

NONPOINT SOURCE WATER QUALITY MANAGEMENT PLAN FOR THE TAHOE KEYS PROPERTY OWNERS ASSOCIATION

PREPARED PURSUANT TO
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION BOARD ORDER NO. R6T-2014-0059

Prepared by
Tahoe Keys Property Owners Association



UPDATE
JANUARY 2026

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	2025 NPS SAMPLING AND RESEARCH	2
2.1	FIRST FLUSH STORMWATER SAMPLING	2
2.1.1.	First Flush Site Expansion	2
2.1.2.	2024 and 2025 First Flush Data Analysis	4
2.1.2.1.	Lake Tallac	4
2.1.2.2.	West and East Lagoons	5
2.1.2.3.	Pope Marsh and the Upper Truckee Marsh/River	6
2.1.2.4.	Summary	8
2.2	COMPREHENSIVE NUTRIENT DATA ANALYSIS	9
3.0	2025 ACTIVITIES AND PROGRAMS	10
3.1	STORMWATER	10
3.2	COMMON AREA BEST MANAGEMENT PRACTICES	10
3.2.1.	Common Area Landscaping and Maintenance	10
3.2.2.	Infrastructure Improvements and Access Control	10
3.3	SINGLE-FAMILY HOMES BEST MANAGEMENT PRACTICES	11
3.3.1.	Compliance and Enforcement	11
3.3.2.	Landscape Modifications and Guidance	11
3.4	IRRIGATION	12
3.5	FIREWISE COMMUNITY	12
3.6	CIGARETTE BUTT COLLECTION AND MONITORING	13
4.0	2025 OUTREACH	15
4.1	HOMEOWNER OUTREACH	15
4.1.1.	Digital Communications	15
4.1.2.	Printed and Physical Materials	15
4.2	COORDINATED COMMUNITY OUTREACH EVENTS	17
4.2.1.	Training Events	17
4.2.2.	Educational Outreach	17

5.0	NONPOINT SOURCE WATER QUALITY MANAGEMENT PLAN FOR 2026	19
5.1	WATER QUALITY IMPROVEMENTS PROJECT EIP	19
5.2	LANDSCAPING	19
5.3	STORMWATER.....	19
5.4	OUTREACH.....	19
5.5	COLLABORATION.....	20
6.0	LIST OF PREPARERS	21
7.0	REFERENCES.....	22
8.0	APPENDIX A – BEST MANAGEMENT PRACTICES DEFINITIONS.....	24
8.1	TKPOA STORMWATER AND EROSION CONTROL BEST MANAGEMENT PRACTICES ..	24
8.2	COMMON AREA DEFINED	24
8.3	SINGLE-FAMILY HOMES DEFINED	26
8.4	BMPS IN THE TAHOE KEYS EDUCATION CAMPAIGN	27
9.0	APPENDIX B – DISCONTINUED NPS ACTIVITES.....	28
9.1	LUNCH AND LEARN.....	28
9.2	LAKE TAHOE COMMUNITY COLLEGE	28
10.0	APPENDIX C – CALIFORNIA’S MODEL WATER EFFICIENCY LANDSCAPING ORDINANCE	29
11.0	APPENDIX D – TAHOE KEYS WATER COMPANY IRRIGATION POLICIES	30
12.0	APPENDIX E – WILDFIRE ACTION PLAN.....	34
13.0	APPENDIX F – TRAINING GUIDE: LANDSCAPE PRACTICES FOR TKPOA COMMON AREAS	36
14.0	APPENDIX G – ACRONYMS AND ABBREVIATIONS	42

1.0 INTRODUCTION

The Tahoe Keys Property Owners Association (TKPOA) implemented the Nonpoint Source (NPS) Plan in 2016 to address both a finding of Waste Discharge Requirements (WDR) Order No. R6T-2014-0059 adopted by the Lahontan Regional Water Quality Control Board (Lahontan) on July 17, 2014 (Lahontan 2014), and as an aquatic invasive plant control method in the Integrated Management Plan for Aquatic Weeds for the Tahoe Keys Lagoons (IMP). Findings in the WDR specified the following two objectives of the NPS Plan:

- To identify and evaluate land-based activities being conducted in the Tahoe Keys community that may be sources of pollution (including nutrients) that have the potential to be discharged into surface waters.
- To identify and implement site-specific management practices to reduce or prevent pollutants (including nutrients) associated with activities being conducted in the Tahoe Keys community from discharging into surface waters.

This NPS Plan evaluates and addresses the land-based activities occurring in the Tahoe Keys development that could contribute to NPS pollution of the lagoons and describes how TKPOA is informing and educating its employees and member homeowners about how to reduce NPS pollution emanating from the TKPOA common areas and private properties. This NPS Plan is linked to the IMP and fulfills a requirement of the 2014 Lahontan Order that supports the aquatic plant control work that is being completed under the IMP. Please refer to the 2025 IMP for a detailed summary of aquatic invasive plant management activities conducted in 2025 (TKPOA 2026).

2.0 2025 NPS SAMPLING AND RESEARCH

2.1 FIRST FLUSH STORMWATER SAMPLING

As part of the Water Quality Certification and WDRs issued by the Lahontan Water Board, TKPOA is to promote compliance with the City of South Lake Tahoe (CSLT) municipal separate storm sewer system (MS4) permit (LRWQCB Order No. R6T-2011- 0101) for stormwater from TKPOA-owned facilities that drain into CSLT storm drains. In addition, for shared stormwater facilities, runoff from TKPOA facilities must either meet the surface water numeric effluent limits in the CSLT MS4 permit or TKPOA must document coordination with CSLT to meet fine sediment and nutrient load reduction requirements. The numeric effluent limits in Order No. R6T-2011- 0101 are:

Table 1. Numeric effluent limits

CONSTITUENT	MAXIMUM CONCENTRATION
Total Nitrogen as N	0.5 mg/L
Total Phosphorus as P	0.1 mg/L
Total Iron	0.5 mg/L
Turbidity	20 NTU
Grease and Oil	2.0 mg/L

The first-flush stormwater sampling was designed to occur after the first significant storm event of the season, which was anticipated to produce runoff from both TKPOA-owned facilities and upgradient areas within the CSLT. This “first flush” runoff sampling is performed to identify the pollutants and nutrients that accumulate over the dry season and then are washed into the Tahoe Keys lagoons once the wet season begins. The first flush runoff is not intended to be representative of the average stormwater quality over the season but may represent reasonable maximum anticipated nutrient levels.

Water samples are collected from surface water drainages, within storm drain inlets, and from the outlet of accessible storm drains above the lake level. Mild precipitation for the beginning of winter pushed the 2024 first flush sampling into January 2025; therefore, results were not included in the 2024 NPS and are presented in this report. In 2025, first flush sampling took place on November 18 after a multi-day heavy rainfall event.

2.1.1. First Flush Site Expansion

In 2023, TKPOA expanded the number of first flush sampling sites from 11 to 17, to include areas that enter directly into Pope Marsh, the Upper Truckee River and Trout Creek before it merges with the Upper Truckee River (Figure 1). Understanding the direct sources of nutrients

flowing into these locations combined with the data from inside the marshlands will help identify where the biggest nutrient loads are and how the marshland ecosystem contributes to the nutrient cycle. Another factor of consideration is the groundwater table influence. Lake Tallac is a separate water body from the West and East Lagoons. It is directly affected by the rise and fall of groundwater levels and collects the majority of CSLT stormwater runoff that enters the Tahoe Keys. (EMKO, 2025a) This lagoon essentially buffers the West and East Lagoon from stormwater influences outside of the Tahoe Keys property. Therefore, the sites added in 2023 provided a more comprehensive view of the nutrient cycle in not just the Tahoe Keys area, but surrounding areas as well. For first flush analysis, these areas are grouped into three ‘drainage’ areas; Lake Tallac, West Lagoon, and the surrounding marshes (Pope Marsh and Upper Truckee Marsh/River area). Table 2 summarizes the location and nature of each site.

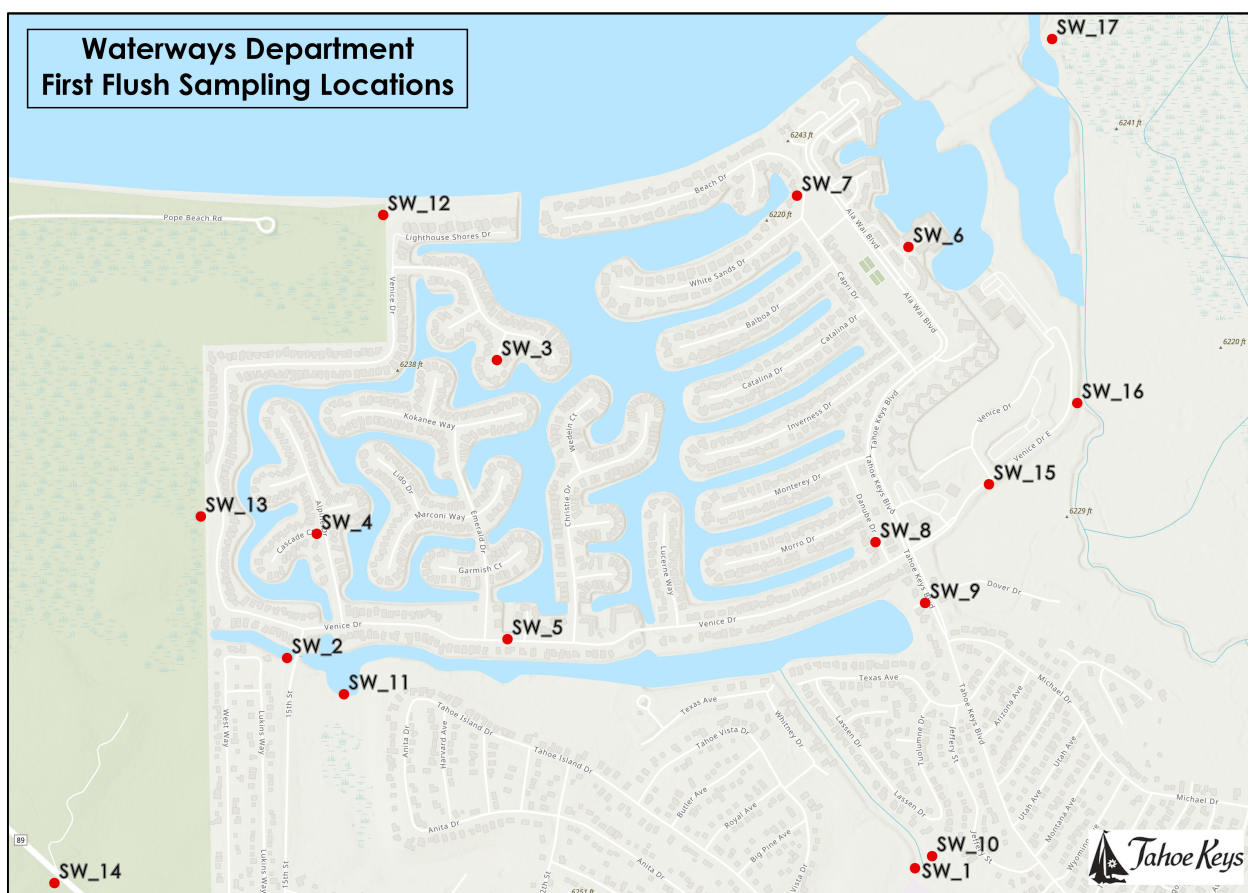


Figure 1. First Flush Sampling Location Map (2025)

Table 2. Description of the first flush stormwater sampling sites

SITE	LOCATION
SW-01	Tahoe Valley Elementary School Drainage Ditch
SW-02	15 th St storm drain into Lake Tallac
SW-03	Carson Ct. storm drain off Aloha
SW-04	Cascade Ct storm drain off Alpine
SW-05	Venice Dr. storm drain east of Christy
SW-06	Ala Wai storm drain into East Lagoon
SW-07	Pavilion Common Area runoff to Beach Dr.
SW-08	Tahoe Keys Blvd storm drain at Danube
SW-09	Dover St. storm drain to Lake Tallac
SW-10	South Y drainage ditch to Tallac South Canal
SW-11	Drainage swale entering Lake Tallac from meadow east of 15 th St
SW-12	North end of Pop Marsh at discharge to Lake Tahoe
SW-13	Pop Marsh north of discharge from Lake Tallac
SW-14	Drainage entering Pope Marsh from Tahoe Mountain, at Hwy 89
SW-15	Upper Truckee Marsh south of Venice Dr.
SW-16	Upper Truckee River off Venice Dr.
SW-17	Trout Creek terminus into Upper Truckee River

2.1.2. 2024 and 2025 First Flush Data Analysis

2.1.2.1. Lake Tallac

First flush sites that drain into Lake Tallac (Table 3) exhibited elevated nutrient concentrations and frequent exceedances of total phosphorus (TP) and total nitrogen (TN) numeric effluent limits during both the January and November 2025 sampling events.

During the January 2025 event, TP and TN exceedances were observed at SW-01 and SW-09, with particularly high concentrations at SW-01 (TP = 13 mg/L; TN = 27 mg/L). Field notes indicate shallow flow conditions and debris in the sample could account for the high values. An additional TN exceedance was observed at SW-02 (TN = 0.6 mg/L), while SW-10 did not exceed nutrient limits. SW-11 could not be sampled due to insufficient flow.

November 2025 first flush samples revealed TP exceedances at SW-09 (TP = 0.32 mg/L), and TN exceedances at SW-09 (TN = 1.6 mg/L) and SW-10 (TN = 0.59 mg/L). Orthophosphate was detected at SW-01, SW -02 and SW-09, and based off detectable values, the median orthophosphate fraction of TP was approximately 76%, which is higher than the long-term (2018-2025) median orthophosphate fraction for Lake Tallac stormwater, which has been approximately 60% (Table 6). This indicates that dissolved inorganic phosphorus was a

dominant component of TP during these first flush events, reflecting a higher proportion of immediately bioavailable phosphorus relative to typical first flush stormwater events.

Nitrogen for both sampling events was almost entirely composed of Total Kjeldahl Nitrogen (TKN). Sample specific TKN/TN ratios were consistently high, with median values near 98-100%, indicating that nitrogen was dominated by organic and reduced forms that are generally not as biologically available as oxidized forms, such as nitrate.

Table 33. First Flush nutrient results for sites draining into Lake Tallac (samples from January 10, 2025, and November 18, 2025).

Site	Date Sampled	Ortho-phosphate as P (mg/L)	Total Phosphorus (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen (mg/L)	Notes
SW-01	1/10/2025	NS	13 [†]	0.057	27	27 [†]	Shallow flow; debris observed in sample
SW-01	11/18/2025	0.033	0.1	ND	0.58	0.59 [†]	
SW-02	1/10/2025	NS	0.039	ND	0.58	0.6 [†]	
SW-02	11/18/2025	0.26	0.081	ND	0.42	0.43	
SW-09	1/10/2025	NS	0.32 [†]	ND	2.6	2.6 [†]	
SW-09	11/18/2025	0.25	0.33 [†]	ND	1.6	1.6 [†]	
SW-10	1/10/2025	NS	0.074	ND	0.37	0.39	
SW-10	11/18/2025	ND	0.073	ND	0.58	0.59 [†]	
SW-11	1/10/2025	NS	NS	NS	NS	NS	Insufficient flow
SW-11	11/18/2025	ND	ND	ND	0.33	0.33	

[†] Exceeds CSLT MS4 numeric effluent limit. *Numeric effluent limits per CSLT MS4 Permit (Order No. R6T-2011-0101): Total Phosphorus = 0.1 mg/L; Total Nitrogen = 0.5 mg/L. ND = Not Detected; NS = Not Sampled.*

2.1.2.2. West and East Lagoons

First flush stormwater draining into the West Lagoon (Table 4) exhibited lower nutrient concentrations than those observed in the stormwater samples of sites draining into Lake Tallac, though exceedances of the numeric effluent limits still occurred.

In January 2025 first flush sampling, TP concentrations exceeded numeric effluent limits at SW-04 (TP = 0.38 mg/L), SW-06 (TP= 0.39 mg/L), and SW-08 (TP = 0.27 mg/L), while TN exceedances were only observed at SW-06 (TN = 0.78 mg/L), which is the sole site that drains into the East Lagoon. SW-03 had insufficient flow and was not sampled.

During the November 2025 sampling event, TP exceedances were observed at SW-04 (TP = 0.15 mg/L) and TN exceedances at SW-04 (TN= 1.3 mg/L) and SW-05 (TN = 0.6 mg/L). Orthophosphate was detected at SW-04 and comprised approximately 25% of TP, indicating a measurable but not dominant contribution of dissolved, bioavailable phosphorus. Long-term monitoring data (Table 6) indicate that stormwater draining to the West and East Lagoons typically exhibits a higher dissolved phosphorus component, with median orthophosphate fractions of approximately 75%, suggesting that phosphorus inputs frequently occur in more

readily bioavailable dissolved forms under first flush stormwater conditions. SW-03 and SW-11 were not sampled due to insufficient flow.

Nitrogen input into the West and East Lagoons via stormwater remained dominated by TKN during these first flush events, consistent with long-term patterns. The long-term median TKN/TN fractions (approximately 90-92%) indicate that organic and reduced nitrogen forms dominate total nitrogen, while nitrate-nitrite contributes a relatively minor fraction. Ammonia contributed intermittently but has not been consistently detected across samples from 2018-2025.

Table 4 4. First Flush nutrient results for sites draining in the West and East Lagoons (samples from January 10, 2025 and November 18, 2025).

Site	Date Sampled	Ortho-phosphate as P (mg/L)	Total Phosphorus (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen (mg/L)	Notes
SW-03	1/10/2025	NS	NS	NS	NS	NS	Insufficient flow
SW-03	11/18/2025	NS	NS	NS	NS	NS	Insufficient flow
SW-04	1/10/2025	NS	0.38†	0.038	0.43	0.47	
SW-04	11/18/2025	0.037	0.15†	0.09	1.2	1.3†	
SW-05	1/10/2025	NS	0.078	0.057	0.48	0.54	
SW-05	11/18/2025	ND	ND	0.1	0.48	0.6†	
SW-06	1/10/2025	NS	0.39†	0.046	0.74	0.78†	
SW-06	11/18/2025	ND	0.11	0.195	0.33	0.53	
SW-07	1/10/2025	NS	0.076	ND	0.34	0.35	
SW-07	11/18/2025	ND	ND	ND	ND	ND	
SW-08	1/10/2025	NS	0.27†	0.3	0.34	0.37	
SW-08	11/18/2025	NS	NS	NS	NS	NS	Insufficient flow

† Exceeds CSLT MS4 numeric effluent limit. *Numeric effluent limits per CSLT MS4 Permit (Order No. R6T-2011-0101): Total Phosphorus = 0.1 mg/L; Total Nitrogen = 0.5 mg/L. ND = Not Detected; NS = Not Sampled.*

2.1.2.3. Pope Marsh and the Upper Truckee Marsh/River

Stormwater draining to Pope Marsh and the Upper Truckee Marsh/River (Table 5) exhibited the highest TN concentrations and the greatest variability among the three drainage areas.

During the January 2025 first flush sampling, TP exceedances were observed at SW-13 (TP = 1.2 mg/L), SW-14 (TP = 0.39 mg/L) and SW 15 (TP = 0.72 mg/L). Elevated TN concentrations were recorded at SW-13 (TN= 5.2 mg/L) and SW-15 (TN = 10 mg/L), with additional exceedances observed at SW-12 (TN = 0.92 mg/L), SW-14 (TN = 2.9 mg/L), and SW-16 (TN = 0.78 mg/L), indicating nitrogen enrichment into Pope Marsh and Upper Truckee Marsh during early storm runoff. SW-17 could not be sampled due to insufficient flow.

During the November 2025 first flush sampling, TP and TN concentrations generally decreased relative to January, though exceedances still occurred. TP exceedances were observed at SW-12 (TP=0.51 mg/L) and SW-13 (TP = 0.15 mg/L), while TN exceedances occurred at SW-12 (TN= 0.77 mg/L), SW-13 (TN = 2.9 mg/L) and SW-15 (TN = 0.84 mg/L). Orthophosphate was detected at SW-14 during the November 2025 sampling and comprised approximately 25% of total phosphorus, indicating a measurable but not dominant contribution of dissolved, bioavailable phosphorus at this site. Orthophosphate was not detected at the remaining sites, suggesting that phosphorus during this stormwater event was primarily associated with particulate or organic forms.

Across both the January and November first flush events, nitrogen was consistently dominated by TKN, with nitrate-nitrite infrequently detected and contributing a minor fraction of TN when it is detected. This indicates that nitrogen inputs to Pope Marsh and Upper Truckee Marsh/River during first flush conditions were primarily composed of organic and reduced nitrogen forms, which are not as readily bioavailable as the oxidized forms, such as nitrate.

Table 55. First Flush nutrient results for sites draining into Pope Marsh and Upper Truckee Marsh/River (samples from January 10, 2025, and November 18, 2025).

Site	Date Sampled	Ortho-phosphate as P (mg/L)	Total Phosphorus (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen (mg/L)	Notes
SW-12	1/10/2025	NS	0.046	ND	0.9	0.92+	
SW-12	11/18/2025	ND	0.51+	ND	0.75	0.77+	
SW-13	1/10/2025	NS	1.2+	0.022	5.2	5.2+	
SW-13	11/18/2025	ND	0.15+	ND	2.5	2.6+	
SW-14	1/10/2025	NS	0.39+	0.074	2.9	2.9+	
SW-14	11/18/2025	0.021	0.085	ND	0.31	0.33	
SW-15	1/10/2025	NS	0.72+	0.03	10	10+	
SW-15	11/18/2025	ND	0.096	ND	0.84	0.84+	
SW-16	1/10/2025	NS	0.083	0.024	0.75	0.78+	
SW-16	11/18/2025	ND	ND	ND	ND	ND	
SW-17	1/10/2025	NS	NS	NS	NS	NS	Insufficient flow
SW-17	11/18/2025	ND	0.067	0.26	0.35	0.37	

† Exceeds CSLT MS4 numeric effluent limit. *Numeric effluent limits per CSLT MS4 Permit (Order No. R6T-2011-0101): Total Phosphorus = 0.1 mg/L; Total Nitrogen = 0.5 mg/L. ND = Not Detected; NS = Not Sampled.*

Table 6. 6 Mean and median first flush stormwater nutrient concentrations and nutrient percentages (orthophosphate of total phosphorus and Total Kjeldahl Nitrogen of total nitrogen) by drainage area, 2018-2025 (2023-2025 for sites SW-12 -SW-17).

	Ortho- Phosphate as P, (mg/L)	Total Phosphorus (mg/L)	Ortho P Percent of Total P	Nitrate + Nitrite (mg/L)	Ammonia, as Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen (mg/L)	Ammonia Percent of TKN	TKN percent of Total N
Lake Tallac									
Mean	0.122	0.602	20%	0.057	0.373	2.17	2.28	16%	95%
Median	0.086	0.140	60%	0.057	0.250	0.775	0.845	0%	97%
West Lagoon									
Mean	0.097	0.235	41%	0.110	0.234	1.02	1.13	21%	90%
Median	0.082	0.14	75%	0.052	0.18	0.74	0.776	12%	92%
Pope Marsh & Upper Truckee Marsh/River									
Mean	0.102	0.215	48%	0.082	0.325	1.83	1.87	17%	97%
Median	0.075	0.155	35%	0.03	0.25	0.84	0.84	0%	98%

Mean nutrient percentages were calculated as the ratio of mean concentrations. Median nutrient percentages were calculated as the median of sample-specific percentages. A median ammonia percentage of 0% reflects non-detection in more than half of samples and does not indicate absence across all sites or events.

2.1.2.4. Summary

Overall, first flush stormwater monitoring conducted from 2018-2025, indicates clear differences in the three grouped drainage areas (Lake Tallac, West and East Lagoons and Pope Marsh & Upper Truckee Marsh/River). Results show that the highest total nutrient concentrations and most frequent exceedances are associated with stormwater inputs that originate outside the Tahoe Keys, particularly from drainage areas influenced by the CSLT infrastructure and upstream urban development.

First flush sampling demonstrated that TN concentrations were consistently elevated across all drainage areas, with nitrogen overwhelmingly dominated by TKN. This pattern suggests that storm events primarily influence the magnitude of nitrogen loading, rather than altering nitrogen form.

Phosphorus values varied more among the drainage areas. Long-term monitoring (2018-2025) indicates that first flush stormwater draining to the West and East Lagoons, which are mostly influenced by the Tahoe Keys residential community, typically exhibits a higher proportion of dissolved orthophosphate, with median orthophosphate fractions often exceeding 70% under typical first flush conditions. This pattern is consistent with runoff from landscaped residential areas and soil-associated sources, rather than urbanized infrastructure. Despite this higher relative bioavailability, absolute phosphorus concentrations in West and East Lagoons first flush stormwater were generally lower than those observed in other drainage areas.

2.2 COMPREHENSIVE NUTRIENT DATA ANALYSIS

TKPOA hired an outside consultant, EMKO Environmental, to conduct additional analysis of nutrient distribution within the Tahoe Keys Lagoons hydrological system, including surrounding areas of Pope Marsh and Upper Truckee River as part of the parallel Water Quality Improvements Project (EMKO, 2025a and 2025b). This study initially focused on phosphorus because it is the limiting nutrient for plant growth in Lake Tahoe. The analysis integrated nutrient data derived from a variety of sources, including peer-reviewed papers, TKPOA and contractor research, and numerous other studies, focusing on historical and current data from groundwater, surface water, and sediment samples. The findings indicated that if a nutrient removal project were to focus on only the water column through a “treatment plant” style process, results would yield almost no difference because the fraction of nutrients within the water column itself is only about 0.1% of the nutrients within the entire lagoon system, which includes not only the water but the aquatic vegetation biomass and the underlying organic sediment layer. The predominant source of nutrients is stored in the organic sediment layer and the aquatic vegetation. Nutrient cycling occurs seasonally, with an approximate 50/50 distribution between the sediment and aquatic vegetation during peak summer months, while in the winter, virtually all nutrients are retained in the organic sediment. Further analysis of nutrient removal efficacy was conducted by comparing the biovolume within the entire lagoons system to the biovolume removed during the season. This analysis indicated that harvested weeds only account for about 1% of nutrient removal each year. Therefore, current harvesting operations do not remove a significant volume of nutrients and have minimal impact on overall nutrient levels.

With this new level of understanding, TKPOA is exploring alternative solutions to address the nutrient levels in the organic sediment layer, parallel to the AIP removal effort. Since the nutrients drive aquatic plant and algae growth, without addressing the organic sediment layer, invasive aquatic plants are likely to repopulate the lagoons after removal. Therefore, by pursuing in parallel these complementary approaches (Water Quality Improvements Project and Large Scale Weed Removal Project), there is a strong potential for making impactful changes. Continuing first flush samples and exploring where the nutrient sources are and how they cycle through the waterways is a main priority for TKPOA in 2026.

3.0 2025 ACTIVITIES AND PROGRAMS

3.1 STORMWATER

TKPOA is currently working with the Tahoe Regional Planning Agency (TRPA), CSLT, landscape architects at Design Workshop, and the EPA on a new stormwater drainage design for the Tahoe Keys using green infrastructure. TKPOA remains in phase 1 of the project. The project would remove about 100,000 sqft of turf, install green infrastructure along Ala Wai Blvd, around Lake Tallac, areas near Pope Marsh and other common area locations throughout the Association, and then replace any remaining turf with low maintenance vegetation to reduce water needs. TRPA is currently working on GIS mapping of locations and areas of interest and will work with TKPOA throughout 2026 to make progress on this project.

TRPA also has a Best Management Practices (BMP) Action Plan, found in the TRPA Code of Ordinances, where BMP and Source Control Certificates are issued to properties that are in full compliance with TRPA Stormwater and Water Quality BMPs. Full details on TRPA's BMP Action Plan can be found on this website : <https://www.trpa.gov/programs/environmental-improvement-program/stormwater-bmps/>. For details on TKPOA homeowner's BMP Certification status, refer to Appendix A.

3.2 COMMON AREA BEST MANAGEMENT PRACTICES

TKPOA continued to conduct NPS required standard maintenance and landscaping in 2025. Each activity adhered to its BMP protocols, defined in Appendix A.

3.2.1. Common Area Landscaping and Maintenance

Landscaping and maintenance in the common areas were conducted routinely and in accordance with established standards throughout the year. The maintenance staff and contracted landscapers followed the operational rules established by TKPOA, which are outlined in a comprehensive training manual was included in the 2017 NPS plan and can be referenced in Appendix F. The operational rules and comprehensive training manual draw from the TRPA's Best Management Practices Guidebook (TRPA, 2014). There were no changes in landscaping contractors in 2025, ensuring continuity in the quality and standards of landscape maintenance.

3.2.2. Infrastructure Improvements and Access Control

There were sizable infrastructure improvements in common areas within the Tahoe Keys. These included:

- Landscaping Renovation: The center medians along Ala Wai Blvd. had major landscaping overhauls coupled with updates to the irrigation systems to create native landscapes.

- Bulkhead Replacement: 250 linear feet (LF) of bulkhead was replaced at Islanders 1 and Cove 3A is currently in the process of a 343LF bulkhead replacement.

Additionally, access to Pope Marsh via Lighthouse Shores was restricted using a new card system established in 2024, which limits entry specifically to homeowners. This measure aims to minimize human impact on Pope Marsh, enhancing bird migration awareness and overall marsh health, which in turn supports the natural drainage into Lake Tahoe.

3.3 SINGLE-FAMILY HOMES BEST MANAGEMENT PRACTICES

In 2025, the Architectural Control Committee (ACC) continued to uphold stringent regulations, guided by BMPs, aimed at promoting sustainable landscaping and water conservation among single-family homeowners.

3.3.1. Compliance and Enforcement

The ACC enforced water conservation rules and a ban on the use of phosphorus-containing fertilizers (established in 2015) across both common areas and individual properties. The BMPs specific to single family homes can be found in Appendix A. TKPOA provides a sample agreement template to assist homeowners in ensuring their landscape maintenance companies adhere to these BMPs (Appendix A). The agreement explicitly lists financial consequences for violations and that the landscape company will be held accountable to the property owner if any occur. Homeowners found in violation of these rules are subject to member discipline and fines, as outlined in the TKPOA Disclosure Document (2016). However, in 2025, no warnings or fines were issued, indicating strong compliance among property owners.

In addition to landscape and fertilizer regulations, the ACC also enforced the TKPOA Covenants, Conditions and Restrictions (CC&Rs) regarding the washing of boats within the Tahoe Keys Lagoon Channels. This enforcement is part of the Wastewater Rules and Protocol Operating Rules adopted in July 2020. The specific CC&R covers regulations for boat cleaning in the waterways, and the cleaning of boats and vehicles on streets, as well as wastewater discharge from jacuzzies. It is designed to protect the waterways from chemicals via both point and nonpoint sources, by requiring that homeowners and renters use only water (no additional cleaning agent) to clean boats while in the Tahoe Keys Lagoons. Furthermore, any products used for cleaning watercrafts and vehicles in driveways, roads, or yards must be environmentally safe, phosphate-free, biodegradable, and water-based (TKPOA 2020b).

3.3.2. Landscape Modifications and Guidance

In 2025, there was significant engagement from homeowners in sustainable landscaping practices:

- Lagoon-Friendly Landscaping: In 2024, TKPOA updated landscaping rules and BMPs to include turf reduction. These regulations restrict the addition of new sod or reseeding

to a maximum of 25% of a property's total landscaped area, encouraging less water-intensive landscaping solutions. In 2025, a total of 47 applications to modify landscapes to be more lagoon-friendly were approved and a reduction of turf was recognized, following these new restrictions.

- Educational Resources: TKPOA distributed landscape guidebooks to both homeowners and contractors. These guidebooks are designed to assist in implementing sustainable practices and are available both in the office and the TKPOA website.

3.4 IRRIGATION

In compliance with the TKPOA Water Conservation Operating Rule Section 10, all landscaping within the Tahoe Keys, including common areas and townhomes, adheres to strict irrigation schedules. These measures, effective from April through October, are due to the limited capacity of the drinking water wells and aim to conserve water. See Appendix D for the Tahoe Keys Water Company (TKWC) Irrigation Schedule and Policies. In 2025, water use throughout the Tahoe Keys went down to 200 million gallons (MG) from 204 MG.

Tahoe Outdoor Living inspected irrigation boxes throughout the Keys and upgraded all irrigation boxes in Cove 5 and 4 to be covered and tamper-proof. In 2026, all common irrigation boxes will be covered as well.

In 2024, a major concern was brought up regarding the stability of trees throughout the Tahoe Keys. Over the summer, TKPOA worked with several arborists and tree experts to inspect the health of the trees in the medians and common areas. Based on this collaborative effort, all parties determined there were dead and dying trees in these areas as well as some infested with bark beetles. The cause was declared to be the soil composition along with lack of irrigation from drought conditions leading to shallow root systems with no large taproot to provide water to the trees or stability from wind. Therefore, a plan was put in place to replace the trees in the medians and common areas with lagoon friendly landscaping. Approximately 365 trees have been removed throughout the Tahoe Keys community since the beginning of this project and lagoon friendly landscaping should be finished in these areas by the end of 2026.

3.5 FIREWISE COMMUNITY

In 2024, TKPOA was recognized as a FirewiseUSA community. The Wildfire Action Program (Appendix E) developed a strategy to increase outreach, education, and implementation efforts to make Tahoe Keys more fire resilient. This program has lagoon friendly benefits as it encourages residents to modify landscaping and remove debris from around their property. This messaging mirrors the landscaping guidelines already in place. On August 3, 2025, volunteers came together for a FirewiseUSA community workday to remain in compliance with the certification guidelines.

3.6 CIGARETTE BUTT COLLECTION AND MONITORING

In 2019, TKPOA volunteered to participate in The League to Save Lake Tahoe's (LTSLT) program for cigarette butt collection and monitoring. Cigarette butts contain carcinogenic chemicals and potential nutrients that can be harmful to the environment if not properly disposed. There are seven canisters around the Tahoe Keys (Figure 2 and Figure 3). In 2025, canisters were emptied and contents were disposed of according to the LTSLT guidelines. There was a noticeable decline in collected cigarette butts. TKPOA will continue the collection and disposal of cigarette butts in 2026.



Figure 2. Picture of cigarette canister provided by LTSLT



Figure 3. Locations of cigarette canisters within the Tahoe Keys

4.0 2025 OUTREACH

4.1 HOMEOWNER OUTREACH

In 2025, TKPOA continued homeowner outreach activities to give information, updates and reminders regarding water-based activities, best management practices and educational or community events.

4.1.1. Digital Communications

- *E-Blasts*: Weekly email notifications to all homeowners regarding updates of current projects. Details included completion of a project or the status of an ongoing project. In 2025, E-Blasts consisted primarily of updates surrounding the implementation of the revised voluntary Bottom Barrier Program and Harvesting Operation updates.
- *Websites*: TKPOA maintains two websites:
 1. The TKPOA association website (www.tkpoa.com),
 2. The AIS management website (www.keysweedsmanagement.org).

These websites contain information for TKPOA residents and renters about education and training events, lagoon water quality, and water quality friendly landscaping, BMPs, and water conservation. TKPOA's AIS management website continued providing information on ongoing and proposed/future projects with information on harvesting schedules and all past reports for easy reference.

4.1.2. Printed and Physical Materials

- *Monthly Newsletters*: Information, updates, and reminders regarding water-based activities were also distributed to homeowners in the Associations monthly newsletter, *The Keys Breeze*. A digital version is also available on www.tkpoa.com.

- *Educational Display and Brochures:* This program includes displays (e.g., poster) (Figure 4) and informational brochures in the TKPOA Pavilion lobby. The educational brochures address landscaping, existing aquatic invasive species within the Tahoe Keys Lagoons, and locations of every project within the lagoons. The displays are updated regularly with new information regarding activities within the waterways and ways the homeowners can participate.

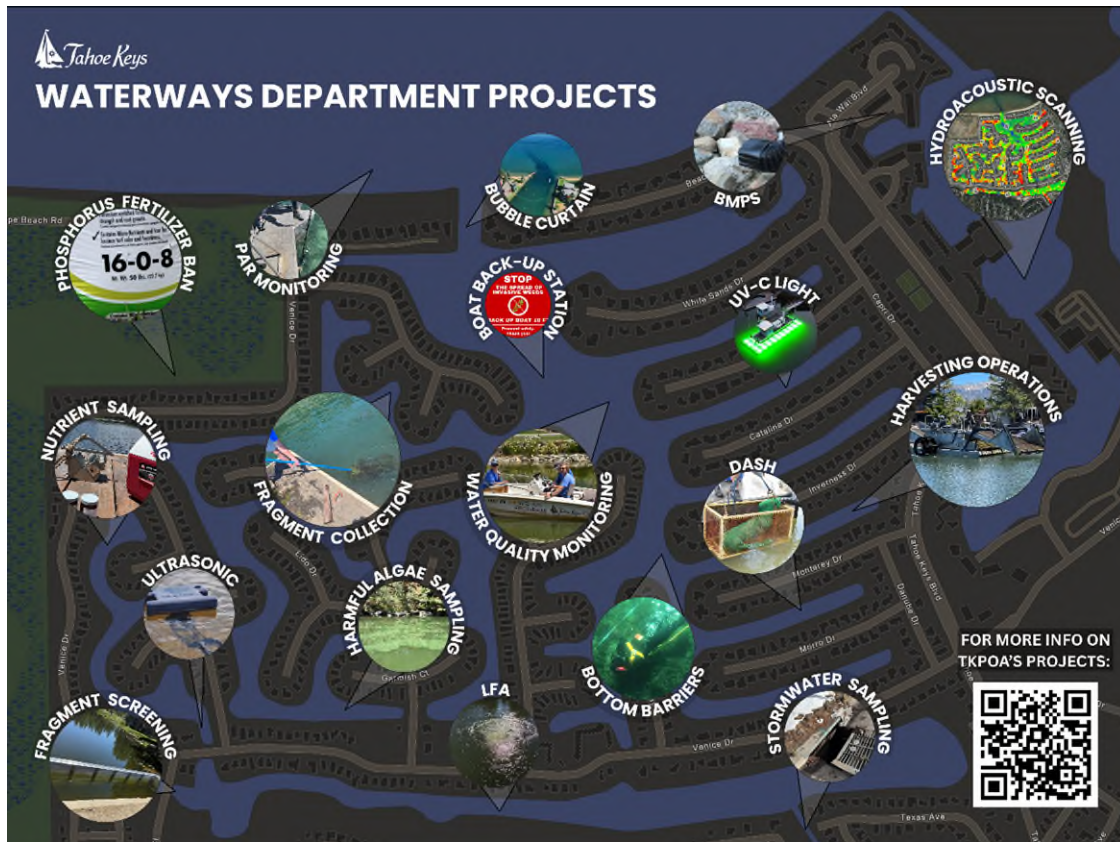


Figure 4. TKPOA Pavilion Lobby Educational Poster

- *Educational Rack Cards:* Informational rack cards were distributed to homeowners to encourage fragment containment promoting the Boat Back-Up Station and the Clean, Drain and Dry principles and as part of and supplying information on the Aquatic Invasive Species (AIS) Program (Figure 5).



Figure 5. Informational rack cards for the Boat Back-Up Station and the Clean, Drain and Dry principles.

4.2 COORDINATED COMMUNITY OUTREACH EVENTS

4.2.1. Training Events

- *Eyes on The Lake*: TKPOA hosted an Eyes on the Lake Training for The League to Save Lake Tahoe (LTSLT) on June 6, 2025.

4.2.2. Educational Outreach

- *Town Hall Forums*: TKPOA held a town hall forum this year. This forum was hosted on February 28, 2025, and provided summaries and updates on the CMT, lagoon activities,

budget breakdowns and partnerships for the Tahoe Keys AIS program for the next four years. Presentations and updates to the homeowners were done regularly in open board meetings. Town Hall Forums will be held on an as needed basis when projects develop, and new information needs to be shared with the homeowners.

- *Webinars:* TKPOA, TRPA and the LTSLT hosted a public webinar on July 18, 2025, that provided updates on the final CMT results. Public webinars will be held on an as needed basis as updates on ongoing and new projects become available.
- *25th Annual Tahoe Truckee Snapshot Day:* On May 5, 2025, TKPOA worked alongside the LTSLT to host a sampling site for their Snapshot Day event. TKPOA staff, along with 6 students from LTCC, volunteered to help guide a sampling event at the Tahoe Keys West Channel entrance to take various water quality measurements from the channel entrance.

5.0 NONPOINT SOURCE WATER QUALITY MANAGEMENT PLAN FOR 2026

5.1 WATER QUALITY IMPROVEMENTS PROJECT EIP

TKPOA will begin the development of an Environmental Improvement Project (EIP), coordinated with TRPA, focused on lagoon water quality (TRPA 2024). This program will run parallel to the Large Scale Weed Removal Project. The goal of the Water Quality Improvements Project EIP is to find solutions that address physical and chemical water quality issues around the lagoons such as stagnation, algae growth and excessive nutrients. Working with neighboring entities and partnering agencies, goals for this project will be pursued over the next two years to find approaches to begin to address specific water quality issues.

5.2 LANDSCAPING

- Continue to encourage homeowners to modify their landscaping to comply with TRPA BMP program and receive the Source Control Certificate.
- Promote incentivizing programs from other agencies such as green lawn buybacks and continue to inform homeowners of these programs.
- Maintain established programs and continue monitoring compliance of the fertilizer phosphorus ban.
- Encourage homeowners to participate in Firewise programs.
- Continue training programs for contractors regarding best practices.
- Continue tree removal.
- Install tamper proof irrigation boxes around common areas.

5.3 STORMWATER

- Continue TRPA collaboration on Tactical Green Infrastructure program.
- Advocate for greater city support in drain cleaning and maintenance. TKPOA will reach out to the CSLT for support in getting regular street sweeping around the community to prevent clogged storm drains and nutrient runoff into the lagoons.
- Continue first flush sampling and compare findings with data from past and other city-established sites.

5.4 OUTREACH

- Strengthen ongoing outreach to both homeowners and the public, with updates to the website and other channels.
- Hold Town Hall Forums and give presentations as appropriate or needed to the homeowners as projects develop as well as regular updates via E-Blasts and articles in the association newsletter to provide reminders updates and changes to waterways items.
- Prepare articles for news media and hold webinars for the public on an as needed basis as new information and updates on projects become available.

- Engage with sailboat owners highlighting AIS fragment accumulation on keels and rudders, and the importance of extra vigilance while using the boat backup station.

5.5 COLLABORATION

- Continue collaboration with the LTSLT on initiatives like cigarette butt collection and water vessel cleaning stations.
- Collaborate on innovative technologies such as drones and beach cleaning robots as they become available.
- Engage with Suntex Marina, Tahoe Keys Beach and Harbor Association, and the Tahoe Keys Village to align water quality efforts in the West and East Lagoons.

6.0 LIST OF PREPARERS

The following individuals prepared the text presented in this report.

NAME	COMPANY	ROLE
Kristine Lebo	Tahoe Keys Property Owners Association	Author, Data Analysis
Katie Terwilliger	Tahoe Keys Property Owners Association	Primary Author, Data Analysis, GIS Mapping, Data Collection
Dr. Andrew Kopania	EMKO Environmental, Inc.	Consulting Author, Editor
Moire Breslin	Tahoe Keys Property Owners Association	Editor, Data Collection
Meghan Hoffmann-Hussey	Tahoe Keys Property Owners Association	Data Analysis, GIS Mapping, Data Collection

7.0 REFERENCES

EMKO Environmental, Inc., 2025a, Tahoe Keys Lagoons Water Quality Improvements Project, Surface Water and Groundwater Hydrology Existing Conditions Report, Final Draft, August 6, 2025.

EMKO Environmental, Inc., 2025b, Tahoe Keys Lagoons Water Quality Improvements Project, Nutrient Existing Conditions Report, Final Draft, August 6, 2025.

Lahontan Regional Water Quality Control Board (Lahontan) 2011. California Regional Water Quality Control Board, Lahontan Region, Board Order No. R6T-2011-0101, Waste Discharge Requirements for the City of South Lake Tahoe Municipal Separate Storm Sewer System (MS4).

Lahontan Regional Water Quality Control Board (Lahontan) 2014. California Regional Water Quality Control Board, Lahontan Region, Board Order No. R6T-2014-0059, WDID No 6A 090089000 for Water Quality Certification and Waste Discharge Requirements for Tahoe Keys Property Owners Association. July 18, 2014.

Tahoe Regional Planning Agency (TRPA) 2014. Best Management Practices Handbook. Published by TRPA. May 2014.

Tahoe Regional Planning Agency (TRPA) 2019. BMP Mapping Tool. Created by TRPA. May 2014. Available at <http://gis.trpa.org/bmpmappingtool>

Tahoe Regional Planning Agency (TRPA) 2024. BMP Action Plan. Environmental Improvement Program – Stormwater Best Management Practices. Available at: <https://www.trpa.gov/programs/environmental-improvement-program/stormwater-bmps/>

Tahoe Regional Planning Agency (TRPA) 2024. Tahoe Keys Lagoon Water Quality Environmental Improvement Project (EIP). Lake Tahoe Info Project Database. Available at: <https://www.laketahoeinfo.org/Project/Detail/4478>

TKPOA 2016. Disclosure Document for the Tahoe Keys Property Owners Association. Tahoe Keys Property Owners Association, South Lake Tahoe, California.

TKPOA 2019b. Pers. Comm. With G. Hoover, TKPOA Water Quality Head Staff, on 2019 NPS Activities, November 2019.

TKPOA 2020a. 2020 Addendum: Integrated Management Plan for Aquatic Weeds for the Tahoe Keys Lagoons.

TKPOA 2020b. Keys Breeze – August 2020.

TKPOA 2026. 2025 Integrated Management Plan for Aquatic Weeds in the Tahoe Keys Lagoons. Prepared for the Lahontan Regional Water Quality Control Board, South Lake Tahoe, California.

8.0 APPENDIX A – BEST MANAGEMENT PRACTICES DEFINITIONS

8.1 TKPOA STORMWATER AND EROSION CONTROL BEST MANAGEMENT PRACTICES

Stormwater and erosion control BMPs are retrofit measures required on all private properties in the Lake Tahoe Region to control erosion and infiltrate stormwater before it leaves the property. This applies to both TKPOA Common Area properties as well as private residential properties. BMPs are proven to prevent sediment, nutrients, and other pollutants from entering waterways. BMPs include pollutant source control measures, which reduce the amount of pollutants present, and hydrological source control measures to direct stormwater and snowmelt runoff so that pollutants are filtered out and prevented from entering surface water.

BMPs are a requirement of the 2014 Lahontan Order issued to TKPOA in 2014. As part of the NPS Plan requirement, the development and implementation of BMPs are specified to help achieve the plan objectives. TKPOA landscape BMPs to minimize controllable NPS nutrient loading include the following:

- Installation of TRPA-approved runoff control BMPs at TKPOA Common Areas and outreach to encourage a goal of 100% BMP compliance by single-family properties.
- Ban of the use of phosphorus-containing fertilizer.
- Management of Common Areas irrigation and townhouse landscaping to limit runoff and promote infiltration/percolation.
- Education and outreach to staff and members regarding the effects on water quality from over fertilizing and over watering through staff trainings and articles in the Keys Breeze newsletter.
- Implementation of a water conservation program where landscape irrigation on Common Areas and single-family properties is limited to three days per week.

Attachment D of the 2014 WDR lists management practices to be considered for control and reduction of pollutants from the Tahoe Keys Common Areas, with additional considerations for private residential neighborhoods (Lahontan 2014).

8.2 COMMON AREA DEFINED

TKPOA is responsible for maintaining areas of recreational turf and accent plantings for TKPOA Common Areas. TKPOA Common Areas include townhouse subdivisions, TKPOA Pavilion and administrative offices, parking lots, open space parks, playgrounds, tennis courts, pools, and the Tahoe Keys Water Company (TKWC) facilities. TKPOA contracts with various landscape maintenance companies, in addition to using in-house staff, to maintain these Common Areas.

The Common Area BMP's are as follows:

1) Water Conservation

- Implementing irrigation schedules to limit water use during drought conditions or according to local regulations.
- Using drought-resistant plants in landscaping to reduce the need for watering.
- Maintaining irrigation systems to prevent leaks and overwatering.

2) Nutrient Management

- Prohibiting the use of phosphorus-containing fertilizers, which can lead to algal blooms in nearby water bodies.
- Encouraging the use of organic or slow-release fertilizers to minimize nutrient runoff.
- Regular soil testing to tailor nutrient applications to actual landscape needs.

3) Sediment Control

- Installing silt fences or similar barriers to prevent sediment from entering waterways during construction activities.
- Maintaining vegetation along shorelines to stabilize soil and absorb runoff.
- Regularly cleaning and maintaining drainage systems to prevent sediment build-up and ensure efficient water flow.

4) Waste Management

- Providing and promoting the use of proper waste disposal facilities, including pet waste stations, to prevent contamination of common areas.
- Encouraging composting and proper yard waste disposal to reduce organic waste runoff.

5) Pest and Weed Control

- Using integrated pest management (IPM) practices to reduce reliance on chemical pesticides.
- Promoting manual or mechanical removal of weeds where possible to avoid herbicide use.
- Educating homeowners about non-toxic alternatives for pest and weed control.

6) Habitat Enhancement

- Planting native species to promote biodiversity and provide habitat for local wildlife.
- Restoring eroded areas and implementing shoreline stabilization projects to improve habitat quality.
- Designating and protecting natural areas within common spaces.

7) Public engagement

- Engaging community members in volunteer opportunities for local environmental projects.

8) Monitoring and Reporting

- Regularly assessing the effectiveness of implemented BMPs through monitoring water quality and other environmental indicators.
- Reporting findings to local water boards or environmental agencies as required.
- Adjusting BMPs based on monitoring results and new environmental research or regulations.

8.3 SINGLE-FAMILY HOMES DEFINED

Most landscaped areas within the Tahoe Keys are under the control of individual homeowners who may maintain their properties or may contract private landscaping companies for maintenance. TRPA acknowledges and tracks BMP installation by inspecting and issuing a BMP Certification or Source Control Certificate (SCC) letter to the property owners. A BMP Certificate certifies that the BMPs are properly installed and functioning on a property. A SCC is for site-constrained properties that cannot infiltrate stormwater on site, but that have otherwise met all sediment source control requirements. Homeowners are requested to inform TKPOA of their certification so that acreage protected by BMPs can be readily tracked and reported. TRPA tracks BMP installations on the publicly available TRPA website <https://gis.trpa.org/bmpmappingtool/>. Based on analysis of parcel data collected by TRPA (<https://gis.trpa.org/bmpmappingtool/>), a total of 35% of TKPOA parcels have BMP Certifications or Source Control Certifications as of December 2023, which is a 2% increase from the prior year. Combined, these certifications cover approximately 36% (88 acres) of an estimated 243 acres of land area owned by TKPOA and association members². Figure 6 shows the BMP status of properties within the association. As of January 2024, the data has not changed since 2023.

To promote installation of BMPs and compliance with TRPA BMP requirements, TKPOA supplies the following information to property owners:

- A Basic Guide to Fertilization and Irrigation Scheduling for Single-Family Homeowners and Property Managers available on TKPOA's webpage.
- Informational displays with rack cards in the lobby of TKPOA's Administrative Office.
- Informational brochures about TRPA-approved BMPs to encourage BMP Certification.
- Reference to the Tahoe Keys Landscape Conservation Idea Book.

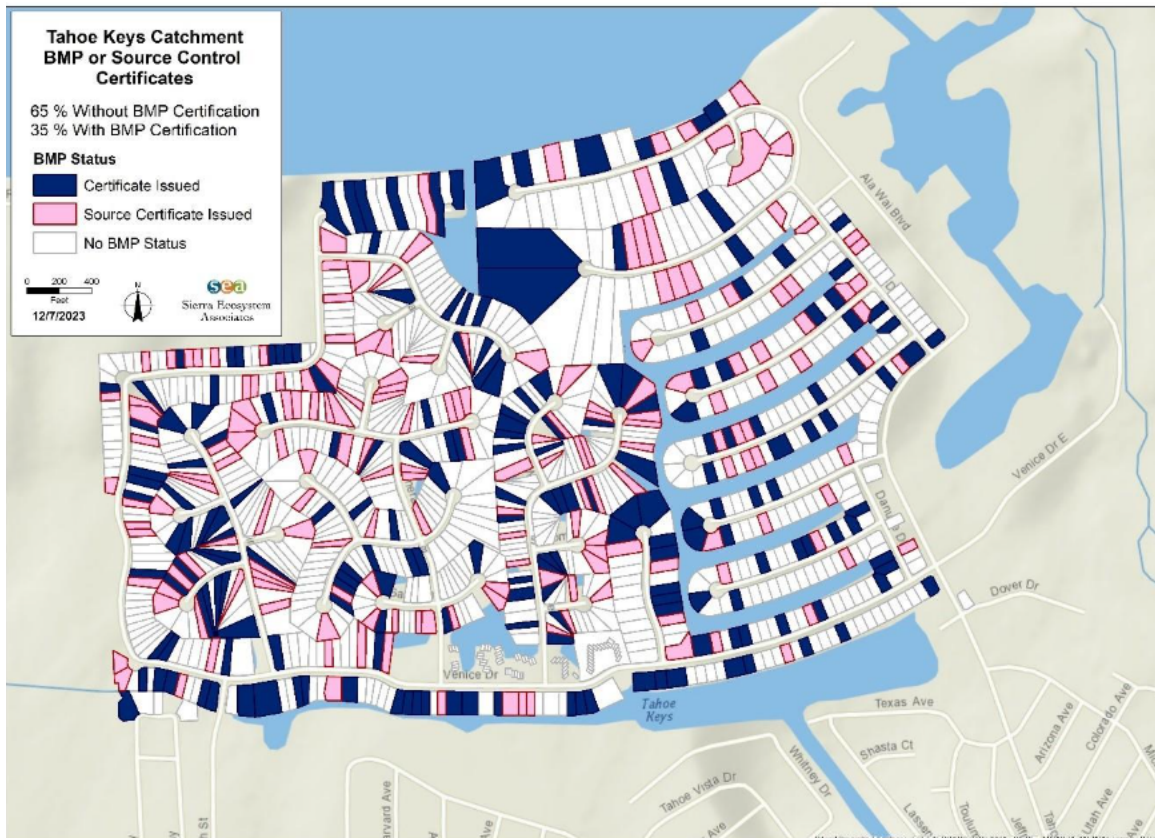


Figure 6. TKPOA parcels with BMP or Source Control Certificates

8.4 BMPS IN THE TAHOE KEYS EDUCATION CAMPAIGN

In 2017 and in coordination with TRPA, TKPOA initiated a second annual educational campaign that laid out the extensive rules and guidelines for BMPs applicable for the Tahoe Keys. Key points of this campaign include the following:

- Soil protections along driveway and under driplines of structures.
- Create a five-foot-wide defensible space zone area around all structures.
- BMP benefits for the environment and for the Tahoe Keys.
- BMP benefits to property values.
- BMP requirement for remodel or addition.
- BMP value in resale.
- Possibility of non-compliance fines.
- Educational materials on how to get a BMP Certificate from TRPA.

9.0 APPENDIX B – DISCONTINUED NPS ACTIVITIES

9.1 LUNCH AND LEARN

In 2017, TKPOA organized the first annual “Lunch and Learn,” an informational event designed to educate property managers, landscape companies, pest control companies, hot tub companies, and nursery company employees on TKPOA’s AIS management plans, landscaping policy and procedures, rules, and regulations. The event includes a TKPOA hosted presentation followed by a free lunch for those in attendance.

The first “Lunch and Learn” had limited attendance. The second, hosted in 2018, had only four representatives from different companies in attendance. TKPOA increased outreach in 2019 to garner additional attendance; however, attendance was limited to three individuals despite the additional outreach. In both 2020 and 2021, while prepared to engage in outreach for “Lunch and Learn,” both events were postponed due to restrictions and social distancing requirements associated with the COVID-19 pandemic.

In 2022, a combination of limited resources and the implementation of CMT Year 1 resulted again in the postponement of the “Lunch and Learn” event. In 2023, TKPOA decided to discontinue the Lunch and Learn event due to limited staff resources and availability through CMT Year 2.

9.2 LAKE TAHOE COMMUNITY COLLEGE

In 2019, TKPOA began collaborating with the Lake Tahoe Community College (LTCC) to allow students access to the TKPOA Waterways for classroom and lab instruction. Specific courses included in this collaboration included: Biology, Ecology, Aquatic Ecology, Environmental Science, and Hydrology. Water Quality Staff provide background and ongoing program information for each of the classes regarding TKPOA Aquatic Weed management activities.

Collaboration with the local community college has not occurred in recent years, except for the water quality sampling described above in Section 4.2.2 as part of the 25th Annual Tahoe Truckee Snapshot Day on May 5, 2025. TKPOA plans to resume a cooperative relationship with LTCC in the future.

10.0 APPENDIX C – CALIFORNIA’S MODEL WATER EFFICIENCY LANDSCAPING ORDINANCE

In 2022, CSLT updated the City’s development standards to incorporate [California’s Model Water Efficiency Landscaping Ordinance](#) (MWELO), to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, onsite stormwater capture, and by limiting the portion of landscape that can be covered in turf. Specifically, items addressed by the CSLT in its update include:

- MWELO requirements apply to any landscape project greater than 500 sqft that requires a permit, plan check, or design review.
- Landscape area means all the planting areas, turf areas, and water features in a landscape design plan. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).
- For new and rehabilitated landscapes subject to MWELO and less than 2,500 sqft, the streamlined Prescriptive Compliance form may be used. The Prescriptive Compliance form is a checklist of landscape standards that are met and documented on the Landscaping Plan.
- For landscaping of any size subject to MWELO, the Performance Compliance Approach can be used. The Performance Compliance approach must be used for landscapes greater than 2,500 sqft. The Performance Compliance approach has additional requirements beyond the Prescriptive Compliance form option. The Performance Compliance approach must include a soil management report, landscape design plan, irrigation design plan, and a grading design plan.

The CSLT passed its MWELO (Ordinance 1167) on October 4, 2022, which includes provisions that are applicable to TKPOA’s Common Area landscaping and other plans.

11.0 APPENDIX D – TAHOE KEYS WATER COMPANY IRRIGATION POLICIES

Tahoe Keys Irrigation Schedule

Group	Street/Streets/Location	Irrigation Days	Time Period for Irrigation
Group 1 (red)	Venice Drive, Tuolumne Drive, Lassen Drive, Shasta Court, Dana Court, Dover Drive and 15th Street	Sunday, Tuesday, and Thursday	1:00AM-3:00AM
Group 2 (teal)	Alpine Drive, Cascade Court, Cathedral Court, Genevieve Court, Tahoe Keys Blvd, Danube Drive, Morro Drive, Monterey Drive and Lucerne Way	Sunday, Tuesday, and Thursday	3:00AM-5:00AM
Group 3 (green)	Texas Avenue, Whitney Drive, Aloha Drive, Daggett Court, and Carson Court	Sunday, Tuesday, and Thursday	5:00AM-7:00AM
Group 4 (purple)	Capri Drive, Inverness Drive, Catalina Drive, Kokanee Way, Crystal Court, and Lido Drive	Monday, Wednesday and Saturday	1:00AM-3:00AM
Group 5 (brown)	Beach Drive, Beach Lane, Beach Court, White Sands Drive, Balboa Drive, Marconi Way, and Garmish Court	Monday, Wednesday and Saturday	3:00AM-5:00AM
Group 6 (blue)	Lighthouse Shores Drive, Emerald Drive, Christie Drive, Traverse Court, Slalom Court, Wedeln Court, and Weir Way	Monday, Wednesday and Saturday	5:00AM-7:00AM
Group 7 (yellow)	TKPOA Townhomes: Cove 1, Cove 2, Cove 2A, Cove 3A, Cove 3B, Cove 3C, Cove 4, Cove 5, Tahoe Marina Shores (TMS), Islanders 1, Islanders 2, and Islanders 3	Sunday, Tuesday, and Thursday	10:00PM-12:00AM
Group 8 (pink)	TKPOA-Owned Common Areas, Mt. Tallac Village 3 (South Tahoe Public Utility District Service)	Monday, Wednesday and Saturday	10:00PM-12:00AM
TOTAL			

Figure 7. Tahoe Keys Irrigation Schedule

Tahoe Keys Irrigation Zone Map

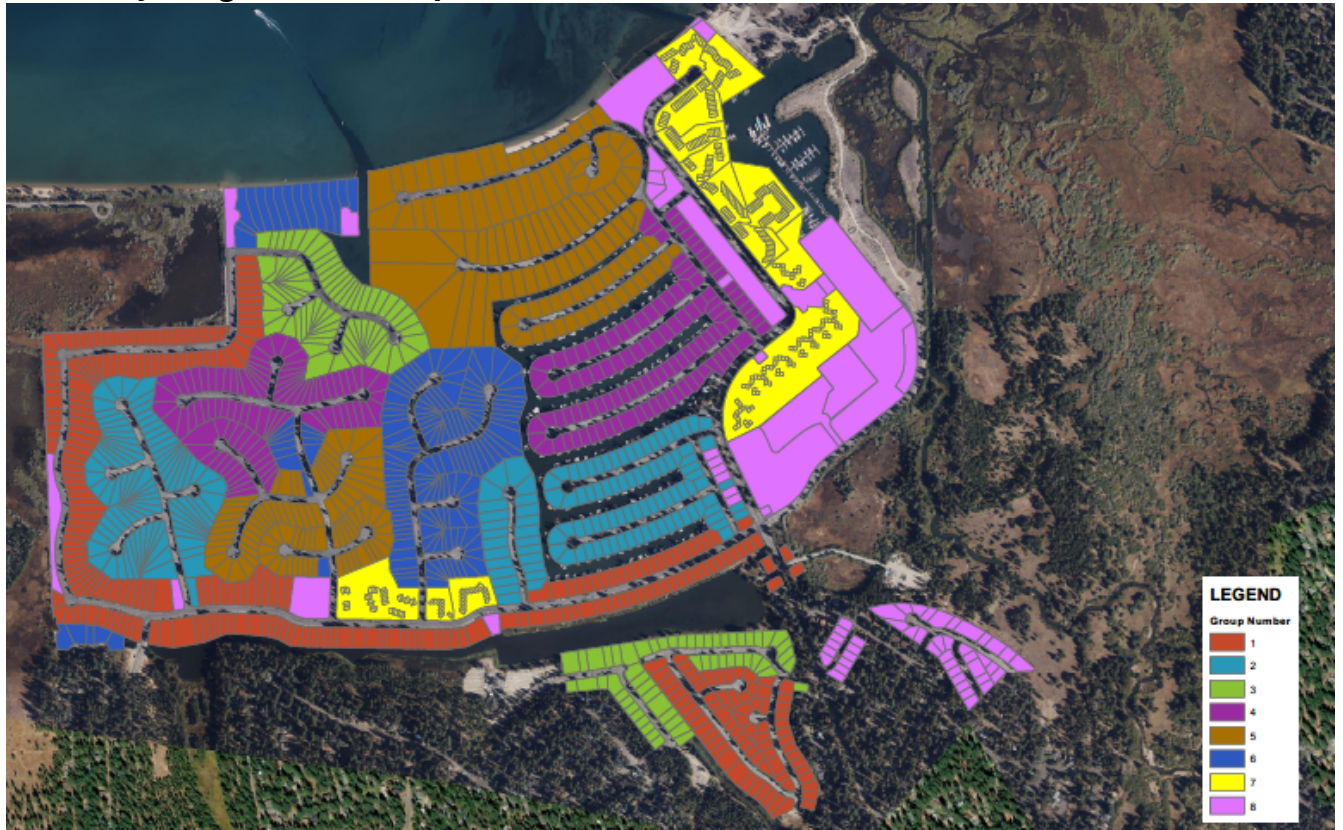


Figure 8. Tahoe Keys Irrigation Zone Map

Tahoe Keys Emergency Rule Notification



EMERGENCY RULE NOTIFICATION

TO: Tahoe Keys Property Owners Association (TKPOA) – Property Owners and Commercial Customers served by the Tahoe Keys Water Company (TKWC)

FR: TKPOA Board of Directors

DT: 04-20-2022

RE: Approved Emergency Rule Change – TKPOA Operating Rules: Section 10 Water Conservation Rules for Landscape Irrigation for all TKPOA Water Serviced Properties and Commercial Customers of the Tahoe Keys Water Company **starting Friday April 1st, 2022.**

On March 16th, 2022 the Board of Directors approved and adopted the following Emergency Rule during the Open Board Meeting. Pursuant to Civil Code Section 4360 (d) an Emergency Rule Change to Section 10 Water Conservation Rules for Landscape Irrigation for all water serviced properties and commercial customers of the TKWC. This emergency rule shall be in effect for 120 days, from April 1st, 2022 – July 29th, 2022.

Starting April 1st, 2022 Landscape Irrigation lawn, turf, and plant material including shrubs, flowers, trees, and foliage is allowed.

At the April 20th, 2022 Board of Directors Meeting, the Board approved a slight revision to allow drip system irrigation per the prior Landscape Irrigation Rule Schedule.

This Emergency Rule Order will extend to all TKPOA Common Areas, all Cove Townhome landscaping, all Single-Family home landscaping, and commercial water customer properties landscaping. The TKPOA Operating Rule Section 10 is enclosed with the 2021-2022 Summer Irrigation Schedule A and Irrigation Map that provided the allocated times by TKPOA Street for irrigation.

The Board of Directors has implemented this Emergency Rule based on the authority granted from the "Tahoe Keys Property Owners Association Rules and Regulations for Water Service" Section 12; Paragraph 12.3 'Public Hazard', and by authority of the Davis Stirling Civil Code §4360 (d) to impose an irrigation landscape rules which are required by the limited TKWC Water Service available because of the natural occurring Uranium contamination of TKWC Wells 2 & 3, and potential threat to personal safety.

Additional Information

Any additional questions can be answered by contacting the TKPOA Front Desk at 530-542-6444 Monday through Friday 8:30AM - 4:30PM, Saturday and Sunday 10:00AM - 2:00PM. Also visit the TKPOA website at www.tkpoa.com. For additional assistance please contact TKPOA Security at 530-545-0847.

Figure 9. Tahoe Keys Emergency Rule Notification

EMERGENCY RULE

EFFECTIVE IMMEDIATELY APRIL 1ST, 2022

TAHOE KEYS PROPERTY OWNERS ASSOCIATION TAHOE KEYS WATER COMPANY

EMERGENCY RULE Water Conservation and Irrigation Section 10

April 1st, 2022 – July 29th, 2022

The TKWC is issuing an Emergency Rule Change to allow landscape irrigation for all water serviced properties and commercial customers. This includes Tahoe Keys Property Owners Association (TKPOA) Common Areas, all Cove Townhome landscaping, all Single-Family home landscaping, and commercial water customer properties landscaping.

SECTION 10 WATER CONSERVATION RULES

10.1 Irrigation Limits. Irrigation shall be calibrated and scheduled to deliver no more than the following:

April 1 – June 1 and September 1 – October 31: 1.0 inches per week (2 Times a Week)

June 1 – August 31: 1.5 inches per week (3 Times a Week)

10.2 Irrigation Scheduling. Subject to the exemptions below, landscape irrigation is permitted only on designated irrigation days, as designated in Schedule A (Attached):

10.3 Exemptions from Irrigation Schedule.

No exceptions to irrigation schedule for new plant material (including new turf), **other than drip irrigation systems as reviewed by Architectural Control and per the prior irrigation rule schedule. Drip irrigation systems must comply with the Irrigation Limits listed in Section 10.1.**

10.03a Drip Irrigation Schedule

- Even Numbered Street Addresses: Monday, Wednesday, and Friday
- Odd Numbered Street Addresses: Sunday, Tuesday, and Thursday
- Landscape irrigation on Saturday is prohibited.

10.4 Prohibited Activities. No Owner, nor an Owner's tenant, contractor, employee, or agent may engage in any of the following activities:

Irrigation is Prohibited on Memorial Day Weekend, July Fourth Weekend, and Labor Day Weekend
Allowing water to flow over the ground surface or from sprinklers onto surfaces that are not able to absorb water or onto neighboring properties.

Use of a hose without an automatic shut-off nozzle.

Use of water to wash sidewalks, driveways, parking areas, tennis courts, decks, patios, or other improved areas.

Any activity prohibited by federal, state, or local law or regulation.

Figure 10. Tahoe Keys Emergency Rule

12.0 APPENDIX E – WILDFIRE ACTION PLAN

Draft 1: Sept. 20, 2023

Tahoe Keys Firewise USA Recognition Program “Action Plan

Year 1 (2023)

Apply for Firewise USA certification and establish the Tahoe Keys neighborhood as a Firewise USA community.

Continue regularly scheduled meetings with the Tahoe Keys Neighborhood Firewise USA Committee and the South Lake Tahoe Fire Rescue (SLTFR) to develop and implement defensible space and home hardening strategies and activities.

Plan and conduct a minimum of one public education/meeting/activity each year. Events may include a fire prevention safety day, or a “clean up day” in coordination with SLTFR as well as addressing other topics such as evacuation preparedness, Go-Bags, and the importance of residents/volunteers in performing and reporting the number of hours spent reducing fire fuels and doing recommended “home hardening” fire prevention.

Conduct a town hall to inform the community of the steps involved in becoming a Firewise Community and our progress to date. This meeting will also include information about what individual TKPOA members can do to support the endeavor.

Develop mailing (electronic and through the Keys Breeze) to Tahoe Keys residents, property owners, commercial properties and the TKPOA within the Tahoe Keys community.

Develop and maintain a Tahoe Keys Firewise USA community website, attached to the existing TKPOA website.

Develop a risk assessment checklist for the Tahoe Keys community.

Perform an initial survey of approximately 300 parcels to determine a baseline of the condition of the Tahoe Keys related to adherence to Firewise USA standards. Based on the information identified in the risk assessment:

- Initiate an effort to standardize address markings.
- Assess properties owned and managed by the TKPOA to advise the TKPOA on actions needed to mitigate wildfire risk and ensure defensible space compliance with California’s state-mandated program.
- Seek community cooperation/support to reduce combustible material by 50% in the next 3 years to mitigate the potential for tree torching and ember production during a wildfire.

Year 2 (2024)

Continue to expand 2023 efforts by conducting outreach programs that focus on wildfire awareness, fuel reduction, vegetation management, home hardening and evacuation preparedness.

Develop and initiate fundraising activities to offset costs and provide additional local services to residents/property owners.

Develop a program utilizing volunteers to complete home defensible space assessments for residents/property owners.

Cooperate with the TKPOA to manage properties owned by the TKPOA and with commercial properties to advise on their improvement initiatives.

Continue to seek community support to reduce combustible materials by 50% in the next 3 years.

Conduct a town hall to keep homeowners apprised of the efforts to become a Firewise USA Community.

Year 3 (2025)

Review all educational efforts and expand upon awareness of the threat of wildfire risks within the Tahoe Keys Firewise USA community.

Continue to emphasize that all residents/property owners should maintain defensible space in the “Lean, Clean and Green” zone (0-30 feet) and that adequate treatment of fuels in the “Reduced Fuel Zone” (30-100 feet) will provide additional protection to improve the survivability of their home and other structures within the Tahoe Keys community.

Conduct a town hall to keep members of the TKPOA apprised of the progress of the Tahoe Keys Firewise community.

13.0 APPENDIX F – TRAINING GUIDE: LANDSCAPE PRACTICES FOR TKPOA COMMON AREAS

Reducing nutrient and irrigation runoff are essential steps to take to reduce nonpoint source pollution in the Tahoe Keys waterways. Landscape professionals and maintenance workers can prevent nonpoint source water pollution by complying with rules and requirements of the Nonpoint Source Plan (NPS Plan) for the Tahoe Keys Property Owners Association

The guidelines presented below are taken from several sources of information including publications from the University of Nevada, Reno (UNR), University of California, Davis, Agriculture and Natural Resources Department.

All landscape maintenance companies under contract with the TKPOA and TKPOA landscape maintenance staff are required to comply with the guidelines in this chapter to minimize the use of fertilizers and to minimize the potential for water run-off from irrigated areas. These guidelines are subject to change and maintenance company staff members are to review these guidelines annually and provide notice to TKPOA by signing the attached acknowledgment sheet.

These Guidelines describe required practices for fertilization and irrigation scheduling in the Tahoe Keys development. Recommended practices for landscape maintenance are also discussed.

In addition to following the required practices, landscape companies are required to file reports to the TKPOA to demonstrate compliance. These reports are in worksheet format and directions for reporting are described.

Following the practices described here will protect the waterways while maintaining healthy landscapes.

General Consideration: Soil Type of the Tahoe Keys Development

Fertilization and irrigation requirements are dependent on the soil as well as the type of plant. The Tahoe Keys development has a uniform soil type (Oxyaquic xerothents) that was created when the lagoons were formed. The soil has a cap of decomposed granite that drains quickly to the finer textured soil below. The coarse textured decomposed granite drains quickly, does not have a high capacity to hold water, and may not have a sufficient nutrients for satisfactory plant growth. Given the limitations of this soil, landscape plants may need fertilization and water. Therefore, fertilizer and water must be added in small amounts at any one time because the soil does not retain either for an extended time.

Fertilizer Use: Turf

Proper fertilization is essential for healthy turf. Proper fertilization includes applying at the proper time, using the proper amount and type of product, using the proper application method, and following the manufacturer's directions. Fertilizing properly provides sufficient nutrients present for plant health and reduces the chance that excess nutrients leach out of the soil or runoff from the site of application.

Timing of application

In the Tahoe Keys development, turf will be fertilized twice per year.

- Fall application: fertilizer will be applied when the average daily temperature is below 50° F (typically by August 31)
- Spring application: fertilizer will be applied after snowmelt and when soil temperatures reach 50° to 65 °F (typically by May 1) •
- Never apply fertilizer to frozen ground

Type and amount

- Only phosphorous-free fertilizers can be used in the Tahoe Keys development. Actual brands and formulations are the responsibility of the landscape contractor who should rely on their knowledge and familiarity with local conditions.
- Fast-release types are preferred for most areas.
- Slow-release type fertilizer may be used when working in close proximity to open water. Otherwise, its use is restricted to the spring application.
- No more than one pound of nitrogen per 1,000 square feet of turf will be applied at any one time, for a total applied amount of no more than two pounds of nitrogen in a year.

Application Method

Care must be taken to keep fertilizers out of the surrounding waterways.

- Fertilizers may never directly enter the waters of the lagoons of the Tahoe Keys. Establish a 10-foot buffer from open water when using a drop or rotary spreader with a deflector. Slow-release fertilizers are recommended for use near open water.
- Any fertilizer reaching hard surfaces such as sidewalks or streets will be swept back onto the turf or swept up and discarded.
- Fertilizer must not be washed or swept into storm drains.
- Manufacturer's recommendations for application must be followed.
- Spreaders or sprayers for fertilizer must be calibrated correctly and according to manufacturer's directions.

Record-keeping and Reporting by Landscape Contractors

All landscape maintenance staff will record type, amount, location, date and time of fertilizer applications using the "Fertilizer Application Record", found at the end of this section. Companies will provide a sample label (clean copy or photo of label are acceptable) of the fertilizer with the invoice wherein payment for fertilizer application is requested.

Fertilizer Use: Landscape plants

Trees and shrubs have different fertilizer requirements than turf. Fertilizer is not food. It is beneficial when needed but is not a cure-all for ailing plants and in fact, over-fertilizing can result in plants that are more prone to disease or insect damage.

Prior to adding fertilizer, the following must be considered:

1. Conduct a soil test to determine pH and nutrient levels. The availability of nutrients is influenced by soil pH. Add the proper amendments to make sure the pH is proper first and add additional nutrients only if necessary.
2. Inspect the signs of poor growth. Twig or branch die back or unusual coloring of leaves may not be related to nutrient availability. These signs could be symptoms of compacted soil, insect infestation, disease, or adverse weather conditions. Rule out these causes before applying unneeded fertilizer.
3. Consider the location: trees and shrubs growing in sandy soils with little organic matter may benefit from fertilizer application. Plantings growing in or near turf should not require additional fertilizer.

If plants in the Common Areas show signs of nutrient deficiency, the landscape contractor will advise TKPOA of the need for soil or plant testing and costs associated with the testing. If tests indicate a nutrient deficiency, TKPOA and the landscape contractor will identify the appropriate product to be applied, timing of application and method. A summary of this application will be provided to TKPOA to include in the annual report for review through the adaptive management component of the NPS Plan.

If the landscape contractor recommends fertilization, the guidelines described above for turf fertilization will be followed, including observing the prohibition on phosphorous-containing products, establishing buffer zones from open water, and sweeping up fertilizer that lands on pavement.

Timing of application

Apply fertilizer when roots are actively growing and can easily take up the nutrients. This is typically early summer and early fall in the South Lake Tahoe area, when soil temperatures are 50° to 65° F.

Type and amount

Slow-release types may be preferred for trees and shrubs. This is left to the discretion of the landscape contractor.

Standard rates for landscape fertilization are the same as for turf: no more than 2 pounds of nitrogen applied per 1,000 sq ft of root area per year.

Irrigation

Irrigation efficiency

Landscape contractors will complete an irrigation audit in turf areas by using a standard test (commonly called a catch can test) to determine average volume of water delivered. For an example of this test see: “Irrigation System Auditing”, available at <http://Earthkind.tamu.edu>. This testing will be conducted in 2016 for all areas of turf in the Common Areas. The results of the catch can test will be submitted to the TKPOA and will be used to determine the irrigation schedule. Once the system has been evaluated, this will not need to be repeated unless there are significant changes made to the system, such as adding lines, valves, or replacing the majority of sprinkler heads.

Irrigation will be scheduled to deliver no more than:

- Spring and Fall: 1.5 inches per week
- July and August: 2.0 inches per week

Irrigation controllers will be set to deliver water in short intervals as described above. Landscape contractors will provide the irrigation schedules to TKPOA and demonstrate how the schedule complies with these parameters.

Water conservation

Water should never be wasted. Landscape professionals will be held to the Mandatory Conservation Rules for the Tahoe Keys:

- Designated irrigation days are
 - Even numbered street addresses: Monday, Wednesday, and Friday.
 - Odd numbered street addresses Sunday, Tuesday, and Thursday.
 - No irrigation between 6:00 a.m. and 9:00 a.m
- Do not allow water to flow over the ground surface or from sprinklers onto surfaces that are not able to absorb water or on neighboring properties.
- Repair all leaks in plumbing and irrigation systems.
- The irrigation on non-landscaped, natural vegetation or undeveloped property is prohibited.
- Always use an automatic shut-off nozzle on hoses. Continuous discharge from a hose is prohibited.
- Water shall not be used to wash sidewalks, driveways, parking areas, tennis courts, decks, patios or other improved areas.
- Water use in water features such as fountains is prohibited unless the water is recirculated.
- Landscape irrigation on Saturday is prohibited.
- Drip irrigation systems and hand watering with an automatic shut-off nozzle are exempt from the designated irrigation days.

- Exemptions are:
 - o Newly planted sod will be exempt for 21 days from date of installation.
 - o Seeded lawns, whether by hydro seeding or other means, will be exempt for 30 days from date of seeding.
 - o Bedding plants, including annuals and perennials, will be exempt for 15 days from date of planting.

Inspections

This section describes the routine inspections required for irrigation systems, Best Management Practice (BMP), and protocols to be used by landscape professionals and workers. In addition, in, all areas are subject to routine inspection by TKPOA staff and the General Manager.

Irrigation System Inspection Schedule and Protocol

Irrigation systems will be inspected weekly when system is running, typically late spring to early fall in the Tahoe Keys area.

Inspection Protocol: See worksheet attached. Landscape professionals may substitute their own worksheets and inspection protocol for the attached worksheet with approval from TKPOA General Manager.

1. Visually inspect the irrigated area for signs of water runoff and signs of ponding water.
2. Briefly test system for leaks, broken heads, or broken pipes. Flag as needed and repair immediately.
3. Log inspection and repair on weekly inspection form, attached.
4. Submit all weekly reports to TKPOA General Manager's office at end of irrigation season or by October 31 for inclusion in annual report.

Inspection and Maintenance for other BMPs

For detention areas and rain gardens, and infiltration systems: Inspect annually for clogging, damage. Replace failing plants, remove accumulated debris. Dispose of debris properly. For slotted drains: clean twice annually, after snowmelt and prior to snowfall. Sweep out debris rather than flush out with high-pressure water. Complex installations may require additional maintenance. Follow TRPA-recommended guidelines for system maintenance.

Reporting

A brief report with the dates and descriptions of the inspections and maintenance performed must be filed with the TKPOA General Manager's office at end of irrigation season or by October 31 for inclusion in annual NPS Report.

Other considerations for Landscaped Areas

- o Recycling grass clippings is encouraged to return nutrients to the soil. Clippings must not be discharged to sidewalks or other impervious surfaces.
- o The use of natural fertilizers, such as composted sewage sludge, composted manures or complete fertilizer blends is encouraged. These products have low concentrations of nutrients but can be beneficial because they release the nutrients slowly, contain micronutrients that are necessary for plant growth, and can improve soil structure and water holding capacity.

Summary

Landscape professionals and maintenance workers can demonstrate reduction in NPS pollution by completing and filing the following reports with the TKPOA General Manager:

- Fertilizer Use
- Irrigation Scheduling
- Irrigation Inspection
- BMP Inspection and Maintenance

14.0 APPENDIX G – ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

ACC	Architectural Control Committee
AIS	Aquatic Invasive Species
BMPs	Best Management Practices
CC&Rs	Covenants, Conditions and Restrictions
CSLT	City of South Lake Tahoe
EIP	Environmental Improvement Project (TRPA)
IMP	Integrated Management Plan for Aquatic Weeds for the Tahoe Keys Lagoons
GIS	Geographic Information System
Lahontan	Lahontan Regional Water Quality Control Board
LTCC	Lake Tahoe Community College
LTSLT	The League to Save Lake Tahoe
MWEL	Model Water Efficient Landscaping Ordinance
NPS	Nonpoint sources
NPS Plan	Nonpoint Source Water Quality Management Plan for the Tahoe Keys Property Owners Association
NZMS	New Zealand Mud Snail
SCC	Certification or Source Control Certificate
The League	The League to Save Lake Tahoe
TKPOA	Tahoe Keys Property Owners Association
TMS	Tahoe Marina Shores
TRCD	Tahoe Resource Conservation District
TRPA	Tahoe Regional Planning Agency
WDR	Waste Discharge Requirements