



**Tahoe Water
Suppliers
Association**
Protect the Source
WWW.TAHOEH2O.ORG

TWSA Program Milestones 2002-2022

Celebrating 20 Years of Partnerships in Stewardship

“The Mission of the Tahoe Water Suppliers Association is to 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.”

Since 2002, TWSA has provided a unified voice for source water protection. Our regional involvement includes public comment supporting watershed protection, developing strong relationships with local research/regulatory agencies, offering extensive programs to provide community education and providing technical services in watershed protection and water conservation areas.

Year/ Award / Recognition:

2006	American Water Works Association (AWWA) “Exceptional Source Water Protection” Award
2006	Parasol Community Collaboration "Outstanding Event in Education" Award
2008	Parasol Community Collaboration "Best Environmental Program or Event"
2008	NDEP “Wendell McCurry Source Protection Water Award”
2009	“Positive Environmental Impact Award”, North Lake Tahoe Chamber of Commerce
2014	“TRPA Lake Spirit Award”, North Shore Agency Representative
multi	“Best Tasting Water in Nevada” – regional NvRWA (multiple years, IVGID: Glenbrook; KGID)
2016	“Best Tasting Water in America” – national NvRWA (Glenbrook, National Rural Water Rally)
2020	American Water Works Association (AWWA) “Exceptional Source Water Protection” Award
2020	TRPA “Lake Spirit Award”; 50th Anniversary edition

TWSA ORGANIZATIONAL TIMELINE 2002-2022

2002: NEVADA TAHOE WATER SUPPLIERS ASSOCIATION (NTWSA) IS FORMED

NTWSA founding members include:

- Kingsbury General Improvement District
- Round Hill General Improvement District
- Zephyr Water Utility District
- Incline Village General Improvement District
- Edgewood Water Company

Renewed attention from the NV Bureau of Health Protection Department and an enhanced financial motive for maintaining non-filtration status has given many Nevada-Tahoe Basin water suppliers' the impetus needed to immediately address BHPS requirements and sanitary survey recommendations.

The Incline Village General Improvement District Public Works Program, under the direction of Dan St. John, offers to lead and organize a coalition of water suppliers to effectively implement the recommendations of previous sanitary surveys related to the watershed management plan, implement watershed management programs, and address current and impending future BHPS requirements.

As a consequence, the coalition will potentially reduce the cost of their future sanitary surveys, maintain current filtration status, actively distribute water supplier information, address and publicize water supplier concerns, and protect their water source and national treasure, Lake Tahoe. Sara Mae Tone serves as Executive Director. Domi Fellers is TWSA Technician.

2003: THE WORK BEGINS.

Glenbrook joins the Association.

The Nevada Tahoe Water Supplier Association has successfully completed:

- Chapter 8 of the 2002 Sanitary Survey;
- a work plan to fulfill federal and state mandates and previous sanitary survey recommendations;
- a water supplier water quality central database;
- stakeholder collaboration efforts;
- specific goals for the 2003-2004 year including the first Watershed Control Program Annual Reports for each water supplier are completed.

The Nevada Surface Water Treatment Rule (NAC 445A) mandates all non-filtering water suppliers to complete an Annual Watershed Report. Appendix J of the E.P.A. Guidance Manual for Compliance with Filtration and Disinfection Regulations states the contents of the annual report should: 1) identify special concerns that occurred in the watershed and how they were handled; 2) summarize other activities in the watershed such as logging, hunting, and water quality monitoring, and, 3) project what adverse activities are expected to occur in the future and describe how the utility expects to address them.

2004: MAPPING THE WATERSHED.

Five of the six participating water suppliers operate under a non-filtration permit, which allows the suppliers to forgo filtration as a treatment mechanism. The permit is only issued to suppliers with a pristine water source.

Local and State agencies have developed regional maps; however, the maps are not delineated by watershed. Our goal is to compile watershed scale maps on the Nevada side of the Lake Tahoe basin as a method to: describe affected watersheds, identify land ownership and land use changes, ascertain potential sources of drinking water contamination, and locate potential areas of future monitoring.

The Land Ownership map identifies: watersheds, streams, contour, road and highway, SEZ zones, water bodies, and land ownership. Land ownership is distinguished by utility, private, state, federal, and county.

The Land Use map identifies: watersheds, streams, contour, road and highway, SEZ zones, water bodies, and land use. Land use is distinguished by vacant lots, residential, tourist, commercial, public service, recreation, and resource management.

The General Description map identifies: watersheds, streams, contour, road and highway, stream environment zones, and water bodies at the Lake scale. One map is created that identifies all water suppliers.

2005: TWSA SPEAKS: Public Input initiated on the concept of water ‘quality’ versus just ‘clarity’.
TWSA comments to the Lake Tahoe Supplemental Document to the Shore Zone Ordinance Amendments Draft Environmental Impact Statement (DEIS) on source water protection.

The Nevada Tahoe Water Supplier Association (NTWSA) is pleased to see the introduce the concept of “risk assessment” into the review and approval process for shorezone structures located within ¼-mile of public drinking water intakes. Risk assessments for potential contaminations have long been a mainstay of the water industry.

2006: THE FIRST CALIFORNIA MEMBER JOINS (North Tahoe PUD).

The Tahoe Water Suppliers Association, formally the Nevada Tahoe Water Suppliers Association, changed their name and logo to account for new members from the California side of the Lake Tahoe Basin. Two California members joined between 2005-2007.

The Association changes its name to Tahoe Water Suppliers Association.

Intake Risk Assessment Project begins.

TWSA wins the 2006 National American Water Works Association (AWWA) Exemplary Source Water Protection Award for medium systems.

The www.nevadatahoe.org website was changed to www.TahoeH2O.org .

TWSA collaborated with the Nevada Tahoe Conservation District (NTCD) to create a general water conservation plan, outreach packet and water conservation newspaper advertisements.

In the spring of 2006, TWSA signed a memorandum of understanding with the US Army Corps of Engineers to support the Lake Tahoe Source Water Risk Assessment Project under Section 108 of the Water Resources Development Act of 2005. Related project monitoring began in July 2006.

TWSA board members continue to participate in Pathway 2007 as committee members on various Technical Working Groups and on the LTFAC (Lake Tahoe Federal Advisory Committee), the TRPA Shorezone Ordinance Amendment process and the Lake Tahoe Geographic Response Plan committee. Through the efforts of TWSA members, the proposed shorezone ordinance amendments include a provision to establish a ¼ mile buffer zone around public water intakes and introduces the concept of risk assessment for new projects.

The North Tahoe Public Utility District (NTPUD) joined the Association in June 2006, and the Tahoe City Public Utility District is in the process of joining. With the addition of NTPUD to TWSA, new service area, watershed and recreation maps were created to include NTPUD.

Signs at beaches and boat ramps, newspaper advertisements, volunteer monitoring programs, radio advertisements and personal interaction are the next steps TWSA staff will take to educate land use owners on the detrimental effects of microbial contaminants on drinking water.

Continued vigilance is needed to pursue inclusion of source water protection goals in the proposed shore zone ordinance amendments. The US Environmental Protection Agency Region IX spearheaded the Lake Tahoe Geographic Response Plan committee. TWSA staff attends meetings to improve the emergency spill notification system with an interest in protecting Lake Tahoe's water quality and water purveyor intakes.

Initiating the Risk Assessment is viewed as a preemptive move to placate forces in the Basin not in favor with the ¼ mile buffer zone. The purpose of the Risk Assessment is to quantify the impact of potentially contaminating activities on source water quality. The objectives include quantifying the risk of contamination, identify potential mitigation for high risk activities and develop a relatively low-cost and reproducible management tool to guide future construction projects and other proposed activities near drinking water intakes. The Risk Assessment tool is in a design stage with the goal of correlating with the Lake Tahoe Water Quality Model. It is intended to be user friendly for all residents and partner agencies within the Lake Tahoe Basin.

TWSA staff continues to update a climate database with precipitation, wind speed, wind direction and temperature measurements. The presence of precipitation and high wind speed are good indicators of increased turbidity and coliform. To better understand climatic effects on water quality changes and make predictions on water quality based on climate changes, weather stations at each water purveyors' intake may need to be installed. Preliminary correlation studies to relate windspeed and precipitation events to turbidity excursions at the intakes are underway.

Marc Walker, University of Nevada, Reno professor, and his graduate student, Lynell Garfield continue to study the effects of dog feces on Lake Tahoe's water quality. The study suggests that dog feces at a common dog walking area around Burke Creek did not increase bacteria in nearby surface water streams significantly in comparison to other potential sources. Results suggest the on-site pond and wetlands removed fecal bacteria from the water column. They are currently conducting a risk assessment to determine how long a bacteria threat exists.

2007: MEMBERSHIP EXPANSIONS. THE AREA RECOVERS FROM THE ANGORA FIRE.

Tahoe City PUD, CA and Cave Rock / Skyland Water Companies, both in Douglas County, NV, join the group.

The Association has a change in staff: Madonna Dunbar begins service as TWSA Executive Director and Rebecca Williams begins at TWSA Technician.

New TWSA water conservation and water quality protection outreach tools include: a participatory "Drink Tahoe Tap" blind water taste test conducted at booth outreach events, a drought tolerant seed packet with

water conservation information, revised flyers and brochures, and free dog waste pick-up bags with informational sticker.

The Angora Fire aftermath has the potential to threaten Tahoe source water. Thankfully, erosion is kept to a minimum and no impact to lake sourced drinking water quality is seen. South Tahoe PUD was the major purveyor impacted with major infrastructure damage in the area.

**2008: THE THREAT OF AQUATIC INVASIVE SPECIES EMERGES.
RISK ASSESSMENT REPORT (PHASE 1) AND TIME OF TRAVEL MODEL IS COMPLETED.
MORE MEMBERS JOIN.**

Lakeside Park Association joined as full member. South Tahoe Public Utility District joined as associate member (non-dues paying, supporting common outreach efforts).

In October 2008, the TWSA/USACE Lake Tahoe Source Water Risk Assessment (LTSWRA) (Phase 1) was completed. This report was prepared by Black and Veatch and with cost shared funding through a cooperative agreement with Army Corps of Engineers. TWSA members contributed additional funds to support the project.

Aquatic Invasive Species Outreach was quickly incorporated into the TWSA outreach program in 2007-2008. In the spring of 2008, the Tahoe Resource Conservation District and TRPA began a boat inspection & education program focusing on preventing the introduction of Quagga/Zebra mussels and New Zealand mud snails into Lake Tahoe.

One of three recent TWSA outreach campaigns, the “Drink Tahoe Tap” campaign, launched in May 2008 and has proven to be a popular, public favorite. TWSA staff provided a ‘blind drinking water taste test’ and information on Tahoe’s excellent tap water at 17 community events in 2007-2008. Some of these include: two Tahoe-Truckee Earth Days, Living Green at Tahoe, Children’s Science Day, Lake of the Sky festival, North Lake Tahoe Business Association chamber mixers, ski area special events, Kids for Conservation, UC Davis Hatchery opening and Parasol Community Collaboration events. The increased focus on direct outreach will remain a priority.

The “They Drop It, You Drink It” campaign expanded as well in the past year. Information is being offered at events, signs being posted at beaches and free dog waste pick-up bags with a custom sticker are handed out at events.

TWSA builds a new website completely redesigned in spring 2008. Education, outreach and the TWSA Annual Reports are now available for public review on this website.

In conjunction with the Parasol Environment Team, a regional, online, new resident “Tahoe Welcome” site was launched: www.tahowelcome.org. TWSA specific information includes: list of service providers, information on water quality protection, water conservation and BMPs.

2009: EXPANDING COMMUNITY OUTREACH AND PROFESSIONAL EDUCATION.

In March 2009, two Source Water Protection Workshops were hosted by TWSA and RCAC (Rural Community Assistance Corporation) attended by homeowners, residents and utility staff.

As part of this partnership between TWSA and RCAC – an entire year of free, monthly trainings are offered in the Tahoe area during 2009-2010, on specialty topics for water and wastewater operator continuing education. Continuing education credit unit hours (CEUs) are offered for these classes. North Tahoe PUD was the major fiscal sponsor for these trainings, providing the event space and food/refreshments for this training series.

In June 2009, 45 large format aluminum signs were produced for installation at various locations around the lakes. The signs were themed: “Don’t Move a Mussel” and “Protect the Source”. In 2022 most of these signs are still installed at original sites.

In June 2009, TWSA sponsored the production of a 30 second public service announcement (PSA) video called “Drink Tahoe Tap”. It is posted for viewing on You Tube, and is linked at various websites including www.tahoeh20.org.

In spring 2009, TWSA sponsored the installation of 2 dog waste stations at Burke Creek, as part a local Eagle Scout project. We will to continue to offer sponsorship of dog waste stations with partner entities. The program continues with 100 units installed to date (2022).

TWSA staff participated the Tahoe Regional Planning Agency Shorezone Ordinance working groups, Lake Tahoe Aquatic Invasive Species Working Group (LTAISWG) and local non-profits and environmental group activities. Members have spoken at TRPA meetings on the need for a strong Boat Inspection program related to the threat of AIS introduction. TWSA staff and the water purveyor managers have been active partners in the Asian Clam Removal pilot project conducted in the spring of 2009 by the Tahoe Resource Conservation District, TRPA and UC Davis.

2010: MULTIPLE EXEMPLARY PROGRAM AND SERVICE AWARDS ARE RECEIVED.

The Tahoe Water Suppliers Association received the 2009 US EPA/AWWA Region 9 – Exemplary Source Water Protection Award for Medium Systems.

TWSA Executive Director (Madonna Dunbar) received the Living Green Award from the Parasol Community Collaboration.

TWSA Executive Director (Madonna Dunbar) received the 2009 Positive Environmental Impact Award from the North Lake Tahoe Chamber of Commerce.

Rebecca S. Williams (TWSA Staff) received a 2009 Exemplary Employee Service Award from the North Lake Tahoe Chamber of Commerce.

The Drink Tahoe Tap campaign gains momentum as a public relations campaign for TWSA. Tahoe Tap stickers have been distributed through local events, visitor centers, and partner agencies.

TWSA staff continues to bring the “Protect the Source”, Drink Tahoe Tap”, “They Drop It, You Drink It” and other outreach messages through an expanded events/presentation schedule and the use of other communication methods such as video, web and print media.

TWSA provided drinking water bottles and water filling stations to the attendees at the 2010 Tahoe Summit held at Sand Harbor State Park on Aug. 17, 2010. Originally, bottled water was going to be served, however TWSA staff worked closely with Senator Reid's office to eliminate bottle water use at the event.

TAPPED, an award winning documentary on drinking water was screened for public viewing throughout the Tahoe-Truckee-Reno area. (www.tappedthemovie.com). As of August 2010, six screenings had been sponsored in South Lake Tahoe, Tahoe City, Kings Beach, Truckee, CA, and Incline Village and Reno, NV. Co-hosting organizations included Lake Tahoe Community College, Sierra College, The Great Basin Institute, Tahoe Center for Environmental Sciences and the Squaw Valley Institute. Audiences ranging from 50 to 140 people have attended the viewings. Staff offered the taste test and a question and answer session for attendees to the screenings.

In addition to the TAPPED screenings, TWSA partnered in fall 2009 with the Tahoe Environmental Research Center to promote a 3 part, World Water Issues film series. The films Flow, Blue Gold and Poisoned Waters were shown at audiences averaging 80 people. Question and answer sessions were held after the films.

In spring 2010, the TWSA Board committed annual funds to sponsor 10 dog waste stations and 10,000 biodegradable waste collection bags. These stations are being placed in high impact areas and monitored by volunteer or partner agency staff. Program continues to date.

TWSA sets up a Facebook page and provides weekly updates.

TWSA staff are providing on-site water quality monitoring support on the Asian Clam Removal Projects occurring summer 2010 in the Marla Bay, Lakeside and Emerald Bay areas.

TWSA staff members maintain certification as Lake Tahoe Watercraft Inspectors and AWWA Water Conservation Specialists (Level 1).

TWSA members and South Tahoe Public Utilities District have been working on federal funding requests for infrastructure upgrades and inter-tie projects in order to address the need for adequate fire flows in the event of urban wildfire. The Fire Protection Partnership continues to date.

2011: REFILL WITH TAHOE TAP - WATER BOTTLES AND WATER STATIONS.

In 2010, TWSA began the formal program of the distribution of free, refillable stainless steel water bottles to attendees at selected events. Bottles are custom labeled with the "Drink Tahoe Tap" sticker. In August 2010, TWSA provided 300 drinking water bottles and water filling stations to the attendees at the 14th Tahoe Summit held at Sand Harbor State Park. Originally, bottled water was going to be served, however TWSA staff worked closely with Nevada Senator Harry Reid's staff to eliminate bottle water use at the event. Precedent was thereby set to avoid bottled water distribution at the Tahoe Summits.

TWSA initiated the launch of the "Tahoe Tap It Network" in winter 2010; linked to the national network. This database provides a computer or smart phone directory of water filling stations in the Tahoe area and other cities nationwide; www.findtap.org is the link for this resource.

Trashion Shows and SWEP Partnership: In fall 2011, TWSA and TWSA members, TCPUD and NTPUD, partnered with the Sierra Watershed Education Partnership (SWEP) to offer water quality assemblies to

1500 North Tahoe elementary and middle school students. Students will receive custom refillable steel water bottles, and other water conservation education collateral. The assemblies include a presentation by the Truckee High School Envirolution Club's Trashion Show, themed on appreciation of tap water and watershed protection.

TWSA sponsors a dog waste education campaign – "They Drop It, You Drink It". TWSA maintains funding to install dog waste signage and bag dispensers at high impact areas. 15 stations are now in use all around Lake Tahoe, with an estimated bag distribution of 20,000+ bags annually. Dog owners can participate in the TWSA's dog waste clean-up campaign by signing the "They Drop It; You Drink It" pledge.

LRWQCB Basin Plan Revisions: In 2001-11, TWSA staff and members became very involved in language revisions for the Basin Plan Amendment by California's Lahontan Regional Water Quality Control Board (CA) (LRWQCB). The LRWQCB regulates water quality in California over a very large region extending from Barstow, CA, north to include the California side of Lake Tahoe. LRWQCB's amendment language maintained an overall prohibition on aquatic herbicide and pesticide use; this was modified in 2015 to allow exemption. By providing written and public comment, TWSA staff was successful in bringing the issue of the Tahoe drinking water purveyors' filtration exempt status and their concerns to the LRWQCB. LRWQCB staff was then given direction to work with TWSA, NDEP and CDPH on the regulatory language and review process.

TWSA staff and the water purveyor managers have been active partners in the Asian Clam Removal pilot project and ongoing AIS removal/monitoring projects by the Tahoe Resource Conservation District, TRPA and UC Davis. TWSA staff provided on-site water quality monitoring support on the Asian Clam Removal Projects occurring summer 2010 & 2011 in the Marla Bay, Lakeside and Emerald Bay areas

2012: EXPANDING EDUCATION AGAIN. COLLABORATIVE EFFORTS EXPAND AMONG AGENCIES.

Free, bi-monthly trainings were again offered in the Tahoe area on specialty topics for water and wastewater operators continuing education. Workshops were held at the North Tahoe Event Center, Kings Beach, CA, a North Tahoe Public Utility District (NTPUD) managed property. Funding for these workshops is provided by NTPUD, the California Department of Public Health (CDPH) and the State Water Resources Control Board (Water Board). TWSA provides fiscal support for upper division operator training. Two, multi-day, Distribution and Treatment Operator Grade 2/3 test preparation trainings by RCAC were sponsored in May and September 2012. Ongoing TWSA fiscal sponsorship is allocated for operator training classes for 2012-13.

Staff conducts outreach with the TWSA "Drink Tahoe Tap" education booth at community events annually. The booth features an interactive water taste test along with water conservation, watershed protection and tap water awareness information. Some of the annual events include the: Lake Tahoe Kokanee Salmon Festival, the North and South Lake Tahoe Earth Day Festivals, Kids for Conservation, Red White and Tahoe Blue events, Children's Science Day, Business Association Chamber Mixers, ski area special events, the Tahoe Expo, UC Davis education events, and other events upon invitation or request.

In 2011-12, almost 2000 North Tahoe area elementary school students attended the Truckee High School/Sierra Watershed Education Partnership "Trashion Shows". These TWSA sponsored school assemblies introduced the ideas of watershed protection to students via peer education. In addition to a great event, each student received a custom refillable steel water bottle and educational materials.

Students at the shows received custom refillable steel water bottles, and other water conservation education collateral. The assemblies include a presentation by the Truckee High School Envirovolution Club's Trashion Show, themed on appreciation of tap water, water conservation and watershed protection. Program continues to date.

Two \$500 one-time awards were awarded to South Lake Tahoe area high school students entering college with an emphasis on environmental studies. Plans are in place to rotate these scholarships between North Shore and South Shore schools. The TWSA Board later commits to expansion to 4 scholarships, program ends in 2019 from low participation..

TWSA water conservation and water quality protection print publications are updated annually and now include: a drought tolerant seed packet with water conservation information, a leak detection information card with dye tabs, AWWA 'value of water' and water conservation brochures; TWSA source water protection information, a dog waste dispenser, 'Drink Tahoe Tap' stickers and information on the issues of bottled water versus tap water.

TWSA began a Cigarette Butt Awareness campaign in June 2012.

In June 2012, the TWSA/USACE Lake Tahoe Source Water Risk Assessment (LTSWRA) was used to evaluate potential impacts to drinking water quality from proposed new beach access areas associated with the pending Edgewood Lodge Project. The project engineer (RO Anderson) provided extensive case study comparison and conducted multiple runs of the risk model to assuage concerns voiced by NDEP and TWSA water providers to the Tahoe Regional Planning Agency during the project public comment period.

TWSA members and South Tahoe Public Utility District have been working collaboratively on federal funding requests for infrastructure upgrades and inter-tie projects in order to address the need for adequate fire flows in the event of urban wildfire.

2013: PROFESSIONAL DEVELOPMENT, INTERLOCAL SUPPORT AND EMERGENCY RESPONSE PREPAREDNESS ARE EMPHASIZED. INVOLVMENT IN AQUATIC INVASIVE SPECIES MANGEMENT INCREASES.

There are 12 water system members in the Association. The TWSA Annual Report references water quality data and activities for the 11 full members of the Association. South Tahoe Public Utility District is an associate member, with a non-voting status, based on common interest. The TWSA Board holds four meetings each year, scheduled on a quarterly basis.

IVGID received the "Best Tasting Water in Nevada Award" as the winner in a blind taste test conducted at the annual Nevada Rural Water Association Conference in both 2011 and 2012 (and 2016).

Sarah Vidra joins TWSA staff as the new TWSA Program Technician.

TWSA members are participants in the NvWARN and CalWARN emergency inter-local agreements. The WARN groups of water and wastewater utilities offer a web-driven, statewide mutual assistance program. Managed through the websites (<http://www.calwarn.org>) (<http://www.nvwarn.org>). Cal WARN and NvWARN provides immediate assistance for member utilities during an emergency. Water and wastewater utilities can to request

equipment and personnel to assist during natural or man-made events that impact water and wastewater systems.

An ArkStorm @ Tahoe Preparedness Workshop was held at the September 12, 2013 TWSA Board meeting. The TWSA members and other agency representatives spent 3 hours to discuss the operations of water and sewer supply systems during a potential long-term storm event. The exercise is designed to address potential social and ecological impacts of extreme winter storm events in the Lake Tahoe region. It was designed to exceed any single storm in the 20th Century.

Providing, free, continuing education trainings for utility staff continues to be a strong focus of TWSA and member agencies. A variety of classes were held in the Tahoe area 2012-2013 on specialty topics for water and wastewater operator continuing education. TWSA maintains an education fund for class sponsorship. Sponsorship is based on Board vote. Major funding for these workshops is provided also provided by North Tahoe Public Utilities District (NTPUD), the California Department of Public Health (CDPH) and the CA State Water Resources Control Board (Water Board).

**2014: BUILD AN EVENTS WATER STATION - AND THEY WILL USE IT.
LAKE TAHOE FLOW MODELING, POTENTIAL PATHOGEN TRANSPORT AND RISK MODELING REPORT
(PHASE 2) COMPLETED.**

In 2014, TWSA built two custom mobile fill stations to accommodate the need for tap water distribution at public events. These stations, which hook up to standard outdoor faucets, have 4 tap dispenser heads and a carbon filter system. They have proven to be extremely popular and have provided water at multiple large scale community events. TWSA provides the use of the mobile fill stations and also gallon water dispensers to local events for free. This program has been instrumental in reducing the use of bottled water at area events (In 2017, there are 6 mobile stations available and design / build instructions are posted on TahoeH2O.org.)

As of July 2014, there were 40 dog waste stations in use around Lake Tahoe. 5 to 10 stations are added annually, dependent upon volunteer support. Stations are now located all around Lake Tahoe including Van Sickle State Park, Sand Harbor State Park, Bijou Park, Burke Creek/Kahle Drive, Tahoe City Dog Park and neighborhood streamside trails. TWSA partners with other agencies to address problem locations for dog waste.

In 2014, TWSA committed funding for the replacement of 20 rubber mats (\$5000) used by the AIS management team (bottom barrier non-chemical treatment program) to smother weeds and Asian clams.

“2014 Lake Tahoe Flow Modeling, Potential Pathogen Transport and Risk Modeling Report “

S. Geoffrey Schladow, Andrea Hoyer, Francisco Rueda and Michael Anderson/ June 2014:
In spring 2013, NDEP initiated discussion with TWSA to fund Phase 2 of the Lake Tahoe Risk Assessment Model developed in 2008 (Black & Veatch, B&V Project No. 41717). Phase 2 was funded by NDEP and TWSA for \$95,000 in 2013-14.

There has been significant improvement in the data available on lake currents since 2008, so the upgrades were allowed to provide better modeling with more refined area grids based on this new data. This project re-analyzed lake water current patterns in the southeastern corner of Lake Tahoe, in the area of the Edgewood and Kingsbury intakes. The analysis is related to public water systems at Lake Tahoe and the

impact that local potential contaminating activities have on the source water. In addition to new data, new potential contaminating activities have been proposed near the public water system intakes, which will also impact system specific risk models.

This study was undertaken to quantify the impacts of body contact recreation on microbial water quality at the Kingsbury General Improvement District (KGID) and Edgewood Water Company intakes on Lake Tahoe. This study builds upon the risk assessment conducted previously (Black and Veatch, 2008).

Starting in 2013, TWSA has maintained a presence on the Nearshore Aquatic Invasive Weeds Working Group (NAIWWG) and the Tahoe Keys Water Quality Working Group.

TWSA maintains staff presence on the TRPA Interagency Shorezone Coordination Group. This group meets monthly to review Shorezone project applications each month.

TWSA staff maintains ongoing participation with the TRPA, The Tahoe Fund, Tahoe Prosperity Center, Tahoe Environmental Research Center, Sustainable Tahoe and other working groups to maintain dialogue on source water protection.

California TWSA members have responded to the 2014 California emergency water conservation mandates with extensive education, outreach and enforcement measures.

2015: TRADEMARKING OUR SLOGAN “DRINK TAHOE TAP ®” – A PRODUCT WITHOUT A PACKAGE.

In June 2015, TWSA’s Executive Director, Madonna Dunbar was awarded the “2014 Tahoe Regional Planning Agency (TRPA) Lake Spirit Award” in the north shore exemplary agency or environmental scientist representative category.

KGID received the “Best Tasting Water in Nevada Award” in the blind taste test conducted at the 2015 annual Nevada Rural Water Association Conference.

In 2015, based on the campaign popularity and brand recognition, TWSA initiated the trademark registration process for “Drink Tahoe Tap”® and “I Drink Tahoe Tap!”®. It’s a slogan and a brand quality indicator - ‘branded’ water without the packaging.

TWSA provides support for a variety of conferences and educational programs in the form of fiscal donations or water bottle donations. In the past year, the Association has supported the production of the “State of the Lake Report, The spring Nevada Rural Water conference, Eyes on the Lake trainings, the International GeoLimologist conference, the Western Governors’ Drought Forum, the Tahoe Summit, the Tahoe Expo, North and South Lake Tahoe Earth Day events and additional events.

As of November 2015, there were 54 dog waste stations in use around Lake Tahoe. 5 to 10 stations are added annually, dependent upon volunteer support. Stations are now located all around Lake Tahoe including Van Sickle State Park, Sand Harbor State Park, Bijou Park, Burke Creek/Kahle Drive, Lake Tahoe Nevada State Park, Brockway Lookout, Tahoe City Dog Park and neighborhood streamside trails. TWSA partners with other agencies to address problem locations for dog waste. Approximately 30,000 dog bags are provided by TWSA with an estimated 60,000 more bags being provided by our partners, annually.

Informational articles and advertisements on source water protection, water quality and water conservation are published regularly in visitor magazines such as “Tahoe In Depth”, “Tahoe Visitor Guide” and “Tahoe Summer/Winter” supplements. Each publication reaches an estimated audience of 60,000+ persons each summer and winter season. Issues are provided in the rooms of area hotels and are also distributed at shopping centers, visitor centers and local businesses. Water bottles and Drink Tahoe Tap stickers also serve as a major portion of the advertising campaign.

TWSA drinking water quality advocacy has focused on concerns regarding the impending use of herbicides for aquatic weeds control in the Tahoe Keys. The TWSA supports the use on non-chemical methods, with herbicide applications considered a last resort in aquatic weeds management.

2016: KINGSBURY GID WINS THE “GOLD MEDAL FOR BEST TASTING WATER” AT THE NATIONAL RURAL WATER RALLY.

TWSA staff maintains annual training including American Water Works Association (AWWA) water conservation and Water Smart Innovations technical trainings. TWSA staff members hold AWWA Water Efficiency Practitioner level 1 certifications. Staff members are trained as regional ‘Eyes on the Lake’ team members for aquatic invasive species (AIS) identification. Staff members also attended Project WET and Project WILD curriculum training classes.

TWSA staff promotes multiple messages: “Protect the Source”, “Drink Tahoe Tap”[®] and “I Drink Tahoe Tap![®]”, “They Drop It, You Drink It” and other outreach messages through wide-ranging event and presentation schedules. TWSA also employs other communication methods such as video, web and print media. TWSA’s website is www.Tahoe H2O.org.

A refillable, foldable water pouch featuring Lake Tahoe photos and custom messaging is offered to the public. This sports friendly option is extremely well received. 7,000 units distributed in 2017-18.

TWSA partners with the regional TAKE CARE stewardship project to commission DRINK TAHOE TAP[®] graphics to join the larger pool of messaging in the campaign.

2017: TWSA REACHES ITS 15TH ANNIVERSARY.

South Tahoe PUD becomes a full voting member of the Association.

The membership now includes:

- Cave Rock Water System
- Edgewood Water Company
- Glenbrook Water Cooperative
- Incline Village GID
- Kingsbury GID
- Lakeside Park Association
- North Tahoe PUD
- Round Hill GID
- Skyland Water Company
- South Tahoe PUD
- Tahoe City PUD
- Zephyr Water Utility

Involvement on threats to source water such as AIS, climate change, development and drought continue to be concerns at the forefront of TWSA Board.

The TWSA Budget has grown to \$145,000 annually with an almost even split on operating costs and staff time. Staff are allocated 1351 combined hours, annual on TWSA work. Staff includes: Madonna Dunbar and Sarah Vidra with support from Waste Not staffer, Joe Hill.

Industry Taste Test Awards: In 2017, Cave Rock/Skyland won “Best Tasting Water in Nevada” at the Nevada Rural Water Conference. In January 2016, Kingsbury GID took home the “Gold Medal for Best Tasting Water” at the national Rural Water Rally, in Washington D.C., after receiving “Best Tasting Water in Nevada” in at the 2015 annual Nevada Rural Water Association Conference. IVGID received the “Best Tasting Water in Nevada” at the 2016 Nevada Rural Water Association Conference; also in 2012 and 2011.

Mobile water station and refill jug program is active including events such as: the Rock Tahoe Marathon, Snow Globe Festival, Earth Days, Tahoe City Wine Walk, Gatsby Festival, Red, White and Tahoe Blue Festival and other events.

Staff attends the TKPOA Water Quality Working Group, Nearshore Aquatic Weed Working Group (NAAWG), coordinates a presentation on CLEAN FLO water quality improvement technology, attends the TRPA Shoreline Project Planning Group and gives talks on source water protection and TAHOE TAP.

Staff continues to spend extensive time reviewing research materials related to the Tahoe Keys Property Owner Association’s (TKPOA) “Application for Exemption to Apply Aquatic Herbicides Test Project” which was submitted to the Lahontan Regional Water Quality Control Board in January 2017. Staff is researching state and federal regulatory information that will be important in the decision making process.

TWSA celebrates its 15th Anniversary on June 8, 2017 with an interagency luncheon and a renewed focus and commitment on source water protection.

2018: MOVING INTO AIS MANAGMENT

TWSA/Tahoe Fund AIS Bottom Barrier Challenge

In 2014, TWSA committed funding to Tahoe RCD, for the replacement of 20 rubber mats (\$5000) used by the AIS management team (bottom barrier, non-chemical treatment program) to smother weeds and asian clams. Through a well-coordinated program, the Tahoe Resource Conservation District has been able to remove aquatic invasive weeds with the use of bottom barriers and diver-assisted hand pulling.

In 2018, the TWSA partnered with the Tahoe Fund to purchase additional bottom barriers with a 1:1 grant match project. The successful matching challenge to raise a total of \$52,000 to purchase the remaining 175 barriers that would bring the inventory to the full 5 acres The inventory of bottom barriers was 1.6 acres short of the maximum 5 acres of coverage permitted for Tahoe. With the full inventory of mats, more aquatic invasive weeds are removed from the lake and water quality is improved. Media coverage of the successful funding challenge is posted at:

<http://www.tahoefund.org/our-projects/active-projects/aquatic-invasive-bottom-barrier-challenge>.
<http://www.kolotv.com/content/news/Keeping-Lake-Tahoe-clean-with-bottom-barriers-490967561.html>

<http://www.ktvn.com/clip/14565568/tahoe-barriers-invasive-species>

<http://www.ktvn.com/story/38894280/crews-tackle-invasive-aquatic-plant-issue-at-lake-tahoe>

Several TWSA members have been working with Tahoe RCD on AIS controls using non-chemical methods on their properties. Lakeside Park Association has hosted both UV light and bottom barrier installation sites. North Tahoe PUD used bottom barriers at one site, to evaluate different non-herbicide controls. Crystal Shores HOA in Incline Village NV used bottom barriers to treat a milfoil growth site in their marina.

“Drink Tahoe Tap[®]” Taste Test

TWSA staff provides a ‘blind taste test’ at our outreach booth at local events. Staff provides the waters in 3 unmarked, dispensers using a 2 oz. compostable plastic cup. Each participant votes and the votes are recorded. The taste tests results are consistent; tap water is selected over bottled waters, every event.

2019: MULTIPLE PARTNER PROJECTS INITIATED

Tahoe Tap Refill Network Re-Established

As part of service learning project for Sierra Nevada College, student Frankie Sanchez helped re-design and made initial business contacts for building the bottle refill network (TAP APP) . His project, “Drink Tahoe Tap Refill Network” resulted in 20 Tahoe locations signing up. By 2022, there are 50. <https://findtap.com>

Tahoe Tap Water Bottle Refill Station Grant Program

In August 2019, TWSA and the Tahoe Fund initiated the Tahoe Tap Water Bottle Refill Station Grant Program. \$500 rebates will be available to Tahoe Basin businesses and non-profits who install a bottle filler/upgraded water fountain. \$20,000 in total funding is available through a generous Tahoe Fund Match grant. Information posted at www.DrinkTahoeTap.org.

TWSA Scholarship Fund

From 2012-2019, TWSA provided a scholarship fund for Tahoe high school students entering college with a focus on science, math, engineering or environmental studies. Four \$500 scholarships were offered annually; one for each Tahoe high school. Low participation resulted in the program closure

Microplastics Research and Education Grants

NDEP/U.S. Environmental Protection Agency (EPA) awarded \$97,000 in grants for projects to address micro plastic pollution in Lake Tahoe. \$62,000 is awarded to TWSA and partners on micro plastics education project. Details of the project follow in the 2021 section.

2020: TWSA RECEIVES MULTIPLE AWARDS

1) 2020 Exemplary Source Water Protection Program Award - American Water Works Association

<https://sourcewatercollaborative.org/highlights/member-awwa-recognizes-three-water-systems-with-2020-exemplary-source-water-protection-awards/> .

https://sourcewatercollaborative.org/highlights/member-awwa-recognizes-three- Search

SOURCE WATER HIGHLIGHTS

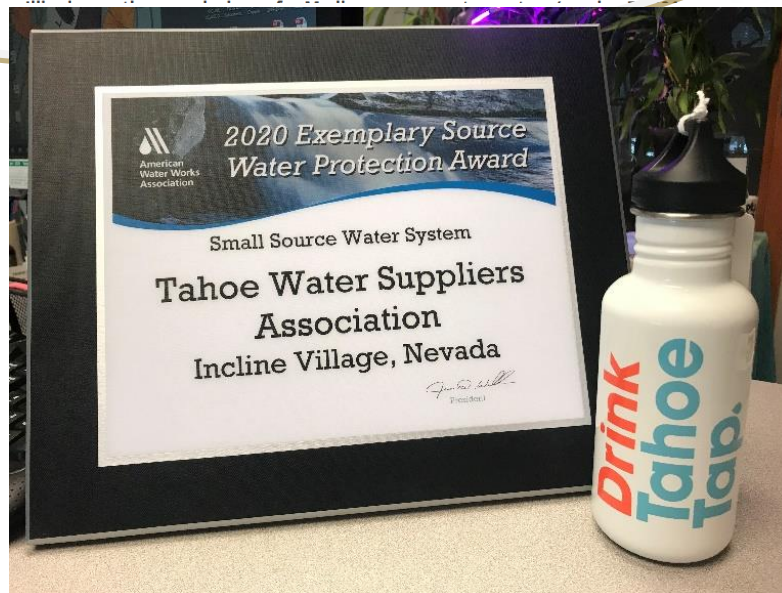
View All Highlights



Member AWWA Recognizes Three Water Systems with 2020 Exemplary Source Water Protection Awards

The American Water Works Association (AWWA) 2020 Exemplary Source Water Protection Award recipients demonstrate the highest level of vision, goals, action plan, innovation, implementation and evaluation in the categories of small, medium and large water systems. Recognition was made to three water systems in different size categories located in Nevada, Illinois, and Arkansas.

The award for Small source water system (serving less than 50,000 population) went to Tahoe Water Suppliers Association, California/Nevada. The Tahoe Water Suppliers Association (TWSA) is a partnership of 12 California and Nevada municipal water agencies operating around Lake Tahoe. Their primary drinking water source is Lake Tahoe, although several members have auxiliary groundwater sources. Lake Tahoe is one of the deepest and clearest lakes in the world and a popular destination for recreation, tourism and home ownership. TWSA's source water quality goals are clarity and exceptional water quality. Source water challenges include storm water runoff, urban development, air quality and erosion. TWSA's Watershed Control Program focuses on education, monitoring, data management, regulation, mapping, administration, water conservation and water rights.



TWSA's long-standing watershed protection outreach and activities were recognized with the **2020 AWWA national Exemplary Source Water Protection Program Award** (for small systems) from the American Water Works Association. "The award for small source water system (serving less than 50,000 population) went to Tahoe Water Suppliers Association, California/Nevada. The Tahoe Water Suppliers Association (TWSA) is a partnership of 12 California and Nevada municipal water agencies operating around Lake Tahoe. Their primary drinking water source is Lake Tahoe, although several members have auxiliary groundwater sources. Lake Tahoe is one of the deepest and clearest lakes in the world and a popular destination for

recreation, tourism and home ownership. TWSA’s source water quality goals are clarity and exceptional water quality. Source water challenges include storm water runoff, urban development, air quality and erosion. TWSA’s Watershed Control Program focuses on education, monitoring, data management, regulation, mapping, administration, water conservation, water rights.

2) 2020 Spirit of TRPA Award - 50th Anniversary - Tahoe Regional Planning Agency

www.trpa.org

<http://southtahoenow.com/story/11/30/2020/trpa-awards-recognize-50-years-collaboration>

The Tahoe Water Suppliers Association was selected by TRPA staff and board members as one of the 2020 Spirit of TRPA award recipients to represent the group of Public Utility Districts and General Improvement Districts who work so hard to protect Lake Tahoe. All recipients were acknowledged at the virtual TRPA Governing Board meeting on November 18, 2020. Honoring individuals by the decades – from the 1960s through present day was the line up at this 50-year celebration.

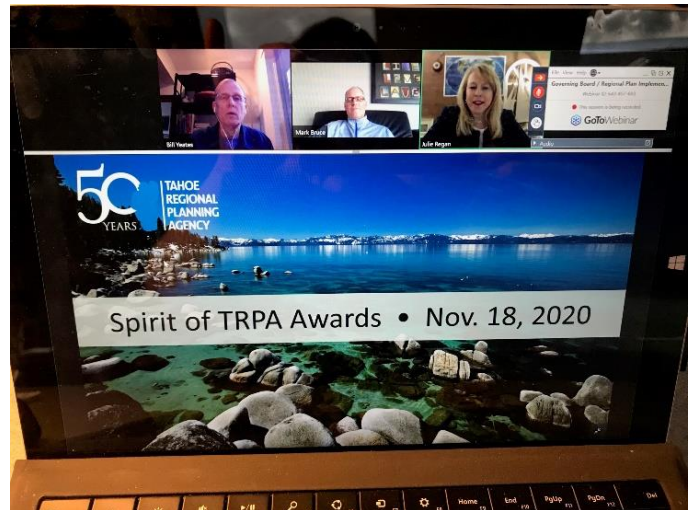
The Tahoe Regional Planning Agency (TRPA) today recognized individuals who, over the agency’s 50-year history, worked tirelessly to protect the spectacular environment of the Lake Tahoe Region and to create more resilient communities.

During its online governing board meeting (Nov. 18, 2020), the agency bestowed “Spirit of TRPA” awards on scientists, agency representatives, organizations, and community and legislative leaders who embody the essence of collaboration in the basin. Reflecting on its half-century legacy, TRPA honored people who have made significant achievements through each decade, beginning in the 1960s with the work to create a first-of-its kind bi-state compact between Nevada and California.

“There is a spirit of collaboration and partnership that has resounded in the Tahoe Basin ever since these two states came together to protect one of the most pristine alpine lakes in the world,” TRPA Executive Director Joanne S. Marchetta said. “Through brilliance, hard work, and cooperation, these awardees and many others have made these protections possible.”

TWSA’s award excerpt follows:

For the 1970s, the agency recognized Dr. Charles Goldman for his long-standing contributions to science-based decision-making; and the Tahoe Water Suppliers Association was recognized on behalf of all the regional water and wastewater utilities, which provide critical environmental services to our communities and protect our drinking water.



2021: MICROPLASTICS OUTREACH AND RESEARCH. COVID-19 IMPACTS OUTREACH FOR 2 YEARS.

TWSA’s organizational website = www.Tahoe H2O.org

Drink Tahoe Tap / Take Care Storyboard site = www.DrinkTahoeTap.org

Facebook = <https://www.facebook.com/DRINK-TAHOE-TAP-160029390585>

Instagram = <https://www.instagram.com/where2fill> and <https://www.instagram.com/drinktahoetap>

Provide local professional development opportunities for TWSA members.

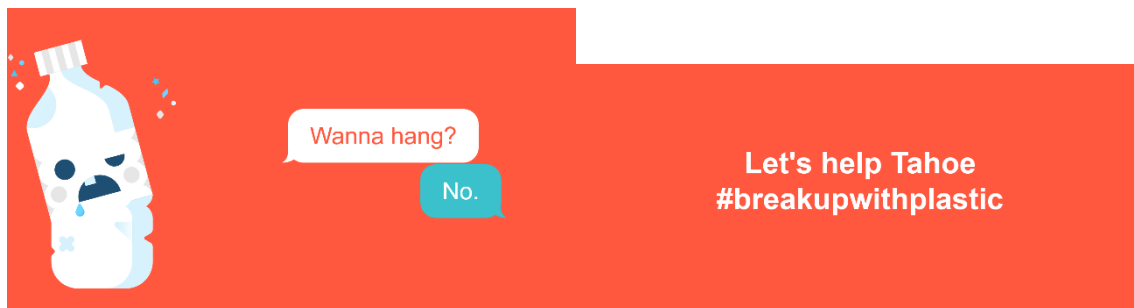
TWSA staff members maintain professional water industry certifications; all hold AWWA Water Efficiency Practitioner level 1 certifications. Regional training opportunities by AWWA, NvRWA, WEF and state agencies are shared with all members. TWSA staff are trained ‘Eyes on the Lake’ team members for identifying aquatic invasive species (AIS). Staff members also attended ongoing trainings such as Project WET and Project WILD curriculum training classes. In addition, staff self-learn on emerging topics through independent research.

Provide educational materials

TWSA’s long-running outreach program focuses on educational messaging on watershed protection, water quality, sustainability choices, and the exceptional quality and value of local tap waters. New topics (such as micro-plastics) are integrated as they emerge. TWSA staff promotes multiple messages, including trademarked slogans, through wide-ranging event and presentation schedules (now online). TWSA also employs other communication methods such as video, web and print media.

Covid-19 Pandemic Modifications – Outreach 2020-22 restructured

Prior to March 2020 and the resulting Covid-19 shutdown protocols, the Tahoe Water Suppliers Association staff members (TWSA) maintained an extensive outreach schedule of events and programs in order to provide community education and technical services in watershed protection and water conservation areas. This was modified to respond to the shutdown of physical outreach events. Staff pivoted quickly and began an increased offering of online, virtual and remote outreach sessions; partnering with multiple agencies as we moved through these environmental education challenges. Prior to March 2020, we estimated 200,000+ persons annually received the TWSA and IVGID Waste Not messages through various physical and online outreach methods.





Tahoe’s unique draw as an international tourist destination is currently estimated at 24 million annual visitations. This is 3x the visitation to the top 3 US National Parks, combined.

Educational and Action Based Partner Projects:

Focus Topic: TOURISM: Litter and Trash Impacts in the Watershed

Litter and trash issues at Lake Tahoe have received increased regional, even national attention, for the high visitation influx creating extreme pressure on limited public lands and community resources. The League to Save Lake Tahoe, Tahoe Environmental Research Center, Desert Research Institute and other partners are maintaining databases on trash impacts in the watershed Lake Tahoe is the most visited national forest in California. Regional agencies in Tahoe estimate as many as 20 million people visit every year. In 2020, the region saw a shift in the focus of tourism promotional efforts towards a sustainable recreation model. Various agencies are now shifting to address recreation, land use and water quality impacts from land use.

TWSA staff and organization are active partners with the following efforts:

Take Care Tahoe www.takecaretahoe.org

A workgroup of more than 60 participating agencies, this group coordinates custom environmental stewardship messaging for the Tahoe region. Many of the TWSA main outreach topics are in this messaging pool, including “Drink Tahoe Tap”, “Be #1 at Picking Up #2; and others.

Lake Tahoe Sustainable Recreation Working Group

<https://www.trpa.gov/programs/sustainable-recreation>

The Lake Tahoe Sustainable Recreation Working Group (formed in 2017) is a multi-sector working group of conservation and recreation professionals, private and nonprofit partners, and recreation stakeholders. The primary goal, and ultimate desired outcome is to provide high-quality outdoor recreation experiences, while preserving and restoring the outstanding natural and cultural resources of the Lake Tahoe Basin.

Sustainable Recreation Pledge <https://www.gotahoenorth.com/sustainable-travel-pledge>

Become A Steward of Lake Tahoe: Commit to exploring the Lake Tahoe region responsibly and help preserve our treasured spaces by leaving them better than you found them. Adhere to instructions and signage, rules are in place for your safety and the wellbeing of our environment. Lend a hand during one of our community clean-up days and volunteer through North Lake Tahoe’s Ambassador program. Think like a local! Ride public transportation and support small businesses and events – tourism dollars help keep our communities vibrant and strong.

Tahoe Ambassadors <https://www.tahoefund.org/news/new-take-care-tahoe-ambassador-programs-roll-out-across-the-tahoe-region>

Programs designed to create new opportunities to educate visitors, encourage environmental stewardship and promote responsible recreation. The Lake Tahoe Basin, Truckee and surrounding mountain communities saw a dramatic increase in visitation as travelers seek out the great outdoors. While the mountains provided a much needed respite, it quickly became evident that many visitors weren't familiar with Leave No Trace practices. Trash piled up outside of proper receptacles or was left behind altogether. Trails were heavily impacted, trail etiquette ignored, and wildlife disregarded. This summer, six organizations are launching ambassador programs in locations around the Lake Tahoe Region to directly address and reduce tourism-related environmental impacts the region regularly experiences. Every weekend in summer, up to 50 ambassadors will be positioned at popular recreation sites to provide information to Tahoe-Truckee area visitors about the importance of proper trash disposal, trail and wildlife etiquette, wildfire safety and other Leave No Trace principles. While each of the programs are independently managed, ambassadors from each program will wear the same Take Care Tahoe branded uniform to demonstrate a united, consistent approach to the education effort.

Tahoe Blue Crews – More Volunteer Teams to Tackle Trash

In response to increased trash concerns, IVGID Waste Not's conservation team, who support TWSA efforts, increased clean-up activities by partnering with the League to save Lake Tahoe's Tahoe Blue Crew program (volunteers who commit to ongoing cleanups) and offering multiple, socially distant cleanup events for casual volunteers. Participants engaged on several levels: at in-person events, cleanup remotely or both, clean up any day, any time. Participants are also encouraged to report what you find while cleaning up using the Litter and Trash Report on the Citizen Science App (free to download at citizensciencetahoe.org) or by using a data card (provided in the cleanup kits or [downloading it here](#)) and either drop it off to the location you borrowed cleanup supplies from. Also, we encourage the use of the hashtags #TahoeBlueGooder #litterfreetahoe. These multi-day events are hosted by [Clean Tahoe](#), [Incline Village Waste Not](#), [Jamie Anderson Foundation](#) and the [League to Save Lake Tahoe](#). See also: <https://www.keeptahoeblue.org/news/events/tahoe-trash-pickup-challenge-2020>

Clean Tahoe North Shore Program for trash and litter mitigation launches July 2021

In 2021, Clean Tahoe launched a north shore litter mitigation service; to parallel their long established south shore operations. Clean Tahoe is a nonprofit corporation, whose mission includes fostering public-private partnerships and resources for supporting litter and garbage management services in the Lake Tahoe Basin and surrounding areas. More than \$300,000 was put towards this pilot effort for 2021-22. Funding Partners wished to enhance litter and garbage abatement and reduce the negative effects of such litter and garbage in their respective communities; and recognized the advantage of a joint and coordinated effort to address litter and garbage abatement and recognized Clean Tahoe's success in providing these services in the South Lake Tahoe area. Each Funding Partner has a separate Agreement with Clean Tahoe for litter abatement and garbage services, each with specific services, terms, conditions, and compensation schedule.



Clean Up the Lake's (CUTL) 72 mile underwater cleanup of Lake Tahoe

<https://cleanupthelake.org>

CUTL has discovered pollution issues within the community and under the surface of numerous lakes in the Tahoe Basin including Lake Tahoe. Through data collection, collaborating with environmental scientists, extensive research dives and outreach in the community –CUTL utilizes a small staff and many volunteers to tackle these issues. CUTL performs scuba clean ups and implement litter mitigation strategies. TWSA offered in-kind support to the 2020 NDEP funded 6 mile underwater cleanup of Tahoe East Shore locations by collaborating with the Clean Up the Lake non-profit, Tahoe Environmental Research Center (TERC and Desert Research Institute (DRI) on the trash sort operations. Support includes: use of a utility trailer for debris collected storage, use of Public Works site for sorting and inventory operations, disposal costs for collected materials after inventory. The TWSA Board approved a \$5,000 fundraiser/match to be with CUTL/TWSA in 2022-23.



Partner Agency Research Support Projects:

Micro-Plastics as an Emerging Contaminant

<https://www.epa.gov/newsreleases/us-epa-awards-nearly-100000-address-microplastic-pollution-lake-tahoe>

Plastic waste, and the resulting micro-plastic plastic fragments created from outdoor exposure, have emerged as a concerning contaminant in the ocean and freshwater environments. In California, the State Water Board has begun the regulatory process to define, monitor and potentially regulate a standard for drinking water systems. Due to the land and airborne loading nature of micro-plastics, drinking water systems reliant on surface water sources have the most potential to be impacted, rather than groundwater systems. Unlike plastic waste in the ocean, microplastics do not enter Lake Tahoe through wastewater or from commercial shipping operations. Rather, improperly disposed of litter found on Lake Tahoe's beaches is believed to be the lake's primary source of plastic pollution; followed potentially by road/tire debris and airborne particulates.

In 2019, The U.S. Environmental Protection Agency (EPA) awarded \$97,000 in grants for projects to address microplastic pollution in Lake Tahoe. The projects include a study led by the UC Davis Tahoe Environmental

Research Center (TERC) to gather more data on the movement and types of plastics in Lake Tahoe as well as a public education-focused, source-reduction pilot project led by the Incline Village General Improvement District, in partnership with the Tahoe Water Suppliers Association and others. Both projects are managed by the Nevada Division of Environmental Protection (NDEP) with the aim of reducing sources of plastic pollution.

USEPA/NDEP funded projects to address microplastics in Lake Tahoe include:

RESEARCH: A Snapshot Study on the Fate and Type of Plastics in Lake Tahoe, EPA Grant \$35,000.

This UC Davis project examines where micro plastics accumulate in Lake Tahoe and the potential for those plastics to be ingested by wildlife and humans. Samples will be collected from various depths throughout the lake, including from deep water sediments, to capture heavier plastics as they settle. To assess plastic pollution in drinking water sourced from the lake, samples are being collected from municipal water treatment facilities on the north and south shores of the lake. To examine the effects on wildlife, tissues will be collected from the Kokanee salmon and Asian clams, which are at a greater risk of ingesting microplastics as filter-feeding organisms. The results from this study will direct future research and supply agencies and policymakers with important baseline information for strategies to reduce plastic pollution in Lake Tahoe. TWSA is a project partner on this project, providing a \$5,000 grant for sampling equipment and in-kind support.



OUTREACH: Pilot Project to Reduce Source Water Plastic Pollution at Lake Tahoe, EPA Grant \$62,000.

This 2 year, multi-agency collaborative project includes: education and public outreach to achieve a behavior change in the region, with the ambitious goals of 1) raising awareness of plastic pollution, 2) increasing public understanding of the different types of plastics and 3) the impacts of their consumer choices, 4) reducing the use of single-use plastic, and thereby 5) reducing the presence of plastic in Lake Tahoe's waters and beaches.

TWSA's "Drink Tahoe Tap" Partnership with Take Care, Tahoe Environmental Research Center, and Sierra Watershed Education Partnership has just completed 2 years of work on this 'emerging contaminant' education project. This project focusses on education and public outreach to promote behavioral changes towards proper disposal of trash at Lake Tahoe. It promotes the reduction of the use



of single-use plastic through research, local business partnerships, student engagement, public education, and awareness of drinking water and watershed protection.

Project highlights included:

Development of a complete suite of DRINK TAHOE TAP[®] TAKE CARE outreach materials was commissioned and published regionally, in both web and print format. Messaging specifically focuses on reducing micro plastics by reducing purchase of single use water bottles, and refilling instead.

A new website was created as part of the Take Care Tahoe campaign along with a new page within the main Take Care Tahoe campaign and an update to an existing page:

<http://www.drinktahoetap.org> (redirects to <https://takecaretahoe.org/drink-tahoe-tap/>) (and) <https://takecaretahoe.org/take-action/tahoe-tap>

The website features an interactive web storyboard, visually linking in a cartoon illustration style, eco-system impacts from single-use plastic waste, and litter in general. Information and graphics on the high quality of Tahoe Tap waters was also developed. These graphics are used in regular rotation on social media postings, and a new storyboard website. Social content (hashtag, picture, caption) developed includes posting on billboards at I-80/Hwy 50, social media.



An Official DRINK TAHOE TAP Bottle & Partnership with Raley's Supermarket



The team also worked with the concept of building a brand presence for the “Tahoe Tap” product; marketing it as ‘a luxury water offered free from the tap’. This concept brought forth the idea of an ‘official Tahoe Tap refillable bottle’. Design products included multiple bottle designs, end cap design for Raley’s grocery store, grocery store aisle blade, refill badge sign for businesses, signage at the water refill stations, and wayfinding blades (store and shelf presence).

In July 2020, the DRINK TAHOE TAP[®] / TAKE CARE special design bottles put on sale at the Raley’s store in Incline Village, Nevada. Customer response was immediately positive. This was followed by expansion into seven regional stores in fall 2020. Raley’s produced 11,000 custom bottles in 2021. Displays were created for 116 Raley’s stores (outside the basin) throughout northern California and Nevada.

In July 2021; the special character bottle “FILL M. UP” was produced and put on sale. The character bottle has an Instagram page (#where2fill). In 2022-23 there will be a push on that platform.... as ‘FILL goes on refill adventures’.

Tahoe Environmental Research Center Interactive Microplastics Exhibit - Linking Sourcewater Protection and Litter Reduction

The Tahoe Science Center developed a microplastics exhibit and nonpoint source and plastic pollution educational materials, informed by research. The exhibit was installed at the Tahoe Science Center in Incline Village, and opened in summer 2021. A new water fill station is included in the exhibit area, featuring DRINK TAHOE TAP custom messaging and graphics.

This exhibit and lesson topics include: ‘Sources of Plastic at Lake Tahoe, From Macro to Micro: How Plastics Break Down, Quantifying Microplastics, and Where Do Microplastics End Up Around the Lake?’

Tahoe’s Plastic Problem: A Day at the Beach (includes “Plastic Sorting” and “Resin Identification Code” details) Breaking up with Plastic; Microplastics in Lake Tahoe (includes “Zoom in on Microplastics”); It’s Time for Solutions.

This project also produced similar traveling exhibits for use at events around the lake and locations including visitor centers, trailheads, and public beaches. The grant team is also collaborating with other regional partners to promote their plastics outreach efforts, such as California State Parks' 'Below the Blue' artwork displays made from underwater trash retrieved at their park locations.

This interactive exhibit will be mirrored in 2022 at the Sand Harbor Visitor Center.



Sierra Watershed Education Partnership with TERC

Student Microplastics Education

As part of the grant, TERC and Sierra Watershed Education Partnership (SWEP) created a variety of online video lessons on plastic pollution and watershed impacts. In-person curriculum delivery remains on hold due to COVID-19. In the past year as part of this grant, SWEP created the "Beach Detectives" <https://www.4swep.org/post/beach-detective> virtual field program and associated [Microplastics-Beach Detective Data Sheet](https://www.4swep.org/post/microplastics-beach-detective-data-sheet). UC Davis created this [video lesson](#) to help guide student investigations.



New micro-plastics snippets created and web posted, see <https://www.4swep.org/swep-snippets> for all the sessions.

These are plastic specific: <https://www.4swep.org/post/what-is-plastic>

<https://www.4swep.org/post/beach-detective>

<https://www.4swep.org/post/how-long-until-gone>

<https://www.4swep.org/post/upcycled-milk-jugs>

<https://www.4swep.org/post/zero-waste-lunch>

<https://www.4swep.org/post/litter-scavenger-hunt>

<https://www.4swep.org/post/upcycled-t-shirt-bags>

Another student program component was to create partnerships between Eco-Action Teams and local businesses, which play a key role in products available to the community. The TERC staff and SWEP staff engaged Tahoe-Truckee students in the past year in a variety of ways. This program component was impacted by the Covid-19 restrictions; there was an inability to conduct in person interviews with customers. Instead, the students helped develop the on-line survey on water purchase / use habits; provided feedback on the water bottle and Take Care designs and copy; and created several on-line educational videos. For 2020-21 school year, the Tahoe-Truckee High School's combined Envirolution Club (facilitated by SWEP staff advisors) has created an on-line, community participation portal via Instagram. <https://www.youtube.com/watch?v=nwFeMZfvPE0> .

Student Partnership with Raley's Supermarket

<https://www.tahodailytribune.com/news/tahoe-students-address-plastic-problem-inspire-change-in-raleys>

In 2021, the students also had direct access to work with Raley's management on their sustainability measures, providing a youth feedback perspective. The group participated in several collaborations with the Raley's team facilitated by TERC and SWEP, and developed a four-part action plan for Raley's executive team to consider how they could reduce plastic waste locally.

When the initiative began, students from North Tahoe, Truckee, Incline and South Tahoe high schools learned about the prolific microplastics problem impacting Lake Tahoe from UC Davis Tahoe Environmental Research Center AmeriCorps member Elise Matera and staff members at Sierra Watershed Education Partnerships and the Tahoe Water Suppliers Association.

The North Tahoe and Truckee Envirolution Club members were inspired to make a difference and formed a plastics sub-committee to assess which of these problems could be solved. With coaching by members of the plastic reduction collaboration (funded by a Nevada Division of Environmental Protection grant), the students surveyed their local Raley's stores to come up with a list of all the ways plastic waste could be reduced.

The students presented their findings to the Raley's executive team on Earth Day 2021 and highlighted three areas for improvement: plastic water bottles, plastic grocery bags and plastic sleds and other toys that break apart easily. Other suggestions the team made included moving away from distribution of straws, plastic to-go ware, and plastic souvenirs.

Inspired by the presentation, Raley's President and CEO Keith Knopf said, "We appreciate the students' hard work and dedication to reduce microplastics and their thoughtful solutions for Raley's to consider. We commit to several changes; eliminate plastic straws, switching to paper and reusable options; eliminate single use plastic silverware and switch to a compostable solution. We are proud to offer real silverware and plate options for people who purchase food to be consumed in our Truckee store."

Media Coverage of Trash and Plastics Issue - The microplastics project has received extensive media coverage. A sampling:

<https://www.kolotv.com/2020/07/02/raleys-working-with-tahoe-organizations-and-uc-davis-to-reduce-plastic-waste/>

<https://www.sierrasun.com/news/environment/microplastic-cleanup-research-continues-at-lake-tahoe/>
<https://www.tahoedailytribune.com/news/microplastic-clean-up-research-continues-at-lake-tahoe/?fbclid=IwAR0ZrNliqsQD21ULLd0GsJrFmsEffgh3r2lg8wG7EQQS01oMkzxNnuQQaTk>
<https://www.ktvn.com/story/42349550/incline-village-raleys-encourages-customers-not-to-buy-plastic-water-bottles-as-part-of-new-initiative>
<https://www.sierrasun.com/opinion/columns/darcie-goodman-collins-tina-dvon-gallier-save-lake-tahoe-from-single-use-plastics/>
<https://www.sierrasun.com/news/the-fate-of-plastics-in-lake-tahoe/>
<https://www.sierrasun.com/news/environment/clean-up-the-lake-pulls-more-than-8200-pounds-of-trash-from-tahoe-donner/>
<https://www.sierrasun.com/news/pack-it-in-pack-it-out-locals-protest-surge-of-litter-left-in-truckee-tahoe-area/>
<https://www.sierrasun.com/news/power-of-the-people-how-truckee-tahoe-locals-are-taking-to-beaches-to-clean-up-litter-left-by-visitors/>
<https://www.sierrasun.com/news/placer-county-temporarily-increases-trash-service-in-north-lake-tahoe/>
<https://www.sierrasun.com/news/environment/trash-problem-piling-up-around-lake-tahoe/>
<https://www.sierrasun.com/news/litter-mitigation-on-tap-at-truckee-town-council/>
<https://www.sierrasun.com/news/mitigating-microplastics-what-types-of-plastics-are-getting-into-lake-tahoe-and-landing-on-beaches/>
<https://www.sierrasun.com/news/community/koop-the-lake-collects-over-200-pounds-of-trash/>
<https://takecaretahoe.org/success-stories/raleys-is-first-tahoe-area-grocery-store-to-encourage-customers-not-to-buy-single-use-water-bottles/>
<https://www.tahoedailytribune.com/news/partnership-aims-to-get-more-people-drinking-tahoe-tap-water/>



TWSA Long Term Education Projects:

TWSA has a long history of projects related to community education and outreach on the focus topics of source water protection and an appreciation of municipal tap water. The following offers summary of some of these long term programs and partnerships.

“Drink Tahoe Tap”[®] “I Drink Tahoe Tap!”[®] Stickers and Bottles

TWSA completed the trademark registration process for “Drink Tahoe Tap”[®] and “I Drink Tahoe Tap!”[®] valid to 2026. This trademark was executed in a license agreement for the recent Raley’s collaboration. Tahoe Tap is well recognized regionally and supported by both locals and tourists alike. In 2020, an official brand and bottle were developed. **More than 100,000 “Drink Tahoe Tap”[®] stickers have been distributed since the campaign launched in 2008.**

“Drink Tahoe Tap”[®] Taste Test

TWSA staff provides a ‘blind taste test’ at our outreach booth at local events. Staff provides the waters in 3 unmarked, dispensers using a 2 oz. compostable plastic cup. Each participant votes and the votes are recorded. The taste tests results are consistent; tap water is selected over bottled waters. This program is on hold-due to Covid-19 restrictions on public events.

Distribution of Refillable Water Bottles

Prior to having retail bottle sales with Raley’s, between approximately 5,000 customized, refillable containers were distributed annually at various events.

Since 2010, approximately 60,000 (glass or metal) bottles and foldable water pouches have been distributed. Our largest single distribution event is the annual Tahoe Summit where we provided up to 3,000 drinking water containers and supply water filling stations for the attendees. See microplastics grant information above, on development of a line of custom bottles.



Promoting Greater Access to Tahoe Tap Water for Visitors and Residents

Drink Tahoe Tap® Water Bottle Refill Station Grant Program

In August 2019, TWSA and the Tahoe Fund initiated the Tahoe Tap Water Bottle Refill Station Grant Program. As of YE 2021, 18 stations have been installed, both indoor and outdoor, in the region. \$500/\$1000 rebates are available to Tahoe Basin businesses and non-profits who install a bottle filler/upgraded water fountain. \$20,000 in total funding is available through a generous Tahoe Fund match grant. Information posted at www.DrinkTahoeTap.org.

FIND A REFILL: The “Drink Tahoe Tap Refill Network” now has 50 Tahoe locations registered.

(www.findtap.com) via the “TAP APP”.

Local businesses who offer free water refills can register to place their location on a digital mapping source. This regional refill network uses the TAP APP.

(www.findtap.com)

Tahoe Tap fill station information is also included in the 2022 Citizen Science App to see if that will provide a good platform for highlighting available water stations. <https://citizensciencetahoe.org/home>

Free Tap Water Distribution at Public Events Covid-19 response included cancellation of most public events, so the water stations were not deployed in summer 2020. They received limited use in summer 2021 with enhanced sanitation best practices. 10 stations are available for regional use at various events. The water fill station construction designs are available online as free resource information at www.TahoeH2O.org.

These stations connect up to standard outdoor faucets served by approved water sources, have tap dispenser heads and a carbon filter system. 3,5 and 8 gallon water dispensers are available for smaller events.



Community Outreach / Watershed Education Events

Pre-Covid-19; staff conducted outreach with the TWSA “Drink Tahoe Tap®” education booth at more than 25 community events annually. The booth features an interactive water taste test along with water conservation, watershed protection and tap water awareness information. Some of the annual events include the North and South Lake Tahoe Earth Day Festivals, Snapshot Day, Rock Tahoe half-marathon, Harbor Shakespeare Festival, SnowFest Science Expo, 4th of July events, Children’s Environmental Science Day, the Tahoe Summit, regional music festivals, chamber mixers, ski area special events, education events and other events upon invitation or request.



Community Neighborhood and Beach Cleanups

Work to increase volunteer participation and develop Tahoe’s community stewardship culture goes on. TWSA staff serves annually as the Tahoe East Shore/Nevada Coordinators for International Coastal Cleanup Day. We collaborate extensively on North Shore cleanup efforts coordinated by the League to Save Lake Tahoe and Keep Tahoe Clean for South Lake Tahoe. Annually, hundreds of volunteers collect more than a ton of trash from Tahoe’s beaches, streams and lakeside trails. IVGID Waste Not / TWSA in coordination with the League to Save Lake Tahoe, support Tahoe Blue Crews with the loan of collection equipment, waste disposal, donation of water bottles.



Sponsorships

2020 saw TWSA supporting a variety of conferences, online events and educational programs in the form of fiscal donations or water bottle donations. In the past year, the Association has supported the production of the State of the Lake Report, Tahoe In Depth publications, Music on the Beach, Concerts at Commons Beach, Nevada Rural Water events, Eyes on the Lake trainings, the Tahoe Summit, North and South Lake Tahoe Earth Day events, Tahoe Film Festival, various conferences and additional events.

School Programs

In addition to the micro-plastics project, TWSA staff normally provides school and civic group presentations on Tahoe Tap and source water protection, including water quality sampling lessons and streamside ecology activities in area schools. This was Covid-19 impacted, with a shift to virtual platforms for 2020.

Since 2011, TWSA and TWSA members (TCPUD, NTPUD, IVGID) have partnered with the Sierra Watershed Education Partnership (SWEP) to offer water quality assemblies annually, to almost 2,000 North Tahoe elementary, middle and high school students. These assemblies feature a presentation by the Truckee High School Envirolution Club's Trashion Show, themed on appreciation of tap water, water conservation and watershed protection. At these shows, students receive custom refillable steel water bottles, shower timers and other water conservation education collateral.

Snapshot Day

<http://tahoetruckeesnapshotday.org>

In 2021, a reduced scale, 21th Anniversary Snapshot Day event was held. Due to Covid-19 restrictions, it was not open to the general public. Each year, TWSA staff leads Snapshot Day, a large-scale volunteer water quality monitoring event for the Tahoe region from Lake Tahoe to Pyramid Lake. At "Snapshot Day" (annually in May) 300+ volunteers spend the morning at 50+ locations within the watershed - collecting samples of turbidity, nutrients, dissolved oxygen and photographic documentation. Many sites have been repeated now for 15+ years, providing long-term watershed condition data. This event is a collaboration between multiple water quality focused agencies. This is one of the longest running watershed citizen monitoring events on the U.S. west coast.

Beach Water Quality Sampling

TWSA staff collects and analyzes raw water samples on a regular schedule from 6 Incline Village beach and stream zone locations. AIS inspections of shoreline conditions were added in 2015. Data from this sampling activity has been maintained in a centralized database since 2004.

Watershed Protection Outreach Campaigns

TWSA water conservation and water quality protection print publications are updated annually. Outreach materials include a leak detection information card with dye tabs, AWWA 'value of water' and water conservation brochures, TWSA source water protection information, a custom dog waste bag holder and bag refills, 'Drink Tahoe Tap'® stickers and information on the issues of bottled water versus tap water. The regional Take Care Tahoe messaging was upgraded in 2020.

TWSA General Advertising Program & Social Media

TWSA is found on social media (Facebook/Instagram) as Drink Tahoe Tap (#where2fill and #drinktahoetap). TWSA partnered with the regional Take Care Tahoe campaign, to develop Drink Tahoe Tap® messaging to encourage the use of refillable water containers. Informational articles and advertisements on source water protection, water quality and water conservation are published regularly in visitor magazines such as Tahoe In Depth, Tahoe Visitor Guide and Tahoe.com Summer/Winter supplements. Each publication reaches an estimated audience of 60,000+ persons each summer and winter season. Issues are provided in the rooms of area hotels and are also distributed at shopping centers, visitor centers and local businesses. Water bottles and "Drink Tahoe Tap"® stickers also serve as a major portion of the advertising campaign. TWSA staff regularly tapes radio and television public service announcements. Tahoe Tap is featured on Lake Tahoe Television on multiple segments and TWSA runs "Drink Tahoe Tap"® ads.

To view the ad see: <https://m.youtube.com/watch?v=633vLUjWM8A&feature=youtu.be>



Tahoe Cigarette Disposal Bin Program

<https://www.keeptahoeblue.org/our-work/combating-pollution/cigdisposal> .

The aim of the Tahoe Cigarette Disposal Program is to reduce toxic chemicals from littered cigarette butts from leaching into the environment, to protect wildlife, and to reduce litter on Lake Tahoe's shoreline and vicinity, while also providing educational information. The bins were obtained through a Keep America Beautiful grant program (value, \$20,000). The League to Save Lake Tahoe and TWSA have installed 125+ canisters throughout the Lake Tahoe Basin, for free, with more available. The Tahoe Cigarette Disposal program is branded to fit in with the Take Care Tahoe campaign, and each canister is designed to be highly visible and include education on how cigarette butts impact to the environment and wildlife.

Dog Waste Awareness Campaign:

"Be #1 at Picking Up #2" / "They Drop It, You Drink It"

Dog Waste Pickup Station Sponsorship

Dog waste collection is an ongoing campaign. Bag dispensing stations, custom signage and collection receptacles are placed in high impact areas and monitored by volunteer or partner agency staff. Approximately 50,000 dog bags are provided by TWSA with an estimated 100,000 more bags being provided by our partners, annually.

The graphics style Take Care Tahoe messaging on dog waste collection was incorporated. 100 stations are in use around Lake Tahoe, including the new East Shore bike path, the Johnson Meadows property, Van Sickle State Park, Bijou Park, Burke Creek/Kahle Drive, Lake Tahoe Nevada State Park, Brockway Lookout, Tahoe City and Tahoe Vista Dog Parks, Incline Village community lands, and various Tahoe neighborhoods.

Individual leash bag dispensers are also handed out at events.

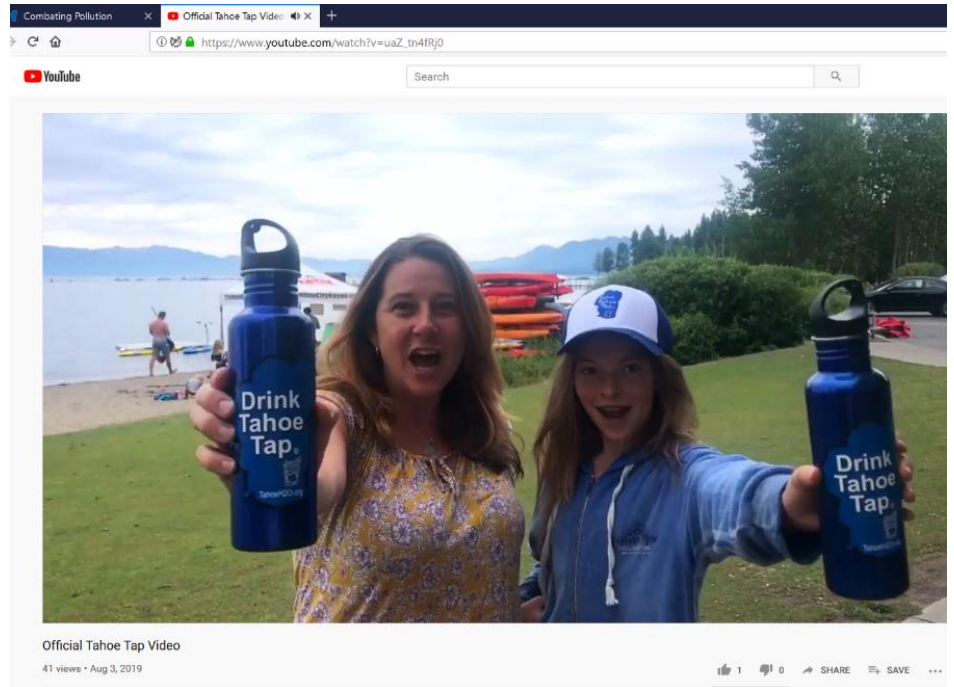


Love Your Water - Tahoe Tap's Music Video - The "Drink Tahoe Tap Song"

https://www.youtube.com/watch?v=uaZ_tn4fRj0.

Local musician, Joaquin Fioresi, wrote and produced this original song and music video, featuring regional music talent.

In 2020-21, it was featured on regional broadcasts of the on-line summer music series "Virtual Music on the Beach" and "Best of Commons Beach".



Participate in source water protection efforts:

Aquatic Invasive Species (AIS) Public Outreach and Engagement; Control Method Workgroups

TWSA staff has been heavily engaged in environmental review documentation and research on regional AIS projects, and our involvement is anticipated over through the next decade, as this is one of Tahoe's top environmental concerns from its potential, eco-system-wide impacts. TWSA continues to support AIS prevention efforts by other regional agencies including Tahoe Regional Planning Agency (TRPA) and Tahoe Resource Conservation District (TRCD) as a member of the Lake Tahoe Aquatic Invasive Species Working Group (LTAISWG). TWSA staff and utility members are active participants in the LTAISWG, regularly attending meetings and participating in work plan development.



Tahoe Keys Lagoons Aquatic Weed Control Methods Test Application / CEQA Process

<https://tahoekeysweeds.org>

TWSA is highly involved in providing public comment AIS Management Plans. This issue has become a major component of our work.

TWSA support the implementation of non-chemical, water quality enhancing, control methods. The emerging technologies of Ultraviolet Light (UVC) and Laminar Flow aeration, are showing promising results. Diver assisted removal is slow, but effective.

The Tahoe Keys Property Owners Association (TKPOA) submitted the Tahoe Keys Lagoons Aquatic Weed Control Methods Test Application. Because the applicant's preferred project includes limited use of selected herbicides (with mitigation) this triggered the need for an [Environmental Impact Report](#)

(EIR) required by the [California Environmental Quality Act](#) (CEQA) and Lahontan Regional Water Quality Control Board (Lahontan Water Board), and an Environmental Impact Statement (EIS) required by the Tahoe Regional Planning Agency (TRPA).

The Control Methods Test application proposes the use of targeted herbicides as one weed control method to test (alongside and in combination with) other methods to reduce and control the abundant growth of invasive and nuisance aquatic weeds that are compromising water quality and degrading beneficial uses of the Tahoe Keys lagoons. The environmental analysis will determine if the use of U.S. Environmental Protection Agency (EPA) and the Department of Pesticide Regulation (DPR) approved herbicides can meet the strict environmental standards of Lake Tahoe's classification as a [Tier Three, Outstanding National Resource Water](#). TWSA staff, and our consultant Water Quality Treatment and Solutions, each prepared comments.

TRPA, one of the lead agencies on this project, convened a core committee of stakeholders to select neutral facilitation services and an independent environmental consulting firm for the environmental analysis process. The selection team is composed of representatives from Lahontan Water Board, TKPOA, TRPA, Tahoe Water Suppliers Association, and The League to Save Lake Tahoe. The core team unanimously selected Zephyr Collaboration to provide facilitation services for the project, and TRC Solutions, Inc. to provide environmental consulting services.

Since its inception, TWSA staff has participated in regional government, regulatory and scientific research working groups, to keep the dialog about source water protection inclusive of drinking water services. We regularly partner with local non-profits and environmental group on programs, trainings and educational



activities. TWSA staff and the water purveyor managers have been active partners in the Asian Clam removal projects and ongoing AIS removal/monitoring projects by the Tahoe RCD, TRPA and UC Davis.



Final TKPOA CMT project and environmental document review links:

https://www.waterboards.ca.gov/lahontan/water_issues/programs/tahoe_keys_weed_control

<https://tahoekeysweds.org>

<https://www.keyswedsmanagement.org>

Tahoe Water Suppliers Association Staff Summary

TWSA Project Staff summary: https://www.yourtahoeplace.com/uploads/pdf-public-works/TKPOA_CMT_TWSA_Staff_Summary_Antideg_10152021.pdf

TWSA Comment Letter: [https://www.yourtahoeplace.com/uploads/pdf-public-works/TWSA_FINAL_comments_on_Lahontan_Permit_\(submitted_10_28_2021\).pdf](https://www.yourtahoeplace.com/uploads/pdf-public-works/TWSA_FINAL_comments_on_Lahontan_Permit_(submitted_10_28_2021).pdf)

Track customer responses / summarize activities

Through direct outreach and media contacts, staff estimates 150-200,000 people receive TWSA/IVGID Waste Not information annually. TWSA maintains the websites: www.TahoeH2O.org (and) www.DrinkTahoeTap.org. Source water protection, water conservation, TWSA annual reports and sanitary surveys are available for public review on this website.

Gather, track, and report regularly on TWSA partners' operations, management, project, planning or other changes that may affect water quality:

TWSA members and staff continue to annually report on planning or other changes that may affect drinking water quality. Raw water data (Turbidity, Fecal Coliform and Cryptosporidium levels) is collected and tracked from each of the water purveyors' intakes on a monthly basis. Long term data sets are maintained. This data, along with operational upgrades, capital improvement projects and Tahoe area environmental improvement projects are recorded in the TWSA Watershed Control Annual Report. The USEPA Long Term 2 Enhanced Surface Water Treatment rule (LT2) required redundancy on treatment for filtration avoidance

permit facilities. All TWSA members have met this requirement. Detailed water quality data for members is included in annual reports.

Emergency Preparedness

TWSA members are participants in the NvWARN and CalWARN emergency inter-local agreements. The WARN groups of water and wastewater utilities offer a web-driven, statewide mutual assistance program. Managed through the websites (<http://www.calwarn.org>) (<http://www.nvwarn.org>), CalWARN and NvWARN agreements provide a system for immediate assistance for member utilities during an emergency. Water and wastewater utilities can request equipment and personnel to assist during natural or man-made events that impact water and wastewater systems.

Mutual Aid

In 2014, a TWSA subcommittee began the revision of a Tahoe specific mutual aid agreement, this update was completed in 2017 and is being revised in 2022.

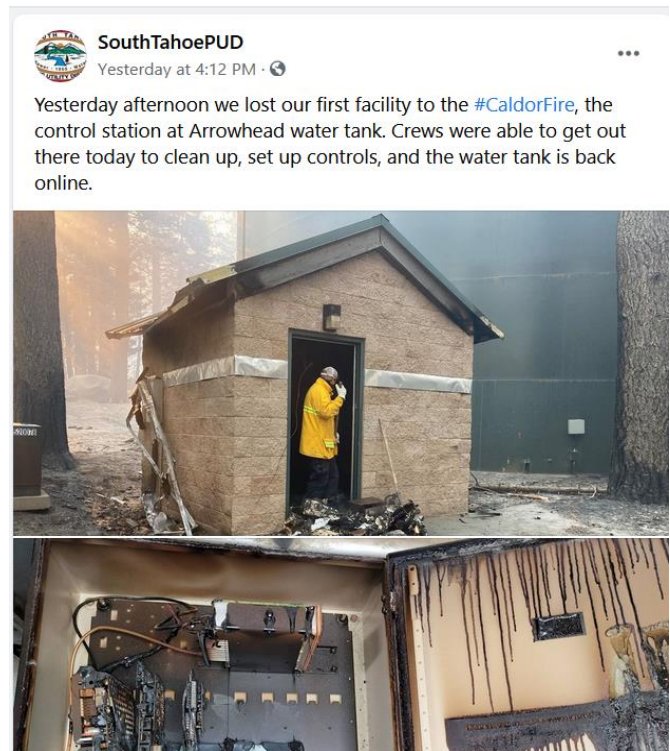
The Caldor Fire created major public safety and emergency response needs as it tore through the edges of the City of South Lake Tahoe (August/Sept. 2021). Emergency response protocols included assisting TWSA members with connecting with their emergency managers, to address issues such as infrastructure mapping needs, assuring generator fuel supplies and staffing.

August, 2021 - The Caldor Fire erupts. The Caldor Fire becomes the 15th-largest and 16th-most destructive wildfire in California’s recorded history, according to Cal Fire. Its cause remains under investigation.

October 2021 - Caldor Fire 100% contained, nearly two months after South Lake Tahoe evacuations.

Tahoe In Depth Special Caldor Fire Issue:

https://www.trpa.gov/wp-content/uploads/CaldorFire_12pgs_No20_FINAL_web.pdf



Wildfire in the Urban-Wildlands Interface of the Tahoe Basin is universally identified as a high-level risk to source water protection, holding potential catastrophic damage to water quality, water infrastructure, water treatment and distribution. Wastewater infrastructure is also highly vulnerable and is a critical service to maintain and protect.

Nineteen agencies currently form the Tahoe Basin Fuels Partnership working group. The membership includes a mix of community owned and private water suppliers, and the regional wastewater agencies. Eleven of the TWSA members are active in this Partnership. Each of the Partnership members operates and maintains infrastructure for water/wastewater services, serving local and visitor populations. Serving a year

round population under 100,000 – infrastructure investments to protect our source water have been a major commitment of our communities.

Intensive efforts are being focused on Tahoe “Wildfire Adapted Communities” – a multi-agency, multi-state, multi-decade effort of education and forest fuels reduction projects designed to reduce and mitigate risk of catastrophic wildfire in the Tahoe Basin.

Fire Flow Partnership: Seeking funding for Fire Flow Water Supply Enhancements

South Tahoe Public Utility District leads a regional effort of collaborative agencies developing federal funding requests for infrastructure upgrades and inter-tie projects in order to address the need for adequate fire flows in the event of urban wildfire. The Lake Tahoe Community Fire Protection Partnership has worked to secure federal funding which, when matched dollar-for-dollar with local agency funding, allows construction of critical water infrastructure projects with a nexus to fire protection within the Lake Tahoe Basin. More than \$32,000,000 in federal funds have been 50% matched by Partnership members. (Source: USFS Funding/Lake Tahoe Fire Prevention Partnership). The Fire Flow Partnership is formalized, with both TWSA and non-TWSA members.

Annual Reporting

TWSA Watershed Control Program Annual Reports have been published annually since 2003. The TWSA Watershed Control Program Annual Report is submitted to the Nevada Division of Environmental Protection Bureau of Safe Drinking Water and the California Division of Drinking Water Programs (Northern California Field Operations Branch) annually, each December. Reports are posted online at www.TahoeH2O.org (documents and links section). Hard copies of the report are distributed to personnel of area agencies upon request.

2022: Celebrating 20 years of Partnerships in Stewardship

TWSA Full Members:

- Cave Rock Water System
- Edgewood Water Company
- Glenbrook Water Cooperative
- Incline Village General Improvement District Kingsbury General Improvement District
- North Tahoe Public Utility District
- Round Hill General Improvement District
- Skyland Water Company
- Tahoe City Public Utility District
- Zephyr Water Utility
- Lakeside Park Association

Associate Members:

- South Tahoe Public Utility District
- Heavenly Water Systems

Tahoe Environmental Research Center Interactive Microplastics Exhibit (Linking Sourcewater Protection and Litter Reduction) is duplicated and installed at Sand Harbor Visitor Center.

Tahoe Keys' 3 year, Control Methods Test is approved; allowing for the testing of select herbicides alongside expanded non-chemical tests in May 2022. TWSA remains an engaged partner advocating for drinking water protections in project development.

Reopening of most public venues allows for the return of outreach events. Staff is able to conduct in-person outreach again and the use of the mobile water stations for events returns to previous levels.

New members join TWSA

TWSA has a defined cost sharing plan and formal membership agreement. STPUD became a full member in 2017; modified in 2022 to associate member. Also in 2017, the TWSA Board completed a bylaws review process with updates. Other purveyors express interest in joining, so membership is anticipated to increase in 2022.

TWSA 20th Anniversary is celebrated on June 1, 2022. The theme is “Defining our Legacy – Partners in Stewardship”.

TWSA 2022 Organizational Goals:

1. “Continue and increase emphasis on extensive education and outreach on focus topics of: source water protection, Aquatic Invasive Species (AIS) threats, treatment methods used for AIS and the value of municipal tap water.”
2. “Continue outreach and advocacy efforts for federal infrastructure funding, especially for fire flow capacity.”
3. “Continue a strong communication relationship with Tahoe Regional Planning Agency (TRPA), Nevada Department of Environmental Protection (NDEP), Lahontan Regional Water Quality Control Board (LRWQCB) and other regulatory agencies on source water protection.”
4. “Maintain and improve project review / involvement process with TRPA, NV State Lands, Lahontan Water Board and other planning/regulatory agencies.
5. “Utilize regional studies/projects to determine how they protect source water quality. Continue to work with LTWIP as appropriate.”