ATTACHMENT A: EIS CERTIFICATION FINDINGS

The following findings in Chapter 3: *Environmental Documentation*, Chapter 4: *Required Findings*,Chapter 60: *Water Quality*, and Chapter 80: *Shorezone* of the TRPA Code of Ordinances must be made in order to approve the project:

Chapter 3 Required Findings for Environmental Impact Statement

Certification Findings: Pursuant to TRPA Rules of Procedure, Certification is defined as a finding that the final Environmental Impact Statement (EIS) is in compliance, procedurally and substantively, with Article VII of the Compact, Chapter 3 of the Code, and Article 6 of the Rules of Procedure. The following Certification Findings have been prepared for the Tahoe Keys Lagoons Aquatic Weed Control Methods Test Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

These Certification findings are divided into two sections (A & B). *Section A* includes the findings for: (1) the requirements for preparation of an EIS pursuant to Code Section 3.7.1 and TRPA Compact VII(a)(1, 3, and 4) and VII(b); (2) minimum contents of an EIS pursuant to Code Section 3.7.2 and TRPA Compact VII(a)(2); (3) inclusion of Other Data and Information pursuant to Code Section 3.7.3 and TRPA Compact VII(c); (4) Draft EIS requirements of Rules of Procedure 6.13; and (5) Final EIS requirements of Rules of Procedure 6.14. Section B includes the Compact Article VII(d) and Code of Ordinances Section 3.7.4 findings for each significant effect identified in the Environmental Impact Statement for the project.

A. (1) Code Section 3.7.1 (see also TRPA Compact VII(a)(1), (3) and (4))

3.7.1 Preparation of EIS

When preparing an EIS, TRPA shall:

A. Utilize a systematic interdisciplinary approach that integrates natural and social sciences and the environmental design arts in planning and decision making that may have an impact on man's environment;

B. Study, develop, and describe appropriate alternatives to recommended courses of action for any project that involves unresolved conflicts concerning alternative uses of available resources;

C. Consult with and obtain the comments of any federal, state, or local agency that has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate federal, state, and local agencies that are authorized to develop and enforce environmental standards shall be made available to the public and shall accompany the project through the review processes; and

D. Consult the public during the environmental impact statement process and solicit views during a public comment period of not less than 60 days.

RATIONALE: The EIR/EIS consulting team, TRC and Environmental Science Associates, utilized a multidisciplinary team of experts and a systematic interdisciplinary approach in the preparation of the EIS, which insures the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making that may have an impact on man's environment; The document includes a reasonable range of action alternatives consistent with the requirements of the Tahoe Regional Planning Agency (TRPA) ordinances and procedures, and the California Environmental Quality Act (CEQA); the consultant team consulted with and obtained comments from representative federal, state and local agencies which have jurisdiction by law or special expertise with respect to any environmental impact involved with the project's location and sphere of influence; and the Lahontan Regional Water Quality Control Board (Lahontan), and TRPA, distributed the Draft Document to various public agencies, the California and Nevada State Clearinghouses, citizen groups, and interested individuals for a 60-day public review period, from July 6, 2020 to September 3, 2020.

(2) Code Section 3.7.2 (see also TRPA Compact VII(a)(2))

Contents of EIS

An EIS shall include, at a minimum, the following:

- Description of the project;
- The significant environmental impacts of the proposed project;
- Any significant adverse environmental effects that cannot be avoided should the project be implemented;
- Alternatives to the proposed project;
- Mitigation measures that must be implemented to assure meeting standards of the region;
- The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity;
- Any significant irreversible and irretrievable commitments of resources that would be involved in the proposed project should it be implemented; and
- The growth-inducing impact of the proposed project.

RATIONALE: The EIR/EIS includes a description of the proposed project and project alternatives. The EIR/EIS includes identification of potential environmental impacts of the proposed project and the project alternatives; through the analysis of the EIR/EIS no adverse environmental effects that cannot be avoided were identified (all potential impacts can be reduced to a level of insignificance through mitigation measures and/or resource protection measures); the EIR/EIS includes an analysis of three action alternatives, including the proposed project alternative, and a no-project

alternative. The EIR includes an analysis of all proposed mitigation measures which must be implemented to assure meeting standards of the region; the EIR/EIS includes an analysis of the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; the EIR/EIS includes an analysis of any significant irreversible and irretrievable commitments of resources which would be involved in the proposed project should it be implemented; and the EIS includes an analysis of the growth-inducing impact of the proposed project and alternatives.

(3) Code Section 3.7.3 (see also TRPA Compact VII(c))

Inclusion of Other Data and Information

An environmental impact statement need not repeat in its entirety any information or data that is relevant to such a statement and is a matter of public record or is generally available to the public, such as information contained in an environmental impact report prepared pursuant to the California Environmental Quality Act or a federal environmental impact statement prepared pursuant to the National Environmental Policy Act of 1969. However, such information or data shall be briefly described in the environmental impact statement and its relationship to the environmental impact statement shall be indicated.

RATIONALE: The EIR/EIS refers to the entirety of information and data which are relevant to the preparation of the document and are a matter of public record or are generally available to the public. All relevant information or data referred to in the EIR/EIS includes a brief summary of the information or data and explains its relationship to the EIS.

(4) Rules of Procedure 6.13

DRAFT EIS

Upon a determination of the scope of the EIS, a draft EIS shall be prepared. The draft EIS shall include, at a minimum, the elements listed in subsection 3.7.2 of the Code and a list of all federal, state, and local agencies or other organizations and individuals consulted in preparing the draft.

RATIONALE: A draft EIR/EIS was prepared and it included all of the elements listed in subsection 3.7.2 of the Code and a list of all federal, state, and local agencies or other organizations and individuals consulted in preparing the draft.

6.13.1 Summary

A draft EIS in excess of 30 pages shall include a summary, preferably less than ten pages in length, which identifies at a minimum:

A. A brief project description;

B. Each significant adverse effect with a summary of proposed mitigation measures or alternatives that would reduce or avoid that effect; and

C. Areas of controversy known to TRPA.

RATIONALE: The draft EIR/EIS exceeds 30 pages and included a summary with a brief project description; a table with each adverse effect with a summary of proposed mitigation measures or alternatives that would reduce or avoid that effect; and areas of controversy known to TRPA.

6.13.2 Comment Period

The draft EIS shall be circulated for public comment for a period not less than 60 days. TRPA may hold a public hearing on a draft EIS.

RATIONALE: The draft EIR/EIS was circulated for public comment for a period not less than 60 days, between July 6, 2020, and September 3, 2020.

6.13.3 Notice of Comment Period

The comment period shall not commence before the date of publication of a notice in a newspaper whose circulation is general through the region. The notice shall include a brief description of the project or matter under consideration, the date the comment period commences, the date by which comments must be received, and that copies of the draft EIS may be obtained by contacting TRPA and are available for public review at TRPA's offices. Copies of the draft EIS shall be mailed to California and Nevada state clearinghouses and appropriate federal agencies, on or before the beginning date of the comment period. Notice of the comment period shall be given to affected property owners pursuant to Article 12 of these Rules.

RATIONALE: Notice of the comment period was accomplished as described in Rule of Procedure 6.13.3.

6.13.4 Request for Comments

TRPA shall request comments on draft EISs from any federal, state or local agency that has jurisdiction by law or special expertise with respect to any environmental impact involved. Notice of a request for comments shall be given by deposit of the request, in the U.S. Mail, first class mail, postage prepaid. Notice shall be given no later than the date the comment period commences. Separate notice under this section is not necessary if notice of the draft EIS has been given to the Agency pursuant to subsection 6.13.3 above.

RATIONALE: Requests for comments on the draft EIR/EIS from any federal, state or local agency that has jurisdiction by law or special expertise with respect to any environmental impact involved was accomplished through the Notice of Comment Period set forth in Rule of Procedure 6.13.3 or a Request or Comments under Rule of Procedure 6.13.4, or both.

6.13.5 Extension of Comment Period

TRPA may extend the comment period for good cause. Notice of extension shall be posted at TRPA offices. TRPA is not required to respond to late comments but may elect to do so.

RATIONALE: The draft EIR/EIS was circulated for public comment between July 6, 2020, and September 3, 2020, and the comment period was not extended.

(5) Rules of Procedure 6.14

6.14 FINAL EIS

6.14.1 At the conclusion of the comment period, TRPA shall prepare written responses to all written comments received during the comment period, and may respond to oral or late comments. The response to comments may be in the form of a revision to the draft EIS, or may be a separate section in the final EIS that shall note revisions to the draft EIS, if any. The final EIS shall include, at a minimum:

A. The draft EIS, or a revision;

B. Comments received on draft, either verbatim or in summary;

C. The responses to comments; and

D. A list of persons, organizations, and agencies commenting in writing on the draft EIS.

6.14.2 The final EIS may incorporate by reference computer data recorded on disk, videotape, slides, models, and similar items provided summaries of such items are included in the final EIS. The final EIS may also include oral testimony given at APC or Board hearings.

RATIONALE: The final EIR/EIS includes the draft EIR/EIS, comments received on the draft EIR/EIS, responses to the comments received, and a list of persons, organizations and agencies commenting in writing on the draft EIR/EIS.

REQUIRED FINDINGS FOR THE PROPOSED PROJECT

B. COMPACT ARTICLE VII(D) AND CHAPTER 3 FINDINGS

When acting upon matters that would result in a significant environmental effect, the Compact and Code require that separate written findings are made for each significant effect identified in the environmental impact statement (Compact Article VII[d], Chapter 3 of the Code of Ordinances). For each significant effect one of two findings must be made:

1. Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level; or

2. Specific considerations, such as economic, social, or technical, make infeasible the mitigation measure or project alternatives discussed in the environmental impact statement on the project.

The EIR/EIS identified a number of potentially significant environmental effects (or impacts) that the Tahoe Keys Lagoons Aquatic Weeds Control Methods Test Project will cause or contribute to. These significant effects can be avoided or substantially lessened through the adoption of feasible mitigation measures, and some can be avoided or substantially lessened by resource protection measures incorporated into the proposed project test design (resource protection measures are part of how activities in the project or alternatives were planned). The Governing Board's findings with respect to the proposed project's potentially significant effects and mitigation measures are set forth in the following discussions.

These discussions do not attempt to describe the full analysis of each environmental impact contained in the EIR/EIS. Instead, they provide a summary description of each impact, describe the applicable mitigation measures identified in the EIR/EIS, previously adopted by Lahontan, and now adopted by the Governing Board, and state the Governing Board's findings on the significance of each impact after imposition of the adopted mitigation measures. A full explanation of these environmental findings and conclusions can be found in the draft EIR/EIS and final EIR/EIS, or elsewhere in the record, and these findings hereby incorporate by reference the discussion and analysis in those documents supporting the EIR/EIS's determinations regarding the proposed project's impacts and mitigation measures designed to address those impacts. In making these findings, the Governing Board ratifies, adopts, and incorporates into these findings the analysis and explanation in the draft EIR/EIS, the final EIR/EIS, or elsewhere in the record, and ratifies, adopts, and incorporates in these findings the determinations and conclusions of the draft EIR/EIS and final EIR/EIS relating to environmental impacts and mitigation measures, except to the extent any such determinations and conclusions are specifically and expressly modified by these findings.

The Governing Board has adopted all of the mitigation measures identified in the following discussions. Some of the measures identified are also within the jurisdiction and control of other agencies. To the extent any of the mitigation measures are within the jurisdiction of other agencies, the Governing Board finds those agencies should implement those measures within their jurisdiction and control.

ENVIRONMENTAL HEALTH

1. **Potentially Significant Effect: Herbicide Applicator Exposure and Health (Issue EH-1).**

Herbicide applicators could suffer health effects due to exposure during application of herbicides. Only the risks of acute exposure are pertinent since the limited testing period would assure that no chronic exposures would occur.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level.

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

There is a risk to the health of workers handling and applying herbicide products unless precautions are taken to protect them. Endothall is toxic if inhaled, may be harmful if swallowed, and may cause skin irritation or serious eye damage. Triclopyr is not metabolized by humans but is excreted unchanged in the urine. Triclopyr does not pose an inhalation risk but can cause skin irritation or eye corrosion.

Given that the Proposed Project includes a one-time application of herbicides at several test sites, only the risks of acute exposure to the herbicides were evaluated since no chronic exposures over months or years are likely to occur as part of the Proposed Project. The potential acute effects of the herbicides were determined by a review of the available literature, as well as Safety Data Sheets from the herbicide manufacturers.

The registration labels and Safety Data Sheets for each herbicide product specify the proper methods for handling and applying the chemicals, personal protective clothing requirements, and other precautions to protect workers, all of whom must be certified by the State as qualified applicators.

Applicator Qualifications (Mitigation EH-1) reduces potential impacts to a less than significant level by requiring that herbicide applications would be performed only by Qualified Applicator License (QAL) holders, who would be trained to follow NPDES permit requirements, use proper personal protective equipment, and follow product label specifications.

2. **Potentially Significant Effect: Detectable Concentrations of Herbicides and Degradants in Receiving Waters. (Issue EH-2).**

Impacts could occur if detectable concentrations of active ingredients and chemical degradants of herbicides proposed for testing persisted in lagoon waters. The environmental fate and persistence of each herbicide proposed for testing in the West Lagoon and Lake Tallac are defined in the literature. There is a potential for excess discharge concentrations if an herbicide product were spilled.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCITON BY MITIGATION

Detectable concentrations of discharged herbicides and their degradants would be controlled as a temporary condition allowable only for weeks to months. Potential impacts from accidental spills or overapplication are reduced to less than significant through the following mitigation measures:

Spill Prevention and Response Plan (Mitigation EH-2, EH-3a, EH-4): A spill prevention and response plan would be implemented by a QAL holder to minimize and contain any spills during herbicide mixing and application, submitted for review as required by permitting agencies, and implemented at the work sites.

Aeration (Mitigation EH-6b): Aeration technologies would be implemented at each herbicide test site after target aquatic weeds die back from the herbicide application. Aeration during plant decomposition would increase aerobic microbial degradation and reduce the risk of HABs by breaking up thermal stratification, reducing near-surface water temperature and stabilizing pH conditions. The aeration systems would be continually operated until herbicide active ingredients and degradants are no longer detected above background concentrations.

3. **Potentially Significant Effect: Introduction of Toxic Substances into the Environment. (Issue EH-4).**

Impacts could occur if detrimental physiological responses could occur when humans, plants, animals, or aquatic life are exposed to the herbicides proposed for testing. Exposure could occur due to spills or in the course of application of the herbicides. Acute toxicity levels for each herbicide are defined by the USEPA. The maximum allowable application rates for each herbicide determine the potential for effects.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCITON BY RESOURCE PROTECTION MEASURE

The herbicides proposed for testing would not have acute or chronic toxicity to fish or invertebrates, and even minimal dilution would prevent concentrations from exceeding drinking water criteria at drinking water intakes.

Spill Prevention and Response Plan (Mitigation EH-2, EH-3a, EH-4): A spill prevention and response plan would be implemented by a QAL holder to minimize and contain any spills during herbicide mixing and application.

4. **Potentially Significant Effect: Short-term Increases in Aluminum Concentrations. (Issue EH-5).**

Aluminum persistent in sediments of the lagoons could be mobilized into the water column by project activities. If mobilized, it could affect aquatic life. The USEPA defines acute and chronic water quality criteria for the protection of aquatic life.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCITON BY MITIGATION

The sediments in the Tahoe Keys lagoon bottom have pre-existing high concentrations of aluminum. Short-term increases of aluminum concentrations in lagoon water may occur in treatment areas during sediment disturbance caused by project activities such as installation, startup and removal of aeration systems, or installation and removal of bottom barriers and turbidity curtains. The potential for concentrations of aluminum to reach levels associated with toxicity to aquatic life is a function of the amount of turbidity in the water from disturbed sediment. Samples analyzed as part of the baseline study showed that disturbance of sediments could potentially result in total recoverable aluminum concentrations that exceed the short-term exposure criteria and cause harm to aquatic life.

Best Management Practices (Mitigation EH-5a) reduces potential impacts to a less than significant level by requiring best management practices to minimize sediment disturbance would be followed. Turbidity would be monitored to ensure that sediment disturbance and the consequent potential for mobilization of aluminum into the water column is minimized. BMPs also would be used to prevent accidental releases of sediment to the lagoons during dredge spoils transport and handling.

5. **Potentially Significant Effect: Harmful Algal Blooms (HABs). (Issue EH-6).**

A risk exists that the dieback and decay of aquatic weeds consequent upon test activities, and subsequent release of nutrients to the waters of the lagoons could stimulate HABs. The potential for impacts to occur depends on a host of conditions, the timing of herbicide applications, volume of plant biomass, water and nighttime air temperatures, stratification of the lagoons, and plant photosynthesis and respiration levels.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCITON BY MITIGATION

Environmental conditions in freshwater environments can lead to rapid increases in the biomass of single-celled photosynthetic bacteria (cyanobacteria), resulting in a HAB. HABs have been reported in Tahoe Keys lagoons in recent years, including 2017 to 2019. Past detections of cyanotoxins have reached caution levels at Tahoe Keys.

As a result of the Proposed Project, conditions may become increasingly favorable or less favorable for HABs. Because HABs are not always predictable and because the conditions that cause cyanobacteria to produce cyanotoxins are not well understood, there remains some uncertainty about whether the release of nutrients from aquatic weed treatments could increase the risk of HABs and potentially affect people and the environment. Continuation of the existing programs to monitor and warn people

at Tahoe Keys when cyanotoxins are present will continue to be effective in protecting against any additional risks of exposure to cyanotoxins.

Potential impacts from HABs are reduced to less than significant through the following mitigation measures:

Timing and Size of Treatments (Mitigation EH-6a): Spring aquatic plant surveys would be conducted to ensure that herbicide treatments occur at times when target aquatic weeds plants are in their early stages of growth so that the volume of decomposing plant material is minimized. The locations of test sites would be adjusted as needed to ensure that the targeted species are present for each herbicide application and ultraviolet light test, and areas dominated by native plant communities are avoided. The treatment area would be as small as possible given the objectives of the CMT. To minimize the biomass of plants killed by ultraviolet light treatment and the consequent release of nutrients that could stimulate HABs, an initial round of ultraviolet light treatment would be conducted in the spring to stunt plant growth so that plants would only be a few feet tall when they are treated again in the summer.

Aeration (Mitigation EH-6b): Aeration technologies would be implemented at each herbicide test site after target aquatic weeds die back from the herbicide application. Aeration during plant decomposition would increase aerobic microbial degradation and reduce the risk of HABs by breaking up thermal stratification, reducing near-surface water temperature and stabilizing pH conditions. The aeration systems would be continually operated until herbicide active ingredients and degradants are no longer detected above background concentrations.

Lanthanum Clay (Mitigation EH-6c): If HABs occur at a test site in response to phosphorus released during the plant decomposition that is expected to follow dieback from herbicide or UV-C light treatments, a bentonite clay product containing lanthanum (e.g., Phoslock) could be used to control the cyanobacteria. Lanthanum is a rare earth mineral with a strong affinity to bind with phosphorus. The product would be applied to the water surface at the test site where it would strip the water column of available phosphorus molecules while it settles to the bottom. The phosphorus would remain bound in the surface sediments and unavailable for growth of cyanobacteria or other phytoplankton, effectively starving the HAB of an essential nutrient.

WATER QUALITY

1. **Potentially Significant Effect: Changes in Dissolved Oxygen Concentrations (Issue WQ-5).**

Rapid dieback of dense aquatic weed beds from testing herbicide applications or ultraviolet light could result in significant changes to dissolved oxygen (DO) conditions within and near test sites. This could cause biochemical oxygen demand (BOD) from decomposing plants to decrease DO concentrations during the normal growing season for aquatic plants. Herbicide products could also create short-term chemical oxygen demand during applications. Offsetting beneficial effects may result where Laminar Flow Aeration (LFA) increases water circulation and improves low-oxygen conditions in the deeper portions of the water column during summer thermal stratification.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

Rapid dieback of dense aquatic weed beds from testing herbicide applications or UV light could result in significant changes to DO conditions within and near test sites. The primary concern is that BOD from decomposing plants could decrease DO concentrations during the normal growing season for aquatic plants, particularly given the lack of DO contributed from the photosynthesis of living plants. There is also a potential for herbicide products to create a short-term chemical oxygen demand during applications, although this is determined to be less of a concern than BOD from decomposing plants.

Based on information from other studies, any measurable changes in lagoon DO from herbicide applications would likely be restricted to within and adjacent to the test sites, and no effect would be expected on DO in Lake Tahoe. LFA tests sites may also have improved DO conditions due to increased water circulation and improved low oxygen conditions that characterize the deep portions of the water column during summer thermal stratification.

Potential impacts from changes in dissolved oxygen concentrations are reduced to less than significant through the following mitigation measures:

Timing and Limited Extent of Testing (Mitigation WQ-5a): The overall reduction in aquatic weed biomass from testing control methods is generally expected to reduce oxygen depletion at test sites. Herbicide applications would occur in the late spring when target weed species are in their early stages of growth and plant biomass is minimal, and the timing would be adjusted based on pre-application macrophyte surveys. This timing is expected to minimize the biomass of decaying vegetation, mitigating the effects of oxygen depletion and nutrient release that could occur from dieback of mature plants. Similarly, ultraviolet light applications would include an early-season treatment to stunt plant growth, reducing the decaying biovolume that could contribute to reduced DO in the summer. Effects would also be mitigated by the limited size of test sites.

Aeration (Mitigation WQ-5b): LFA or other aeration systems would be deployed in herbicide test sites immediately after plant dieback to increase aerobic microbial degradation and offset the potential for BOD from plant decomposition that could cause low DO impacts. If real-time monitoring indicated that DO was not meeting permit requirements at an ultraviolet light test site, an LFA system would be deployed to aerate during the period of plant decay and ensure that DO impacts were not significant.

2. **Potentially Significant Effect: Increases in Total Phosphorus Concentrations (Issue WQ-6).**

Short-term increases in lagoon total phosphorus concentrations could result from sediment disturbance during suction dredging or LFA installation, or during the initial operation of LFA systems circulating deep waters to the surface. Release of phosphorus from decaying aquatic plants to the water column could be accelerated during and after herbicide or UV treatments, which could increase concentrations during those periods but lead to lower concentrations from aquatic plant dieback in the fall. Long term, phosphorus release from decaying plants would be reduced where dense aquatic weed beds are successfully treated.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

Short-term increases in lagoon water total phosphorus concentrations could result from sediment disturbance during LFA installation, or during the initial operation of LFA systems circulating deep waters to the surface. A temporary increase in TP in the water column is expected during the weeks following aquatic plant dieback from herbicide treatment. Release of phosphorus from decaying aquatic plants to the water column could also be accelerated during and after UV light application, which could increase concentrations during those periods.

Increased total phosphorus (TP) in the water column within and adjacent to treatment areas is expected due to remineralization processes that are likely to occur concurrent with the decomposition of plants at test sites. While not all of the TP content of decomposing plants would be available in the water column, it is likely that perhaps 50 percent of the TP would transition into the water column during decomposition, with most of this remineralization likely occurring within the first 20 days after plant dieback (Walter 2000). The potential internal increases in TP from project activities would be a concern in the lagoons both for compliance with WQO criteria and also for increased productivity of phytoplankton and risk of HABs.

Because herbicide and UV light treatments would prevent the plants from reaching full biomass, there would be a reduction in the transfer of TP from plant tissues to the lagoon water that would otherwise occur when the plants naturally die back in the fall, so overall TP loading from decomposing plants would not increase, accumulate with impacts from other projects, or contribute to a declining trend or affect an already degraded resource.

Potential impacts from changes in total phosphorus concentrations are reduced to less than significant through Mitigation Measure WQ-6a, the timing, and limited size of treatment areas.

Timing and Limited Extent of Testing (Mitigation WQ-6a): The overall reduction in aquatic weed biomass from testing control methods is generally expected to reduce the release of TP from macrophytes at test sites. Herbicide applications would occur in the late spring when target weed species are in their early stages of growth and plant biomass is minimal, and the timing would be adjusted based on preapplication macrophyte surveys. This timing is expected to minimize the biomass of decaying vegetation, mitigating the effects of nutrient release that could occur from dieback of mature plants. Similarly, ultraviolet light applications would include an early-season treatment to stunt plant growth, reducing the decaying biovolume that could contribute to reduced TP in the summer. Effects would also be mitigated by the limited size of test sites.

3. **Potentially Significant Effect: Increases in Lagoon Water Total Nitrogen Concentrations (Issue WQ-7).**

Short-term increases in lagoon water total nitrogen (TN) concentrations could result from sediment disturbance during suction dredging or LFA installation, or during the initial operation of LFA systems circulating deep waters to the surface. Release of nitrogen from decaying aquatic plants to the water

column could also be accelerated during and after weed control treatments, which could increase concentrations during those periods but lead to lower concentrations from aquatic plant dieback in the fall. Long term, a reduction in nitrogen release from decaying plants would be accomplished where dense aquatic weed beds are successfully treated.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

Short-term increases in lagoon water total nitrogen concentrations could result from sediment disturbance during LFA installation, or during the initial operation of LFA systems circulating deep waters to the surface. Release of nitrogen from decaying aquatic plants to the water column could also be accelerated during and after weed control treatments, which could increase concentrations during those periods but lead to lower concentrations from aquatic plant dieback in the fall. Long term, a reduction in nitrogen release from decaying plants would be accomplished if dense aquatic weed beds are successfully treated.

Increased TN in the water column is expected due to remineralization processes that are likely to occur concurrent with the decomposition of plants at test sites. While not all of the TN content of decomposing plants would be available in the water column, it is likely that perhaps 60 percent of the TN would transition into the water column during decomposition, with most of this remineralization likely occurring in the first two to three weeks. In the West Lagoon, increases in TN in the water column would likely occur, and as a colimiting nutrient with phosphorus, TN increases would be expected to increase the abundance of phytoplankton in the water column. The degree of phytoplankton response is likely to correlate with the amount of nutrient uplift associated with plant decomposition and TN remineralization, and the amount of TN remineralization is expected to correlate with the amount of aquatic plant biomass that is treated at any given time. With herbicide treatments proposed to occur in the late spring when aquatic plants are early in their growth and biomass is minimal, and when the water is still cool from snowmelt runoff and low nighttime temperatures, the risk of nutrient uplift resulting in algal blooms (including HABs) can be minimized. Similar to TP, the lack of correlation between TN concentrations and indicators of phytoplankton biomass in Lake Tallac suggests that an uplift in TN concentrations from plant decay presents less of a risk for algal blooms than in the West Lagoon.

A temporary increase in TN in the water column is expected during the weeks following aquatic plant dieback from herbicide treatment.

Because herbicide and UV light treatments would prevent the plants from reaching full maturity, there would be reduction in the release of nitrogen from plant tissues to the lagoon water compared to when full-grown plants naturally die back in the fall, so overall TN loading from decomposing plants would not increase, accumulate with impacts from other projects, or contribute to a declining trend or affect an already degraded resource.

Potential impacts from changes in TN concentrations are reduced to less than significant through Mitigation Measure WQ-7a, the timing, and limited extent of treatment areas.

Timing and Limited Extent of Testing (Mitigation WQ-7a): The overall reduction in aquatic weed biomass from testing control methods is generally expected to reduce the release of TN from macrophytes at test sites. Herbicide applications would occur in the late spring when target weed species are in their early stages of growth and plant biomass is minimal, and the timing would be adjusted based on preapplication macrophyte surveys. This timing is expected to minimize the biomass of decaying vegetation, mitigating the effects of oxygen depletion and nutrient release that could occur from dieback of mature plants. Similarly, ultraviolet light applications would include an early-season treatment to stunt plant growth, reducing the decaying biovolume that could contribute to reduced TN in the summer. Effects would also be mitigated by the limited size of test sites.

AQUATIC BIOLOGY AND ECOLOGY

1. **Potentially Significant Effect: Effects on Non-Target Aquatic Macrophyte Species (Issue AQU-1).**

Non-target plant species could be affected by direct contact with herbicides or through exposure to ultraviolet light treatments or implementation of some Group B methods. The magnitude of short-term impacts depends on the herbicide applied, with endothall being a less-selective contact herbicide that would likely result in the greatest impacts to non-target species.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

Native aquatic plant species in the West Lagoon include leafy pondweed (Potamogeton foliosus), nitella (Nitella sp., a macroalga), elodea (Elodea canadensis), and Richard's pondweed (P. richardsonii) (TKPOA 2019). Native aquatic plants in Lake Tallac include most of the same species (Richard's pondweed is not known to occur); in addition, watershield (Brasenia schreberi) is found along the margins.

The application of aquatic herbicides can directly affect non-target plant species due to direct contact with the herbicide within the designated treatment site or adjacent open water areas. Existing information on the selectivity of the proposed aquatic herbicides, including manufacturer's labels and peer reviewed literature, was used to evaluate their potential to impact non-target aquatic plants. The magnitude of short-term impacts to these species from herbicides depends on the herbicide applied, with endothall being a less-selective contact herbicide that would likely result in the greatest impacts to non- target species. Tryclopyr herbicide is selective to Eurasian watermilfoil and is not reported to have lethal effects on the non-target macrophytes known to occur in the lagoons. The extent of herbicide-only sites is 13.3 acres, or 7.7percent of the lagoons, of which 8.2 acres or less than five percent are proposed for application of endothall.

Potential direct effects to non-target macrophyte species could occur through the use of UV light treatments and implementation of some Group B methods. The use of UV light and bottom barriers can be non-selectively lethal to non-target aquatic plants and could result in changes to community composition.

Potential impacts to non-target aquatic macrophytes are reduced to less than significant through Mitigation Measure AQU-1 spring macrophyte surveys. These surveys will result in adjustment of the test sites to avoid areas dominated by native or non-target plant communities.

Macrophyte Surveys (Mitigation AQU-1): Spring macrophyte surveys would be used as a basis to adjust testing site boundaries to better target dense beds of target species and avoid native plant communities.

2. **Potentially Significant Effect: Effects on Sensitive Aquatic Macrophyte Species (Issue AQU-3).**

No aquatic plant species occur in the vicinity of the Tahoe Keys lagoons that are identified by TRPA as sensitive, or which are listed under federal or state Endangered Species Acts (ESA). Watershield (a 2B.3 California Rare Plant Bank [CRPR] sensitive species) is known to occur in Lake Tallac where endothall treatments are proposed. There is the potential for impacts to watershield due to drift of aquatic herbicides as part of Group A methods associated with the Proposed Project.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

The primary sensitive macrophyte species of concern in the Project area is watershield, a California Native Plant Society (CNPS) 2B.3 ranked sensitive plant species that is known to occur in Lake Tallac. Plants ranked 2B are considered rare, threatened or endangered in California but more common elsewhere, and plants with a threat rank of 3 are considered “not very threatened in California.” Watershield has not been found in the Tahoe Keys lagoons. There is potential for herbicides to impact watershield in Lake Tallac. The abundance of watershield in macrophyte surveys from Lake Tallac has ranged from 0-percent to 32- percent since monitoring began in 2015.

Potential impacts to sensitive aquatic macrophyte communities are reduced to less than significant through the following Mitigation Measure AQU-1. Spring macrophyte surveys are required to adjust testing locations to better target dense beds of target species and avoid native, non-target and sensitive plant communities.

Macrophyte Surveys (Mitigation AQU-1): Although the drift of endothall from the treatment sites in Lake Tallac may contact watershield, there is no published evidence that it would cause substantial adverse effects. Pre-treatment surveys described for AQU-1 would be implemented. These measures to avoid watershield in Lake Tallac, are expected to avoid effects on sensitive macrophyte species.

3. **Potentially Significant Effect: Changes in Aquatic Macrophyte Community Composition (Issue AQU-4).**

Potential direct and indirect effects to the non-target macrophyte community could occur as the result of the Project, including both Group A and Group B methods. The threshold of significance for this issue area would be a substantial change or reduction in the diversity or distribution of the non-target macrophyte community.

FINDING

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less-than-significant level

RATIONALE AND EVIDENCE SUPPORTING IMPACT REDUCTION BY MITIGATION

Native aquatic plant species in the West Lagoon include leafy pondweed (Potamogeton foliosus), nitella (Nitella sp., a macroalga), elodea (Elodea canadensis), and Richard's pondweed (P. richardsonii) (TKPOA 2019). Native aquatic plants in Lake Tallac include most of the same species (Richard's pondweed is not known to occur); in addition, watershield (Brasenia schreberi) is found along the margins of Lake Tallac.

The application of aquatic herbicides can directly affect non-target plant species due to direct contact with the herbicide within the designated treatment site or adjacent open water areas. Existing information on the selectivity of the proposed aquatic herbicides, including manufacturer's labels and peer reviewed literature, was used to evaluate their potential to impact non-target aquatic plants. The magnitude of short-term impacts to these species from herbicides depends on the herbicide applied, with endothall being a less-selective contact herbicide that would likely result in the greatest impacts to non- target species. Tryclopyr herbicide is selective to Eurasian watermilfoil and is not reported to have lethal effects on the non-target macrophytes known to occur in the lagoons. The extent of herbicide-only sites is 13.3 acres, or 7.7percent of the lagoons, of which 8.2 acres or less than five percent are proposed for application of endothall.

Potential direct effects to non-target macrophyte species could occur through the use of UV light treatments and implementation of some Group B methods. The use of UV light and bottom barriers can be non-selectively lethal to non-target aquatic plants and could result in changes to community composition.

Potential impacts to non-target macrophyte community composition are reduced to less than significant through the following Mitigation Measure AQU-1. These surveys will result in adjustment of the test sites to avoid areas dominated by native or non-target plant communities.

<u>Macrophyte Surveys (Mitigation AQU-1):</u> Spring macrophyte surveys would be used as a basis to adjust testing site boundaries to better target dense beds of target species and avoid adverse changes in macrophyte community composition.