson Valley for treated effluent water.
- Total sewer infrastructure replacement value: **\$325,000,000**



*Spooner Pump Station*

**Important Customers and Stakeholders**

The District reads approximately 4,450 meters monthly, billing 4,270 water accounts and 4,170 sewer accounts. Some facilities have multiple water meters such as the Championship Golf Course and some accounts are for water only such as irrigation accounts. The multi-family developments are typically served with one large meter for all the units in that Home Owners Association (HOA).

**A detailed customer breakdown is presented below:**

- Total accounts billed: 4,270
- Total water meters read: 4,450
- Total irrigation meters: 89
- Snow making meter: 1
- Sewer only accounts: 13
- Waste Management directly bills 4,138 residential customers and 275 commercial customers.



*Public Works Facility*

## Administration Service Teams

- Accounting
- Communications
- General Administration
- Human Resources
- Information Technology
- Risk Management

## Public Works Service Teams

- Buildings
- Compliance
- Customer Service
- Engineering
- Fleet
- Pipeline
- Treatment
- Waste Not

## Scale of the Organization

The IVGID service area is substantially built-out at this point. The Washoe County Assessor parcel database shows that there are approximately 9,060 parcels in the service area with approximately 1,000 parcels owned by the United States and the State of Nevada that are non-buildable. Approximately 7,500 parcels are residential single family and multi-family, 200 parcels are commercial and there are approximately 250 parcels that are undeveloped. The full-time population is estimated below 10,000 people with that number increasing to nearly 20,000 people during peak tourism times in the summer months and winter holidays.

This report strictly examines all Public Works infrastructure, the Public Works Facility (PWF) located at 1220 Sweetwater Road, as well as the IVGID Administrative Office - Anne Vorderbruggen Building (AVB - Admin) located at 893 Southwood Boulevard. Public Works infrastructure includes the Burnt Cedar Water Disinfection Plant (BCWDP) located at 665 Lakeshore Boulevard, all water pipeline, water pumps, water reservoirs and associated technology as well as the Water Resource Recovery Facility (WRRF) located at 1250 Sweetwater Road, all sewer pipeline, sewer pumps and manholes.



*IVGID Administrative Offices located at 893 Southwood Boulevard*



*IVGID Public Works team members responding to an emergency*

## Unique Requirements for Wastewater Processing at Lake Tahoe

The WRRF is a biological secondary treatment facility with a rated capacity of 2.14 Million Gallons per Day (MGD). Wastewater treatment processes include micro-screening, grit removal, carbonaceous activated sludge, secondary clarification, solids dewatering and sodium hypochlorite disinfection of the effluent. There are nineteen sewage pumping stations delivering raw sewage to the WRRF.

IVGID first built a Walker Process Package Treatment Plant (one circular structure with four segments handling the treatment process) in 1962. This treatment plant had a maximum capacity of 0.7 MGD with five sewage-pump stations throughout Incline Village and Crystal Bay delivering wastewater to Sweetwater Road.



*The Spooner Pump Station along the Highway 28 Sewer Export Line blends into its surroundings*

The discharge of effluent into Lake Tahoe's waterbody or streams was first prohibited in 1946. A Federal Water Pollution Conference was held in July of 1966 at Lake Tahoe. As a result, all properties were required to have sewer connections and all treated effluent must be exported outside of the Lake Tahoe Basin by 1970 in order to protect Lake Tahoe's water quality and clarity. The Porter Cologne Act and the Tahoe Regional Planning Agency Compact of 1970 formally prohibit any effluent discharge within the Lake Tahoe Basin.

IVGID met the export requirement in the early 1970s with completion of a 21 mile pipeline that delivered the treatment plant's secondary effluent into the Carson River. The Nevada Department of Environmental Protection mandated more stringent treatment requirements in 1974 in addition to the Safe Drinking Water Act of 1974 and subsequent reauthorization requirements. IVGID completed construction of the Wetlands Enhancement Facility in Carson Valley for the disposal of the treatment plant's effluent in 1984. This project helped IVGID meet all local, state, and federal requirements and provides a waterfowl habitat.



*The Wetlands Enhancement Facility located near Hot Springs Mountain in Carson Valley, Nevada*

# SUSTAINABILITY ACTION PLAN

## Management Approach to Sustainability

The community of Incline Village and Crystal Bay, Nevada has been committed to protecting local resources for decades. IVGID has developed a strategic plan to define long-term principles and the means to achieve them. An internal Sustainability Framework has been produced to help guide staff and leadership in achieving sustainability goals and principles.

The IVGID Board of Trustees approved Resolution Number 1836 in 2015 to direct District staff and future policies to consider sustainability and the environment in District operations, policies and planning (Appendix A). Long Range Principle Number One includes protecting the environment as a strategic goal for long term planning within the District (Appendix B). Furthermore, the directive to form a sustainability committee is encouraging the District to engage more staff and community support for related initiatives, policies and programs.

IVGID Public Works is a member of the American Water Works Association (AWWA) and the Water Environment Federation (WEF). Both organizations provide information, insight and tools for public utilities to take advantage of to improve their operations while communicating with other colleagues in the industry. AWWA and WEF both provide supporting tools for using sustainability at water and wastewater utilities. This report primarily relies on background information along with

recommendations that are explained in further detail in the WEF publication, *Sustainability Reporting Statements for Wastewater Systems* and the AWWA publication, *The Green Utility: A Practical Guide to Sustainability* for sustainability recommendations at a public utility.

Sustainability is not a new subject for small organizations such as Public Works. The American Water Works Association reports that approximately 20% of utilities report having adopted a sustainability vision or plan (Landis, 2015). This report is very important as Public Works continues to document sustainability information and encourages other IVGID venues to benchmark sustainability impacts.



*The upper-Tyner water tank (Reservoir 8-B1) is located at 7,771 feet in elevation and holds 350,000 gallons of drinking water.*

## Stakeholder Expectations

The IVGID Sustainability Program is designed to engage the organization regarding sustainability measures specific to local venues while upholding community values in environmental stewardship. The parcel owners, residents and visitors of Incline Village and Crystal Bay are the priority stakeholders within the District. Transparency is valuable to the ratepayers. Local and regional regulators should expect Public Works to be compliant with all current standards while becoming a model for the region.



**TAHOE  
REGIONAL  
PLANNING  
AGENCY**

### Tahoe Regional Planning Agency (TRPA)

TRPA has established the Lake Tahoe Sustainable Communities Program. This program sets target thresholds for Master Plan areas within the Lake Tahoe Basin to consider while evaluating long-term planning options. It also provides a series of documents to help guide communities within the Lake Tahoe basin develop sustainability frameworks, visions and action plans. Sustainability action planning allows the region to make significant progress in attaining sustainability related goals. Achievement of sustainability related goals helps to protect Lake Tahoe for future generations to enjoy. TRPA's website, [laketahoeinfo.org](http://laketahoeinfo.org) is an online resource available to the public which tracks an extensive amount of local data through several portals such as the Sustainability Dashboard.

### Sustainability Dashboard Indicators

#### Community

- Healthy Lifestyle
- Transportation
- Housing
- Education

#### Economy

- Income
- Employment

- Business Environment

#### Environment

- Water Quality
- Forest Health and Fire Hazard
- Greenhouse Gas Emissions
- Aquatic Invasive Species

Visit [www.laketahoeinfo.org](http://www.laketahoeinfo.org) for more information.

## IVGID Sustainability Framework

An internal sustainability framework helps organize sustainability efforts and gives staff the necessary tools to achieve sustainability related goals. Three phases divide this framework to facilitate the development and implementation of sustainability initiatives and products. Detailed descriptions of each phase and objectives for those phases are described below.

### Sustainability Framework Goals

- Increase staff, resident and visitor participation and awareness in sustainable activities, energy efficiency, waste reduction and recycling activities.
- Review and upgrade District policies and practices to encourage or require waste reduction, recycling and environmentally preferable purchasing.
- Serve as a model for the region to influence waste prevention, recycling, and procurement efforts among other public agencies, businesses, contractors, residents and visitors.

### Sustainability Framework Phases

#### Phase 1

This phase has been completed. The purpose of phase 1 was to create a managing body, with strong purpose and internal support as well as defined roles and operations. The result of phase 1 are the initiatives enumerated below in addition to the sustainability framework. Furthermore, administrative capacity and support is continually allocated as progress is made.

#### ✓ **Resources and Environment – Long Range Principle #1**

IVGID revised its Long-Range Principle #1 on resources and the environment to include stronger language on the practices of environmental sustainability with support allocated for defensible space operations, fire suppression enhancement, watershed sanitary surveys and source water protection. The Strategic Plan provides direction and a planned pursuit of the mission, vision, values, long-range principles and objectives and actions of the District from July 1, 2018 to June 30, 2020. The Strategic Plan is approved by the Board of Trustees. Find this principle in Appendix B of this document.

#### ✓ **Environmental Sustainability Resolution - Resolution #1836**

Resolution number 1836 introduces the subject of environmental sustainability to the community and Board of Trustees. This resolution was passed unanimously by the IVGID Board of Trustees on April 29, 2015. Find this resolution in Appendix A of this document.

#### Phase 2

The Public Works Annual Sustainability Report helps to complete phase 2 as an internal assessment of sustainability measurements within the department to create an initial benchmark of data to refer to and build upon in long-term strategies. Phase 2 is research oriented while it establishes a sustainability management, tracking and reporting system. This phase recognizes and celebrates all of the progress made by the District so far.

## Timeline of Sustainability Progress

- ✓ **IVGID Public Works Annual Sustainability Reports (2016, 2017, 2018)**
- ✓ **Diamond Peak Ski Resort Initial Benchmark Assessment (2015) and Certification (2018) from the Sustainable Tourism Operator’s Kit for Evaluation, AKA: STOKE-Certified**
- ✓ **Championship Golf Course Audubon Cooperative Sanctuary Certification (2010, 2013, 2016)**
- ✓ **IVGID Parks and Recreation 9-Year Commitment to Tree City USA/Arbor Day Foundation**

### Phase 3

Phase 3 incorporates the build out of products and supporting tools. Implementation of this phase is currently underway while previous phases are continually supported.

#### SUSTAINABILITY ACTION PLAN

- ✚ Promote sustainable living initiatives with internal and external customers.
- ✚ Request an Energy Efficiency Audit from NV Energy, make a plan to prioritize recommendations and take advantage of incentive options.
- ✚ Consider purchasing renewable electricity and renewable diesel fuel to reduce emissions.
- ✚ Participate as the facilitator for a green business program in Incline Village and Crystal Bay, NV.
- ✚ Document all sustainability data from 2010 to 2019 to use as a baseline while developing a long-term sustainability strategy and waste reduction policy (*see descriptions below*).

#### 📅 Long-Term Sustainability Strategy

The purpose of this initiative is to set in place action plans that achieve positive results and recognition for sustainability efforts District-wide. Sustainability management templates and associated certifications for large scale operations are applicable to this service area. The entities bulleted below examine a wide scope of performance that include quality of and access to basic services, transportation, housing, emergency response, healthcare, education and recreation in addition to determining infrastructure reliability and reporting community-wide emissions.

- ◆ Audubon International’s Sustainable Communities Program
- ◆ U.S. Green Building Council’s LEED for Cities and Communities  
AKA: STAR (Sustainability Tools for Assessing and Rating) Communities

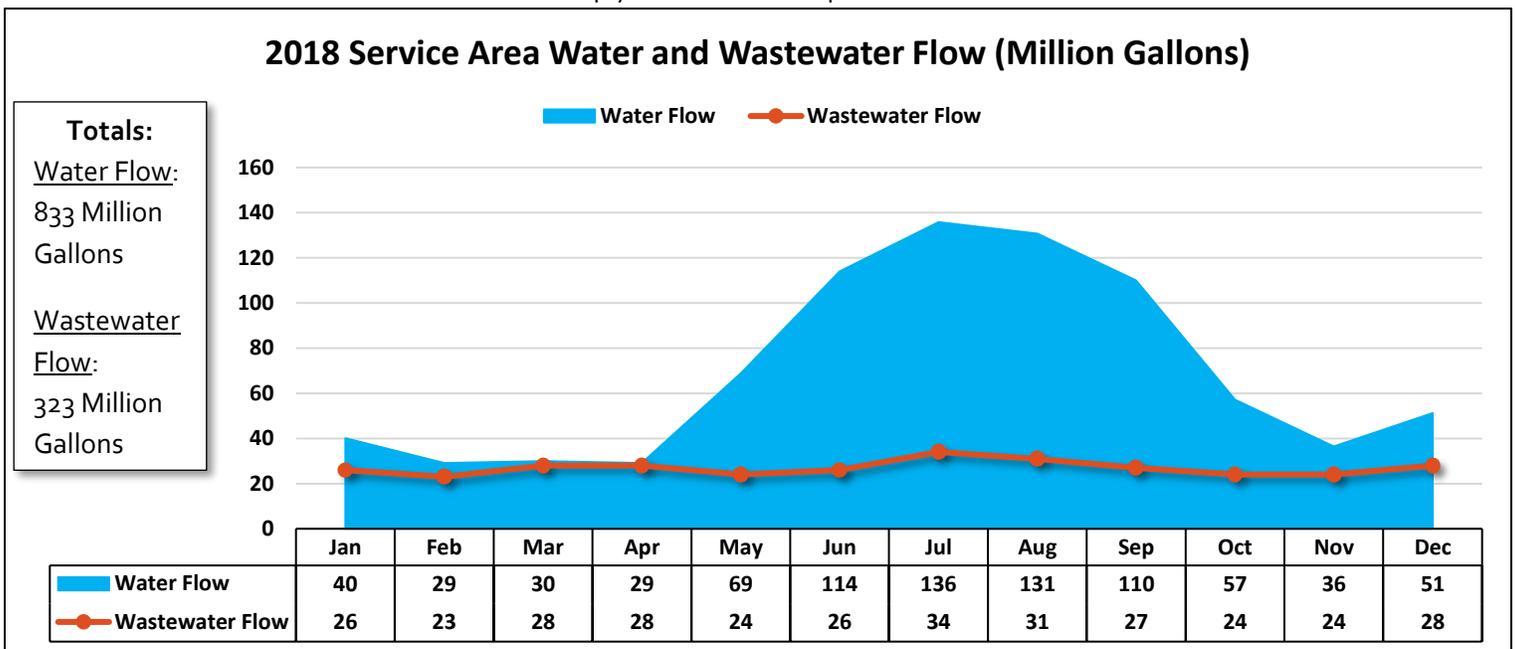
#### 📅 Sustainable Procurement and Waste Reduction Policy

The purpose of this initiative is to support and facilitate the purchase of products and services that minimize the harmful effects to the environment from its production, delivery, use and disposition. Therefore, it will be the District’s procurement strategy to purchase and use environmentally preferable products whenever they perform satisfactorily and can be acquired at similar total value (cost and quality) within the applicable public purchasing statutes. This policy may include funding to install assets that make it easy to avoid single-use consumables. The IVGID Board of Trustees will approve the final policy, directing staff to implement it throughout the District’s operations.

# INDUSTRY BENCHMARKS

## Introduction

The following parameters are considered “standard” in the water and wastewater treatment industries. These measurements aim to capture basic performance of a utility and can be used in comparison to other utilities. Bio-Solids are typically measured in metric tons. Wastewater or effluent flows are typically measured in million gallons. Water flow is typically measured in acre-feet but have been converted to million gallons for the purposes of this report. Compliance, work and customer service orders as well as trash callouts are simply tallied as the requests are made.



## Drink Tahoe Tap®

Lake Tahoe is a pristine waterbody with unique characteristics that provide the source for exceptional tap water. The United States Environmental Protection Agency considers Lake Tahoe to be an “Outstanding Natural Resource Water, Tier 3” giving the lake the same protective designation as Crater Lake in Oregon and Mono Lake in California. This designation allows IVGID’s Public Works Department to operate under a “filtration-exemption status.” Five other water purveyors from around the Tahoe Basin whose source of water is Lake Tahoe are also filtration-exempt. The Tahoe Water Suppliers Association (TWSA) helps these agencies comply with state and federal standards while protecting the local quality of water. IVGID is the home agency for the TWSA.



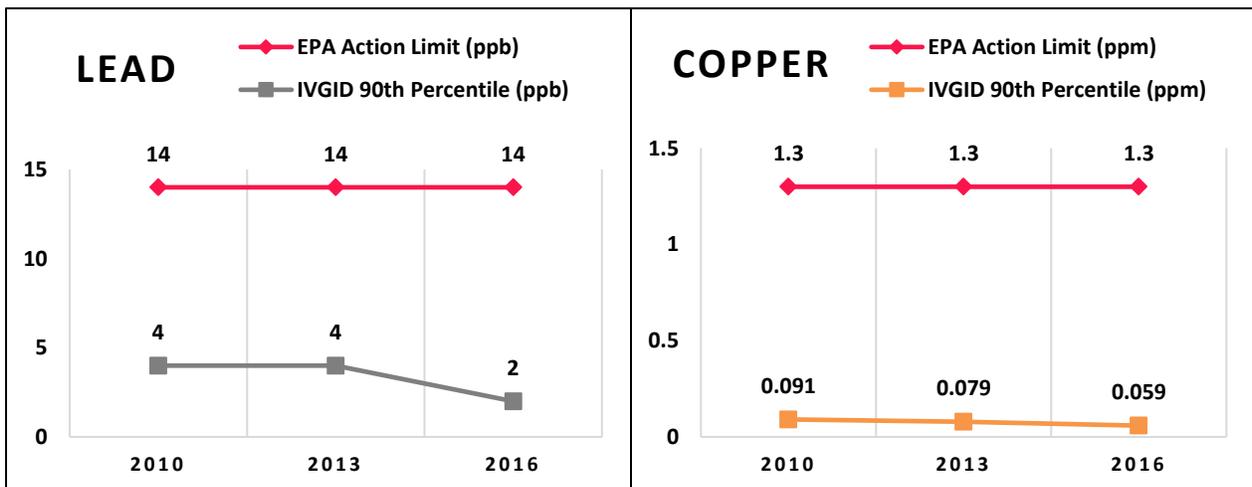


## Consumer Confidence of Potable Water

Public Works uses the Lake Tahoe Intake at the Burnt Cedar Water Disinfection Plant as its source of water. The type of water source is surface water as opposed to groundwater sources. The water provided is safe and high quality. Tap water provided by Public Works exceeds all national standards. A Consumer Confidence Report (CCR) is

issued annually by Public Works to comply with all laws and educate the public about the drinking water supply. It is required to include an explanation of any violations for each calendar year. Please see the 2019 CCR located online at [www.yourtahoeplace.com/public-works](http://www.yourtahoeplace.com/public-works) for detailed information.

Lead and copper levels are of high concern to a utility and its customers because of adverse health effects that could occur if there are high concentrations of these heavy metals in drinking water. Typical sources of these metals come from corrosion of household plumbing systems, erosion of natural deposits and leaching from wood preservatives. The graphs below display the IVGID 90th percentile results for lead and copper contamination compared to U.S. Environmental Protection Agency "Action Limits" or the concentration of the contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow. The Public Works Team is pleased to report that the drinking water quality is well below the EPA's Action Limits.



One other way to assure consumer confidence is to check that backflow devices are working properly within residents' homes that contain a boiler and/or irrigation system. Backflow devices and annual testing are required by the Nevada State Health Department. These devices provide a mechanical separation between potable and non-potable water, to prevent a backwashing of possibly contaminated water back into the potable water system. This can happen if, for example, there is a sudden drop in water pressure and water sitting in a garden irrigation system gets sucked back into the home's potable water supply. A backflow device would prevent this from happening. Devices that are tested and pass are calculated in statistics that are analyzed later in this section alongside other compliance and customer service figures. IVGID's backflow inspection program is a model used statewide as an example of consumer protection.

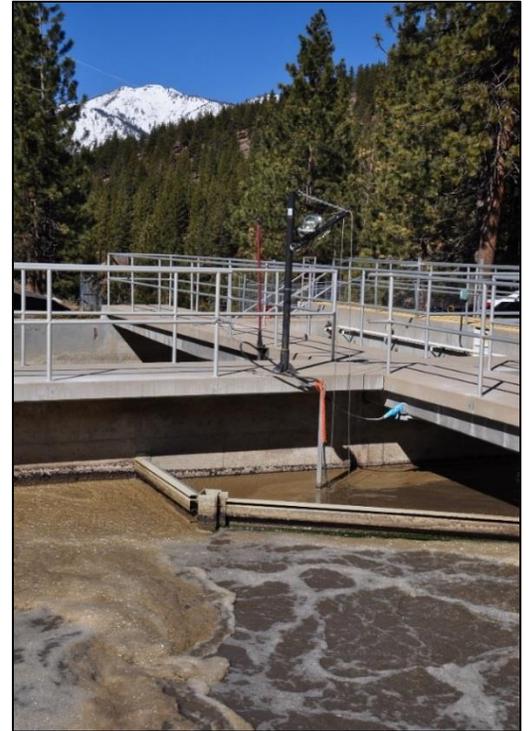
## Water Flow (Million Gallons)

Water is treated at the Burnt Cedar Water Disinfection Plant located at 665 Lakeshore Boulevard. It is pumped through the Incline Village and Crystal Bay service area via pipeline and is stored in reservoirs that have been strategically placed to allow for a gravity-based pressurization system. Water flows are usually reported in Acre-Feet, but the figures have been converted to million gallons for comparison with effluent flows which are typically reported in Million Gallons. Water consumption reaches peak demand during the summer months. The Public Works median user consumes 6,000 gallons per month or 72,000 gallons per year.

## Effluent Flows (Million Gallons)

Public Works treats wastewater and ultimately releases it as treated secondary effluent in Carson Valley, Nevada. The Wetlands Enhancement Facility takes most of this flow especially in the winter, but Clear Creek Golf Course and Carson Valley Ranch also use treated effluent in their operations during the summer season.

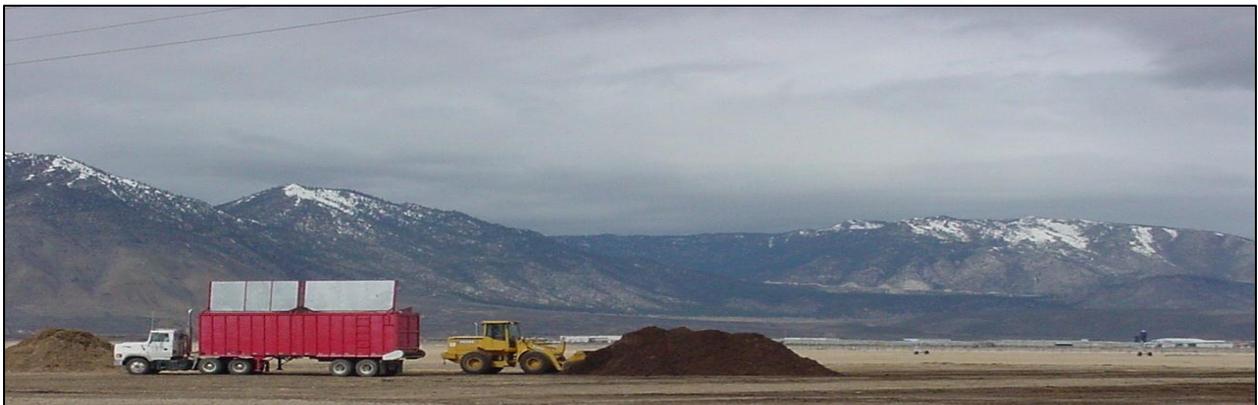
The chart at the bottom of the next page displays the distribution of effluent as it is split up to the previously mentioned locations. Effluent flow analysis enables Public Works to examine system efficiency compared to other sewage collection systems of similar size or production rate. Public Works median users flush 3,000 gallons per month or 36,000 gallons per year.



*Effluent Treatment Process*

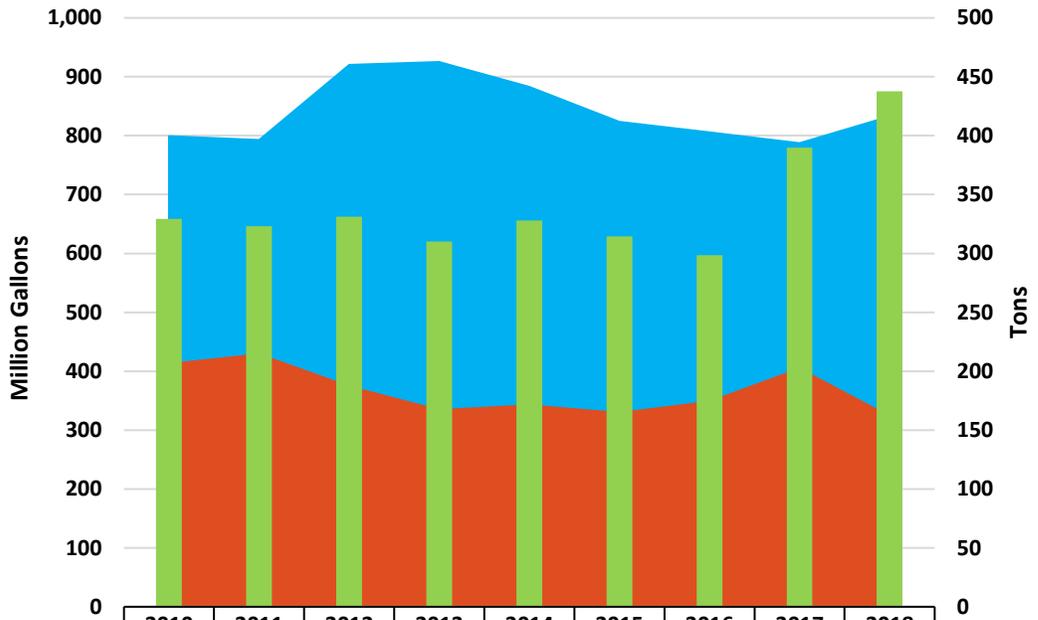
## Bio-solids (Tons)

Bio-solids are nutrient rich organic materials produced from wastewater treatment facilities like the one that Public Works operates. Bio-solids can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth. Effective bio-solids management options help ensure that useful materials are recycled on land at Bently Ranch in Carson Valley, NV and harmful materials are not released to local water bodies.



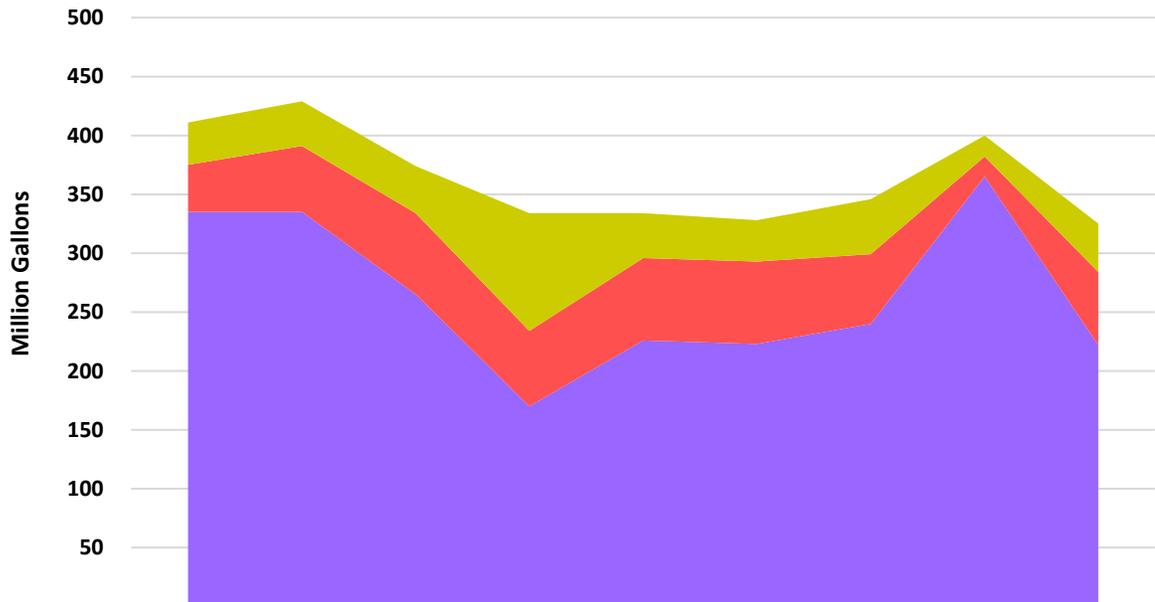
*Distribution of Bio-Solids at Bently Ranch in Carson Valley, Nevada.*

### Water and Wastewater Treatment Industry Benchmarks



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Water Flow (Million Gallons)	799	793	920	925	883	824	806	787	833
Wastewater Flow (Million Gallons)	412	429	374	334	342	329	348	404	323
Biosolids (Tons)	329	323	331	310	328	315	299	390	438

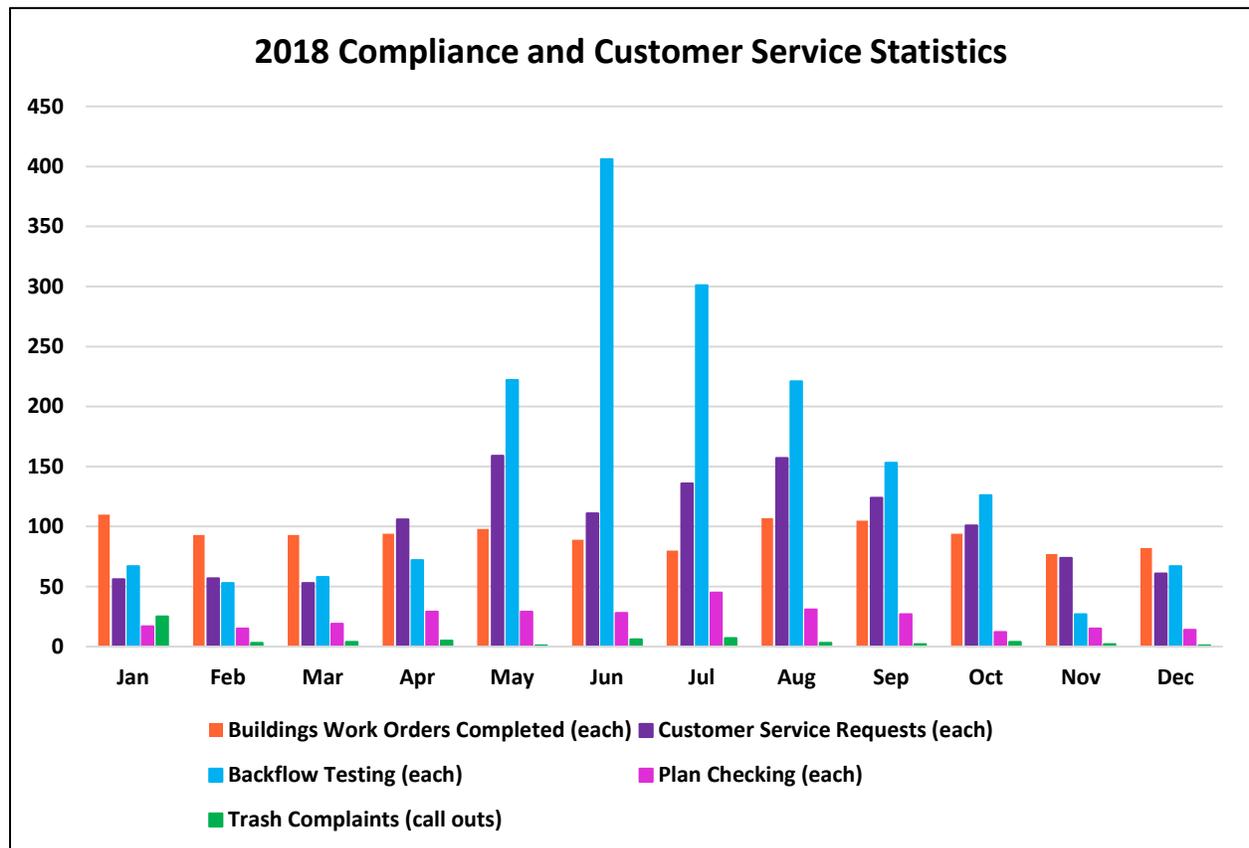
### WRRF Wastewater Flow Splits (Million Gallons)



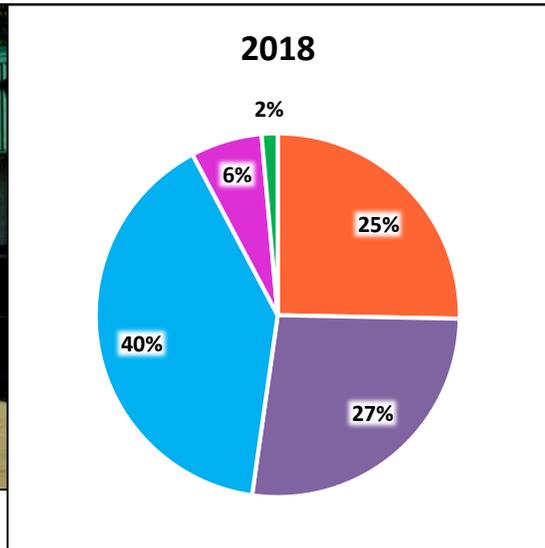
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carson Valley Ranch	36	38	40	100	38	35	47	18	41
Clear Creek Golf Course	40	56	69	64	70	70	59	17	62
IVGID Wetlands	335	335	265	170	226	223	240	365	222

## Customer Service and Compliance Duties

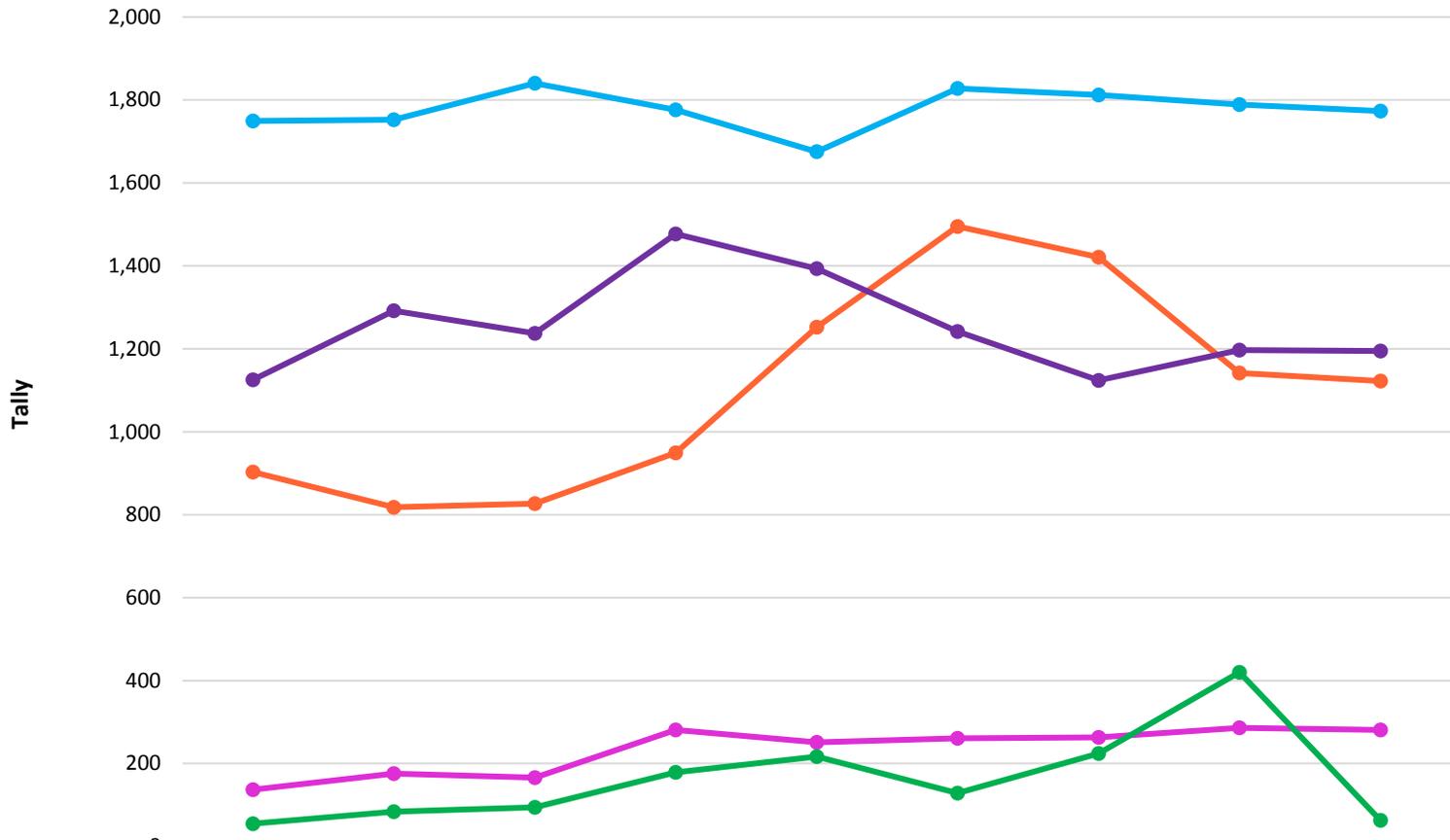
Public Works service and compliance responsibilities range from answering customer inquiries to ensuring water is safe to drink by inspecting backflow prevention devices. The Buildings Division within Public Works responds to requests made by IVGID venues such as Diamond Peak Ski Resort or the Recreation Center. Customer service requests show the annual demand for Public Works services, which average at 1,250 requests per year. The number of plans reviewed by Public Works inspectors is an indicator of how active the construction industry is in this service area.



Public Works Crew - Circa 1990



### Overall Compliance and Customer Service Statistics



	2010	2011	2012	2013	2014	2015	2016	2017	2018
Plans Checked	137	176	166	281	251	261	263	286	281
Backflow Tests	1,749	1,752	1,840	1,776	1,675	1,828	1,812	1,789	1,773
Trash Callouts	55	84	94	179	217	129	224	420	63
Building Work Orders	903	818	827	949	1,252	1,495	1,421	1,142	1,122
Customer Service Requests	1,125	1,292	1,237	1,477	1,393	1,242	1,124	1,197	1,195

# NATURAL RESOURCE MANAGEMENT

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## Introduction

Natural resource consumption is important to track because this information describes the overall impact that an individual or organization has on Earth's systems. IVGID staff create spreadsheets that are used to track data related to consumption and cost of resource management and graphical displays within this report help paint the picture of our own impact. The data analyzed in this annual report refer only to the resource consumption made by Public Works as an organization itself and does not include information from other IVGID venues nor does it include data related to resource consumption of residential, commercial or other private resource consumption and cost. The Environmental Protection Agency offers the "Energy Star® Portfolio Manager®" for anyone to use for free to help document their own impact on the Earth. Please visit [portfoliomanager.energystar.gov](https://portfoliomanager.energystar.gov) for more information.

## Environmental Considerations

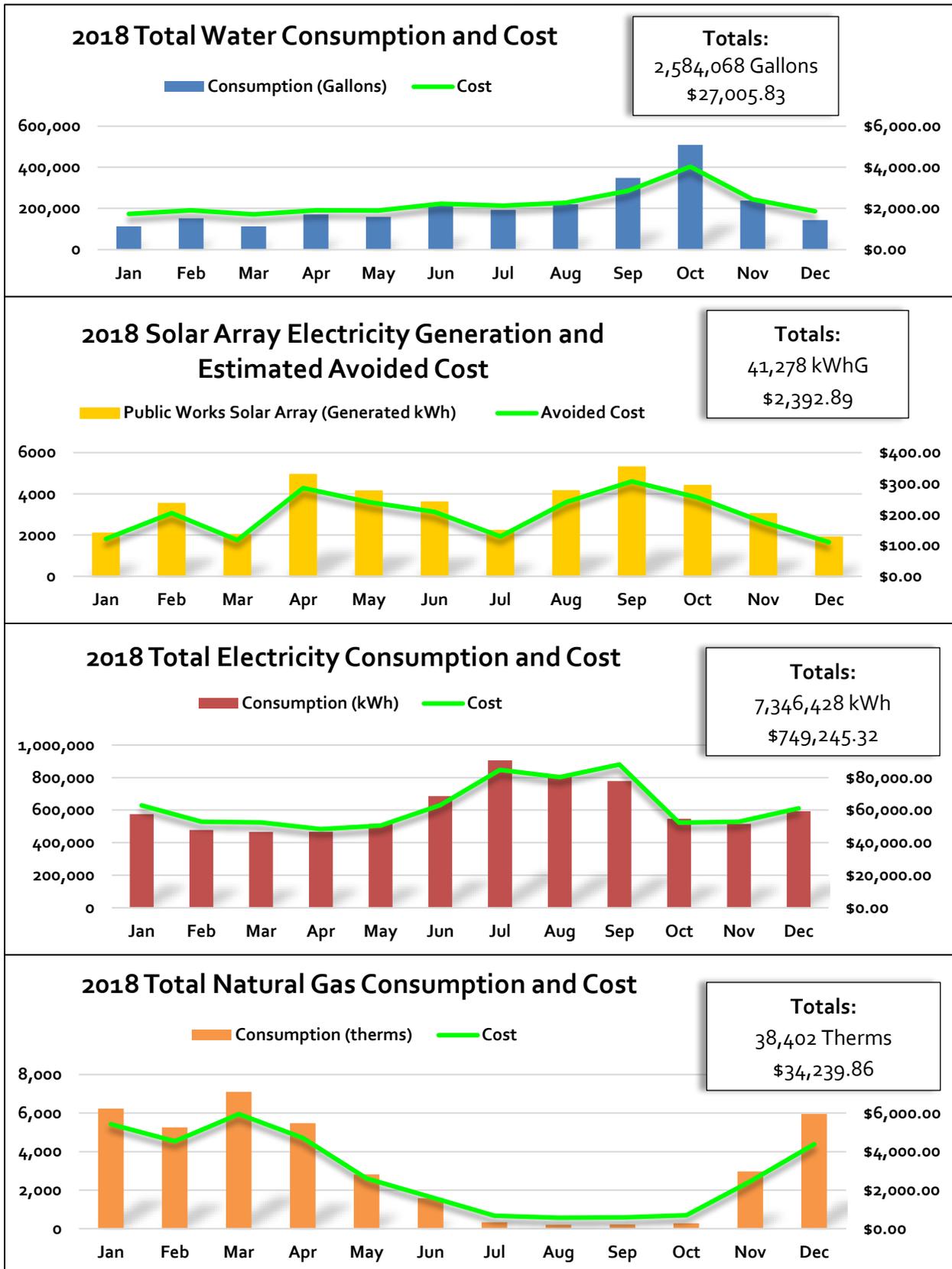
Sustainability metrics within Public Works divisions typically compare standard indicators such as effluent flows and bio-solids generation with resource use such as electricity consumption. The comparison between these indicators allow Public Works to compare our sustainability performance to similar sized utilities. This report is not meant to be a complete inventory of those sustainability indicators, but future reports will at least measure fleet fuel consumption and certain employee statistics as more information is gathered, organized and interpreted. A major sustainability indicator that only begins to scratch the surface in this report are Greenhouse Gas (GHG) Emissions caused by the consumption of natural resources. GHG Emissions include airborne chemicals such as carbon dioxide and methane that contribute to global rise in temperatures and changes in climate over time. Methods for estimating GHG Emissions are currently under research for determining the most accurate information at IVGID venues and Public Works. Future reports will track this information in more detail as emissions are inventoried.

Finally, all environmental considerations will be under evaluation in comparison to standards set by the U.S. Environmental Protection Agency, Nevada Department of Environmental Protection, Washoe County, and the Tahoe Regional Planning Agency in addition to any other applicable industry standards. IVGID Public Works' performance on these indicators will help determine goals for reducing emissions in future operations or promoting sustainability initiatives.

## Economic Considerations

Economic considerations for Public Works include expenses related to resource use. Basic information regarding the average user as well as environmental compliance spending will be examined in future reports. Detailed financial information for Public Works and IVGID as a whole can be found online at: <https://inclinevillagegidnv.opengov.com/transparency>

## Public Works Natural Resource Management – Year in Review: 2018



## Water

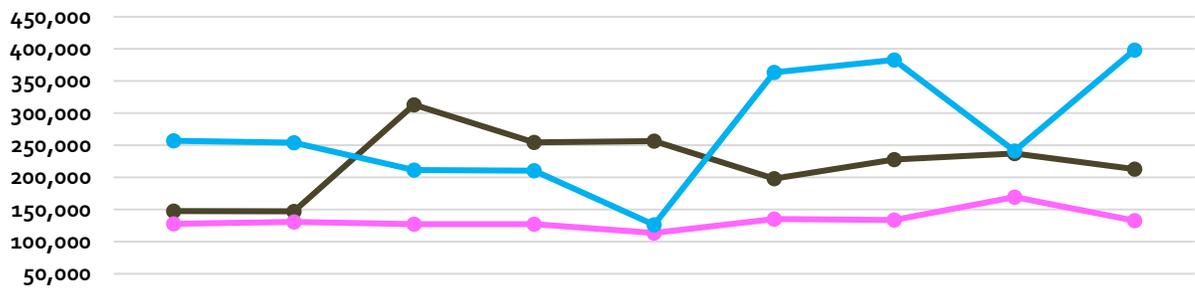
The source of fresh water is an extremely valuable resource. Used to supply public drinking water, Source Water is untreated water from streams, rivers, lakes, or underground aquifers. The source of drinking water for many Tahoe Basin communities, including Incline Village and Crystal Bay, is Lake Tahoe. The water is pumped out the lake, managed in a water treatment facility, and delivered to customers.



## Water Consumption

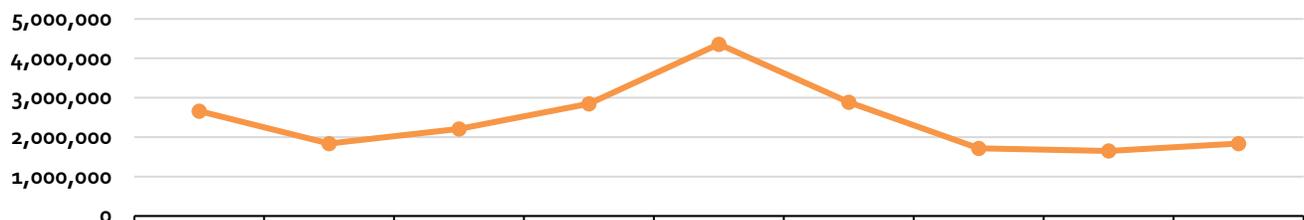
Public Works delivers treated water to its facilities in addition to all other IVGID venues. Water consumption is metered per regulatory code. Public Works has nine water meters at its properties including AVB - Administration, PWF, WRRF as well as various pump stations throughout Incline Village and Crystal Bay. This data reflects all water use for Public Works operations and does not include any data from irrigation systems or other IVGID venues such as Diamond Peak Ski Resort, Incline Village Golf facilities or Parks and Recreation operations. Water consumption by Public Works has decreased over the past five years. Various improvements to infrastructure at District facilities has allowed regular operations to continue while increasing water-use efficiency. Capital improvement projects on the premises at the WRRF caused a spike in water use from 2013 to 2015. Average water use for the WRRF is typically between 1.5 to 2 million gallons of consumption per year.

**Public Works Water Consumption (Gallons)**



	2010	2011	2012	2013	2014	2015	2016	2017	2018
AVB - Admin	147,483	147,229	313,138	254,576	256,770	198,047	227,613	237,415	213,051
PWF	127,840	130,680	127,070	127,120	113,580	135,110	133,730	169,420	132,903
Pump Stations	257,164	254,041	211,593	210,475	126,244	363,576	382,819	241,039	398,344

**Water Resource Recovery Facility Water Consumption (Gallons)**



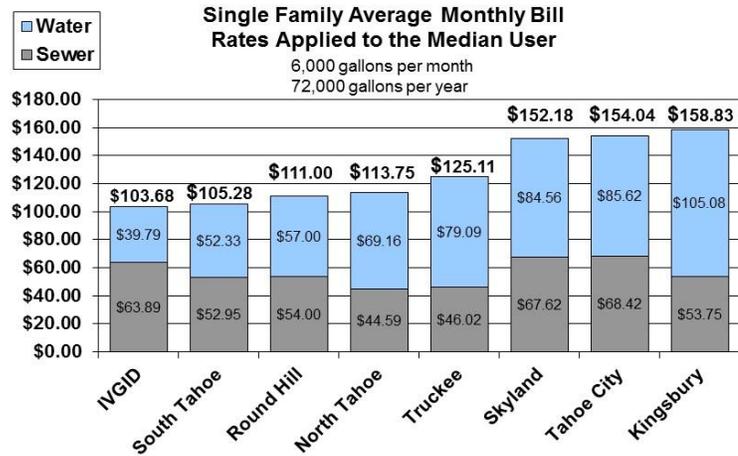
	2010	2011	2012	2013	2014	2015	2016	2017	2018
WRRF	2,659,180	1,838,480	2,211,960	2,845,840	4,362,390	2,889,030	1,716,210	1,650,730	1,839,770

## Water Cost

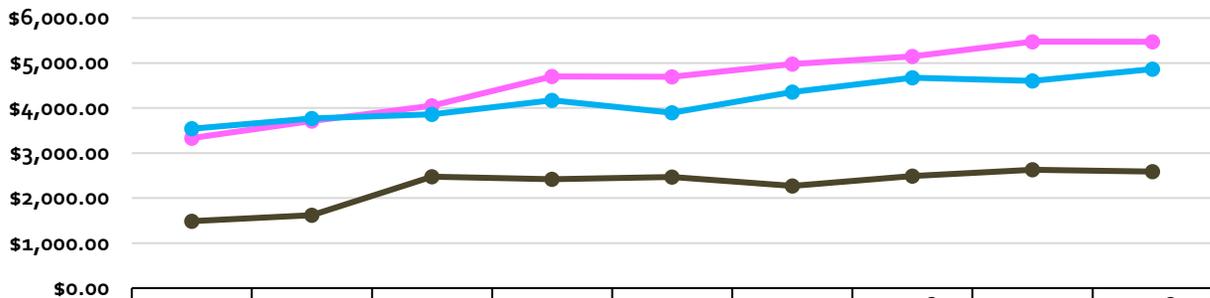
Public Works bills all water meters including meters used by IVGID operations. The chart below represents the total water consumption cost for all nine water meters that Public Works uses, but do not include water consumption cost for any irrigation systems, Diamond Peak Ski Resort, Incline Village Golf Facilities, or Parks and Recreation operations.

Water rates have gradually increased since 2010. The 2018 utility bill comparison details the single-family average monthly bill rates as it is applied to the median District user. The cost of water consumption as displayed in the charts below depict the rate as it is seen by all water users on their monthly bill for any given property. This includes base charges, capital improvement costs, administration fees and use for water and sewer services in addition to defensible space funding.

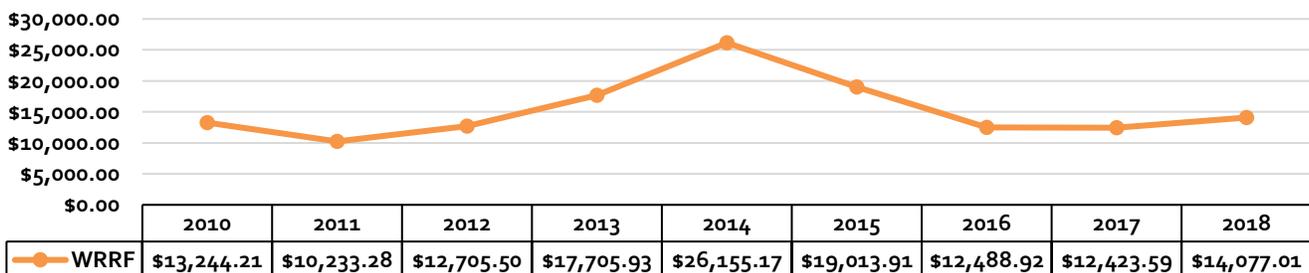
## 2018 Utility Bill Comparison



### Cost of Public Works Water Consumption

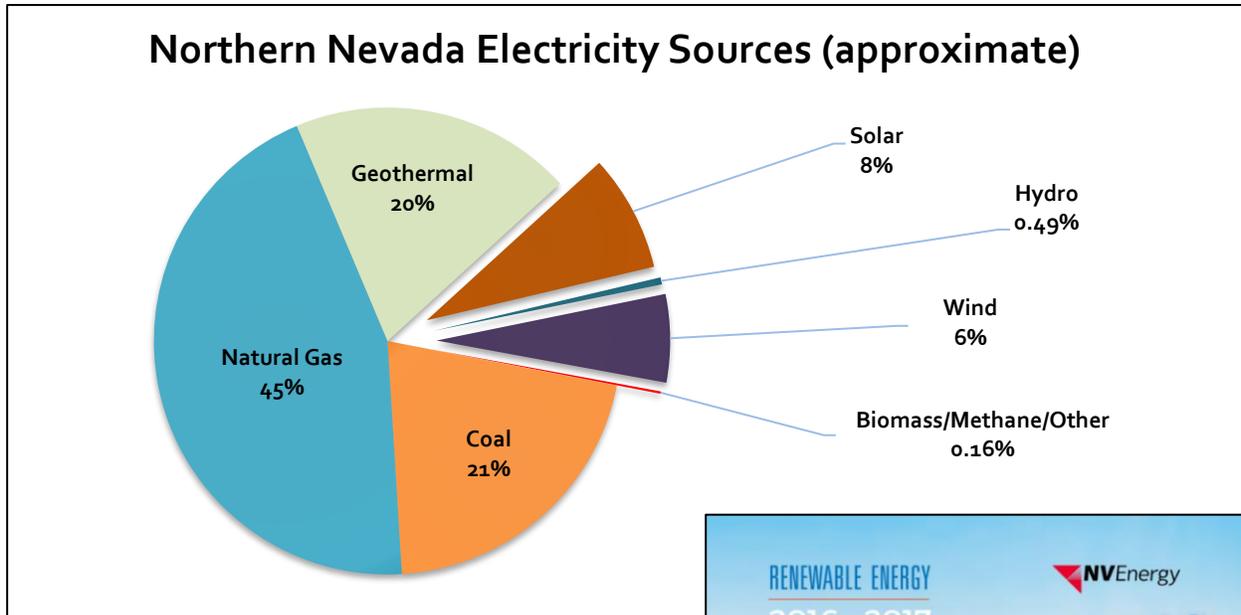


### Cost of Water Consumption at the Water Resource Recovery Facility

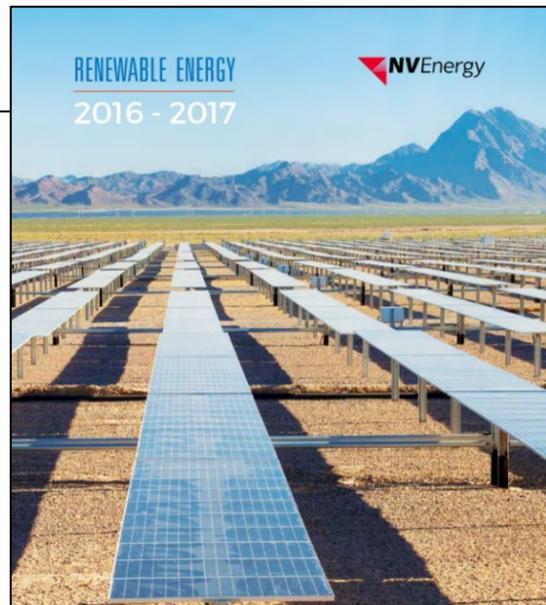


## Electricity

NV Energy provides electricity to Incline Village and Crystal Bay. It is nearly impossible to track an electron once it is created because electricity grids are tied together. However, local transmission lines extend to the nearest regional sub-station in Carson City. NV Energy provides information regarding their generation station's and overall grid's portfolio in Northern Nevada, which is broken down by the pie chart below. ([nvenergy.com/about-nvenergy/our-company/power-supply](http://nvenergy.com/about-nvenergy/our-company/power-supply)).



Most of the electricity generated in Northern Nevada comes from natural gas generation stations and combustion turbines that can produce at least 1,000 megawatts of electricity. North Valmy Generating Station in north central Nevada can produce 522 megawatts during summer peak capacity using coal. Geothermal hotspots provide the other most common sources of electricity in the state. Additional solar power generation stations are currently being built in Nevada. NV Energy has a goal to reduce the greenhouse gas emissions currently being emitted by the electricity grid. Northern Nevada electricity sources as it is defined in the chart above include all generators north of the One Nevada Transmission Line which connects the state electricity grid from Ely to Las Vegas. Fossil Fuels encompass approximately two thirds of the electricity generation in Northern Nevada, leaving only a third of electricity generation to renewable energy projects. NV Energy offers several programs and incentives to promote renewable energy project advancement and installation of energy storage solutions for critical infrastructure.

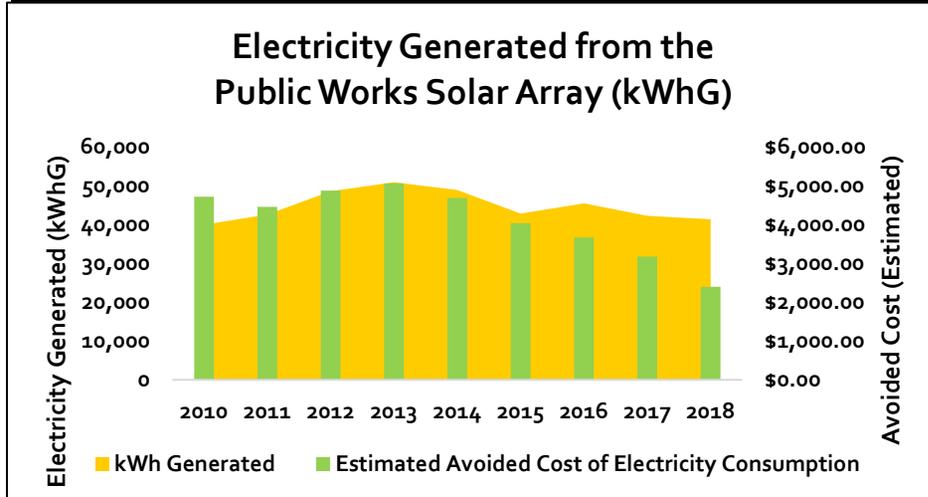


NV Energy's Renewable Energy Portfolio Report is Available at [nvenergy.com/cleanenergy](http://nvenergy.com/cleanenergy)

## Solar Array Electricity Generation

The installation of one hundred fifty solar-photovoltaic 205-watt panels on the roof of the Public Works Facility took place in January 2010. Public Works owns one of the largest solar arrays in Incline Village, NV including 2540 sq. ft. of solar panel surface. This electricity generation provides approximately 20% of the power need for the building's daytime operations. This system functions without battery storage. It is a grid-tied system so any excess energy produced is returned to the main grid via reverse metering. The approximate cost of this project was \$306,000 with \$171,000 funded by District capital and \$135,000 funded by NV Energy's Solar Generations Program Rebate. The estimated lifetime return on direct investment is approximately \$30,000 or at least 10% return for total value and approximately 20% return for District capital fund value. Additional project benefits include an estimated 34 metric tons or 68,000 pounds of carbon dioxide emissions that are avoided annually. Over 600,000 pounds of carbon dioxide emissions into our atmosphere have been avoided since this project was installed.

Solar Array Electricity Generation									
	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>kWh Generated</b>	39,844	42,504	48,454	50,803	48,814	42,733	45,398	42,173	41,278
<b>Percent of total kWh at PWF</b>	19%	23%	24%	25%	25%	20%	21%	19%	19%
<b>Est. Avoided Cost</b>	\$4,711.95	\$4,447.19	\$4,862.84	\$5,054.39	\$4,676.38	\$4,025.02	\$3,656.35	\$3,171.41	\$2,392.89
<b>Lifetime Electricity Generation (kWh):</b>			<b>402,001</b>						
<b>Estimated Lifetime Return on Investment:</b>			<b>\$36,998</b>						
<b>Estimated Lifetime CO2 Avoidance (lbs.):</b>			<b>612,000</b>						



## Electricity Consumption

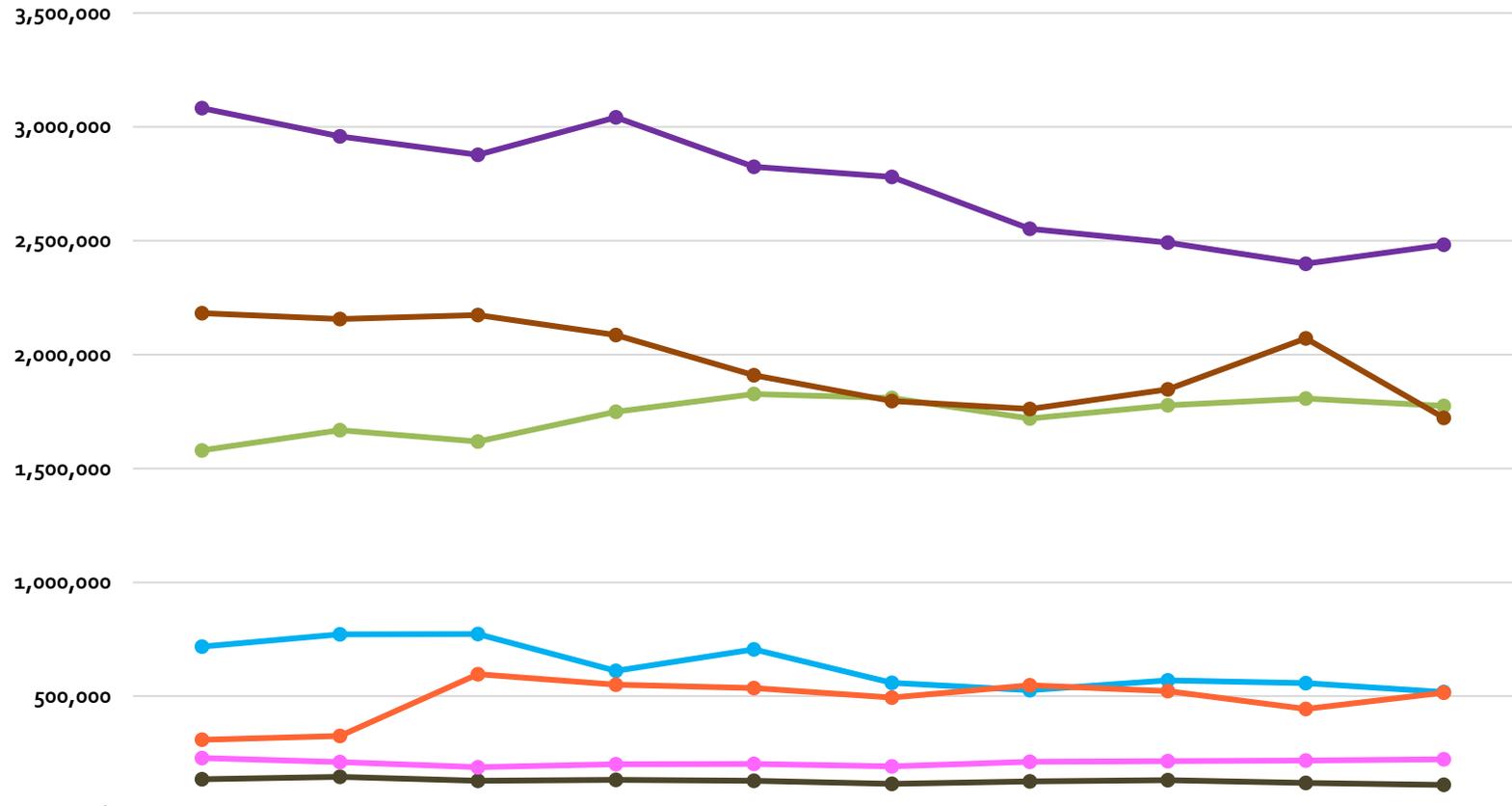
Incline Village and Crystal Bay receives electricity service from NV Energy whose power sources in Northern Nevada include a mix of coal, natural gas and renewable electricity generation stations. IVGID does not currently participate in a Renewable Energy Credit (REC) program or any other similar programs. Rooftop solar in the Lake Tahoe Basin can be difficult to achieve with local regulations, but the PWF does have a small solar array installed on its roof.

NV Energy collects the most accurate electricity data and readily available records go back to 2009. Overall electricity consumption is measured in kilo-watt-hours (kWh) and has shown a decreasing trend since then. New equipment upgrades and revised operational procedures may be contributing to this trend. Public Works electricity consumption was reduced by over 850,000 kWh in 2018 compared to 2009. On average, Public Works electricity consumption has decreased by approximately 98,000 kWh per year since 2009.

Electricity Consumption	kWh	Year to Year Difference (kWh)	Year to Year Difference (Percentage)	Difference Compared to 2009 (kWh)	Difference Compared to 2009 (Percentage)
<b>2009</b>	8,234,038	n/a	n/a	n/a	n/a
<b>2010</b>	8,233,371	-667	-0.01%	n/a	n/a
<b>2011</b>	8,356,439	123,068	1.5%	122,401	1.5%
<b>2012</b>	8,370,203	13,764	0.2%	136,165	1.7%
<b>2013</b>	8,133,777	-236,426	-2.8%	-100,261	-1.2%
<b>2014</b>	7,746,680	-387,097	-4.8%	-487,358	-5.9%
<b>2015</b>	7,443,870	-302,810	-3.9%	-790,168	-9.6%
<b>2016</b>	7,554,635	110,765	1.5%	-679,403	-8.3%
<b>2017</b>	7,615,565	60,930	0.8%	-618,473	-7.5%
<b>2018</b>	7,346,428	-269,137	-3.5%	-887,610	-10.8%
<b>Average:</b>	<b>7,903,501</b>	<b>-98,623</b>	<b>-1.2%</b>		

Public Works has 36 electrical meters including at water and wastewater pumps, the Burnt Cedar Water Disinfection Plant (BCWDP), Water Resource Recovery Facility (WRRF), Public Works Facility (PWF) and the IVGID Administrative Office – Anne Vorderbruggen Building (AVB – Admin). The “Other” category listed in the graph tables on the next page includes electricity consumption that is metered at various water reservoirs and at the Wetlands Enhancement Facility. These meters do not include electricity consumption for Diamond Peak Ski Resort, Incline Village Golf Facilities, or Parks and Recreation operations.

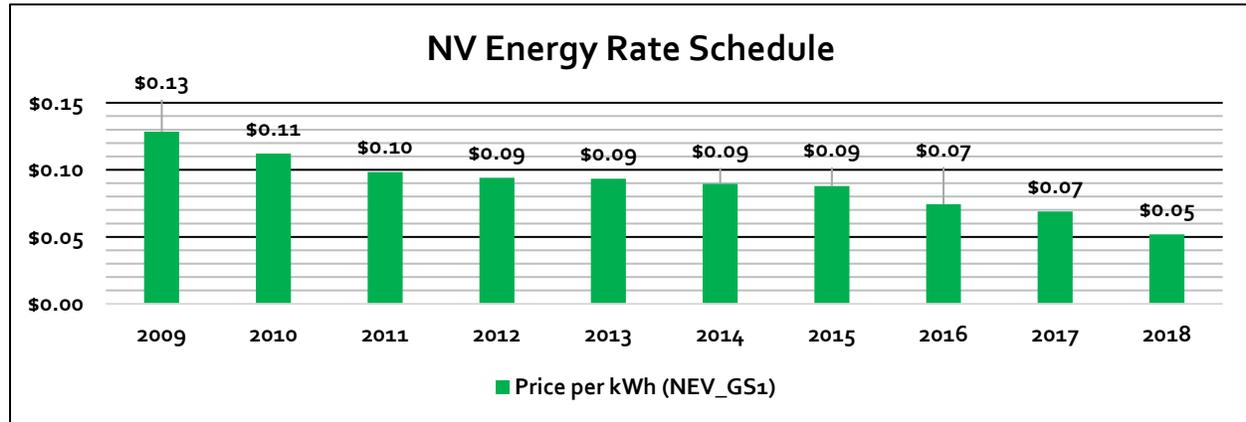
### Public Works Electricity Consumption (kWh)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
AVB - Admin	135,360	145,680	128,640	132,000	128,560	115,520	125,149	131,867	119,698	110,310
PWF	228,560	210,164	188,264	200,774	202,963	192,174	211,453	214,838	217,155	222,705
BCWDP	3,082,248	2,957,903	2,877,818	3,041,239	2,825,348	2,780,216	2,552,352	2,491,675	2,398,963	2,482,015
Water Pumps	717,927	771,176	772,571	611,362	705,113	558,821	525,851	569,287	557,497	517,851
WRRF	1,579,596	1,668,014	1,618,792	1,748,840	1,826,736	1,810,088	1,719,297	1,776,907	1,807,426	1,775,161
Sewer Pumps	2,181,848	2,155,753	2,173,777	2,085,839	1,908,893	1,795,939	1,761,338	1,847,339	2,070,796	1,722,383
Other	308,499	324,681	596,577	550,149	536,164	493,922	548,430	522,722	444,030	516,003

## Electricity Cost

Improvements to local energy infrastructure under NV Energy's management has affected electricity rates. While electricity consumption is going down for Public Works operations so are electricity rates. The table depicting the NV Energy Rate Schedule is an example of electrical rate decrease for most meters associated with Public Works operations. A decrease in electricity rates allows the District to be more cost-efficient per kilo-Watt-hour (kWh) in performing regular duties across all venues.



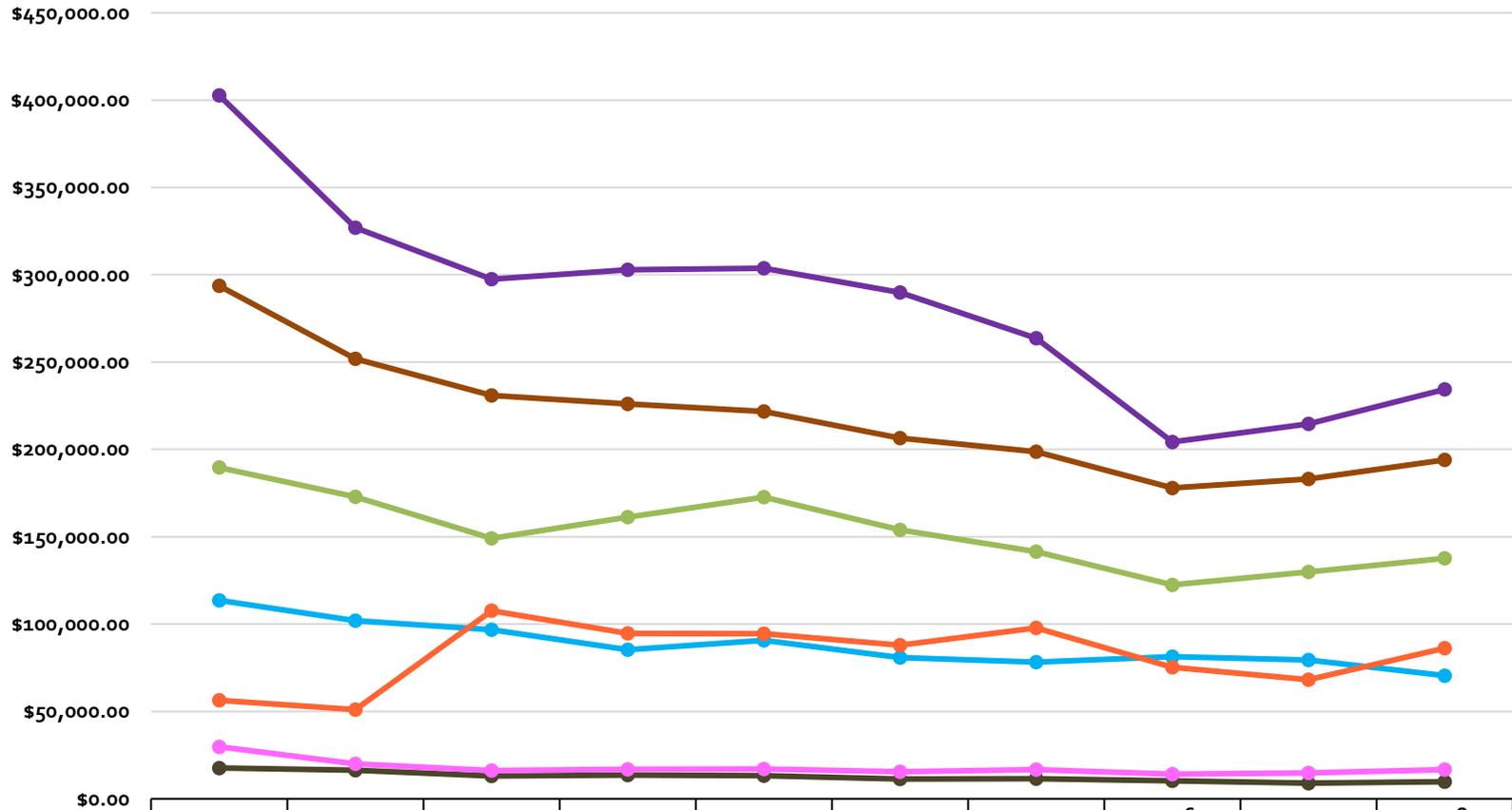
*NEV\_GS1 = General Service - Commercial (Less than 10,000 kWh/month)*

The cost to NV Energy in 2018 was \$350,000 less expensive than it was in 2009. Electricity consumption at Public Works has decreased by approximately 11% since 2009 while the electricity cost has decreased by approximately 32% over the same time. On average, Public Works electricity cost has been reduced by nearly \$40,000 per year since 2009.

Electricity Cost	American Dollars	Year to Year Difference	Year to Year Difference (Percentage)	Difference Compared to 2009	Difference Compared to 2009 (Percentage)
<b>2009</b>	\$1,103,472.01	n/a	n/a	n/a	n/a
<b>2010</b>	\$941,096.71	-\$162,375.30	-14.7%	n/a	n/a
<b>2011</b>	\$911,277.41	-\$29,819.30	-3.2%	-\$192,194.60	-17.4%
<b>2012</b>	\$900,949.96	-\$10,327.45	-1.1%	-\$202,522.05	-18.4%
<b>2013</b>	\$913,535.40	\$12,585.44	1.4%	-\$189,936.61	-17.2%
<b>2014</b>	\$845,993.22	-\$67,542.18	-7.4%	-\$257,478.79	-23.3%
<b>2015</b>	\$808,333.93	-\$37,659.29	-4.5%	-\$295,138.08	-26.7%
<b>2016</b>	\$685,709.59	-\$122,624.34	-15.2%	-\$417,762.42	-37.9%
<b>2017</b>	\$699,086.84	\$13,377.25	2.0%	-\$404,385.17	-36.6%
<b>2018</b>	\$749,245.32	\$50,158.48	7.2%	-\$354,226.69	-32.1%
<i>Average:</i>	<i>\$855,870.04</i>	<i>-\$39,358.52</i>	<i>-3.9%</i>		

The graph and table on the next page display the electricity cost to Public Works over the same period as measured by the electricity consumption data on the previous page.

### Cost of Public Works Electricity Consumption



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
● AVB - Admin	\$17,644.65	\$16,426.18	\$13,082.10	\$13,628.64	\$13,225.95	\$11,374.22	\$11,569.17	\$10,304.37	\$8,967.12	\$9,829.92
● PWF	\$29,769.72	\$20,048.82	\$16,142.16	\$16,808.34	\$17,048.41	\$15,565.33	\$16,647.40	\$14,103.11	\$14,798.11	\$16,706.03
● BCWDP	\$402,719.93	\$326,872.67	\$297,535.73	\$302,869.71	\$303,793.08	\$289,927.17	\$263,699.99	\$204,288.78	\$214,644.23	\$234,351.55
● Water Pumps	\$113,605.92	\$101,994.98	\$96,815.15	\$85,399.62	\$90,624.80	\$80,742.96	\$78,298.41	\$81,339.04	\$79,429.41	\$70,497.29
● WRRF	\$189,624.99	\$172,849.83	\$149,180.43	\$161,333.29	\$172,618.32	\$153,933.12	\$141,572.55	\$122,483.96	\$129,931.96	\$137,642.27
● Sewer Pumps	\$293,675.42	\$251,862.37	\$230,880.89	\$226,158.27	\$221,770.29	\$206,441.41	\$198,685.96	\$177,962.13	\$183,097.23	\$193,991.11
● Other	\$56,431.38	\$51,041.86	\$107,640.95	\$94,752.09	\$94,454.55	\$88,009.01	\$97,860.45	\$75,228.20	\$68,218.78	\$86,227.15

## Natural Gas

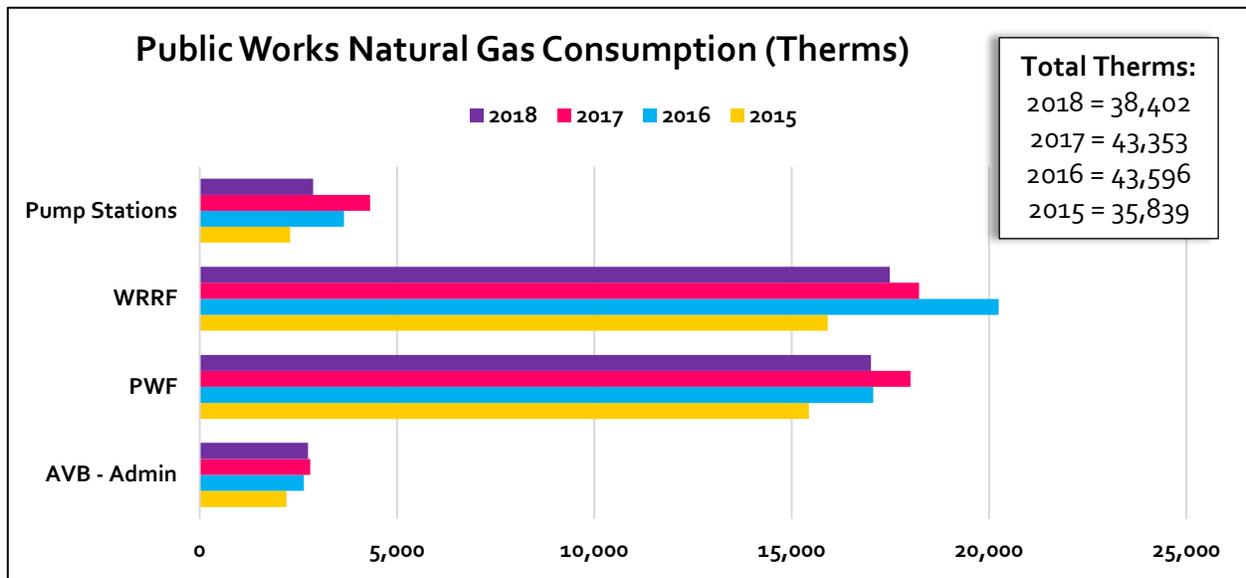
Natural gas is provided to our area by Southwest Gas Corporation



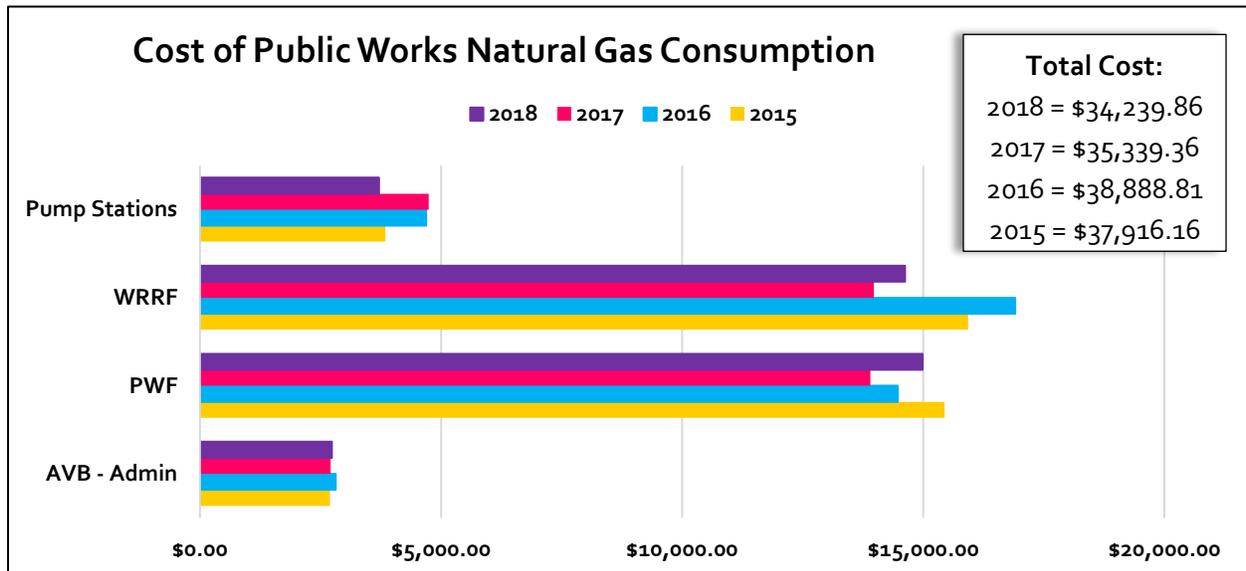
## SOUTHWEST GAS CORPORATION

(SGC), which is a subsidiary of Southwest Gas Holdings, Inc. SGC provides energy to more than 2 million customers in Arizona, Nevada, and parts of California. SGC states "As an abundant source of energy, natural gas is an American foundation fuel, helping to increase our energy security. We believe that developing clean natural gas energy sources is critical to reducing greenhouse gas emissions, and providing an affordable and sustainable energy blend." The Public Works Facility and the WRRF use the most amount of natural gas primarily for heating purposes. Public Works facilities have seven natural gas meters at its properties including the IVGID Administrative Offices.

### Natural Gas Consumption



### Natural Gas Cost

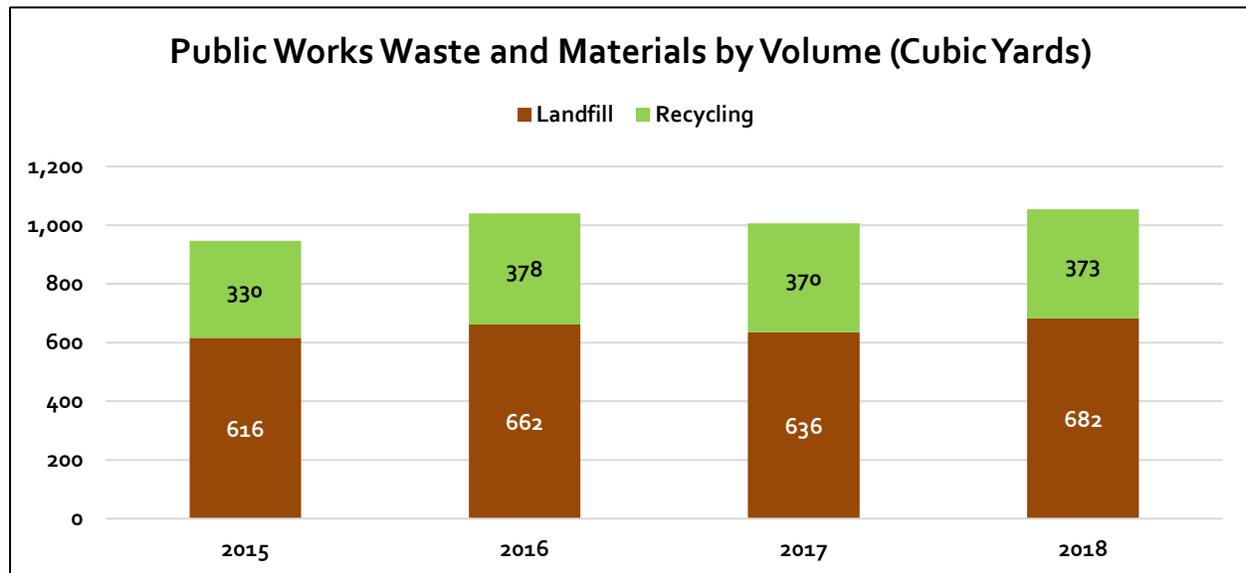


## Waste and Materials

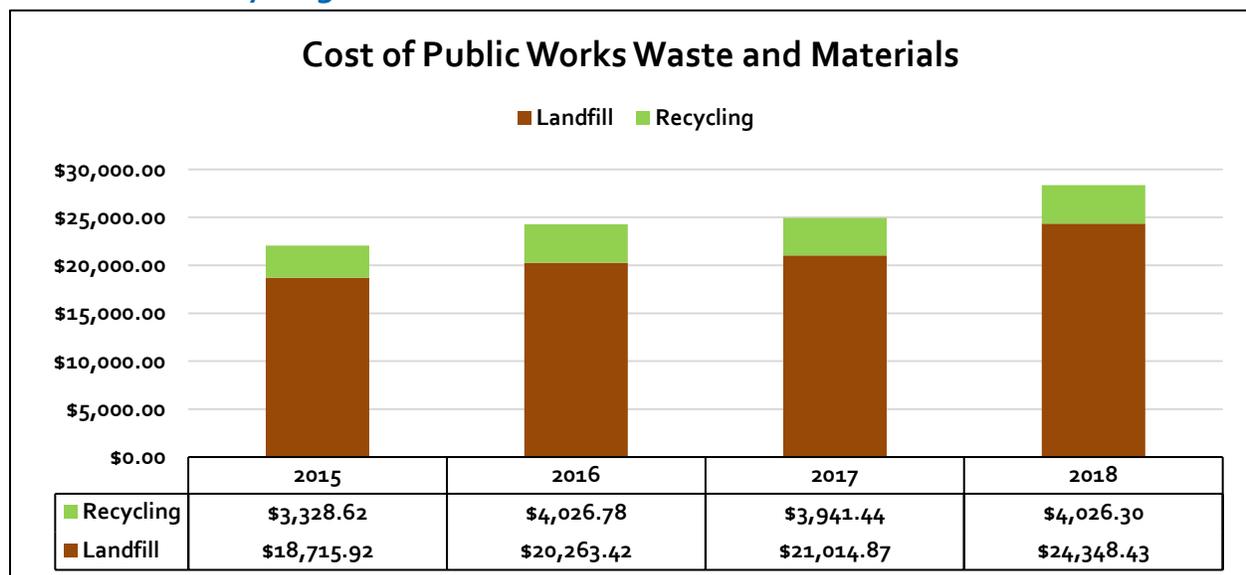
Landfill and recycling services are offered to the District by Waste Management, Inc. Public Works produces typical solid waste along with grit from the WRRF as well as occasional special project waste and hazardous waste. Public Works operations generate approximately 1,000 cubic yards of waste and materials per year. Recyclable materials made up 35% of the total waste generated by Public Works in 2018, yet the cost of recycling only accounts for 14% of the total bill. Public Works has three landfill dumpsters, three recycling dumpsters and three dumpsters for special materials or events. Hazardous materials are managed as they are produced in accordance with all local, state and federal regulations.



### Landfill Diversion Efforts



### Landfill and Recycling Cost



# GREENHOUSE GAS EMISSIONS

## Introduction

Greenhouse gases are types of gases that exist in the Earth’s atmosphere, like water vapor, carbon dioxide and methane. Many scientific findings show that practices like fuel use, raising cattle, and factory production have caused the release of a lot more greenhouse gases than our planet is used to having in its atmosphere. Too much of the sun’s heat is being trapped by the increased levels of these gases, which leads to warmer temperatures and changes in climate.

The Environmental Protection Agency provides several online tools that can help determine greenhouse gas emissions. The Energy Star® Portfolio Manager® is free to use for any size organization and can even be utilized for residential properties. The Greenhouse Gas Equivalencies Calculator can turn those emissions numbers into relatable information for most people. The tools allow the user to upload information regarding natural resource consumption so that emissions analysis can be estimated. Natural resource information is found by reviewing previous utility bills or inquiring the user’s utility services for historical records for a given account.

The estimated greenhouse gas emissions for Public Works operations based on information included in this report resulted in 2,385 metric tons of carbon dioxide emitted into the atmosphere during 2018. This is not inclusive of all available data that influence emission data at Public Works. Further analysis of fleet information is needed to determine a more accurate approximation of emissions.

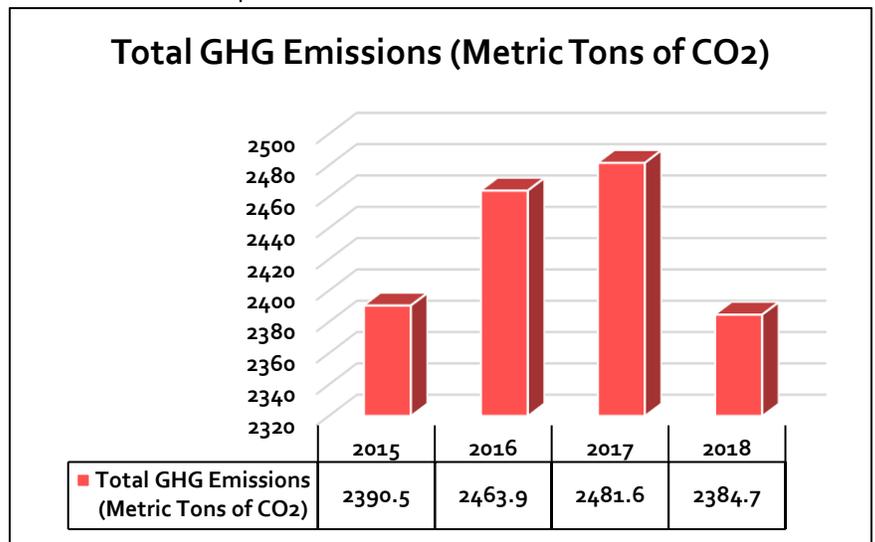


## Greenhouse Gas Equivalencies



**2,385 metric tons of carbon dioxide are equal to:**

-  Greenhouse gas emissions from 506 passenger vehicles driven for one year or 5,831,296 miles driven by an average passenger vehicle.
-  Carbon dioxide emissions from 286 homes’ energy use for one year or 416 homes’ electricity use for one year.
-  Carbon dioxide emissions from 304,116,879 smartphones charged.



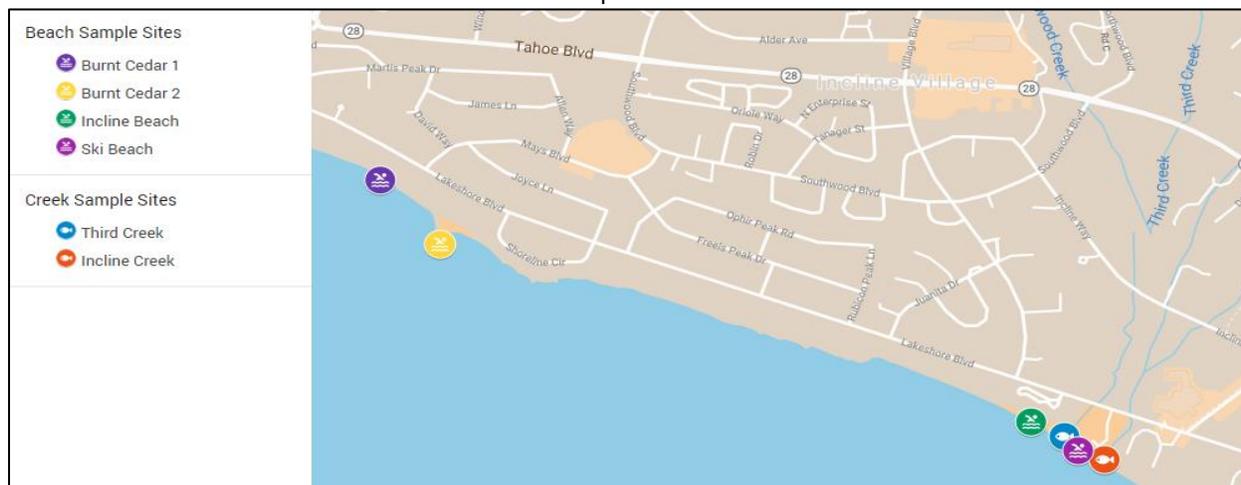


Staff are qualified to gather water quality samples with minimal environmental disturbance. It is never advised to enter the stream zone. The aquatic ecosystem habitat is fragile and personal safety can be compromised.

## ENVIRONMENTAL QUALITY

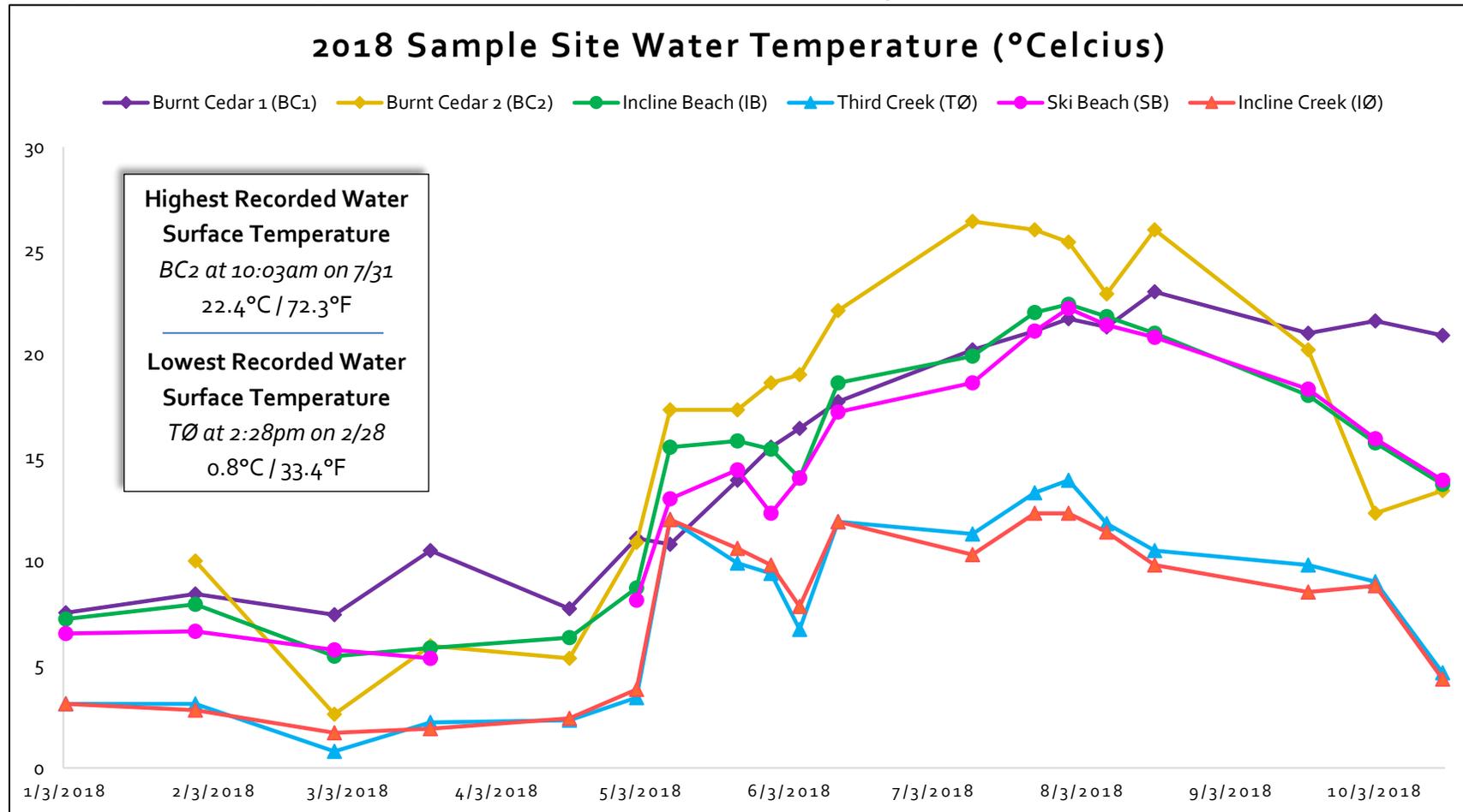
### Site Monitoring

One way of protecting local water quality is to monitor and consistently observe the environment for any changes over time. The Waste Not Program grabs six water quality samples from IVGID owned properties to help build a databank for our natural resource. Staff has been monitoring and recording water quality data at Burnt Cedar Beach and Jetty, Incline Beach, Ski Beach, Third Creek and Incline Creek since 2004. Beach-site water quality parameters include general observations, temperature, turbidity, total coliform and fecal coliform. Dissolved Oxygen (DO) and Total Dissolved Solids (TDS) are measured at creek-sites in addition to beach-site parameters.



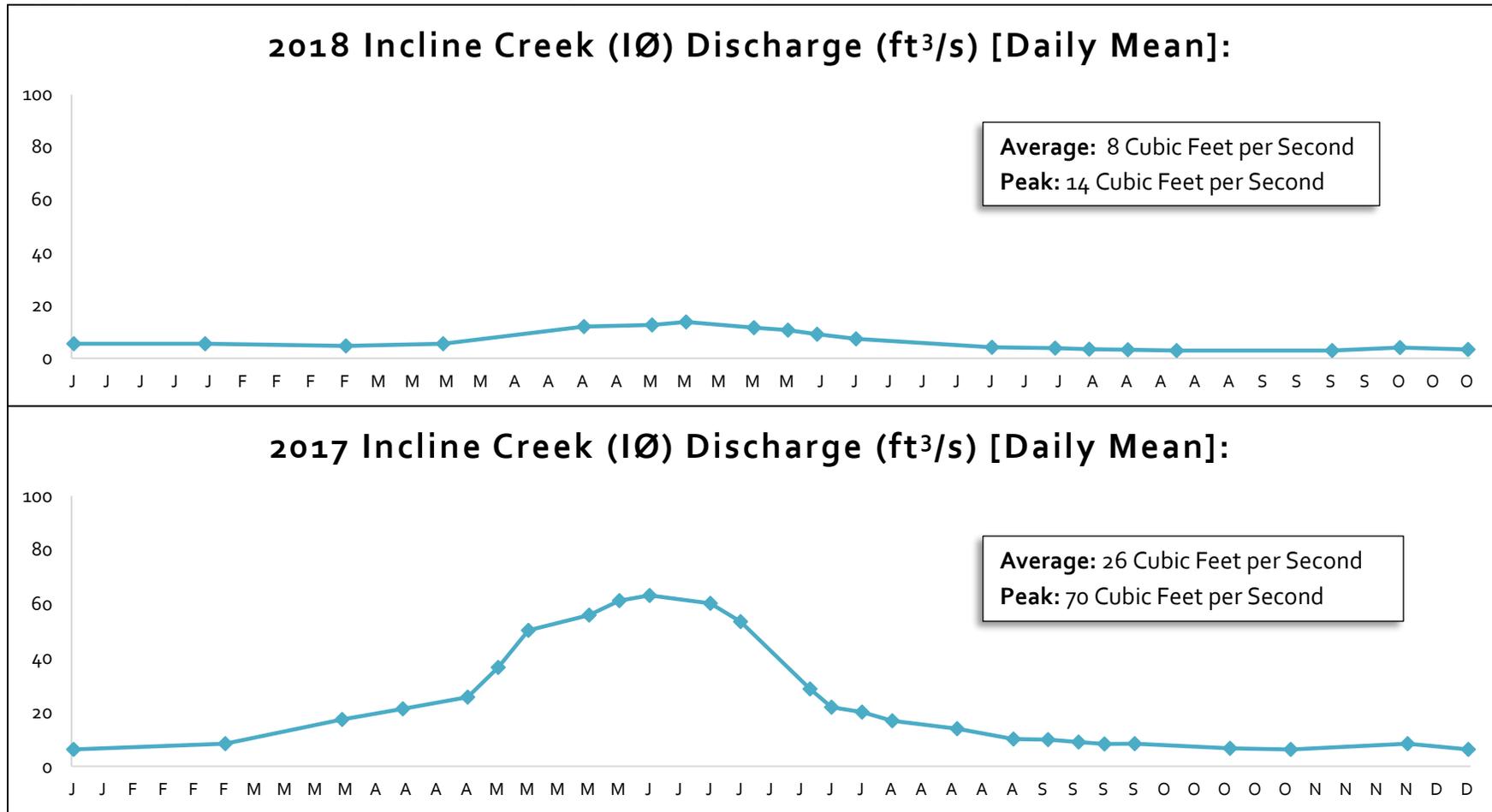
## Sample Site Data

A total of 19 individual sample events were conducted at random by Waste Not staff in 2018 to record the parameters described earlier in this section. The data is presented in graphical form but could include possible errors related to human interaction, unexpected weather events or unanticipated activities that occurred upstream or nearby. Water quality affects the local ecosystem in many tangible and invisible ways. It influences the health of vegetative, aquatic and terrestrial organisms that utilize the water for basic needs. It also influences the health of the people who utilize the resource for recreation and as the primary source for drinking water. This chart presents temperature as a basic water quality parameter. Water temperature is measured by hand at the site surface utilizing a calibrated instrument.



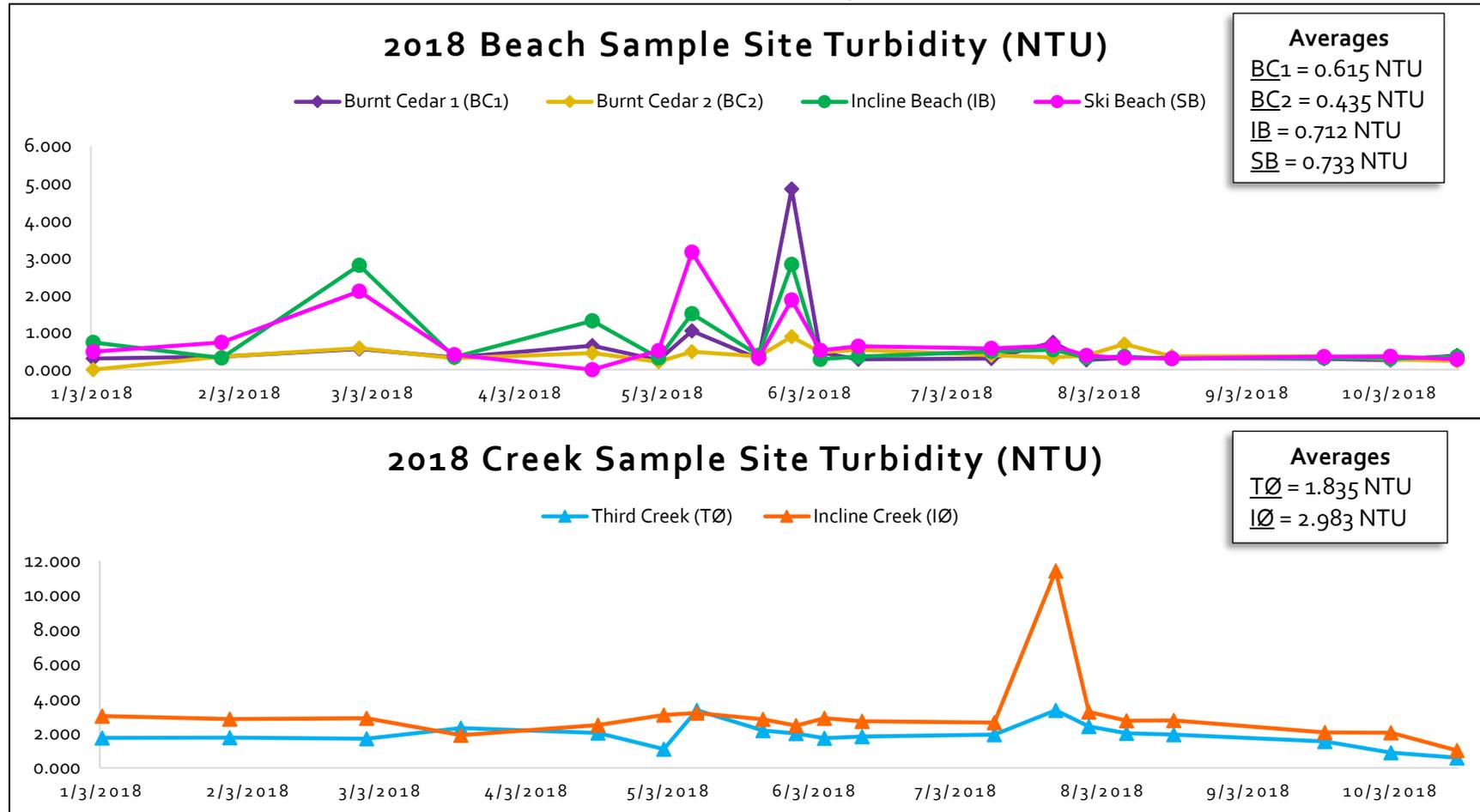
## Incline Creek Water Flows

The chart below depicts the water flow discharge from Incline Creek as it is measured by the United States Geological Survey (USGS) monitoring station located near Lakeshore Boulevard. This is measured as Cubic Feet per Second (CFS) and typically peaks during the early summer as the snow melts. The water from Incline Creek joins Lake Tahoe in between Ski Beach and Hermit Beach. The datapoints and averages depicted in these charts are consistent with the sample events that took place in 2017 and 2018 and may differ from finalized USGS figures. Discharge nearly reached 70 CFS at its peak in 2017, whereas approximately 14 CFS was the recorded peak in 2018. This difference highlights the impact of the snow storms that were experienced the early part of 2017.



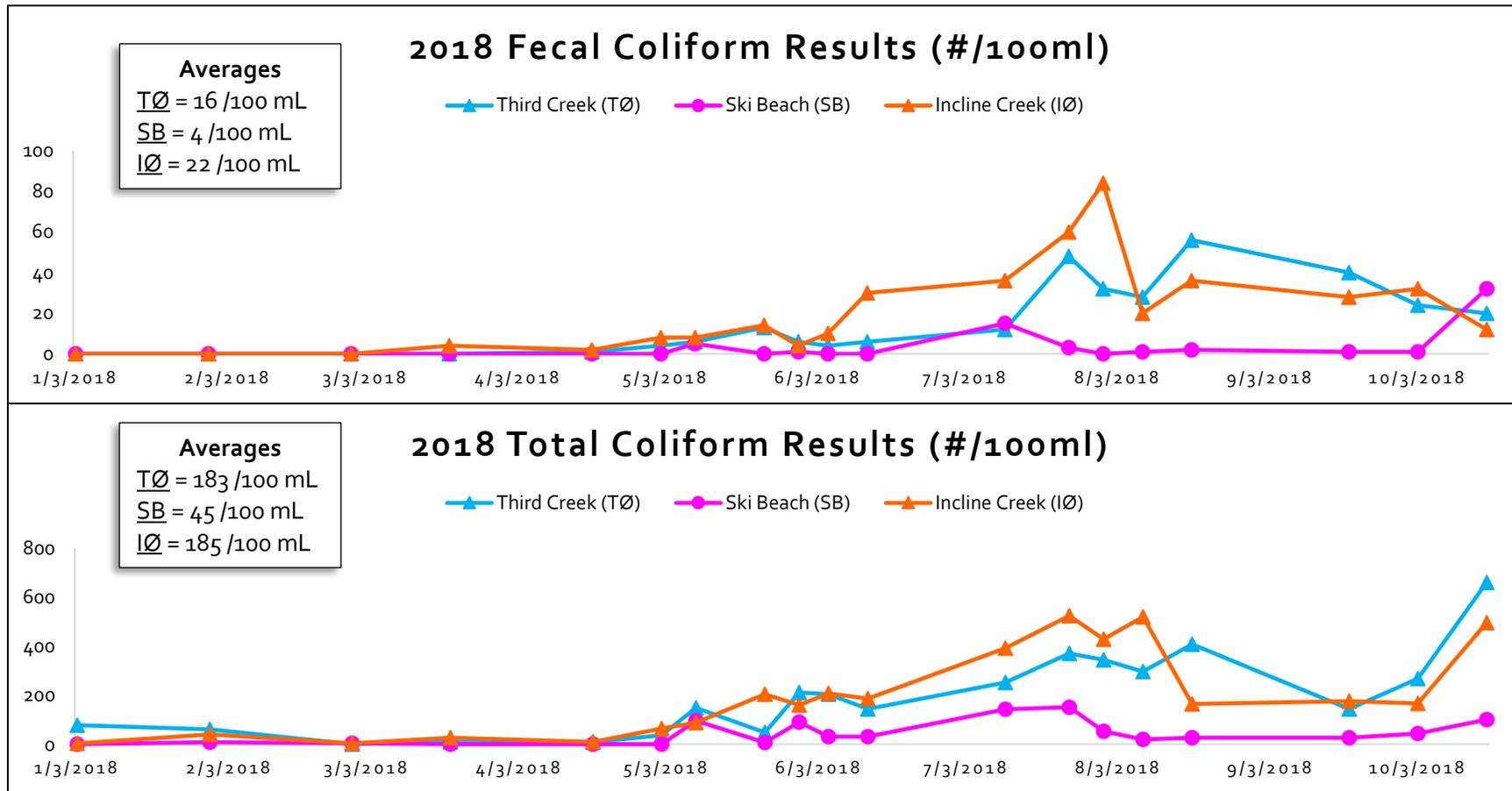
## Turbidity Results

The measurement of turbidity is a key test of water quality. Turbidity is the cloudiness or haziness caused by large numbers of individual particles that are generally invisible to the naked eye. Turbidity can indicate high stream flows or other disturbances that may be occurring upstream of the sample point. Turbidity is measured as NTU, which stands for Nephelometric Unit, and examines scattered white light. A sample is gathered by hand and brought to Public Works' Nevada state-certified laboratory for turbidity analysis with calibrated equipment. The Tahoe Regional Planning Agency (TRPA) has determined that littoral Lake Tahoe turbidity shall not exceed 3 NTU or shall not exceed 1 NTU for waters of Lake Tahoe that are not directly influenced by stream discharges (*LTIMP, 2002*).



## Coliform Results

Coliforms are a broad class of bacteria found naturally in the environment. Coliform can include animal feces or other disease-causing organisms. Coliform results are a simple tally of the number of bacteria that appear due to organisms present in the sample. Fecal coliform is measured using the same methods but with a separate indicator. Ski Beach coliform results have been included alongside results from Third Creek and Incline Creeks for comparison. Burnt Cedar and Incline Beach sites are not visualized in these charts because results are negligible. Coliform occurs naturally in the environment as wildlife contribute to its presence, however human influence can increase these levels. The Environmental Protection Agency (EPA) has established the Total Coliform Rule (TCR) which prohibits any presence of coliform in drinking water. The results presented below represent untreated littoral and riparian water samples collected by hand in a variety of conditions.





# COMMUNITY ALLIANCE

## Introduction

Public Works has participated in community outreach, involvement and education for 26 years through services provided by the Waste Not program. Public Works outreach also includes newsletter inserts in every utility bill, plus staff availability in person and by phone to answer customer questions. Waste Management, Inc. conducts its own outreach per services offered.

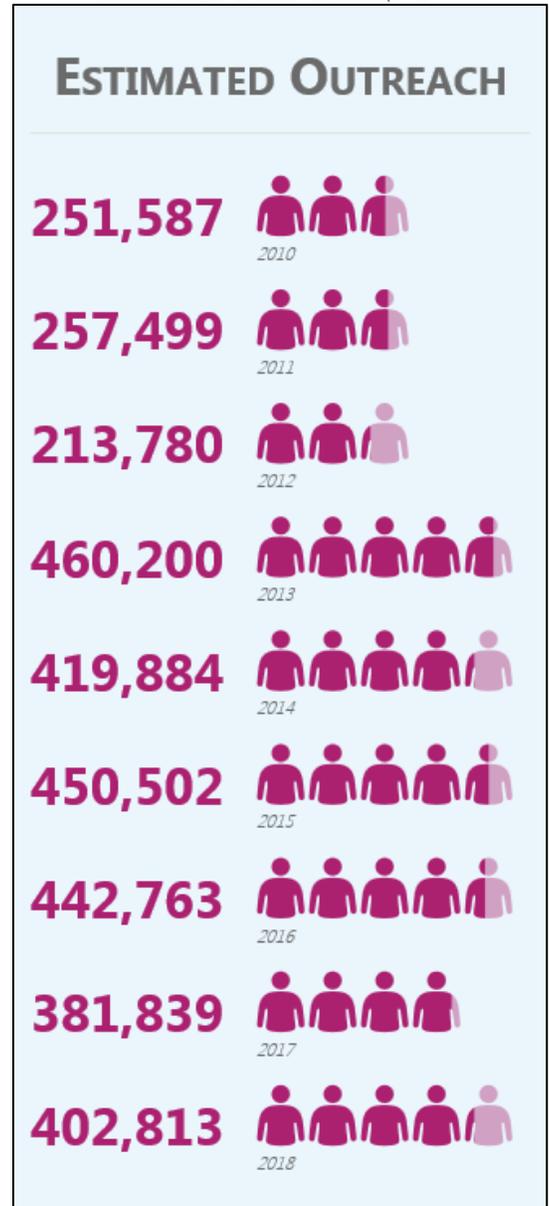
## Waste Not Program

The Waste Not Program is best described as the Community Conservation Services for the District. Waste Not assumes most responsibilities that would resemble an Environmental Health and Safety or Ecosystem Services Division that other utilities, institutions or municipalities have developed. Staff come from a diversity of backgrounds, but all members have a passion for Lake Tahoe’s protection and enhancement.

Waste Not’s mission is to empower sustainable living by providing conservation programs and services for our community in the areas of watershed protection, water conservation, recycling, household hazardous waste, living with wildlife and the Tahoe environment. Waste Not is part of IVGID’s Public Works Department and provides staff support for the Tahoe Water Suppliers Association (TWSA).

## Water Use Efficiency

Public Works customers receive “high water use” courtesy notifications on their monthly bill if use increases or if the meter runs constantly for more than 24-hours. IVGID staff conducts free, on-site landscape water use audits each summer for customers upon request. Public Works and many of its employees are members of the American Water Works Association (AWWA). Several staff members offer valuable resources to the District by holding Water Use Efficiency Practitioner Certifications offered by the AWWA.



## Public Outreach

In 2018, an estimated 400,000 persons received the Public Works, Waste Not and TWSA messages via radio, TV, print and web publications, phone and email inquiries, live classes, community forums, custom presentations, site tours and contact at over 40 regional events.

Employees produce custom brochures, posters, flyers, factsheets, stickers, magnets and buttons, refillable water bottles, reusable grocery bags, dog-waste collection supplies and other items. Waste Not uses local print, online resources and social media outlets to promote information, services and events.

2018 is the 26<sup>th</sup> anniversary of the Waste Not Program, which celebrates a rich history of environmental impact management ranging from watershed protection, solid waste containerization and reduction to public education on a wide variety of topics. Please see Appendix C for a detailed list of projects that the Waste Not Program has contributed to over the past 26 years.



*Sarah conducting the Water Taste Test at Earth Day*

## Event Coordination, Participation and Support

Community events are supported throughout the year by Waste Not staff members on behalf of IVGID and TWSA. Most events are coordinated in partnership with other agencies, non-profits and businesses. The table below lists priority special events but is not inclusive of all events that staff participate in in any given year.

EVENT NAME	EVENT DATE (S)	ATTENDANCE
Mountain Interpretive Tours at Diamond Peak Ski Resort	JANUARY 24, FEBRUARY 24, MARCH 31	25
Community Appreciation Day at IVGID	FEBRUARY 11	150
Tahoe-Truckee Earth Day at Squaw Valley	APRIL 21	5,000
South Lake Tahoe Earth Day at Bijou Park	APRIL 28	800
Snapshot Day at Waterman's Landing	MAY 19	22
Incline Village and Crystal Bay Community Cleanup Day at Aspen Grove	JUNE 2	125
Public Works Walk and Learn Tours around Incline Village and Crystal Bay	JUNE 22, JULY 20, AUGUST 17	150
Tales and Trails at Sugarpine Point	JULY 28	500
Tahoe Summit at Sand Harbor	AUGUST 7	800
Family Science Day at Commons Beach	AUGUST 25	300
Great Sierra/Coastal Cleanup Day along the East Shore of Lake Tahoe	SEPTEMBER 15	55

## School Lessons

Waste Not staff offers an average of 20 annual educational programs on stream science, recycling, and wildlife awareness to students in the Incline Village/North Shore schools (Pre-K to college). In the summer months, lessons are offered at regional youth organization camps. On-site tours of the Public Works water and sewer operations and Waste Not's technical services are offered upon request.



*Joe teaches students about source water protection at the beach.*

**Welcome to TAHOE**

**So glad you're here! Here are eight insider tips to help you do everything you want to do in Tahoe:**

- 1. DRINK TAHOE TAP™**  
No need to buy bottled water. Tahoe Tap is the world's best. Literally. We win awards. Fill and refill your reusable bottles all day.
- 2. BE #1 AT PICKING UP #2**  
If it's your dog, then it's your doody. If left behind, your cute pet's waste drains into the lake and grows horrible monsters.
- 3. NO ONE WANTS TO SEE YOUR DIRTY BUTT**  
Cigarettes leach toxic chemicals into Tahoe. Please keep your butts from touching the ground.
- 4. TRASH BELONGS IN THE CAN**  
What happens in Tahoe shouldn't stay in Tahoe. Wherever you are, trash or recycling cans are never far.
- 5. YOU GONNA EAT THAT?**  
Human food hurts wildlife. Protect our wild animals by locking trash in bear-proof bins.
- 6. SMILE FOR MILES**  
These are nice trails. Blaze a trail of kindness with other hikers, bikers, dogs, and horses.
- 7. PRACTICE SAFE CAMPING**  
If you loved your campfire, give it a big wet one. No fire is out until fully extinguished with water.
- 8. LOOK WHAT THE CRAFT DRAGGED IN**  
Boat inspections aren't just fun, they're mandatory. Bring your boat clean, drained, and dry.

takecaretahoe.org #takecaretahoe

**Take care.**

## Take Care Tahoe

Take Care Tahoe is a collective group of more than 30 organizations that love Lake Tahoe and want to see more people connect with this beautiful natural environment. The Take Care™ campaign has been designed for use in outreach materials. Trash cans, parks, hotel lobbies, piers, restaurants, beaches or trails. Really, anywhere within reach of people who might be making simple mistakes that are hurting our environment. To find out more information, see upcoming events and request a media toolkit for an agency, business and/or property, visit:

[www.takecaretahoe.org](http://www.takecaretahoe.org).



## Be #1 at Picking up #2

At Lake Tahoe and many other areas throughout the United States, people have become concerned about the effects of accumulated dog waste on water quality. Dog waste, like any waste, may contain a variety of microbes, some of which could cause disease. Examples of diseases that can potentially be transmitted from dogs to humans through feces include Salmonella, Giardia, E-Coli and Cryptosporidium.

The Tahoe Water Suppliers Association and IVGID sponsor waste stations to encourage dog owners to clean up after their pets. These stations are placed in high impact areas and monitored by volunteer or partner agency staff. Dozens of sponsored stations are currently in use in Incline Village and Crystal Bay. Nearly 100 sponsored stations have been distributed throughout the Lake Tahoe Basin via partners of the TWSA.

## Bear Smart Program

Waste Not staff provides education and outreach to residents, visitors and local businesses on general wildlife issues with an emphasis on proper trash storage. Services include: media and outreach, presentations, a bear box rebate program reestablished July 2014, on-site assistance with bear box location, research of wildlife-resistant trash carts and peer community programs.

Staff works closely with Waste Management, Inc. on service standardization and compliance. Bear Smart information is placed on dumpster enclosures. Waste Not's Bear Smart Program provides education on proper solid waste management with a goal to reduce human/bear conflict. Solid waste enforcement has been a long-term community focus.



### FACEBOOK PAGES HAVE BEEN ESTABLISHED FOR:

-  **IVGID PUBLIC WORKS**
-  **BEAR SMART - INCLINE VILLAGE**
-  **DRINK TAHOE TAP**  
(TAHOE WATER SUPPLIERS ASSOCIATION)

EXTENSIVE INFORMATION ON ALL TOPICS IS AVAILABLE AT THE FOLLOWING WEB LOCATIONS:

[yourtahoepace.com](http://yourtahoepace.com)

[bearsmartinclinevillage.org](http://bearsmartinclinevillage.org)

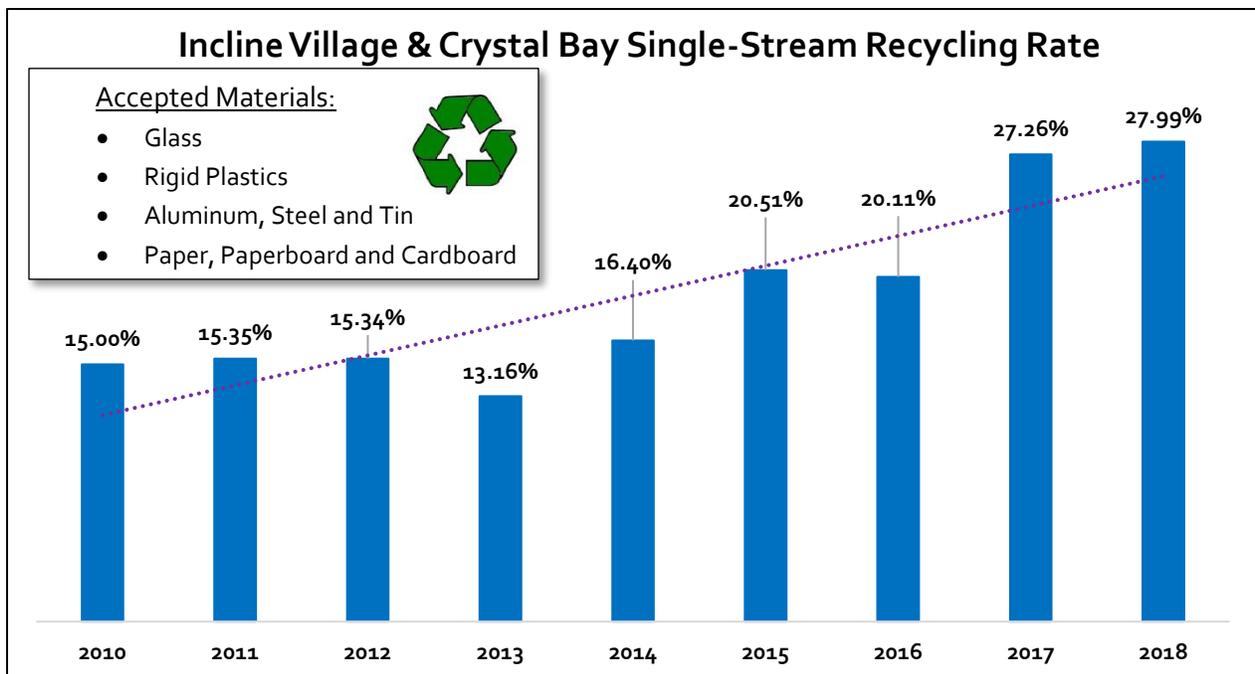
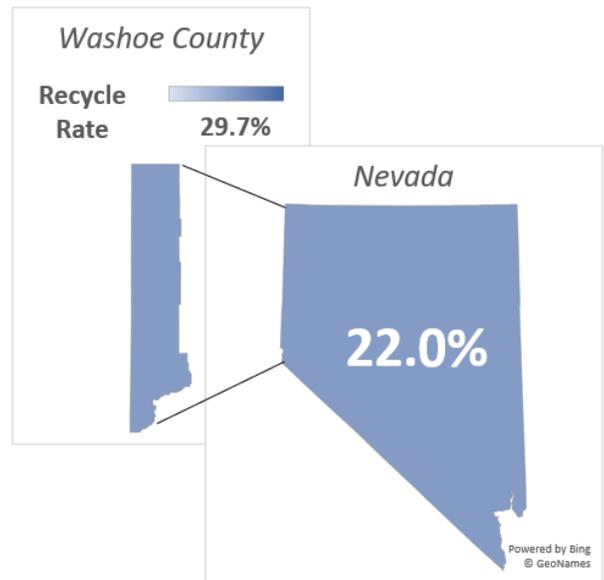
[drinktahoetap.org](http://drinktahoetap.org)

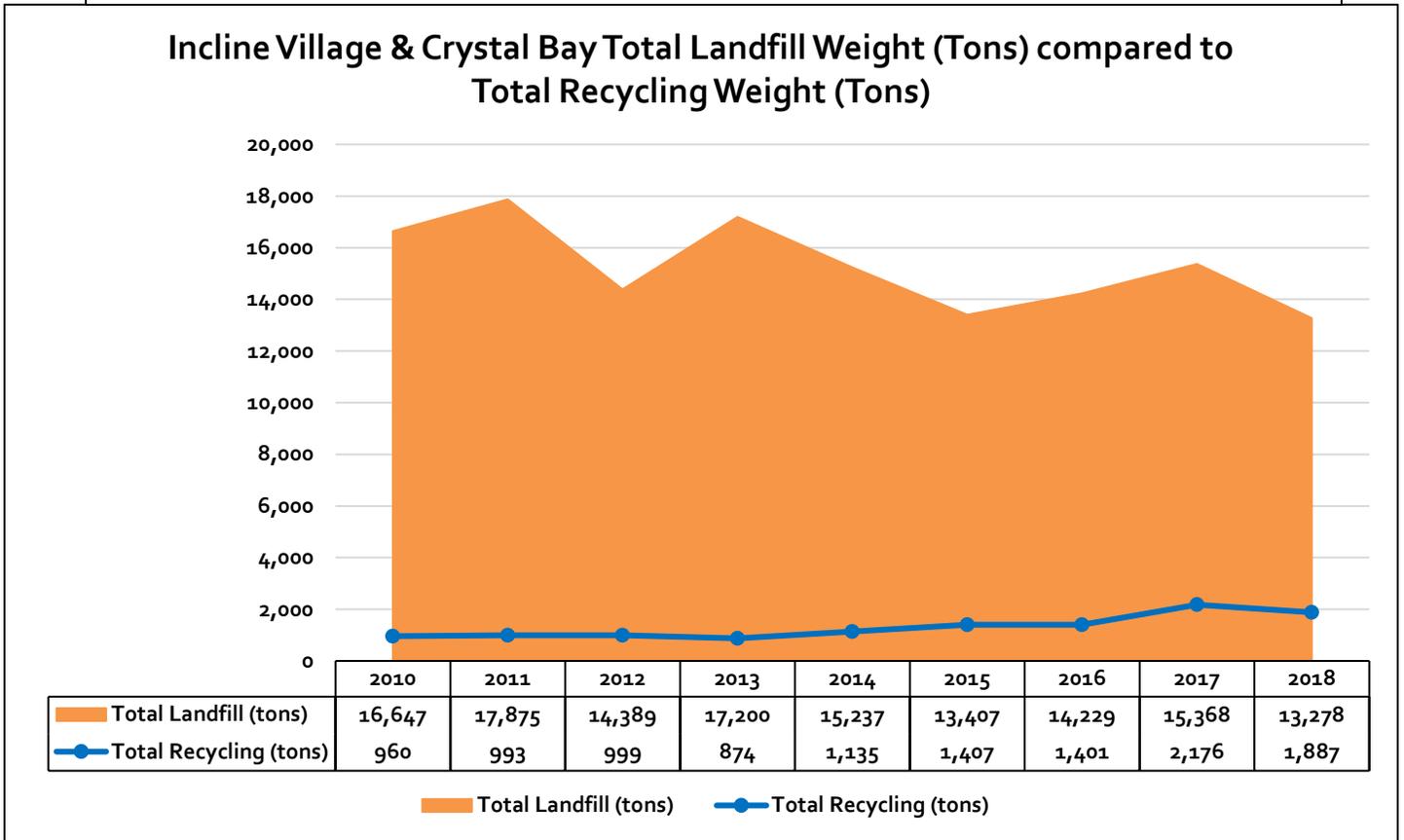
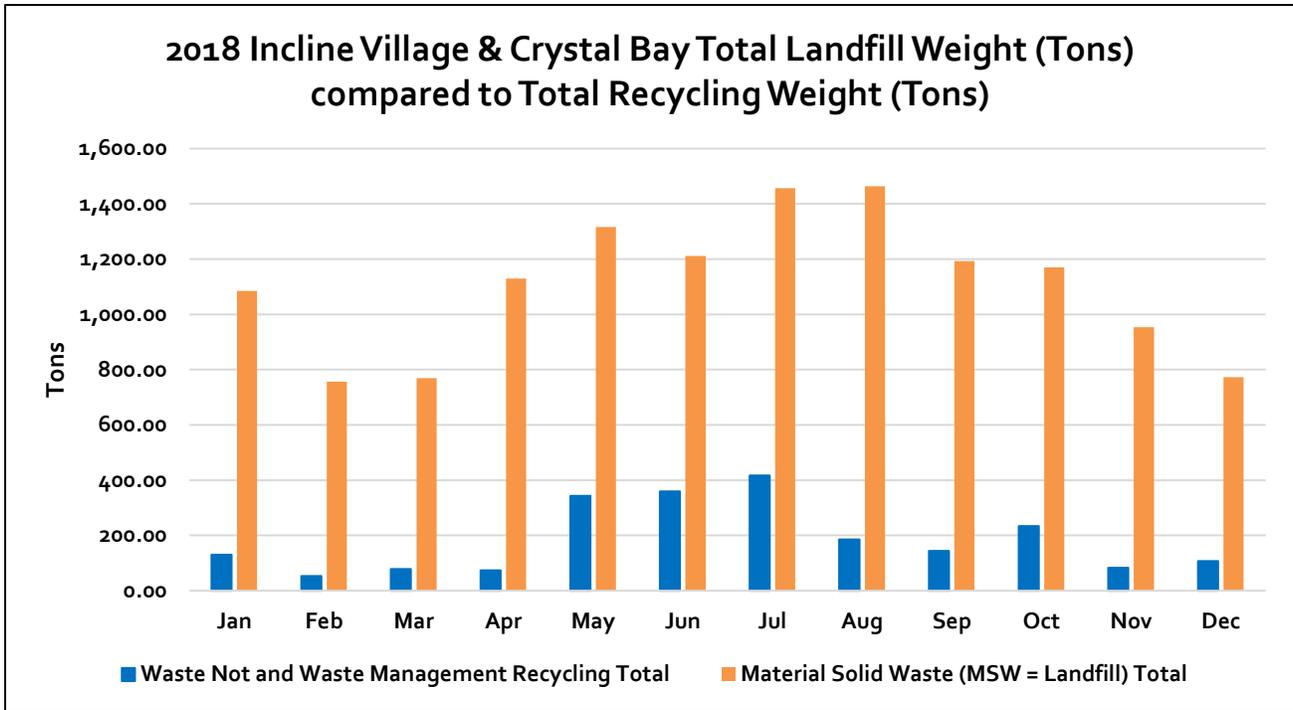




## Community Landfill Waste and Recycling

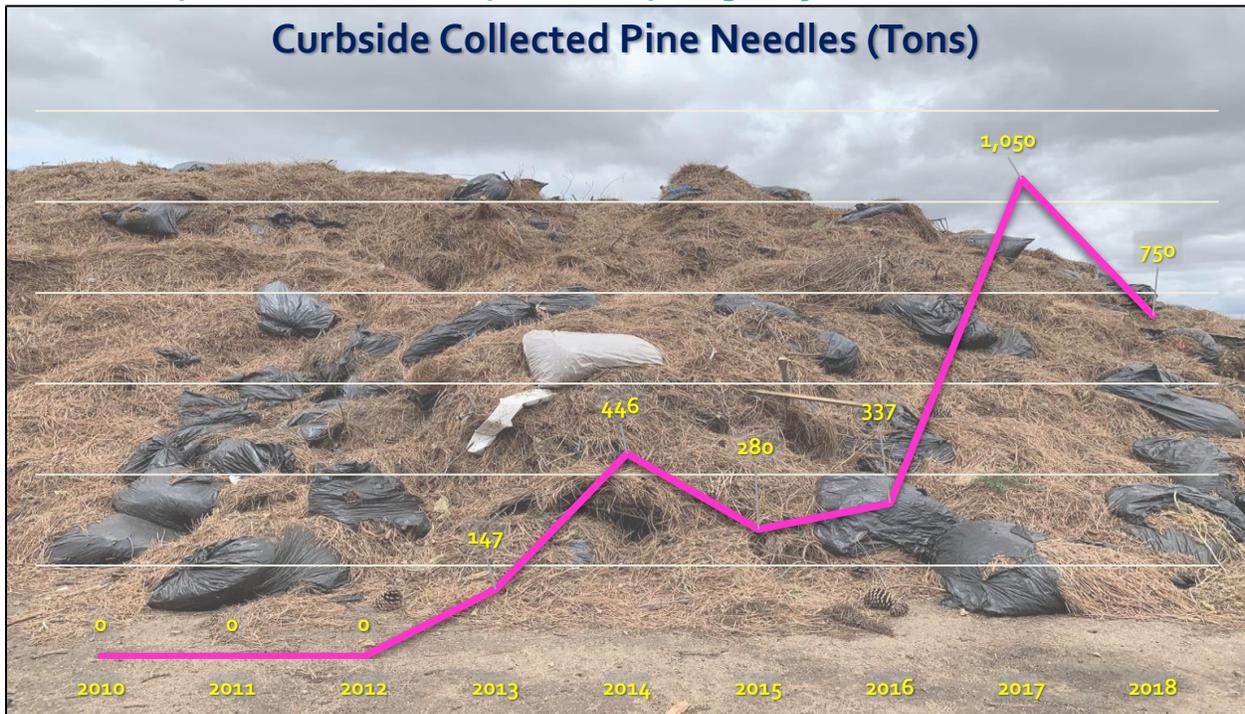
Waste Management, Inc. (WM) provides weekly landfill bound and recycling collection services to Incline Village and Crystal Bay residents, in addition to a transfer station where residents may dispose of excess waste or recycling. Services are available to residents and commercial properties 365 days throughout the year except during severe weather events. WM accepts yard waste during designated timeframes throughout the year. WM also accepts sharps, construction debris and collects holiday trees curbside during a designated timeframe after the Christmas holiday. The community wide single stream recycling rate in 2018 was 27.9%. The Washoe County recycling rate was 29.7% and State of Nevada recycling rate was 22.0% for 2018 ([ndep.nv.gov/nevada-recycles/resources/reports](http://ndep.nv.gov/nevada-recycles/resources/reports)).





The total amounts of community recycling and landfill materials are displayed on the graphs above. These figures include all route collected materials plus materials brought by customers to the Incline Village Transfer Station that include construction/demolition materials and miscellaneous items.

## Community Yard Waste and Special Recycling Projects



Collection of pine needles and associated yard debris increased from 12 weeks per year to 16 weeks per year with approval of the new waste franchise agreement that was implemented in 2017. Since the curbside program started in 2013, a total of 3,010 tons of pine needles have been collected by Waste Management, Inc. and processed by Full Circle Compost in Carson City.



*Christmas trees ready for chipping at Preston Field*

Christmas Tree Recycling has taken place since 1997. Christmas trees are dropped off by residents or collected curbside by Waste Management, Inc. and processed at Preston Field in Incline Village. The North Lake Tahoe Fire Protection District chips the trees for use as mulch and ground cover on District properties. A total of 979 Christmas trees were collected and chipped after the 2018 holiday season.

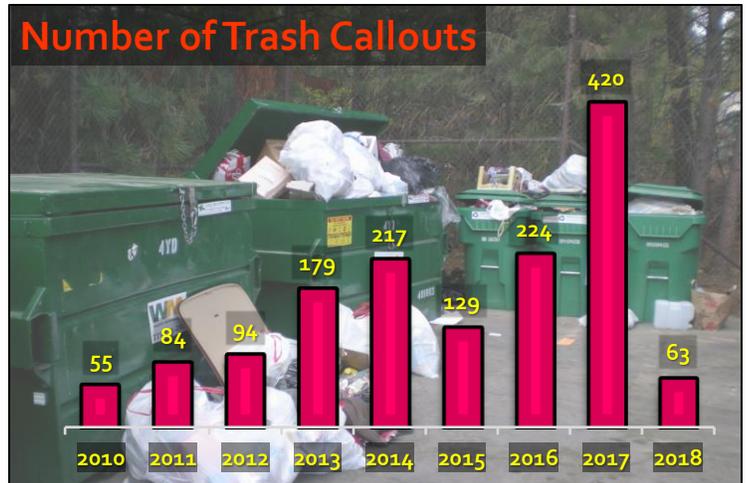
## Let's Talk Trash

The IVGID Board of Trustees approved a new solid waste franchise agreement with Waste Management, Inc. on July 7, 2016 based on recommendations from a Solid Waste Committee put together by the IVGID General Manager to evaluate options, problems and feedback from community members.

All residents have been distributed one 64-gallon rolling cart for landfill bound waste and one 64-gallon rolling cart for comingled

recyclables to both be collected once per week. Residents have the option to upsize to a 96-gallon cart or downsize to a 32-gallon cart and are able to return the recycle cart according to the individual property's needs. Wildlife Resistant Carts are available in 96-gallon and 64-gallon sizes for properties that want to prevent or have had issues with wildlife. Bear Shed service is available at the lowest monthly service rate for properties that have metal garbage can enclosures installed to incentivize best practices for securing waste and reducing human conflict with wildlife.

The change required the community's cooperation. The ordinance approved by the Board of Trustees is enforced by the Public Works Solid Waste Technician. Reporting procedures allow citizens to document issues so a technician can respond accordingly. Enforcement of this ordinance has occurred since at least 2010 and increased significantly in 2017 due to a "Zero Tolerance" policy that imposes a cart upgrade and fine structure for ordinance violations such as overflowing waste or apparent wildlife interaction. The number of trash callouts record the number of actionable issues found by a technician. Trash Callouts increased by 87.5% in 2017 compared to 2016 actions. In comparison, the number of Trash Callouts in 2018 decreased by 85% compared to 2017's record.



## ZERO TOLERANCE TRASH ENFORCEMENT BEGINS ON AUGUST 1, 2017



Visit [WWW.INLINEVILLAGE.WM.COM](http://WWW.INLINEVILLAGE.WM.COM) or call 775-831-2971 to learn more about trash service and how to avoid overages  
Visit [YOURTAHOEPLACE.COM/PUBLIC-WORKS](http://YOURTAHOEPLACE.COM/PUBLIC-WORKS) or call 775-832-1203 for IVGID Ordinance 1 and zero tolerance information





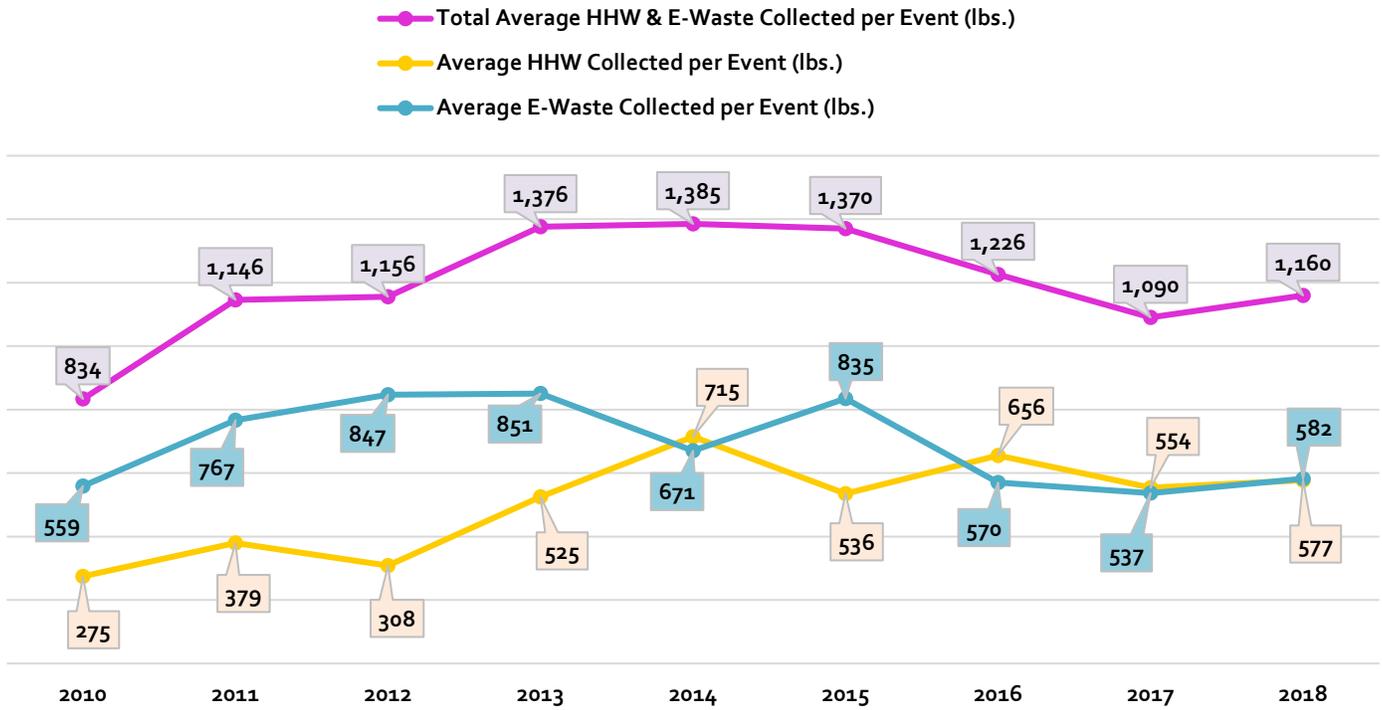
*Joe and Sarah organizing the community's hazardous waste for proper disposal.*

According to the 2018 IVGID Comprehensive Annual Financial Report (CAFR), there are approximately 8,100 recreation accounts in Incline Village and Crystal Bay. These accounts essentially represent the total number of active households that have access to the Public Works HHW and E-Waste program. If only half of these households utilized this service in 2018, then the community average was 14 pounds of hazardous waste and 15 pounds of electronic waste produced per household. Therefore, households in this community produce less hazardous waste than the national average of 20 pounds/year.

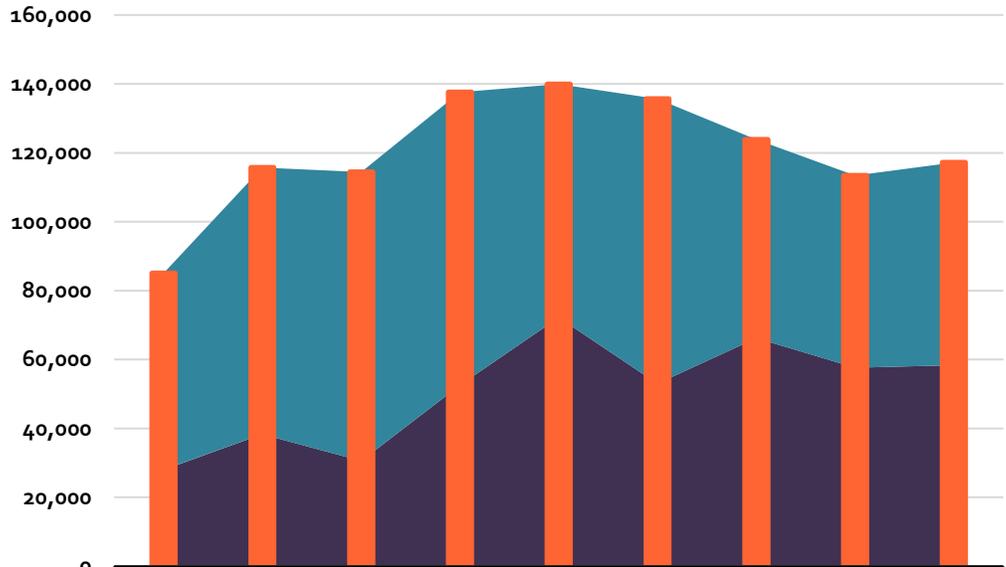
The 2010 U.S. Census indicates that the population of Incline Village was 8,777 and the population of Crystal Bay was 305 for a total population of 9,082 individuals. 6 pounds of hazardous waste and 6 pounds of electronic waste was produced per capita in 2018, assuming all those individuals live in within the District year-round and have access to this service. These statistics indicate that Incline Village and Crystal Bay citizens produce more hazardous waste per capita than the national average of 4 pounds/year.

The number of customer interactions tracks how many individuals presented their IVGID Picture Pass or other proof of residency to gain access to this service throughout the year. The individual is a representative of a household and no information is gathered to indicate the amount of waste that was produced per capita from that household. Some individuals come more than once per year and each drop-off interaction is counted toward the total number of customers served. HHW customers brought an average of 34 pounds of hazardous waste and 34 pounds of electronic waste per visit in 2018.

### Incline Village & Crystal Bay Average Household Hazardous Waste & Electronic Waste Processed per Collection Event by Weight (Pounds)



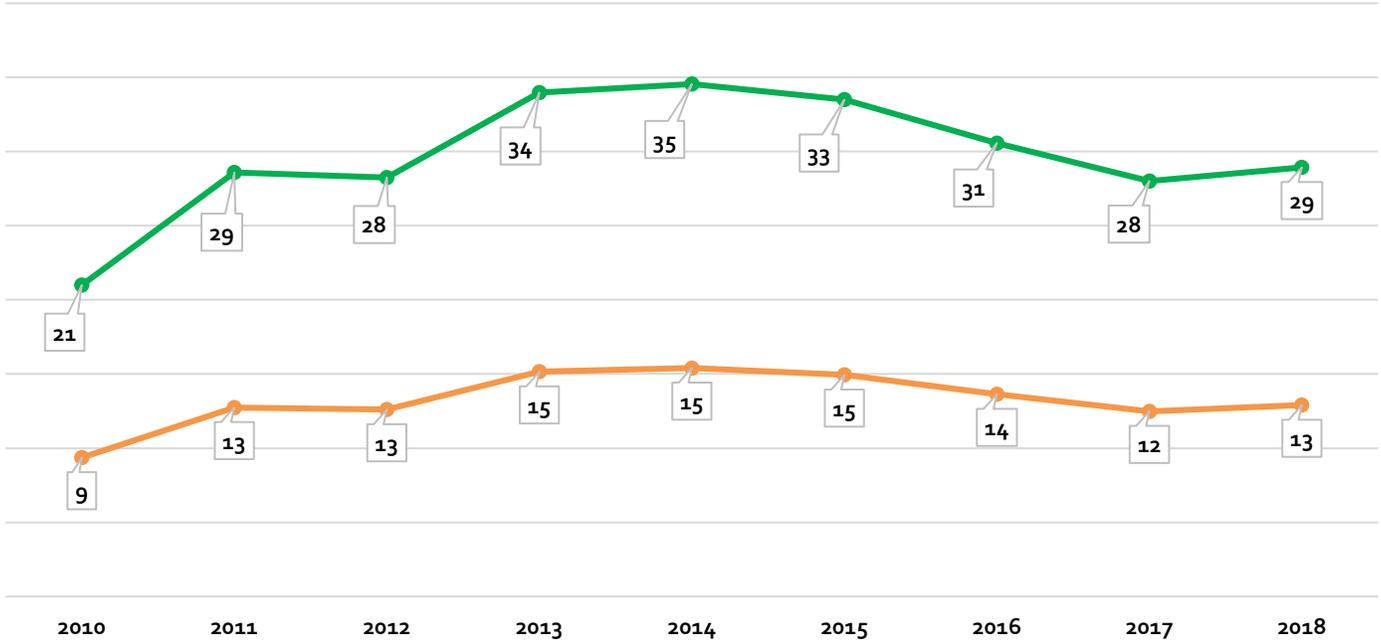
### Incline Village & Crystal Bay Total Household Hazardous Waste & Electronic Waste Processed per Year by Weight (Pounds)



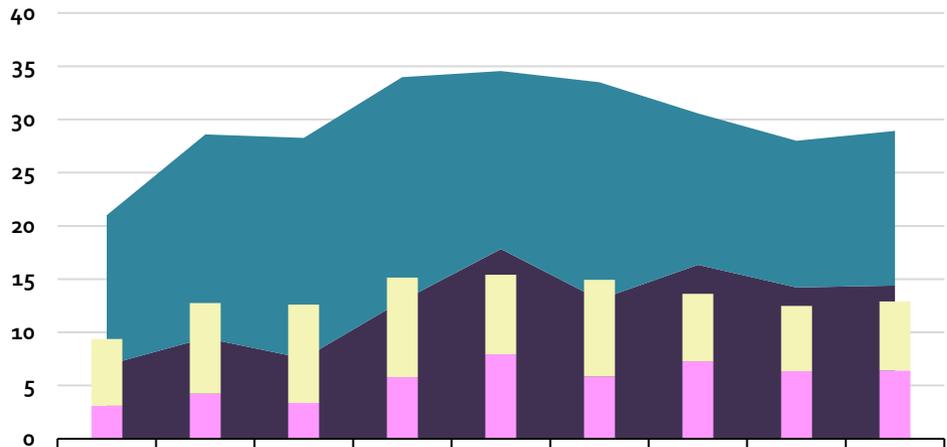
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Electronic Waste Weight (lbs.)	57,009	77,434	83,893	85,050	67,726	82,640	57,600	55,820	58,830
Household Hazardous Waste Weight (lbs.)	28,017	38,320	30,527	52,545	72,192	53,020	66,220	57,586	58,324
Combined Total Weight (lbs.)	85,026	115,754	114,420	137,595	139,918	135,660	123,820	113,406	117,154

## Incline Village & Crystal Bay Average Household Hazardous Waste & Electronic Waste Production Statistics by Weight (Pounds)

● Average HHW & E-Waste Produced per Household (lbs.)    
 ● Average HHW & E-Waste Produced per Capita (lbs.)



## Incline Village & Crystal Bay Average Household Hazardous Waste and Electronic Waste Production Breakdown by Weight (Pounds)



	2010	2011	2012	2013	2014	2015	2016	2017	2018
■ Average E-Waste Produced per Household (lbs.)	14	19	21	21	17	20	14	14	15
■ Average HHW Produced per Household (lbs.)	7	9	8	13	18	13	16	14	14
■ Average E-Waste Produced per Capita (lbs.)	6	9	9	9	7	9	6	6	6
■ Average HHW Produced per Capita (lbs.)	3	4	3	6	8	6	7	6	6

# SUPPLY CHAIN MANAGEMENT

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## Introduction

Sustainable procurement is an encouraged activity and takes place with goods related to bathroom tissues and kitchen towels among other daily use items. Employee events are typically supplied with reusable cutlery, recyclable materials and compostable products when appropriate. The checklist presented in this section can be used as a purchasing guide by anybody who wants to plan his or her procurement procedures with environmental, financial and cultural sustainability in mind.

## Sustainable Purchasing Checklist

First, determine if the product or service is truly necessary. Purchasing will need to be balanced with issues of product performance, cost and availability.

### Waste Reduction

- Is the product durable?
- Can the product be easily and economically serviced and maintained?
- Is the product designed to reduce consumption and minimize waste?
- Is the product reusable?
- Is the product technically and economically recyclable in the immediate area?
- Do facilities and internal collection systems exist to recycle the product?
- Can the product be returned to the supplier at the end of its useful life?
- Is the product compostable and are systems in place to compost the product on or off site?
- Will the product biodegrade over time into harmless elements?

### Packaging

- Is the product necessary?
- Can the product be eliminated?
- Is minimal packaging used?
- Is the product packaged in bulk?
- Is the package reusable or recyclable?
- Are recycled materials used to produce the packaging and at what percent post-consumer waste?
- Can the packaging be returned to the supplier?
- Is the packaging compostable?

### Material Source

- Are recycled materials used in the product? If so, what percentage?
- What percentage of post-consumer materials is used?
- If wood is used in the product, what is its source and how is harvested?
- Is the product manufactured from tropical rain forest wood?

### Energy Efficiency

- Is the product energy-efficient compared to competitive products?
- Can the product be recharged?
- Can the product run on renewable fuels?
- Does the product require less energy to manufacture than competing products?

### Supplier Environment Record

- Is the company producing the product in compliance with all environmental laws and regulations?
- What is the company's handling environmental and safety issues?
- Can the company verify all environmental claims?
- Does the manufacturer/supplier have a company environmental policy statement?
- What programs are in place/planned for promoting resource efficiency?
- Are printed materials available documenting these programs?
- Has the company conducted an environmental or waste audit?
- Is the product supplier equipped to bid and bill electronically?
- Has an environmental life-cycle analysis of the product (and its packaging) been conducted by a certified testing organization, such as Green Seal?

### Minimize Transportation

- Can the required products be obtained from local sources?

## CONCLUSION

### Moving Sustainability Forward

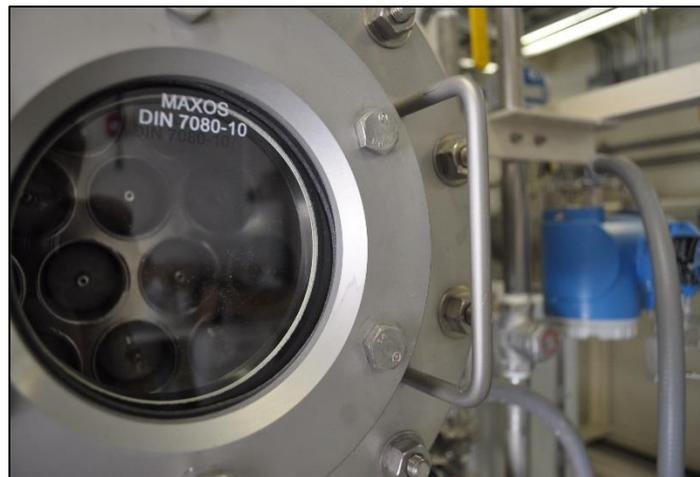
This report features a few select sustainability measurements that are most important to Public Works operations and its stakeholders. Future reports may give more detail to existing datasets but will also include additional sustainability related measurements, as those datasets are prepared. The meaning of this information is to inform stakeholders, staff and leadership within the organization of potential improvements that could be made to our overall operational footprint.

### Goals for Future Reports

The American Water Works Association reports that energy efficiency measures are easy to implement and enable utilities to document significant cost savings, greenhouse gas emissions, and reduced environmental impacts. Documenting successful and cost-effective sustainable practices related to resource use helps utilities make the case for sustainability. Future reports will expand the information presented in this report while introducing fleet fuels consumption as a major influence over emissions. This report assists Public Works in making progress toward achieving a sustainable utility.

### Summary

The Incline Village General Improvement District recognizes that the community of Incline Village and Crystal Bay is a system of built, natural, and human networks. IVGID also realizes that we must plan from a regional perspective while implementing local projects and initiatives. Sustainability is an essential behavior in managing a community-wide system. Our environmental resources are pristine yet growing populations, drought and climate change challenge the resiliency of our community. This challenge demands that organizations and communities within the Lake Tahoe Basin make plans with sustainability as a key strategy element.



*Drinking Water Disinfection Chamber*

IVGID is addressing the sustainability element through long-range principles, a sustainability framework, in addition to this report. In conclusion, it is most efficient to redevelop first, provide efficient infrastructure and support concentrated development. Restoration and enhancement of the environment along with enhancement of recreational and heritage resources will help preserve our local ecosystem. The practice of good communication, civic engagement, leadership, and fiscal responsibility will make the most progress in cultivating a sustainable community.



# APPENDICES

## Appendix A



### RESOLUTION NUMBER 1836 ENVIRONMENTAL SUSTAINABILITY RESOLUTION INCLINE VILLAGE/CRYSTAL BAY, NEVADA

**WHEREAS**, it is in the interest of Incline Village/Crystal Bay, Nevada to conserve and protect natural resources for current and future generations; and

**WHEREAS**, IVGID acknowledges that a changing climate poses economic and recreational challenges to the communities of Incline Village/Crystal Bay; and

**WHEREAS**, IVGID operations have economic, cultural and environmental impacts that are currently not fully evaluated and benchmarked; and

**WHEREAS**, the evaluation of sustainability topics including but not limited to: Economic Health, Community Health, Safety and Equity, Forest, Biological and Recreational Resources and Management, Solid Waste and Recycling and Water Quality, Resources and Conservation and can provide economic and environmental benefit to the District; and

**WHEREAS**, Nevada Revised Statutes 278, 332, 338 and 444A and the Washoe County Master Plan have established sustainability-related policies; and

**WHEREAS**, the Tahoe Regional Planning Agency has established the Sustainable Communities Program, Framework and Action Plan; and

**WHEREAS**, this policy will further contribute to the District's compliance with county, state and regional governing bodies; and

**WHEREAS**, IVGID being located within the Lake Tahoe Basin and watershed creates an enhanced need for environmental stewardship and leadership; and

**WHEREAS**, sustainability is an essential behavior of the IVGID core values which are Integrity, Service, Responsibility, Excellence, and Teamwork.

**NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF TRUSTEES OF INCLINE VILLAGE GENERAL IMPROVEMENT DISTRICT** does hereby recognize the importance of environmental sustainability for our organizations and the priority it must play in decision- and policy-making; and encourages the citizens of Incline Village and Crystal Bay, Nevada in taking a proactive role in changing human behavior in embracing sustainable practices to help protect our environment.



# Long Range Principles

## **LONG RANGE PRINCIPLE #1 Resources and Environment**

Initiating and maintaining effective practices of environmental sustainability for a healthy environment, a strong community and a lasting legacy.

- Promote and protect Lake Tahoe and other sources in the Basin as viable sources of drinking water. Promote responsible use of water as a valuable natural resource.
- Develop, implement and maintain an effective watershed control program in order to satisfy recommendations in watershed sanitary surveys, advocate for the protection of Lake Tahoe as a viable source of drinking water and to satisfy additional state and federal requirements
- Encourage integrated regional strategies for the planning, design, construction and implementation of water system infrastructure for fire suppression

### Objectives for 2018-2020

1. Maintain an active watershed management control program and execute the goals of the Tahoe Water Suppliers Association to meet Federal and State requirements for filtration avoidance and other requirements; promulgated by the Surface Water Treatment Rule and its amendments.
2. Enter into available Grant Agreements with the South Tahoe Public Utility District as a member of the Lake Tahoe Community Fire Prevention Partnership. This partnership was formed out of the member agencies of the Tahoe Water Supplier's Association and its purpose is to obtain appropriations from the Federal Government through the United States Forest Service for planning, design, and construction of water system improvements that have a direct relationship to wildland fire suppression.
3. Continue Legislative Advocacy efforts at the Federal Government level to support appropriations for water and wastewater infrastructure improvements that support Principle 1 and Principle 5.
4. Participate in the Tahoe Water for Fire Suppression Partnership. This Partnership will be working with the Regional Fire Districts to submit water system projects for improving fire suppression in the Tahoe Basin.

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5. In partnership with the North Lake Tahoe Fire Protection District, protect District lands and the Tahoe Basin watershed by performing defensible space best management practices.

Budgeted Initiatives for 2018-2019

- A. Operate a residential drop-off household hazardous waste and electronic waste facility to reduce the amount of hazardous materials entering the waste stream and landfills and to provide our residents with a convenient local facility. This program will be funded by the Solid Waste Franchise Fee.
- B. Continue membership in the Tahoe Water Suppliers Association and provide the services of Association Director by IVGID staff to execute the goals of the Association for 2018-19 including the completion of the 2018 Annual Watershed Control Program Report,
- C. Submit District Fireflow Enhancement Projects to the Tahoe Water for Fire Suppression Partnership (which the District is a member) for prioritization and ranking. The Tahoe Water for Fire Suppression Partnership submits the priority projects to the USFS for consideration to obtain funding through the Lake Tahoe Restoration Act.
- D. Provide bear box rebates for new homeowners in the service area to contain putrescible waste in a safe manner.

## Appendix C

# Celebrating 25 Years of Community Conservation Services by IVGID Waste Not (1992 - 2017)

<u>Year Started</u>	<u>Year Ended</u>	<u># of Years</u>	<u>Program</u>
1992	Ongoing	25	Waste Not Program Founded
1992	Ongoing	25	Curbside Recycling, from crates --> blue bags --> carts!
2002	Ongoing	25	School Educational Programs
1997	Ongoing	20	Christmas Tree Recycling / Chipping
1997	Ongoing	20	Household Hazardous Waste Drop Off Site
2000	Ongoing	17	Snapshot Day – Volunteer Water Quality Sampling Day
1997	2012	15	Pine Needle Recycling, Diamond Peak Pile maintained
2002	Ongoing	15	Tahoe Water Suppliers Association (TWSA) is founded; Annual Report produced by staff
2003	Ongoing	14	IVGID Watershed Water Quality sampling at beaches and streams (6 locations)
2007	Ongoing	10	Community Clean-Up and International Coastal Cleanup Days
2005	Ongoing	9	Bear Awareness Program (Stash Your Trash/ Bear Smart)
2005	2014	9	Kids for Conservation event held
2007	2016	9	Blue Bag Program for Single Stream Recycling
2000	2008	8	Clean Water Team / IVGID watershed water quality sampling
2007	2015	8	AmeriCorps Team Host Site
2010	Ongoing	7	TWSA's "Drink Tahoe Tap" Campaign
2010	Ongoing	7	Dog Waste Awareness - "They Drop It, You Drink It" & "Your DOG = Your DOODY" Campaigns
2002	2007	5	LT Demo Garden
2009	2014	5	"Zero Waste" Program offered
2012	Ongoing	5	Curbside Yard Waste pickup program
2012	Ongoing	5	Television Recycling offered year round
2013	Ongoing	4	"Butts on the Beach" Campaign
2014	Ongoing	3	Bear Box Rebates: 417 issued / \$116,710 in rebates; some rebates offered 2004 -2007
2014	Ongoing	3	"Take Care" Campaign Partnership
2015	Ongoing	2	IVGID Sustainability Programs Research and Development
2016	Ongoing	1	Curbside Containerization; Weekly Recycling

### Awards/Recognition

2005	AWWA "Exceptional Source Water Protection" Award
2005	Parasol Community Collaboration "Outstanding Event in Education" Award
2005	Northern Nevada Pine Cone Award
2007	America in Bloom
2008	Parasol's "Best Environmental Program or Event"
2008	America in Bloom
2008	NDEP Source Water Award
2009	"Positive Environmental Impact Award", North Lake Tahoe Chamber of Commerce
2014	"TRPA Lake Spirit Award", North Shore Agency Representative



# GLOSSARY AND REFERENCES

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## Acronyms

**AL** – Action Limit

**AWWA** – American Water Works Association

**AVB** – Anne Vorderbruggen Building (IVGID Administrative Offices)

**BCWDP** – Burnt Cedar Water Disinfection Plant

**CAP** – Climate Action Plan

**CCR** – Consumer Confidence Report

**CO<sub>2</sub>** – Carbon Dioxide

**DO** – Dissolved Oxygen

**EPA** – Environmental protection Agency

**E-Waste** – Electronic Waste

**GHG** – Greenhouse Gas(es)

**HAZWOPER** – Hazardous Waste Operations and Emergency Response

**HHW** – Household Hazardous Waste

**IVGID** – Incline Village General Improvement District

**LEED** – Leadership in Energy and Environmental Design

**MGD** – Million Gallons per Day

**NDEP** – Nevada Department of Environmental Protection

**NTU** – Nephelometric Unit

**ppb** – Parts per Billion

**ppm** – Parts per Million

**SEZ** – Stream Environment Zone

**STOKE** – Sustainable Tourism Operator’s Kit for Evaluation

**TBD** – To be determined

**TDS** – Total Dissolved Solids

**TRPA** – Tahoe Regional Planning Agency

**TWSA** – Tahoe Water Suppliers Association

**WEF** – Water Environment Federation

**WRRF** – Water Resource Recovery Facility

## Definitions

**Adaptation** - Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effect, which minimizes harm or exploits beneficial opportunities.

**Climate Change** - Any long-term change in average climate conditions in a place or region, weather due to natural causes or as a result of human activity.

**Greenhouse Gases Emissions** – The emission of gases in the earth’s atmosphere that reduce the loss of heat into space.

**Littoral** - Relating to or situated on the shore of the sea or a lake.

**Mitigation** - A human intervention to reduce the sources or improve the uptake (sinks) of greenhouse gases.

**Resilience** - The ability of a system to absorb some amount of change, including shocks from extreme events, and recover from them to be able to function and provide essential services and amenities that it has evolved or been designed to provide.

**Riparian** - Relating to wetlands adjacent to rivers and streams.

**Stream Environment Zone** - Generally an area that owes its biological and physical characteristics to the presence of surface or ground water.

**Sustainability** – (1) capable of being sustained; (2a) of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged (“sustainable techniques”) (“sustainable agriculture”); (2b) of or relating to a lifestyle involving the use of sustainable methods (“sustainable society”); (3) development that meets the needs of the present without compromising the ability of future generations to meet their own needs; and (4) improving the quality of human life while living within the carrying capacity of supporting ecosystems.

**System** - The built, natural and human networks that provide important services or activities.

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