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STAFF REPORT

Date: January 11, 2022

To: TRPA Advisory Planning Commission

From: TRPA Staff

Subject: Recommendation to the Governing Board for certification for the Final Environmental Impact Statement for the Tahoe Keys Lagoons Aquatic Weeds Control Methods Test Project and Article VII findings.

Summary and Staff Recommendation:

Staff requests that the Advisory Planning Commission (APC) hold a public hearing and make a recommendation to the Governing Board to certify the Final Environmental Impact Statement (EIS) for the Tahoe Keys Lagoons Aquatic Weeds Control Methods Test Project and make the appropriate Compact Article VII (Environmental Impact Statements) findings.

Staff recommends the APC recommends the Governing Board to certify the Final EIS and make the Article VII findings as set forth in Attachment A.

Required Motions:

Staff requests that the APC take the following actions based on the Final EIS, this staff memorandum, and the complete administrative record:

- I. A motion to recommend the Governing Board certify the Final EIS as technically adequate as set forth in Attachment A.
- II. A motion to recommend the Governing Board make the Compact Article VII findings for the Final EIS as set forth in Attachment A.

For the motions to pass, a majority of a quorum of the members present must vote in the affirmative.

Scope of APC Review and Recommendation:

In general, the APC does not make recommendations to the governing Board on projects. TRPA Rule of Procedure 6.16, however, requires the APC to make a recommendation on the certification of all final EISs. Thus, while the merits of the Tahoe Keys Aquatic Weeds CMT is not before the APC and therefore outside the scope of the hearing, the APC must review the Final EIS for procedural and substantive compliance with Compact Article VII requirements. In addition, the Final EIS also serves as the Final EIR under CEQA to inform potential actions by the Lahontan Regional Water Quality Control Board ("Lahontan"). Issues related solely to Lahontan's decision making or unique to CEQA are outside the scope of APC (and Governing Board) review. Lahontan will holding a public hearing on January 12-13, 2022 to consider certification of the CEQA Environmental Impact Report, Basin Plan Exemption, and issuance of a National Pollutant Discharge Elimination System permit for the CMT.

Purpose and Need for the Project:

The Tahoe Keys, a multi-use development situated at the southern end of Lake Tahoe, was constructed in the 1960s on the Upper Truckee River Marsh. The development includes 1,529 homes and townhomes sited on artificially constructed lagoons that afford boating access to the Lake. The Tahoe Keys lagoons connect to Lake Tahoe via two narrow, direct channels: The West Channel which connects the West Lagoon; and the East Channel, which connects the East Lagoon. Lake Tallac borders the Tahoe Keys to the south and is separated from the West Lagoon by a weir and gate structure. A second weir gate connects Lake Tallac to Pope Marsh; seasonal water exchange between Lake Tallac and Pope Marsh occurs in most years, but neither are directly connected to Lake Tahoe. In total, the waterways represent approximately 172 surface acres, and almost entirely infested with three problematic aquatic plants- Eurasian watermilfoil and curlyleaf pondweed, along with a native species, coontail.

The Tahoe Keys Property Owners Association (TKPOA) is responsible for maintaining the common areas of the Tahoe Keys development as well as navigation in the portions of the waterways it manages, even though the submerged lands within the lagoons are almost entirely privately owned; individual homeowners' property lines generally extend to the middle of the waterways. Invasive aquatic plants were first reported in the Tahoe Keys lagoons in the 1980s (TKPOA 2015), though they were likely present as far back as the 1960s or 1970s (Loeb and Hackley 1988; Anderson and Spencer 1996). Seasonal harvesting has been the main aquatic weed control practice employed by TKPOA since the mid-1980s. However, nearly four decades of mechanical harvesting has not limited the spread of aquatic weeds in the Tahoe Keys lagoons, and in fact the volume of aquatic weeds harvested from the lagoons has increased 100-fold since 1984, to a total of 10,125 cubic yards in 2016.

Invasive aquatic weeds pose one of the greatest threats to Lake Tahoe's environment and the Region at large. Eurasian watermilfoil and curlyleaf pondweed impact the lake's famed clarity and water quality by outcompeting native species, provide habitat for other invasives species such as warmwater fish, and alter Lake Tahoe's delicate food web. In addition, these weed species grow in the nearshore where most people interact with the lake, creating undesirable conditions and impact their experience which can have devastating impacts on the Region's \$5 billion recreation-based economy.

Based on significant scientific and stakeholder review, TKPOA determined that to move forward with a long-term approach to control of AIS, more information on different weed control options was required. Therefore, TKPOA proposes **testing** multiple innovative/emerging treatment methods such as ultraviolet-C (UV-C) light and laminar flow aeration (LFA), along with aquatic herbicides. This AIS control methods test would then inform (under a separate decision-making process) what treatment plan might be most effective and appropriate to control the weed infestation in all the Tahoe Keys lagoons.

Scoping of the Draft EIS/EIR:

On June 17, 2019, TRPA and Lahontan distributed a Notice of Preparation/Notice of Intent (NOP/NOI) for TKPOA's proposed methods test, with a public scoping period of 45 days. Three public scoping meetings were held on June 25, 2019, June 26, 2019, and July 16, 2019 to provide the opportunity to learn more about the Project and to receive comments from agencies, other interested parties, and the public regarding the issues that should be addressed in the Draft EIS/EIR. Scoping comments received are summarized in Appendix A, "Notice of Preparation and Public Engagement Plan for Scoping" of the Draft EIR/EIS/EIS. The Lead Agencies also engaged in multiple public outreach meetings and fieldtrips during and subsequent to the public scoping process.

Production of Draft EIS/EIR:

Based in the information gained from public scoping, TRPA and Lahontan published the Draft EIS/EIR on July 6, 2020. The Draft EIS/EIR can be found here: <https://www.trpa.gov/major-projects/#keys>, and contains the following main sections:

Chapter 1 Project Purpose and Need:

The main goals of the test would be to test which methods could potentially achieve a large-scale knock-back of weeds that allow TKPOA to gain control over the weed infestation and maintain it with non-chemical methods. The principal purpose and need statement include preserving and protecting natural resources throughout the Tahoe Region, including water quality. This is aided by managing and controlling aquatic invasive species to achieve compliance with the environmental threshold carrying capacities established to set environmental standards for the Region. Implementation of a test of multiple invasive aquatic weed treatment methodologies will identify what methodologies (and/or combinations thereof) will quickly reduce aquatic weed biomass, bring infestations to levels that are manageable by non-herbicidal methods, improve water quality and reduce the potential for reinfestation. Results of the test will inform what a long-term treatment plan could consist of.

Chapter 2 Project Description and Alternatives:

Project Description

Section 2.3 of the Draft EIS describes the Tahoe Keys CMT in detail. The CMT proposes a science-based, rigorous test to determine the efficacy of alternative aquatic weed control methods in the Tahoe Keys, both as stand-alone treatments and in combination. The approach would use certain methods to achieve an initial knockback of weeds in the first year of treatment- Group A, with Group B methods, all non-herbicidal, to be used to conduct spot and maintenance treatments in the second year of the test and beyond. Control test methods were grouped as follows:

- **Group A** methods are herbicide and non-herbicide treatments to achieve extensive reduction in target aquatic weeds (targeting at least 75 percent reduction) within test sites. The Proposed Project tests stand-alone treatments using EPA and State of California approved aquatic herbicides, UV-C, and LFA, as well as combined herbicide and UV-C treatments. Group A herbicide methods would be tested only in the initial year of the test project. Non-herbicide Group A treatments may be extended to additional years if monitoring indicates further treatment may be useful. For example, UV-C may be repeated for a second year, while LFA testing is planned to extend over several years. In addition, UV-C could be employed as a follow-up “Group B” method for spot treatments.
- **Group B** methods are non-herbicide maintenance treatments that are applied locally to follow up Group A treatments and control residual target aquatic weeds. Group B methods are intended to be long-term, sustainable control methods capable of maintaining aquatic weed control after initial Group A treatments have been applied to “knock down” the abundant target aquatic weeds in the Lagoons. For example, following a Group A herbicide treatment that achieves at least a 75% reduction in targeted aquatic weeds, Group B methods would be used to further control aquatic weeds and in no case would repeated use of herbicides be permitted as part of the project. Group B methods may include such actions as spot treatments with ultraviolet light, bottom barriers, diver-assisted suction and diver hand pulling techniques. Use of Group B methods would be implemented in years 2-3, following Group A methods in year 1. Group B methods to be used would be informed by a decision tree.

Project Alternatives:

Section 2.4, 2.5 and 2.6 sets forth the lead agencies' reasonable range of project alternatives and those alternatives considered but rejected for further analysis. The EIR/EIS examines the proposed project, two action alternatives, and one "no project" alternative. As noted above, the proposed project includes the use of aquatic herbicides along with non-herbicidal techniques including UV-C, LFA, bottom barriers, and diver assisted suction and hand pulling.

- **Action Alternative 1** is similar to the Proposed Project but excludes the use of aquatic herbicides.
- **Action Alternative 2** uses hydraulic dredging to remove the plants, roots, seeds, and the loose organic sediment layer.
- The **no project alternative** considers the long-term consequences to the Tahoe Keys lagoons and Lake Tahoe if no new weed control methods are employed.

Chapter 3 Potential Impacts from the Proposed Project and Alternatives:

Chapter 3 identifies the resource areas that were analyzed and describes in detail the potential impacts for the CMT and alternatives. The EIS analyzed thirteen environmental topics and found for the proposed project, there are twelve potentially significant impacts and no significant and unavoidable impacts. Executive Summary Table ES-1 provides a summary of the potential impacts and proposed mitigations for each of the alternatives based on resource areas. An updated Table ES-1 from the Final EIS is appended as Attachment B for ease of reference.

All of the potentially significant impacts identified for the proposed project and both action alternatives can be mitigated to a less than significant level. Resource areas that have been identified as potentially significant for the proposed project include: Environmental Health, Water Quality, and Aquatic Biology and Ecology.

Potential impacts associated solely with aquatic herbicide use, including health affects to applicators, discharge into receiving waters, and the introduction of toxic substances to the environment, are all associated with improper use or handling of the aquatic herbicides. All of these can be mitigated to less than significant by use of trained applicators following a detailed plan with specified spill control measures. In addition, aquatic herbicide use that follows label-prescribed concentrations prevent acute or chronic toxicity to any non-target species. For this proposed project, aquatic herbicides would be deployed at half their label rates to minimize application down to what is deemed necessary to be effective and limit herbicide use.

Potential impacts to environmental health are shared by all alternatives which include impacts created by sediment disturbance that may cause impacts from Aluminum toxicity. Alum was added to the lagoons decades ago as a flocculant (no longer being used) and still remains in the sediment of some areas at elevated levels. All alternatives include some disturbance to sediment, however this is mitigated to a less than significant level by the use of best management practices to minimize disturbance, turbidity curtains to contain treatment areas, and implementation of a spill control and containment plan to prevent leaks during the transport of dredge spoils.

Shared potential impacts related to water quality include changes in dissolved oxygen from weed dieback, increases in nitrogen and phosphorus levels due to weed dieback, and sediment disturbance. These can be mitigated to less than significant by implementing control testing early when weed biomass is low, use of aeration, and testing and treating any dredge effluent before it is discharged (Alternative 2).

Shared potential impacts for aquatic biology include those to non-target organisms and macrophyte communities, and the potential introduction of new invasive species from test equipment. These are mitigated by surveys to avoid native plant communities and ensuring all equipment is inspected as part of Lake Tahoe's watercraft inspection program.

Formation of harmful algal blooms (HABs) is a phenomenon that is occurring more frequently in the lagoons (and in many areas of California). It is generally accepted that the annual dieback of weeds in the Tahoe Keys adds nutrients to the system that can encourage HAB outbreaks, along with warming temperatures globally, creating a more suitable environment for them to exist. As the proposed project and action alternative 1 both implement methods that kill weeds within the water column, the potential of nutrient releases exists with any of the methods proposed for use, be it herbicidal or not. To mitigate this potential impact, timing of treatments early in the growing season reduces this impact to less than significant as weed biomass is low, releasing less nutrients into the water column than during the normal dieback later in the season. If necessary, aeration would be used if increased occurrences of HABs due to treatment are observed.

Other potential impacts are specific to action alternative 2 due to dredging that include impacts to docks and bulkheads, which could be mitigated by replacing/restabilizing any affected infrastructure. Roads could also be impacted by the weight of trucks hauling dredged materials. This would be mitigated by ensuring the use of appropriately sized and weighted vehicles.

Only the no project alternative results in impacts that are significant and unavoidable. If the current trend continues, and no test project is implemented to find sustainable solutions, the aquatic weed infestation will continue to grow and spread and will significantly impact and threaten nearshore areas around Lake Tahoe.

Chapter 4 Cumulative Impacts

Chapter 4 describes the cumulative impacts analysis associated with the proposed project and alternatives, and projects from the past, present and probable future that may increase environmental impacts. The EIR/EIS included a range of projects including aquatic invasive species treatments in other areas of Lake Tahoe, the TRPA Shoreline Plan, restoration projects, forest fuel reduction projects, terrestrial pesticide applications, and transportation projects. The EIR/EIS concludes that any cumulative impacts either do not exist, or are less than significant for any resource area for the CMT and the two action alternatives.

Chapter 5 Summaries of Environmental Impacts, Findings and Thresholds

Section 5.3 of the DEIR/DEIS describes any significant irreversible and irretrievable commitments of resources that would be involved in the proposed project should it be implemented. The EIR/EIS concludes that none exist for the proposed project or either action alternative.

Section 5.4 of the DEIR/DEIS describes analysis of the relationship between short-term uses and long-term effects and enhancement of long-term productivity, and concludes that there are no effects.

Section 5.5 describes growth-inducing impacts of the proposed project and concludes that none exist for the proposed project or either action alternative.

Public Comment:

A Notice of Availability (NOA) for the joint Draft EIR/EIS was issued to the California and Nevada State Clearinghouses on July 6, 2020. The notice initiated a 60-day public comment period. During that time, the lead agencies held two virtual public meetings on July 22, and August 12, 2020 to accept comments on the Draft EIR/EIS. During the public comment period, over 3,000 individuals, agencies and organizations provided comments on the Draft EIR/EIS. All comments have been considered, responded to, and/or incorporated into the Final EIR/EIS as appropriate. The comments and responses are included in Appendix A of the Final EIR/EIS. The overwhelming majority of comments were received as form letters via email, most of which stated their opposition to the use of herbicides for a variety of reasons including an overall position against herbicide use, their potential spread into the lake, concern over impacts to drinking water and health from the formation of cyanotoxins from HABs. While staff is respectful of the fears associated with use of herbicides, these general statements of concern do not constitute criticisms of the analysis in the EIS.

The Lead Agencies responded to comments on the adequacy of the EIR/EIS in two ways. First, Chapter 2 of the Final EIS/EIR contains 15 Master Responses addressing topics raised by multiple commenters. These Master Responses included the following:

- Master Response 1 - Alternatives: Responds to comments stating the agencies should approve one of the alternatives over the proposed project, or support for approving the proposed project. The response states that the EIR/EIS includes a reasonable range of alternatives, and that the proposed project, with mitigation will result in impacts that are less than significant.
- Master Response 2 - Alternatives: Responds to comments received regarding approval of herbicides should not occur and an approval will lead to future widespread herbicide use. The response states that the test is designed to inform long term weed management and that any future herbicide use would require analysis and approvals.
- Master Response 3 - Anti-degradation Analysis (AA): Commenters stated that the AA should have been included in the DEIR/DEIS. The AA is required as part of the NPDES permit, should it be issued. The AA was made available along with the draft permit that included its own public comment period. There is no requirement that the AA be completed with the DEIR.
- Master Response 4 - Aquatic Weeds Management: Commenters questioned why 75% reduction of aquatic weeds was used as a performance metric. The 75% threshold is expected to allow Group B methods to maintain the reduction over time, preventing additional growth and spread into other areas of the lake.
- Master Response 5 - Mechanical Harvesting: Commenters suggested that the history of weed harvesting practices should have been included in the DEIR/DEIS, and it amplifies fragment spread. Harvesting is already permitted under Waste Discharge Requirements issued to TKPOA by Lahontan and serves to reduce weed height to prevent boat props from creating fragments. Harvesting activities include a routine fragment collection program.
- Master Response 6 - Cost Analysis: Commenters stated that cost information was missing from the DEIR/DEIS and is needed to make a decision. Costs are not necessary to evaluate environmental impacts.
- Master Response 7 - Environmental Health and Protection: Commenters stated that the dredging associated with Action Alternative 2 would create toxicity issues related to aluminum. An aluminum based product was used as a flocculant in the Tahoe Keys lagoons decades ago, however mitigations identified in the EIR/EIS reduce the potential impact of aluminum toxicity to less than significant.

- Master Response 8 - General: Many commenters stated Lake Tahoe is a valuable resource and that it should be protected. These comments were noted and the purpose of the test is to protect Lake Tahoe.
- Master Response 9 - Use of Herbicides: Numerous comments were received objecting to herbicide use. The response refers to the analysis concluding that with mitigation, all aspects of the CMT can be implemented with less than significant impacts. Mitigations include timing of treatments - early when water is flowing into the lagoons to prevent escape from the lagoons and limit HABs, and when weed biomass is low to prevent concentrated nutrient releases; Use of turbidity curtains to prevent herbicides from leaving test sites; and continual monitoring will be conducted to track herbicide fate and transport.
- Master Response 10 - Public Participation: Some commenters suggested the DEIR/DEIS was insufficient and recirculation is needed. The response states that the DEIR/DEIS was prepared with the appropriate level of analysis to allow decision makers to make an informed decision that accounts for the level of potential environmental impact the proposed project and alternatives present.
- Master Response 11 - Restoration: Commenters stated that restoration of the Tahoe Keys to a wetland should have been included as an alternative. The DEIR/DEIS addresses this issue and identifies that it would impact beneficial uses of the lagoons, impact non-target species, and does not fulfil the purpose and need to test a variety of treatment methodologies.
- Master Response 12 - Protect Lake Water Quality: Many commenters shared personal experiences at Lake Tahoe and that it is a special place deserving protection. The two lead agencies are both charged with protecting the numerous environmental standards at Lake Tahoe and that the CMT is designed to inform long-term protection water quality and that the test can be implemented with less than significant impacts.
- Master Response 13 - Water Quality Objectives: Commenters stated that herbicides will violate water quality objectives immediately after they are applied to the water. The analysis demonstrates that any herbicides would become undetectable within a weeks to months timeframe, consistent with the standards established for Outstanding National Resources Waters. Further, the Sixth Circuit Court of Appeals confirmed USEPS's position that pesticides (including aquatic herbicides) are not generally pollutants when the pesticides is intentionally applied to water of an intended purpose.
- Master Response 14 - Water Supply: Commenters stated concerns of herbicides entering the drinking water supply. The EIR/EIS concludes that potential impacts to drinking water supplies are less than significant before mitigation due to a variety of factors- distance of water supply intakes, the fate and environmental persistence of herbicides and degradants, dilution, and the timing and concentrations of their proposed use. Further, the analysis concludes that there would be "no impact" to the filtration exemption for water suppliers that take water directly from the lake.
- Master Response 15 - Regulatory: The response addresses comments regarding NEPA. This analysis was performed under CEQA and TRPA environmental review processes and not subject to NEPA.

In addition to Master Responses, Section 3.3 of the Final EIR/EIS includes responses to every specific, unique comment timely received. Some comments of note were received from a group identified as Beyond Pesticides (both as a group and as individuals in form letters), The league to Save lake Tahoe, the Tahoe Water Suppliers Association (TWSA), and the Sierra Club.

Beyond Pesticides expressed concern on health effects from cyanotoxins due to herbicide use. The EIR/EIS states the potential for cyanotoxins as a result of HABs occurring, however, HABs are not solely attributed to herbicide use. HABs are a phenomenon observed in Lake Tahoe and throughout California, and likely develop due to high nutrient concentrations and increased water temperatures. The EIR/EIS states that any weed treatment method has the potential to create conditions that are suitable for HABs, in fact, ultraviolet light treatments may have a greater potential to do so. The EIR/EIS includes mitigations that reduce the likelihood of HAB occurrences, and also help dissipate them should they occur. These mitigations reduce the impacts of HABs to less than significant. It is important to note that HABs occur within the Keys and lake without aquatic weed treatments and the test is designed to mitigate impacts from HABs should they occur in test areas, not solve the issue of overall HAB occurrence throughout the Keys or lake.

Beyond Pesticides also commented on nutrient inputs into the lagoons from landscape fertilizer use and exhaust emissions contributing to eutrophication and weed proliferation. TKPOA has implemented a nonpoint source management program to limit runoff nutrient inputs. In addition, the analysis revealed that nutrient inputs from stormwater and landscape runoff are a small percentage compared to the nutrients being returned to the system by the annual die-off of plants. Eliminating runoff inputs is not expected to control weeds.

The League to Save Lake Tahoe provided both written and oral comments on the need to test all methods, that the EIS/EIR is comprehensive, and that they questioned under CEQA the determination that Action Alternative 1 is designated as the environmentally superior alternative.

TWSA provided written comments that addressed a variety of topics including their concern of herbicide use and availability of the anti-degradation analysis, which are responded to by Master Responses 1 and 3. They also raised concern about the socio-economic impact to the Drink Tahoe Tap brand from herbicide use and site an impact to another brand from a “detection” of herbicides in their spring source. Socio-economic impacts are not within the scope of an EIR/EIS, however, the impacts to drinking water are reported to be less than significant before mitigation.

The Sierra Club provided comments as well that addressed a variety of topics. Some examples include their opposition to herbicide use, the range of alternatives in the document, adequacy of the EIR/EIS, availability of the anti-degradation analysis, herbicide use would violate water quality objectives, and the formation of harmful algal blooms, all of which are responded to in detail in the Master Responses referenced above. They also characterized nutrient availability and that controlling fertilizer use and stormwater runoff would suppress weeds, however, the analysis shows that the weeds themselves are the main source of nutrients, and very little is from upland sources. The Sierra Club also suggested a mitigation by blocking off the Tahoe Keys lagoons during a test, however, the EIR/EIS documents the potential significant impacts that action would have, most notably the lack of fresh water entering the lagoons and thereby increasing the potential for HABs.

Summary of EIS Certification Findings:

Certification of the Final EIS is appropriate. As described above, the Final EIS considers a reasonable range of alternatives that are consistent with the Purpose and Need of the EIS and are sufficient to foster informed decision making, public awareness and participation. All potentially significant impacts can be mitigated to less than significant. All other environmental topics analyzed resulted in either no impact or less than significant before mitigation, or that the issue was not applicable. All timely comments received on the DEIR/DEIS have been responded to. Based on information in the record,

TRPA staff has determined that there are no Threshold violations and therefore a finding of no significant effect can be made.

TRPA staff recommends the APC provide a recommendation to the Governing Board to find the Final EIS to be adequate and prepared in conformance with TRPA requirements for Environmental Impact Statements as put forth in the Tahoe Regional Planning Compact and the TRPA Code of Ordinances and Rules of Procedure. And to further make the Tahoe Regional Compact - Article VII(d) findings necessary. The appropriate findings are set forth in Attachment A.

Contact Information:

For questions regarding this agenda item, please contact Dennis M. Zabaglo, Aquatic Resources Program Manager, at (775) 589-5255 or dzabaglo@trpa.gov.

Attachments:

- A. Required Findings/Rationale
- B. Final EIS Table ES-1

Attachment A

Required Findings/Rationale

ATTACHMENT A

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. Tryclopyp 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. Tryclopyp 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.

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 adverse changes in macrophyte community composition.

Attachment B

Final EIS Table ES-1

Table ES-1 Summary of Impacts and Mitigation Measures

IMPACT ISSUES	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	RESOURCE PROTECTION MEASURES	SIGNIFICANCE AFTER MITIGATION
B = Beneficial NI = No impact LTS = Less than significant PS = Potentially Significant SU = Significant and Unavoidable NA = Not Applicable PP = Proposed Project AA1 = Action Alternative 1 AA2 = Action Alternative 2 NAA = No Action Alternative				
ENVIRONMENTAL HEALTH				
Issue EH-1: Herbicide Applicator Exposure and Health. 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.	PP = PS AA-1 = NA AA2 = NA NAA = NA	EH-1 Applicator qualifications: 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.		PP = LTS AA1 = NA AA2 = NA NAA = NA
Issue EH-2: Detectable Concentrations of Herbicides and Degradants in Receiving Waters. 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.	PP = PS AA1 = NA AA2 = NA NAA = NA	Detectable concentrations of discharged herbicides and their degradants would be controlled as a temporary condition allowable only for weeks to months. EH-2, EH-3a, EH-4 Spill prevention and response plan: 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. EH-6b Aeration: Aeration technologies such as LFA would be implemented at each herbicide test site immediately after target aquatic weeds die back from the		PP = LTS AA1 = NA AA2 = NA NAA = NA

Table ES-1 Summary of Impacts and Mitigation Measures

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		herbicide application. Aeration during plant decomposition would increase aerobic microbial degradation of herbicide active ingredients 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.		
Issue EH-3: Protection of Drinking Water Supplies. Although even minimal dilution would prevent concentrations exceeding drinking water criteria from reaching drinking water supplies, degradation would occur if concentrations of active ingredients and chemical degradants of herbicides proposed for testing were detectable in or near the locations of potable water intakes. The potential for detectable concentrations at drinking water supply intakes is a function of the potential for transport of chemicals to these locations, the environmental fate and persistence of each herbicide proposed for testing, and the maximum allowable application rates for the proposed herbicides.	PP = LTS AA1 = NA AA2 = NA NAA = NA		EH-2, EH-3a, EH-4 Spill prevention and response plan: 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. EH-3b Dye tracing: Rhodamine WT dye would be applied by TKPOA during the herbicide applications and tracked to determine the movement and dissipation of dissolved herbicide	PP = LTS AA1 = NA AA2 = NA NAA = NA

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			<p>products and chemical transformation products. If herbicides are detected in nearby wells, contingency plans include shutting off the wells and distributing water to all users until residues are no longer detected in the samples.</p> <p>EH-3c Well monitoring and contingencies: A monitoring plan would address potential effects to human health, based on the TKPOA (2018) Aquatic Pesticide Application Plan. Sampling would be conducted at all three TKPOA well water intakes and would include sampling for contamination by herbicides or degradants 24 hours prior to each application, and at 48-hour intervals thereafter for 14 days. Samples would be analyzed for active herbicide ingredients in the products applied, and contingency plans/measures specified actions if herbicides are detected.</p> <p>EH-3d West Channel monitoring and contingencies:</p>	

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			<p>If herbicides are detected within the West Channel, additional monitoring stations would be sampled outside the Tahoe Keys in Lake Tahoe and monitoring would continue south and north of the channel (TKPOA 2018). In any event, if herbicide residue is detected within 500 feet of the West Channel, the LWB would be notified within 24 hours. Well monitoring would verify the effectiveness of carbon filtration to remove any herbicide residues. If herbicides were detected in wells, contingency plans would be implemented that could include shutting off wells and distributing bottled drinking water until residues are no longer detected in the samples.</p> <p>EH-3e Public outreach: TKPOA would design and carry out an information campaign targeting homeowners, renters, and rental agencies, to provide advance notice regarding the CMT before and during aquatic herbicide applications. TKPOA would also hold a workshop and</p>	

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			<p>informational meeting with Tahoe Water Suppliers Association (TWSA) at least 45 days before herbicide applications are conducted.</p> <p>EH-3f Carbon filtration contingency: <u>If monitoring detects herbicide residues</u> carbon filtration systems already installed at water supply wells would remove any herbicide residues. A mobile filtration system would pump and treat water at wells where exceedances are detected above drinking water standard concentrations.</p> <p>EH-3g Double turbidity curtain barriers: Double turbidity curtain barriers would be installed outside West Lagoon areas where herbicide testing sites are located, to confine the herbicide applications and ensure that herbicide residues or chemical transformation products do not migrate toward the West Channel connecting the West Lagoon to Lake Tahoe</p>	
Issue EH-4: Introduction of Toxic Substances	PP = <u>L</u> PS	The herbicides proposed for	<u>The herbicides proposed for</u>	PP = LTS

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into the Environment. 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.	AA1 = NA AA2 = NA NAA = NA	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 (see EH-3). <u>EH-2, EH-3a, EH-4 Spill prevention and response plan: A spill prevention and response plan would be implemented by a QAL holder to minimize and contain any spills during herbicide mixing and application.</u>	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 (see EH-3). <u>EH-2, EH-3a, EH-4 Spill prevention and response plan: A spill prevention and response plan would be implemented by a QAL holder to minimize and contain any spills during herbicide mixing and application.</u>	AA1 = NA AA2 = NA NAA = NA
Issue EH-5: Short-term Increases in Aluminum Concentrations (NAA). 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.	PP = PS AA1 = PS AA2 = PS NAA = PS	EH-5a Best Management Practices: 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. EH-5b Treatment and testing of dewatering effluent (AA2): Before any effluent is discharged		PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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		<p>to Lake Tallac or to the sanitary sewer system, it would be tested to ensure that aluminum levels comply with water quality criteria for aluminum.</p> <p>EH-5c Leak Prevention, Spill Control, and Containment Plans (AA2): A leak-detection program would be implemented for the transport of dredge spoils. Containment plans would assure adequate storage and safe handling of dredge spoils during processing. The plans would minimize the risk of dredged sediment containing aluminum from being released outside of approved discharge locations.</p> <p>EH-5d Turbidity Curtain Barriers (AA2): Turbidity curtain barriers would be used to isolate test areas for suction dredging and prevent the migration of disturbed sediment containing aluminum beyond the boundaries of test sites.</p>		
Issue EH-6: Harmful Algal Blooms (HABs). A risk exists that the dieback and decay of aquatic weeds consequent upon test activities, and subsequent release of nutrients to the waters of	PP = PS AA1 = PS AA2 = NA NAA = PS	EH-6a Timing and size of treatments: Spring aquatic plant surveys would be conducted to ensure that herbicide treatments		PP = LTS AA1 = LTS AA2 = NA NAA = SU

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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.		<p>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.</p> <p>EH-6b Aeration: Aeration technologies such as LFA would be implemented at each herbicide test site immediately after target aquatic weeds die back from the herbicide application. Aeration</p>		

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		<p>during plant decomposition would increase aerobic microbial degradation of herbicide active ingredients 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, and would continue through the summer and early fall to reduce oxygen depletion from plant decay.</p> <p>EH-6c Lanthanum Clay: 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</p>		

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		<u>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.</u>		
EARTH RESOURCES				
Issue ER-1: Suction Dredging and Dredge Materials Disposal. Effects to earth resources could occur under Action Alternative 2, as soft organic sediment in three test sites would be removed by suction dredging, potentially destabilizing docks and bulkheads. Effects could also occur if spills of dredged sediment (consisting of organic silt and fine sand, plant roots and other organic matter, and lagoon water) occur during transport by pipeline to the location of the old Tahoe Keys Water Treatment Plant for handling, dewatering, or during transport for ultimate disposal.	PP = NA AA1 = NA AA2 = PS NAA = NA	ERM-1 Dredge/Spill Containment (AA2 only): Spill control, containment and contingency plans would be developed for installing and operating a pipeline transporting aluminum-contaminated dredge spoils. Spills in the dredge handling area would be contained by installing barriers and impermeable layers. Performance specifications would be promulgated for the design of the pipeline to minimize the risks of leakage or other failures. Appropriate leak detection systems would be installed in the pipeline systems to quickly detect any leaks and shut systems down prior to significant contamination. Soils		PP = NA AA1 = NA AA2 = LTS NAA = NA

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		<p>in material handling areas would be tested and the existing concrete tank would undergo an engineering evaluation to determine whether it is safe and suitable for storing dewatering effluent; portable Baker tanks would be used if it were found unsuitable. Secondary containment and liners would be employed as necessary to provide surface and ground water protection in the event of an accident. The effects of spill in transport would be remediated by clean-up operations.</p> <p>Any bulkheads or docks removed or destabilized by dredging would be fully mitigated by replacing them in kind, and any slopes that are destabilized would be mitigated by slope restabilization after the dredging test is completed.</p> <p>Speed limits and travel restrictions would be placed on roads used for dredge spoil transportation and disposal to reduce the potential for releases due to collisions and other accidents. These restrictions</p>		

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		would need to be in place for at least six months based on current understanding.		
AIR QUALITY AND GREENHOUSE GAS EMISSIONS				
Issue AQ-1: Compliance with the Basin Air Quality Plan. Conflicts with the applicable air quality plan or any effect on its implementation could affect compliance with air quality standards.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	No conflict with the Basin Air Quality Plan would occur, therefore no mitigation measures are proposed.		PP = LTS AA1 = LTS AA2 = LTS NAA = LTS
Issue AQ-2: Cumulatively Considerable Net Increases of Criteria Pollutants. Effects could occur if the Proposed Project or Alternatives resulted in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or State ambient air quality standard.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	Emissions associated with the Proposed Project and action alternatives are expected to be less than significant, therefore no mitigation measures are proposed.		PP = LTS AA1 = LTS AA2 = LTS NAA = LTS
Issue AQ-3: Exposure of Sensitive Receptors. If the Proposed Project or Alternatives exposed sensitive receptors to substantial pollutant concentrations, effects could occur.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	Emissions associated with the Proposed Project and action alternatives are expected to be less than significant, therefore no mitigation measures are proposed.		PP = LTS AA1 = LTS AA2 = LTS NAA = LTS
Issue GHG-1: Greenhouse Gas Emissions. CEQA requires the evaluation of the potential to generate greenhouse gas emissions, either directly or indirectly. The California Air Resources Board (CARB) has issued the draft Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (2008), which indicates that a project would be	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	Emissions associated with the Proposed Project and action alternatives are expected to be less than significant, therefore no mitigation measures are proposed.		PP = LTS AA1 = LTS AA2 = LTS NAA = LTS

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considered less than significant if it meets minimum performance standards during construction and if the project, with mitigation, would emit no more than approximately 7,000 metric tons of carbon dioxide per year (MTCO ₂ e/yr). The El Dorado County Air Quality Management District (EDCAQMD) currently uses CEQA guidance developed by the adjacent Sacramento Metropolitan Air Quality Management District (SMAQMD) (EDCAQMD, 2020), which states a GHG significance threshold of 1,100 MTCO ₂ e/yr for the construction phase of all projects.				
HYDROLOGY				
Issue HY-1: Disposal of Dewatering Effluent. Under Action Alternative 2 (suction dredging) approximately 33 million gallons (i.e., 100 acre-feet) of dewatering effluent would be produced and would require disposal over a period of approximately six months. Discharge could occur to the South Lake Tahoe sanitary sewer system, if approved by the wastewater utility's Board of Directors, or to Lake Tallac, potentially affecting surface water levels and groundwater flows to the West Lagoon. These discharges could affect flooding.	PP = NA AA1 = NA AA2 = PS NAA = NA	For the Proposed Project and Action Alternative 1, no potential adverse effects to hydrology would occur, therefore no mitigation measures are proposed. HY-1 Disposal of Dewatering Effluent (AA2 only): For Action Alternative 2, mitigation includes discharging treated effluent to the sanitary sewer system, if approved. If discharge is made to Lake Tallac, dewatering effluent would be treated to meet water quality criteria and discharged in the late summer and early fall months, when water levels are		PP = NA AA1 = NA AA2 = LTS NAA = NA

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		lower and the risk of contributing to flood conditions would be negligible.		
WATER QUALITY				
Issue WQ-1: Water Temperature Effects. Short-term heating from ultraviolet light may occur during treatment. Where aquatic weed density is reduced by any of the treatment methods, a long-term increase in solar radiation penetration may add heat to the water. Increased water circulation during LFA operations is expected to eliminate thermal density stratification, leading to cooler waters near the surface and warmer waters at depth.	PP = LTS AA1 = LTS AA2 = LTS NAA = PS	WQ1 Real-Time Temperature Monitoring and Adjustments to Treatment Rates: Real-time temperature monitoring during the implementation of ultraviolet light testing or injection of hot water under bottom barriers would be used to determine whether the rates of ultraviolet light application or injection of hot water under barriers would need to be reduced.	WQ1 Real-Time Temperature Monitoring and Adjustments to Treatment Rates: Real-time temperature monitoring during the implementation of ultraviolet light testing or injection of hot water under bottom barriers would be used to determine whether the rates of ultraviolet light application or injection of hot water under barriers would need to be reduced.	PP = LTS AA1 = LTS AA2 = LTS NAA = SU
Issue WQ-2: Sediment Disturbance and Turbidity. Sediment disturbance would be caused by suction dredging under Action Alternative 2, and by installation, startup, and removal of LFA systems; or installation and removal of bottom barriers under the Proposed Project or Action Alternative 1. These actions could cause short-term increases in turbidity and a temporary decline in water clarity within and near treatment areas. There is also a potential for short-term increased turbidity and decreased water clarity during suction dredging, from any accidental spills during transport and processing of dredge spoils, or during discharge of treated effluent from sediment	PP = LTS AA1 = LTS AA2 = PS NAA = PS	WQ-2: Real-Time Turbidity Monitoring and Adjustments in Practices. Divers would minimize sediment disturbance where employed in Group B activities (hand-pulling of weeds or removal of bottom barriers) because underwater visibility is necessary to carry out the work, and work would have to cease if the water became turbid. Turbidity monitoring would be conducted in association with these activities, and if permit limits could be	WQ-2a: Real-Time Turbidity Monitoring and Adjustments in Practices. Divers would minimize sediment disturbance where employed in Group B activities (hand-pulling of weeds or removal of bottom barriers) because underwater visibility is necessary to carry out the work, and work would have to cease if the water became turbid. Turbidity monitoring would be conducted in association with these activities, and if permit	PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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dewatering.		<p>exceeded, the methods or pace of bottom barrier removal or other activities would be adjusted to achieve compliance with permit limits for turbidity.</p> <p>WQ-2b, WQ-5c, WQ-6b, WQ-7b: Sediment Disturbance and Turbidity Controls for Dredging, Substrate Replacement, and Dewatering (AA2 only). Under Action Alternative 2, impacts from suction dredging resuspension of the sediments in the water column would be minimized by optimizing the cutter head speed and movement with suction capacity, and using a moveable shield around and above the cutter head. Turbidity monitoring would indicate when engine speeds or auger pressures would need to be adjusted. These steps would also minimize the release of nutrients from disturbed sediment into the water column, reducing its availability to algae and minimizing the release of aluminum in sediments to the lagoon water. The rate and method of new sediment placement also would be</p>	<p>limits could be exceeded, the methods or pace of bottom barrier removal or other activities would be adjusted to achieve compliance with permit limits for turbidity.</p>	

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		<p>adjusted in response to monitoring. Silt curtains would be used to confine water quality impacts within test sites during dredging and substrate replacement. Performance specifications for sand or fine gravel used for substrate replacement would require testing prior to placement to ensure that the material did not contain excessive amounts of fine particles that could cause turbidity.</p> <p>Spill control and containment plans would be used to control accidental spills of dredge spoils and would include provisions for adequate storage for safe handling of dredge spoils during processing. No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced turbidity sufficiently to meet standards, as required by contract performance specifications. Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge to the sanitary sewer system or Lake Tallac.</p>		

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Issue WQ-3: Dispersal of Aquatic Weed Fragments. Fragments may incidentally break off from aquatic plants during herbicide applications, ultraviolet light treatments, and placement of LFA systems, and suction. Floating plant fragments may escape, cause nuisance or adversely affect beneficial uses.	PP = NA AA1 = NA AA2 = LTS NAA = PS	WQ-3: Dispersal of Aquatic Weed Fragments (AA2). Performance specifications for sand or gravel used for substrate replacement would require that the material not contain excessive amounts of organic matter that could increase amounts of floating materials.	WQ-3: Dispersal of Aquatic Weed Fragments (AA2 only). Performance specifications for sand or gravel used for substrate replacement would require that the material not contain excessive amounts of organic matter that could increase amounts of floating materials.	PP = NA AA1 = NA AA2 = LTS NAA = SU
Issue WQ-4: Changes in pH. Short-term changes in pH could result from the introduction of herbicide products in treatment areas. Long-term beneficial changes in pH fluctuation could result from reduced photosynthesis, respiration and decomposition as dense aquatic weed beds are controlled. Increased water circulation and oxygenation of deep waters during LFA operation could also improve pH conditions.	PP = LTS AA1 = LTS AA2 = LTS NAA = PS	WQ4 Real-Time pH Monitoring and Adjustments to Treatment Rates: If real-time monitoring of pH indicates that permit limits are exceeded, herbicide rates would be adjusted until compliance with permit limits for pH is demonstrated.	WQ4 Real-Time pH Monitoring and Adjustments to Treatment Rates: If real-time monitoring of pH indicates that permit limits are exceeded, herbicide rates would be adjusted until compliance with permit limits for pH is demonstrated.	PP = LTS AA1 = LTS AA2 = LTS NAA = SU
Issue WQ-5: Changes in Dissolved Oxygen Concentrations. Rapid dieback of dense aquatic weed beds from testing herbicide applications or ultraviolet light could result in significant changes to 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 LFA increases water circulation and	PP = PS AA1 = PS AA2 = PS NAA = PS	WQ5a Timing and Limited Extent of Testing: 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		PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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improves low-oxygen conditions in the deeper portions of the water column during summer thermal stratification.		<p>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.</p> <p>WQ5b Aeration: LFA or other aeration systems would be deployed in herbicide test sites immediately after plant dieback to increase aerobic microbial degradation of the herbicides 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</p>		

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		<p>were not significant</p> <p>WQ-2b, WQ-5c, WQ-6b, WQ-7b: <u>Turbidity Controls for Dredging, Substrate Replacement, and Dewatering (AA2 only).</u> Under Action Alternative 2, impacts from suction dredging resuspension of the sediments in the water column would be minimized by optimizing the cutter head speed and movement with suction capacity, and using a moveable shield around and above the cutter head. Turbidity monitoring would indicate when engine speeds or auger pressures would need to be adjusted. These steps would also minimize the release of nutrients from disturbed sediment into the water column, reducing its availability to algae and minimizing the release of aluminum in sediments to the lagoon water. The rate and method of new sediment placement also would be adjusted in response to monitoring. Silt curtains would be used to confine water quality impacts within test sites during dredging and substrate replacement.</p>		

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		<u>Performance specifications for sand or fine gravel used for substrate replacement would require testing prior to placement to ensure that the material did not contain excessive amounts of fine particles that could cause turbidity.</u> <u>Spill control and containment plans would be used to control accidental spills of dredge spoils and would include provisions for adequate storage for safe handling of dredge spoils during processing.</u> <u>No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced turbidity sufficiently to meet standards, as required by contract performance specifications.</u> <u>Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge to the sanitary sewer system or Lake Tallac.</u>		
Issue WQ-6: Increases in Total Phosphorus Concentrations. 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	PP = PS AA1 = PS AA2 = PS NAA = PS	WQ6a Timing and Limited Extent of Testing: The overall reduction in aquatic weed biomass from testing control methods is generally expected to reduce the		PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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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 weed control 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.		<p>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 pre-application 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.</p> <p>Discharge of Treated Effluent (AA2): No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced phosphorus sufficiently to meet standards, as required by contract performance specifications.</p>		

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		<p>Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge to the sanitary sewer system or Lake Tallac.</p> <p>Mitigation measures to meet project permit limits for turbidity (WQ-2) would also be effective in controlling nutrient entrainment in the water column from sediment resuspension. <u>WQ-2b, WQ-5c, WQ-6b, WQ-7b: Turbidity Controls for Dredging, Substrate Replacement, and Dewatering (AA2 only). Under Action Alternative 2, impacts from suction dredging resuspension of the sediments in the water column would be minimized by optimizing the cutter head speed and movement with suction capacity, and using a moveable shield around and above the cutter head. Turbidity monitoring would indicate when engine speeds or auger pressures would need to be adjusted. These steps would also minimize the release of nutrients from disturbed sediment into the water column, reducing its</u></p>		

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		<u>availability to algae and minimizing the release of aluminum in sediments to the lagoon water.</u> <u>The rate and method of new sediment placement also would be adjusted in response to monitoring.</u> <u>Silt curtains would be used to confine water quality impacts within test sites during dredging and substrate replacement.</u> <u>Performance specifications for sand or fine gravel used for substrate replacement would require testing prior to placement to ensure that the material did not contain excessive amounts of fine particles that could cause turbidity.</u> <u>Spill control and containment plans would be used to control accidental spills of dredge spoils and would include provisions for adequate storage for safe handling of dredge spoils during processing.</u> <u>No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced turbidity sufficiently to meet standards, as required by contract performance specifications.</u>		

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		<u>Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge to the sanitary sewer system or Lake Tallac.</u> WQ-6c and WQ-7c Effluent Treatment to Remove Phosphorus or Nitrogen (AA2 only): <u>No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced phosphorus sufficiently to meet standards, as required by contract performance specifications.</u> <u>Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge to the sanitary sewer system or Lake Tallac.</u> <u>Mitigation measures to meet project permit limits for turbidity (WQ-2) would also be effective in controlling nutrient entrainment in the water column from sediment resuspension.</u>		
Issue WQ-7: Increases in Lagoon Water Total Nitrogen Concentrations. Short-term increases in lagoon water total nitrogen concentrations could result from sediment disturbance during suction	PP = PS AA1 = PS AA2 = PS NAA = PS	WQ-7a Timing and Limited Extent of Testing: The overall reduction in aquatic weed biomass from testing control methods is		PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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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.		<p>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 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 TN in the summer. Effects would also be mitigated by the limited size of test sites.</p> <p><u>WQ-2b, WQ-5c, WQ-6b, WQ-7b: Turbidity Controls for Dredging, Substrate Replacement, and Dewatering (AA2 only).</u> Under Action Alternative 2, impacts from suction dredging resuspension of the sediments in the water column</p>		

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		<u>would be minimized by optimizing the cutter head speed and movement with suction capacity, and using a moveable shield around and above the cutter head. Turbidity monitoring would indicate when engine speeds or auger pressures would need to be adjusted. These steps would also minimize the release of nutrients from disturbed sediment into the water column, reducing its availability to algae and minimizing the release of aluminum in sediments to the lagoon water. The rate and method of new sediment placement also would be adjusted in response to monitoring. Silt curtains would be used to confine water quality impacts within test sites during dredging and substrate replacement. Performance specifications for sand or fine gravel used for substrate replacement would require testing prior to placement to ensure that the material did not contain excessive amounts of fine particles that could cause turbidity. Spill control and containment plans</u>		

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		<p>would be used to control accidental spills of dredge spoils and would include provisions for adequate storage for safe handling of dredge spoils during processing. No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced turbidity sufficiently to meet standards, as required by contract performance specifications. Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge to the sanitary sewer system or Lake Tallac.</p> <p>WQ-6c Effluent Treatment to Remove Phosphorus or Nitrogen (AA2 only): No discharge of dewatering effluent would be allowed until monitoring has demonstrated that treatment systems reduced phosphorus sufficiently to meet standards, as required by contract performance specifications. Treatment system designs could include settling and flocculation in batches stored in tanks for testing before discharge</p>		

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		<u>to the sanitary sewer system or Lake Tallac.</u> <u>Mitigation measures to meet project permit limits for turbidity (WQ-2) would also be effective in controlling nutrient entrainment in the water column from sediment resuspension.</u>		
AQUATIC BIOLOGY AND ECOLOGY				
Issue AQU-1: Effects on Non-Target Aquatic Macrophyte Species. 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.	PP = PS AA1 = PS AA2 = PS NAA = PS	AQU-1 Macrophyte Surveys: 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.		PP = LTS AA1 = LTS AA2 = LTS NAA = SU
Issue AQU-2: Competitive Exclusion of Aquatic Macrophytes Due to Increased Growth of Curlyleaf Pondweed. If the application of aquatic herbicides favors the more competitive nuisance plants such as curlyleaf pondweed, this species could expand as other aquatic weeds are reduced at test sites, leading to the competitive exclusion of native species.	PP = LTS AA1 = NA AA2 = NA NAA = NA	Pre-treatment surveys would help focus the test sites on target species, thus implementation of Group A methods is expected to reduce the competitive pressure exerted by curlyleaf pondweed.	AQU-1 Macrophyte Surveys: <u>Pre-treatment surveys would help focus the test sites on target species, thus implementation of Group A methods is expected to reduce the competitive pressure exerted by curlyleaf pondweed.</u>	PP = LTS AA1 = NA AA2 = NA NAA = NA
Issue AQU-3: Effects on Sensitive Aquatic Macrophyte Species. No aquatic plant species occur in the vicinity of the Tahoe Keys lagoons	PP = PS AA1 = NA AA2 = NA	AQU-1 Macrophyte Surveys: Although the drift of endothall from the treatment sites in Lake Tallac		PP = LTS AA1 = NA AA2 = NA

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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 endothermal 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.	NAA = NA	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.		NAA = NA
Issue AQU-4: Changes in Aquatic Macrophyte Community Composition. 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.	PP = PS AA1 = PS AA2 = PS NAA = PS	AQU-1 Macrophyte Surveys: 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.		PP = LTS AA1 = LTS AA2 = LTS NAA = SU
Issue AQU-5: Effects on the Aquatic Benthic Macroinvertebrate Community. Potential direct and indirect effects to the benthic macroinvertebrate community could include the loss of organisms as a result of exposure to ultraviolet light, through placement of bottom barriers, and/or through entrainment associated with suction dredging. Potential indirect adverse effects could result from short-term water quality degradation associated with vegetation decomposition.	PP = LTS AA1 = LTS AA2 = LTS NAA = PS	All treatments would be temporary and localized. Implementation of Group A methods would not be expected to result in a substantial change or reduction in the diversity or distribution of the aquatic BMI community, and no mitigation is required.		PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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Issue AQU-6: Effects on Special-Status Fish Species. Toxicity tests indicate that the herbicides proposed for use in the Tahoe Keys lagoons are not toxic to fish and BMI species and the USEPA has determined that the herbicides would have no significant acute or chronic impact on fish or BMI when recommended rates are used. Ultraviolet light treatments could result in temporary effects on special-status fish if they are present in the immediate treatment areas; however, fish would be expected to quickly move away to avoid exposure. LFA would be expected to generally improve water quality, which could result beneficial, albeit small, effects to fish species.	PP = LTS AA1 = LTS AA2 = LTS NAA = PS	Lahontan Cutthroat Trout would not be expected to be present and Tui Chub would only be expected to occur as a small number of individuals, if at all. Both species would be anticipated to sense the treatment activity (i.e., disturbance) and move away to avoid becoming trapped, entrained, and/or affected by temporary habitat disturbance, as long as adequate habitat space is available for their movement. All treatments would be temporary and localized. Implementation of Group A methods would not be expected to result in a substantial reduction in numbers or reduced viability of special-status fish species and no mitigation is required.		PP = LTS AA1 = LTS AA2 = LTS NAA = SU
Issue AQU-7: Effects on Fish Movement that would Block Access to Spawning Habitat. Potential direct and indirect effects could occur if access to spawning habitat were blocked or delayed during the implementation of the Proposed Project or alternatives.	PP = LTS AA1 = LTS AA2 = LTS NAA = NA	No significant potential to block fish movements was identified and no mitigation is required.		PP = LTS AA1 = LTS AA2 = LTS NAA = NA
Issue AQU-8: Effects on the Suitability of Habitat for Native or Recreationally Important Game Fish Species. Potential effects to the suitability of habitat for native or recreationally	PP = LTS AA1 = LTS AA2 = LTS NAA = PS	No significant effects on habitat for native or recreationally important game fish species identified and		PP = LTS AA1 = LTS AA2 = LTS NAA = SU

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important game fish species could include short-term degradation of habitat associated with herbicide treatments, ultraviolet light, through the placement of bottom barriers, increases in turbidity associated with suction dredging, and changes in submerged aquatic vegetation, which provides important habitat structure for certain fish species.		no mitigation is required.		
Issue AQU-9: Effects Associated with the Introduction or Spread of Aquatic Invasive Species. Potential effects associated with the introduction or spread of aquatic invasive species could include the introduction of aquatic invasive species associated with equipment and personnel implementing the control methods. All of the control methods could result in the release and transport of aquatic weed seed and propagules to areas outside of the Tahoe Keys where aquatic invasive weed species have not yet become established.	PP = <u>L</u> TPS AA1 = <u>L</u> TPS AA2 = <u>L</u> TPS NAA = PS	The existing watercraft inspection program, and permit conditions requiring cleaning and inspection of all in-water equipment, would minimize risks for introduction or spread of AIS.		PP = LTS AA1 = LTS AA2 = LTS NAA = SU
Terrestrial Biology and Ecology				
Issue TE-1: Short-Term Effects on Terrestrial Habitats and Species. Short-term effects to terrestrial species and habitat may arise from disturbance or alteration of the existing habitat. Upland habitats that may be affected include ruderal and disturbed areas adjacent to the old Water Treatment Plant on the south shore of Lake Tallac. Wildlife species which utilize open water for foraging could be affected. Impacts may	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	Field Reconnaissance and Monitoring. Prior to initiating the test program, TKPOA will conduct a pre-test field reconnaissance of potentially affected terrestrial, riparian, and aquatic (benthic and littoral zones), habitat and species. This will include the test sites and buffer zones appropriate to each	MM-BIO-1 Field Reconnaissance and Monitoring: Prior to initiating the test program, TKPOA will conduct a pre-test field reconnaissance of potentially affected terrestrial, riparian, and aquatic (benthic and littoral zones), habitat and species. This will include the test	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS

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include: Introduction and spread of invasive plant species within terrestrial, riparian, and wetland habitats. Damage or mortality of special-status plants or altered extent of special-status plant habitat. Disturbance to sensitive communities, including jurisdictional wetlands and riparian vegetation. Injury or mortality of special-status wildlife individuals or otherwise protected species. Disruption to wildlife habitat including extent of special-status wildlife habitat. Interference with wildlife movement. Disturbance caused by dredge and replacement substrate.		<p>potentially affected species. The occurrence of any sensitive or listed species and/or habitat will be recorded. If sensitive receptors are observed, an evaluation will be made as to the potential impacts. If direct or indirect impacts are possible, coordination will be initiated with the appropriate federal (USFWS) or state (CDFW) agency to determine further mitigation to avoid impacts. Examples of mitigation measures could include environmental</p> <p>tailboards prior to the start of work, the establishment of exclusionary zones (i.e., around active nests), and/or assigning biological field monitors with stop work authority if impacts to receptors are possible. Should work stop based on discovery of sensitive or listed species, and TKPOA will consult with appropriate agencies to determine next steps prior to work restarting.</p>	<p>sites and buffer zones appropriate to each potentially affected species. The occurrence of any sensitive or listed species and/or habitat will be recorded. If sensitive receptors are observed, an evaluation will be made as to the potential impacts. If direct or indirect impacts are possible, coordination will be initiated with the appropriate federal (United States Fish and Wildlife Service [USFWS]) or state (CDFW) agency to determine further mitigation to avoid impacts. Examples of mitigation measures could include</p> <p>environmental tailboards prior to the start of work, the establishment of exclusionary zones (i.e., around active nests), and/or assigning biological field monitors with stop work authority if impacts to receptors are possible. Should work stop based on discovery of sensitive or listed species, and TKPOA will consult with appropriate agencies to determine next</p>	

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			<u>steps prior to work restarting.</u>	
Issue TE-2: Effects on Non-Target Riparian and Wetland Habitats and Species. Riparian and wetland species and habitats could be affected if herbicide applications affect non-target species; if LFA changes current riparian or habitat conditions; or if the discharge of dewatering effluent from test dredging affects water levels in Lake Tallac or Pope Marsh.	PP = LTS AA1 = LTS AA2 = PS NAA = LTS	Mitigation measures would be the same as those identified for Issues HY-1 and AQU-1(AA2 only).	<u>MM-BIO-2: Routine monitoring of the ecotonal areas within Lake Tallac outside and adjacent to the herbicide treatment areas will be performed during the duration of the Proposed Project.</u>	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS
LAND USE				
Issue LN-1: Physical Division of an Established Community. Effects could occur if an established community were physically divided.	PP = NI AA1 = NI AA2 = NI NAA = NI	No new development would occur; therefore, there would be no impacts and no mitigation are required.		PP = NI AA1 = NI AA2 = NI NAA = NI
Issue LN-2: Conflicts with Land Use Plans, Policies, or Regulations. Conflicts with a land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect, could affect compliance. Potential conflicts evaluated include the environmentally mitigating policies and regulations listed in the TRPA Code of Ordinances, the Plan Area Statement (PAS) for Tahoe Keys (PAS-102), and the City of South Lake Tahoe General Plan.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	No conflicts with land use plans, policies or regulations would occur, and no mitigation is required.		PP = LTS AA1 = LTS AA2 = LTS NAA = LTS
Issue LN-3: Inclusion of Unpermitted Land Uses. Effects could occur if the Proposed Project or alternatives led to land uses that were not permitted under the PAS for Tahoe Keys, or if it resulted in expansion or intensification of an	PP = NI AA1 = NI AA2 = NI NAA = NI	No change in existing land uses would occur, including intensification of any existing land use. Therefore, there would be no impacts and no mitigation is		PP = NI AA1 = NI AA2 = NI NAA = NI

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existing non-conforming use.		required.		
RECREATION				
Issue RE-1: Obstruction of Direct Private Access to Lake Tahoe Recreational Boating. Recreational boat passage may be obstructed for Tahoe Keys property owners or their guests (e.g., vacation rentals) by turbidity curtains or other barriers placed in the Tahoe Keys lagoons during the proposed CMT or dredge and substrate replacement test. The threshold of significance is defined as a permanent loss of direct recreational boating access from the Tahoe Keys, including during the recreational boating season (from Memorial Day weekend through Labor Day weekend).	PP = LTS AA1 = NA AA2 = LTS NAA = PS	REC-1 Public Noticing: An information campaign would target home-owners, renters, and rental agencies, to provide advance notice on any public access or recreational restrictions during the test period. The campaign would employ emails, flyers, letters, TKPOA's periodical (The Breeze), and social media to provide announcements and project summaries three to six months in advance of proposed actions. Signage would be displayed by TKPOA 30 days prior to project implementation, throughout project implementation and 14 days after project completion. Notices will be posted in publicly visible locations immediately adjacent to test sites and at the intersection of Tahoe Keys Blvd and Venice Drive, to inform property owners and visitors about the project and current status of waterways. REC-2 Timing for Placement and Removal of Barriers: Herbicide treatments would be timed to allow	REC-1 Public Noticing: An information campaign would target home-owners, renters, and rental agencies, to provide advance notice on any public access or recreational restrictions during the test period. The campaign would employ emails, flyers, letters, TKPOA's periodical (The Breeze), and social media to provide announcements and project summaries three to six months in advance of proposed actions. Signage would be displayed by TKPOA 30 days prior to project implementation, throughout project implementation and 14 days after project completion. Notices will be posted in publicly visible locations immediately adjacent to test sites and at the intersection of Tahoe Keys Blvd and Venice Drive, to inform property owners and visitors about the project and current status of waterways.	PP = LTS AA1 = NA AA2 = LTS NAA = SU

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		<p>treatments to be completed before the onset of the peak recreational boating season if possible. As soon as monitoring shows that acceptable limits of herbicides and degradation products are reached, barriers would be removed. For Action Alternative 2, barriers would remain in place for up to 4.5 months at each dredge site, and no provision is made for their early removal.</p> <p>REC-3 Swimming and Other Direct Water Contact Restriction: As part of the information campaign noted above, property owners and visitors would be alerted regarding the need to avoid direct water contact.</p>	<p>REC-2 Timing for Placement and Removal of Barriers: Herbicide treatments would be timed to allow treatments to be completed before the onset of the peak recreational boating season if possible. As soon as monitoring shows that acceptable limits of herbicides and degradation products are reached, barriers would be removed. For Action Alternative 2, barriers would remain in place for up to 4.5 months at each dredge site, and no provision is made for their early removal.</p> <p>REC-3 Swimming and Other Direct Water Contact Restriction: As part of the information campaign noted above, property owners and visitors would be alerted regarding the need to avoid direct water contact.</p>	
Issue RE-2: Increased Use of Tahoe Keys Marina and Other Facilities. Recreational boat launches may be displaced to the Tahoe Keys Marina and other nearby launching facilities during the period that barriers are placed within the Keys to implement the CMT.	PP = LTS AA1 = NA AA2 = LTS NAA = NA	No significant issues would occur for the Proposed Project and Action Alternatives; no mitigation is required.		PP = LTS AA1 = NA AA2 = LTS NAA = NA

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Issue RE-3: Inconsistency with TRPA Recreation Thresholds. Environmental analysis considers two thresholds: R-1. High Quality Recreational Experience and R-2. Public's Fair Share of Resource Capacity.	PP = LTS AA1 = NA AA2 = LTS NAA = PS	No significant issues would occur for the Proposed Project and Action Alternatives; no mitigation is required.		PP = LTS AA1 = NA AA2 = LTS NAA = PS
UTILITIES				
Issue UT-1: Effects on Water Supply. Effects could occur if herbicide residues and degradants reached water supply intakes on Lake Tahoe, and led to the loss of filtration exemption for purveyors drawing from the lake. An impact could occur if turbidity increased in nearshore shallows near drinking water intakes as a result of the dieback and decay of aquatic weeds.	PP = NI AA1 = NA AA2 = NA NAA = PS	Due to dilution, no detectable concentration of herbicides or degradants attributable to the test program would occur at drinking water intakes, and therefore no impact would occur and no mitigation is required. TKPOA has proposed contingency plans, including monitoring and alert systems to be implemented if necessary to remove herbicides and other chemicals to treat the potable water before distribution.		PP = NI AA1 = NA AA2 = NA NAA = SU
TRAFFIC AND TRANSPORTATION				
Issue TR-1: Generation of New Daily Vehicle Trips. The Project would have a potentially significant impact if it generated more than 100 new daily trip ends (one-way vehicular trips), as defined by TRPA Code 65.2.	PP = LTS AA1 = LTS AA2 = LTS NAA = NI	Because the Proposed Project and action alternatives would generate less than the threshold minimum number of trips, no mitigation is required. Further, prior to commencement of work under Action Alternative 2, TKPOA would coordinate with the City of South Lake Tahoe Public Works Roads	<u>Prior to commencement of work under Action Alternative 2, TKPOA would coordinate with the City of South Lake Tahoe Public Works Roads Division for the operation of heavy vehicles on City streets and would submit an application for a transportation permit and/or a</u>	PP = LTS AA1 = LTS AA2 = LTS NAA = NI

Table ES-1 Summary of Impacts and Mitigation Measures

IMPACT ISSUES	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	RESOURCE PROTECTION MEASURES	SIGNIFICANCE AFTER MITIGATION
B = Beneficial NI = No impact LTS = Less than significant PS = Potentially Significant SU = Significant and Unavoidable NA = Not Applicable PP = Proposed Project AA1 = Action Alternative 1 AA2 = Action Alternative 2 NAA = No Action Alternative				
		Division for the operation of heavy vehicles on City streets, and would submit an application for a transportation permit and/or a traffic control plan, as required.	<u>traffic control plan, as required.</u>	
Issue TR-2: Changes in Demand for Parking. An impact could occur if changes to parking facilities or new demand for parking affected the ability of Tahoe Keys property owners or members of the general public to find parking spaces in reasonable proximity to their destination.	PP = LTS AA1 = LTS AA2 = LTS NAA = NI	Because the Proposed Project and action alternatives would not generate a significant amount of demand for parking in relation to that available in the area, no mitigation is required.		PP = LTS AA1 = LTS AA2 = LTS NAA = NI
Issue TR-3: Effects on Roads and Level of Service. Effects could occur if there were a substantial impact on the condition or level of service of existing road segments along the planned haul routes for sediment and clean substrate could occur, or if patterns of circulation were altered, or if traffic hazards to vehicles, bicyclists or pedestrians were to increase.	PP = LTS AA1 = LTS AA2 = LTS <u>PS</u> NAA = NI	Because no existing roadways would be modified or closed for the Project, and further because truck trips for Action Alternative 2 would utilize trucks appropriately sized for the roadways, no impacts are expected to occur, and no mitigation would be required. <u>TR-3 (AA2 only):</u> Further, prior to commencement of work under Action Alternative 2, TKPOA would coordinate with the City of South Lake Tahoe Public Works Roads Division for the operation of heavy vehicles on City streets. As required by the City, TKPOA would submit a program for minimizing damage to the road surface as a		PP = LTS AA1 = LTS AA2 = LTS NAA = NI

Table ES-1 Summary of Impacts and Mitigation Measures

IMPACT ISSUES	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	RESOURCE PROTECTION MEASURES	SIGNIFICANCE AFTER MITIGATION
B = Beneficial NI = No impact LTS = Less than significant PS = Potentially Significant SU = Significant and Unavoidable NA = Not Applicable PP = Proposed Project AA1 = Action Alternative 1 AA2 = Action Alternative 2 NAA = No Action Alternative				
		result of the project.		
Issue TR-4: Effects on Water Traffic. The Project could have a potentially significant impact if it would alter waterborne traffic. The dredge and ultraviolet light alternatives would each deploy a single small barge.	PP = LTS AA1 = LTS AA2 = LTS NAA = NI	Because the travel paths of the barges under the Proposed Project and Action Alternative 2 are not expected to significantly alter existing waterborne traffic, and because there are no commercial transportation services in the Project area, no impacts would occur and no mitigation is required.		PP = LTS AA1 = LTS AA2 = LTS NAA = NI
NOISE				
Issue NO-1: Short-Term Noise Associated with Dredging and Substrate Replacement. The Proposed Project and Action Alternative 2 could cause short-term noise impacts, similar to a construction project.	PP = LTS AA1 = LTS AA2 = LTS NAA = LT/LTS	The type of noise expected to be generated by the Proposed Project or Action Alternative 1 is considered exempt under local noise ordinances, and no mitigation is required. For Action Alternative 2, the following measures would be implemented: <u>NO-1 Work During Daylight Hours:</u> Action Alternative 2 activities will occur only during daylight hours between 8:00 a.m. and 6:30 p.m. <u>NO-2 Maintenance and Muffling of Equipment:</u> All equipment used during performance of Action Alternative 2 will be maintained in good working order and fitted with	<u>For Action Alternative 2, the following measures would be implemented:</u> <u>NO-1 Work During Daylight Hours:</u> Action Alternative 2 activities will occur only during daylight hours between 8:00 a.m. and 6:30 p.m. <u>NO-2 Maintenance and Muffling of Equipment:</u> All equipment used during performance of Action Alternative 2 will be maintained in good working order and fitted with factory-installed muffling devices throughout the duration of the project.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS

Table ES-1 Summary of Impacts and Mitigation Measures

IMPACT ISSUES	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	RESOURCE PROTECTION MEASURES	SIGNIFICANCE AFTER MITIGATION
B = Beneficial NI = No impact LTS = Less than significant PS = Potentially Significant SU = Significant and Unavoidable NA = Not Applicable PP = Proposed Project AA1 = Action Alternative 1 AA2 = Action Alternative 2 NAA = No Action Alternative				
		factory-installed muffling devices throughout the duration of the project.		
CULTURAL RESOURCES				
Issue CR-1: Traditional Native American Resources and Values. Potential effects were determined through consultation with the affected Indian Tribe; identified concerns include effects caused by unanticipated discovery of cultural resources, or a lack of awareness by consultants and construction workers.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS	On November 15, 2018, the United Auburn Indian Community provided a written request for consultation and recommendations for mitigation measures. These measures included an Unanticipated Discovery Plan, Awareness Training for workers, and an associated Tribal Cultural Resources Awareness brochure to be included in the Proposed Project Mitigation Monitoring Plan. Incorporation of the Unanticipated Discovery Plan, Awareness Training, and Associated Awareness brochure into the final Mitigation Monitoring Plan for the Proposed Project will satisfy AB 52 compliance for the United Auburn Indian Community and meet mitigation requirements.	On November 15, 2018, the United Auburn Indian Community provided a written request for consultation and recommendations for mitigation measures. These measures included an Unanticipated Discovery Plan, Awareness Training for workers, and an associated Tribal Cultural Resources Awareness brochure to be included in the Proposed Project Mitigation Monitoring Plan. The Water Board agreed to include the Tribe's requested measures in the MMRP. Incorporation of the Unanticipated Discovery Plan, Awareness Training, and Associated Awareness brochure into the final Mitigation Monitoring Plan for the Proposed Project will satisfy AB 52 compliance for the United Auburn Indian Community and meet mitigation requirements.	PP = LTS AA1 = LTS AA2 = LTS NAA = LTS