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STAFF REPORT

Date: November 10, 2021

To: TRPA Governing Board

From: TRPA Staff

Subject: Presentation of (1) 2021-2022 Operations Work Plan and (2) Climate Change and Sustainability Initiative

Summary and Staff Recommendation:

Staff will provide a presentation summarizing the 2021-2022 Operations Work Plan, highlighting the importance of climate change and how it touches all aspects of the Work Plan. The Climate Change and Sustainability Initiative will then be presented in more detail. This item is for informational purposes only. No action is requested at this time.

Project Description/Background:

The Operations Work Plan is typically presented to the Governing Board before each fiscal year to direct staff and resources toward achieving agency strategic goals, initiatives, and ongoing program priorities. This Operations Work Plan document carries forward the strategic priorities discussed at the Governing Board retreat held earlier this, and which are reflected in the adopted Annual Budget. The Work Plan summarizes the renewed focus on climate change, the Bi-State Compact mandates, the Federal and State transportation planning mandates, the role of the Operations Work Plan, each strategic initiative, the organizational structure, and each of the four operations divisions.

TRPA and our basin partners have an outstanding record in climate mitigation. The Sustainability Action Plan, prepared in 2014, included 72 implementation actions; 76 percent of those have been implemented since then; and the plan has been recognized by the American Planning Association by receiving California and National Planning Awards. With this new Operations Work Plan TRPA is even more intensely focused on climate change.

Climate Change and Sustainability Initiative

TRPA and its partners in the bi-state Lake Tahoe Region have long been recognized as leaders in sustainability. As the cornerstone of the Operations Work Plan, the climate program implements strategic projects and integrates climate across agency wide programs and divisions.

An [updated Greenhouse Gas Inventory for the Tahoe Basin](#) showed that progress is being made to reduce regional emissions. The Tahoe Region surpassed the initial target of 15 percent GHG emission reductions by 2020. The 2014 Sustainability Action Plan set additional GHG reduction targets of 49 percent by 2035, and net-zero by 2045. Additional reduction actions are needed to meet the region's 2045 net-zero carbon emissions target.

Reducing climate emissions is one part of the formula for reaching climate resiliency. Climate adaptation is needed to create a built and natural environment that can respond to climate change impacts that cannot be avoided, like wildfires and flooding. The [Tahoe Climate Adaptation Action Primer](#) and the [Tahoe Climate Adaptation Portfolio 2021](#) identify projected climate impacts to the region and catalogue ongoing actions to address those impacts.

This initiative consists of activities to advance TRPA's internal sustainability practices and advance the region's climate resiliency through collaborative planning and project implementation. TRPA is also working with the entire basin partnership to ensure the Lake Tahoe Environmental Improvement Program's priorities promote climate resiliency.

Contact Information:

For general questions regarding the Operations Work Plan, please contact John Hester, Chief Operating Officer and Deputy Executive Director, at 775.589.5219 or jhester@trpa.gov. For questions regarding the Climate Change and Sustainability Initiative, please contact Devin Middlebrook, Sustainability Program Manager, at 775. 589.5230 or dmiddlebrook@trpa.gov.

Attachments:

- A. Operations Work Program
- B. Greenhouse Gas Inventory Infographic
- C. Climate Adaptation Primer

Attachment A

Operations Work Program



OPERATIONS WORK PLAN

Tahoe Regional Planning Agency

FY 2021-2022



Acknowledgements

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This document was last updated on 11.8.21.

Table of Contents

| | |
|-----------------------------------------------------------------------------------------------------------|----|
| Operations Work Plan Overview..... | 1 |
| Focus on Climate Change and Sustainability..... | 1 |
| Bi-State Compact Mandates..... | 2 |
| Federal and State Transportation Planning Mandates..... | 3 |
| Role of the Operations Work Plan..... | 3 |
| <i>Building Resiliency: Climate Change and Sustainability Strategic Initiative</i> | 4 |
| <i>Keeping Tahoe Moving: Transportation and Sustainable Recreation Strategic Initiative</i> | 6 |
| <i>Tahoe Living: Housing and Community Revitalization Strategic Initiative</i> | 8 |
| <i>Restoration Blueprint: Environmental Improvement Program Implementation Strategic Initiative</i> | 11 |
| <i>Measuring What Matters: Thresholds and Monitoring Update Strategic Initiative</i> | 12 |
| <i>Digital First: Innovation Initiative</i> | 14 |
| Organizational Structure..... | 16 |
| Research and Analysis Division..... | 19 |
| Core Activities..... | 19 |
| Performance Measures..... | 21 |
| Division Positions and Organization..... | 22 |
| Long Range and Transportation Planning Division..... | 23 |
| Core Activities..... | 23 |
| Performance Measures..... | 26 |
| Division Positions and Organization..... | 27 |
| Environmental Improvement Division..... | 29 |
| Core Activities..... | 29 |
| Performance Measures..... | 32 |
| Division Positions and Organization..... | 32 |
| Current Planning Division..... | 33 |
| Core Activities..... | 33 |
| Performance Measures..... | 35 |
| Division Positions and Organization..... | 37 |

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Operations Work Plan Overview

Many different factors have and do influence TRPA's Compact-mandated roles in setting threshold standards, preparing a Regional Plan, implementing ordinances, and implementing projects. These include factors that can be addressed directly within the Basin (e.g., the amount and type of development) and others that must be recognized and can only be addressed on a limited basis (e.g., the size of the population outside the Basin and their desire for recreation). In the past one of the most significant factors affecting the Basin has always been assumed to be stable – the climate. Now that it is clear that it is changing, it is necessary to address it both directly by actions that can be taken within the Basin and to recognize the impacts it will have in the Basin that can only be addressed by actions taken beyond the Basin.

This Operations Work Plan Overview summarizes the new focus on climate change, the Bi-State Compact mandates, the Federal and State transportation planning mandates, the role of the Operations Work Plan, each strategic initiative, and organizational structure. With this as a foundation, the remainder of the Operations Work Plan provides more detailed information for each of the Operations divisions.

Focus on Climate Change and Sustainability

The approach to addressing climate change has evolved and now includes three major components:

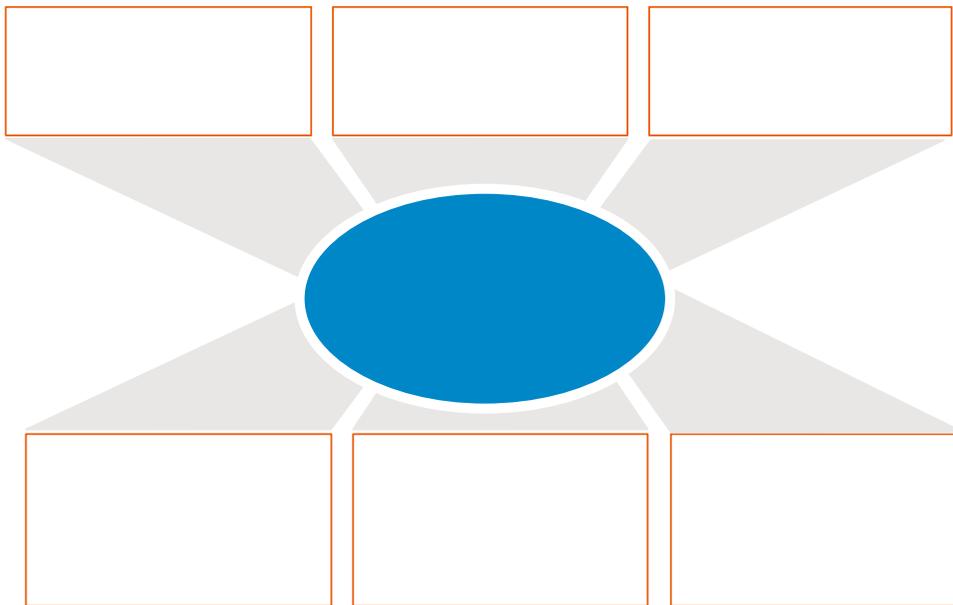
- Climate Mitigation – Reduce greenhouse gas emissions and increase sustainable carbon sequestration.
- Climate Adaptation – Change natural or human systems in response to impacts that cannot be avoided.
- Climate Resiliency – Increase capacity to prepare for disruptions, recover from shocks, and adapt and grow from a disruptive experience.

TRPA has already established an outstanding record in climate mitigation. The Sustainability Action Plan, prepared in 2014, included 72 implementation actions; 76% of those have been implemented since then; and, the plan has been recognized by the American Planning Association by receiving California and National Planning Awards. With this new Operations Work Plan TRPA is even more intensely focused on climate change. The work plan touches all components of the Compact and will examine each of them through the lens of climate change and improving resiliency in the Region:

- Thresholds – A comprehensive review of all threshold categories and standards and updates as necessary to address climate change (e.g., greenhouse gas reduction, sequestration, carbon balance, etc.).
- Regional Plan – An analysis of, and amendments to, relevant Regional Plan element goals, policies, text, and maps (e.g., policies on placing utility lines underground, identification of joint use corridors

for trails and fire breaks or underground utilities and fire breaks, plans for facilities that are effective in both droughts and floods, etc.).

- Implementing Ordinances – Identification and changes to appropriate rules and regulations (e.g., changes to vegetation management on steep slopes, greater flexibility for installation of renewable energy facilities like vehicle charging stations and residential solar panels and battery storage, etc.).
- Implementing Projects – Evaluation of, and any needed revisions to, the Environmental Improvement Program project priorities, categories, and projects to incorporate and prioritize multi-objective climate change projects (e.g., multi-purpose trail/underground utility/fire break corridors).



Focus on Climate Change and Sustainability: Throughout this document examples of strategic initiative and division tasks that reflect the “Focus on Climate Change and Sustainability” will be highlighted using callouts like this one.

Bi-State Compact Mandates

The Bi-State Compact that established TRPA requires the Governing Board to (1) adopt Threshold Standards and (2) a Regional Plan and Code to achieve and maintain the Threshold Standards it has adopted. The transportation planning mandate in the Compact is also addressed through the federal and state transportation planning mandates discussed below.



The Bi-State Compact also mandates implementation of the Regional Plan through adoption and administration of ordinances, rules, and regulations, as well as the inclusion of projects, proposals, and time schedules for implementation. Thus, like many Federal, state and local government plans, the Lake Tahoe Regional Plan is implemented through both (3) regulatory actions such as development and redevelopment permitting and compliance and through (4) projects and programs that are funded predominantly by the public through various implementation partners with significant private sector participation (i.e., the Environmental Improvement Program).

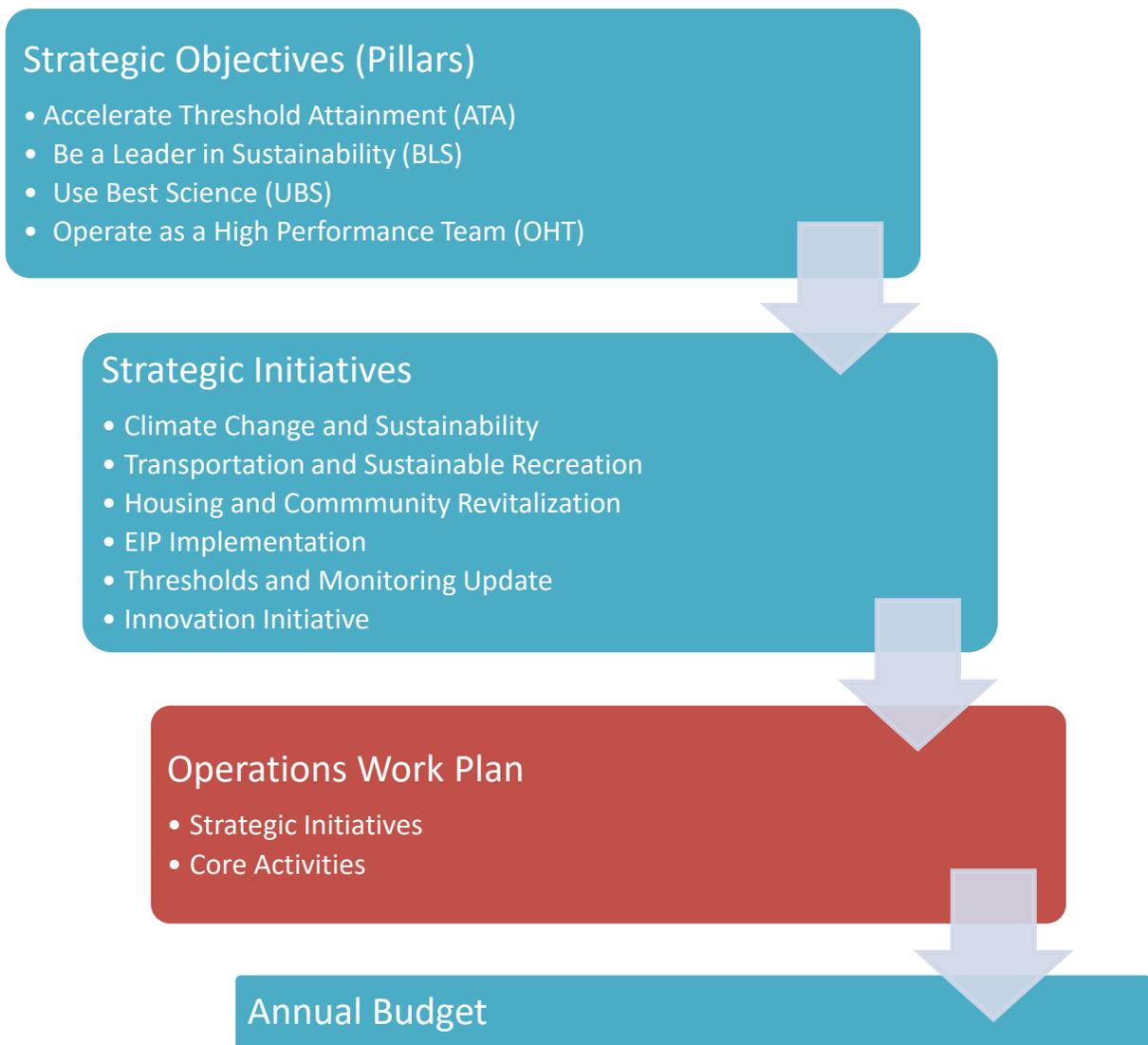
Federal and State Transportation Planning Mandates

Federal law established the Tahoe Regional Planning Agency Governing Board, with the addition of a representative from the US Forest Service, as the Metropolitan Planning Organization (MPO) Governing Board for the Lake Tahoe Region making it responsible for the regional transportation plan, transportation improvement program, and federal transportation grants administration. In recognition of the significant visitor population in the Lake Tahoe Region it also designated the Tahoe MPO as a large MPO. This designation has increased both the level of federal funding and MPO responsibilities.

California law requires all MPOs to prepare a sustainable community strategy (SCS) along with the regional transportation plan (i.e., the RTP/SCS). California law also designates MPOs as the Regional Transportation Planning Agency (RTPA) for their respective areas of jurisdiction in California, increasing funding to the region (e.g., funding for transit agencies like TTD and Placer County to implement the RTP/SCS and associated transit plans). TRPA is able to effectively address the dual Compact and Federal/State transportation planning mandates through preparation and update of the RTP/SCS. TRPAs unique land use planning and permitting authority also allows it to holistically address the relationship between land use and transportation.

Role of the Operations Work Plan

This Work Plan, highlighted by a different color in the graphic below, includes a description of the strategic initiatives that follow. It also provides a view of the same information through the lens of the core activities which are assigned to the Operations divisions and their staff members as described in later sections of this document. The Operations Work Plan is, in part, implemented through the Annual Budget which allocates financial resources to carry out the annual program of tasks and activities. It is



also implemented through the efforts and support of the executive, legal, external affairs, finance, and human resources functions in the Agency which are not included in this document

Building Resiliency: Climate Change and Sustainability Strategic Initiative

Strategic Initiative Description: TRPA and its partners in the bi-state Lake Tahoe Region have long been recognized as leaders in sustainability. As the cornerstone of the Operation Work Plan, the climate program implements strategic projects and integrates climate across agency wide programs and divisions.

An updated Greenhouse Gas Inventory for the Tahoe Basin showed that progress is being made to reduce regional emissions. The Tahoe Region surpassed the initial target of 15 percent GHG emission reduction by 2020. The 2014 Sustainability Action Plan set additional GHG reduction targets of 49 percent by 2035, and net-zero by 2045. Additional reduction actions are needed to meet the region’s 2045 net-zero carbon emissions target.

Reducing climate emissions is one part of the formula for reaching climate resiliency. Climate adaptation is needed to create a built and natural environment that can respond to climate change impacts that cannot be avoided, like wildfires and flooding. The Tahoe Climate Adaptation Action Portfolio 2021 and the Tahoe Climate Adaptation Primer identify projected climate impacts to the region and catalogues ongoing actions to address those impacts.

This initiative consists of internal and external activities to advance TRPA’s internal sustainability practices and advance the region’s climate resiliency through collaborative planning and project implementation. The strategic initiative is building on the foundation of the updated GHG inventory, the documents listed above, and new legislation at state and federal levels to:

- Continue to engage regional partners to identify, prioritize, and fund priority climate mitigation, adaptation, and resiliency projects. The collaborative effort will be conducted in collaboration with the USDA Forest Service, California Natural Resources Agency, Nevada Department of Conservation and Natural Resources, California Tahoe Conservancy, and Tahoe Transportation District.
- Better integrate climate into the EIP Program through the Restoration Blueprint Strategic Initiative, work with partners to better measure climate impact of EIP projects, update the 5 Year Priority List, and refresh the sustainability dashboard. New projects to specifically adapt to a changing climate must be considered and be prioritized such as water quality infrastructure upgrades, community fire breaks, and expanded technologies to predict weather patterns and outcomes.
- Update the TRPA Code of Ordinances to be more climate smart. The TRPA code and development standards can incentivize more sustainable development in line with the Regional Plan goals and policies. Code updates will target priority changes based on data from the greenhouse gas inventory, climate vulnerability assessment, potential positive impacts, and stakeholder engagement.
- Climate touches every aspect of TRPA initiatives and ongoing programs. The agency will continue to integrate climate considerations across divisions to ensure consistency and achievement of climate goals.
- Increase public awareness of climate impacts at Tahoe to inspire action by all community members. Annual TRPA surveys indicate that the awareness of climate impacts on Tahoe is growing but many residents and visitors are still generally unaware. Engaging partner agencies, businesses, non-profits, and the public is critical to reaching climate goals.

FY 2021/2022 Strategic Initiative Activities: During the next fiscal year, the tasks listed below are anticipated to be completed.

| Deliverable (Division) | Recommendation and/or Collaboration Body(ies) | Target Date | Approval Body | Target Date |
|-------------------------------|------------------------------------------------------|--------------------|----------------------|--------------------|
| Bi-State Climate Strategy | TIE SC, Governing Board | 12.31.21 | N.A. | N.A. |
| Climate Code Update Package | RPIC, GB | 1.30.2022 | N.A. | N.A. |
| Outreach and Engagement | | Ongoing | N.A. | N.A. |

Keeping Tahoe Moving: Transportation and Sustainable Recreation

Strategic Initiative

Strategic Initiative Description: Transportation and sustainable recreation are pillars of a resilient Lake Tahoe. This initiative implements the Regional Transportation Plan by enhancing efficient movement of people and goods and managing the Region’s recreation offerings to contribute to climate goals, creating a sustainable and resilient region. This strategic initiative includes the following activities:

- The **Sustainable Transportation Funding** initiative will identify funding strategies with fair share contributions from all sectors to support implementation of initial project priorities supporting the Environmental Improvement Program and achieving the full vision of the Regional Transportation Plan.
- **The Transportation Equity Study** will evaluate TRPA’s connection with underserved communities and provide recommendations to enhance public engagement, identify needs and concerns at the regional and neighborhood levels, evaluate impacts of transportation planning activities (i.e. decision-making, funding, project selection, public engagement, advancing or mitigating inequity, and measurement and tracking of outcomes).
- **Sustainable Outdoor Recreation and Tourism Planning** will address the significant and growing impact of recreational visitors through the Lake Tahoe-Truckee Sustainable Recreation and Tourism partnership. Initially formed under the Environmental Improvement Program, this partnership identifies and implements near-term visitor and destination management solutions and has launched a future of tourism visioning process. This process will deliver a regional shared vision around sustainable practices and an implementation roadmap to achieve that vision.
- **The Tahoe Regional Trails Plan** developed by a coalition of Tahoe-Truckee partners, will provide the blueprint for a connected and accessible trail network that spans land managed by numerous agencies and links Tahoe’s backcountry, front country, and urban trail systems.
- **Corridor plans** will complement both the RTP/SCS update and sustainable recreation planning. The corridor plans include the US 50 East Corridor Management Plan and implementation of the SR89 Corridor plan through a Trail Feasibility Study. The Trail Feasibility Study will not require action by the board, however the outcomes of planning work will be shared as this key project advances to close a major gap in the Tahoe Trail. Staff will continue to support planning and securing project funding for the SR 28 Corridor Plan work and the South Shore Community Revitalization Project.
- **Ongoing technical improvements** in transportation-related modelling data sources, continual project level analysis refinements, and building a monitoring framework will ensure we are on track with our commitment to VMT reductions and achieving our goals. This will primarily be internal but will involve the Environmental Improvement, Transportation and Public Outreach Committee and the Transportation Technical Advisory Committee.
- **Implementation activities**, such as coordination of project implementation from multiple jurisdictions, recommendation of project funding for existing and new grant programs, and providing feedback on MPO financial programming, will be accomplished through an ongoing collaborative process involving the implementing organizations (i.e., state departments of transportation, regional agencies, county and city public works departments, etc.). Additional

implementation activities include a Commute Tahoe pilot that will provide resources and direct assistance to employers to help encourage their employees to bike, walk and carpool to work. Data on employee travel patterns will also be collected and utilized in future transit service planning, VMT, and travel demand analysis.

Focus on Climate Change and Sustainability: Electric vehicles are a key strategy in the Regional Transportation Plan to reduce greenhouse gas emissions. The 2018 award-winning Tahoe-Truckee PEV Readiness Plan created an action plan for accelerating adoption of electric vehicles in the Region. Since its adoption, the region has seen an increase of charging stations of nearly 50% from 35 to 57, with a total of 157 stations. The first electric school busses are currently operating with four additional electric transit busses scheduled for delivery.



In addition, the Tahoe Regional Planning Agency was a founding signatory to the Future of Tourism Coalition. The Coalition recognizes the challenges that climate and COVID-19 have placed on tourism destinations and is working globally to create a more sustainable future.

Strategic Initiative Process: The initiative activities and respective processes for recommendation and approval are summarized in the table below. In addition, Sustainable Outdoor Recreation and Tourism Planning will eventually include updating recreation thresholds, and technical improvements will also be made to transportation monitoring, performance measures, and thresholds. And, an adaptive management framework will be created to support the new VMT standard. These activities are both clearly related to this strategic initiative but are included in the separate *Measuring What Matters: Thresholds and Monitoring Update* strategic initiative.

| Strategic Initiative Activity | Recommendation and Approval Process | | | | |
|----------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------|--------------------------------|
| | Tahoe Transportation Implementation Committee (TIC) | Environmental Improvement, Transportation and Public Outreach (EITPO) Committee | Regional Plan Implementation Committee (RPIC) | Tahoe Transportation Commission (TTC) | TRPA/TMPO Governing Board (GB) |
| Sustainable Transportation Funding | ● | ● | | ● | ● |
| Transportation Equity | ● | ● | | ○ | ● |
| Lake Tahoe-Truckee Future of Tourism Shared Vision and Destination Stewardship Roadmap | ● | ● | | ● | ● |
| Lake Tahoe Regional Trails Plan (informational) | ● | ● | | | ○ |
| Sr89 Trail Feasibility Study (informational) | | ● | | | ○ |
| Corridor plans – US50 East | ● | ● | | ○ | ● |
| Technical recommendations (monitoring framework) | | ● | ● | | ● |

○ Optional

FY 2021/2022 Strategic Initiative Activities: During the next fiscal year, the tasks listed below will be completed. They are also referenced in the responsible division performance measures table.

| Task (Division) | Recommendation Body(ies)* | Target Date | Approval Body | Target Date |
|--------------------------------------------------------|---------------------------|-----------------------------|---------------|-------------|
| Draft Strategy Sustainable Transportation Funding (TP) | TTC EITPO | 11.3.21 11.17.21 | GB | 12.22.21 |
| US 50 Corridor Management Plan (TP)? | EIPTPO TTC APC | 1.26.22 2.9.22 2.9.22 | GB | 3.23.22 |
| Monitoring Framework (TP w/ R&A) | EITPO | 2.27.22 | GB | 3.23.22 |
| Transportation Equity Draft Study (TP) | EITPO | 6.22.22 | GB | FY 2023 |
| Sr89 Trail Feasibility Study (TP)* | EITPO | 5.25.22 | | |
| Draft Trails Plan (LR&TP)* | EITPO | 6.22.22 | | |

*Informational

***Tahoe Living:* Housing and Community Revitalization Strategic Initiative**

Strategic Initiative Description: This includes identification and implementation of region-wide strategies that most effectively deliver the affordable-achievable housing identified in the Regional Plan, Regional Transportation Plan/Sustainable Communities Strategy, and local housing needs assessments. This strategic initiative is entering Year 2, and includes the following activities:

- Utilize the Tahoe Living Housing and Community Revitalization Working Group (TLWG) which is comprised of local government representatives of the Advisory Planning Committee (APC), Governing Board members, and key stakeholders to provide timely recommendations for meeting critical housing needs. The public and others active in housing issues in the Basin are invited to attend TLWG meetings and contribute to the discussion. The TLWG meets approximately quarterly and advises on recommendations to the Local Government and Housing Committee, Regional Plan Implementation Committee, APC, and Governing Board.
- Continue implementation of priority housing actions, building on work completed in Year 1. In Year 1, the Governing Board approved a set of priority housing actions, based on TLWG consultation, shown in the figure below. In July of 2021, the Governing Board approved the Phase 1 Housing Amendments, which resulted from TLWG work on the “near-term” actions, Accessory Dwelling Units/Small Homes and Density. In Year 2, staff and the TLWG will continue to focus on outstanding items in the “near-term” set of actions, while laying the groundwork for Phase 2, the “medium-term” actions, including:
 - Implement changes to TRPA’s intensity, density, and dimensional standards to better support the construction of affordable-achievable housing and attainment of environmental thresholds.

- Consider changes to TRPA’s “achievable” deed-restriction requirements to ensure they are directed to local residents and local workers.
- Analyze the environmental impacts of the current development rights system, focusing on how a residential unit of use (RUU) is utilized under the current regulatory system. Given recent market trends toward larger, second homes, this analysis will rely on previous environmental analyses to provide a more detailed understanding of the environmental and community impacts of an RUU, taking into account both the size and the likely use of the unit. This analysis will lay the groundwork for the majority of remaining priority actions, such as coverage, mitigation fees, and the completion of the incentives related to ADUs/small homes and density.
- Incorporate minor code changes to maintain alignment with local jurisdiction policies to facilitate short-term housing solutions, as time allows. Due to the acute need for housing in the short-term, local jurisdictions are considering temporary or permanent policies to increase the supply of housing. An example of this is expanding opportunities for the use of moveable tiny homes for worker housing. Where changes to TRPA’s code are needed to accommodate these policies, the TLWG may be called upon to provide recommendations.
- Establish data sets that can be used to develop performance metrics for the Tahoe Living Housing and Community Revitalization Strategic Initiative: Housing Cost Analysis Tool, and Annual Housing Inventory. The Housing Cost Analysis Tool is based on a pro forma, was developed in Year 1, and will be maintained to show changes in the cost to construct local resident housing compared to affordability levels for Lake Tahoe’s affordable, moderate, and achievable communities as TLWG recommendations are implemented. Annual housing inventories are being developed by the Mountain Housing Council and Tahoe Prosperity Center. TRPA will work with these partners to develop a regional, annual housing inventory that can be used to track progress toward meeting housing needs.

Focus on Climate Change and Sustainability: *Nearly 50 percent of the Basin’s workforce commutes from outside the region to work. This adds to regional vehicle miles traveled and greenhouse gas emissions. Creating more workforce housing in the region will enable a greater portion of the workforce to take the bus, bike, or walk to work, reducing emissions. Additionally, new housing developments can be constructed with green building practices such as solar and efficient electric heating systems, further reducing regional emissions. The Regional Plan includes incentives for this type of green development.*

- Develop recommendations for TRPA Governing Board approval. Recommendations may include TRPA policy changes and/or recommendations for further partnering on collaborative strategies.

Tahoe Living Working Group Priority Housing Actions

| | | |
|--------------------|------------------------------------------------------------------------------|----------------------|
| Timeframe | Land Use Action | Policy Action |
| Near Term | ADUs/Small Homes | Density |
| Medium Term | Mixed Use Residential | Permitting |
| Long Term | Tourist/Commercial Conversion to Residential Land Donations | Coverage Fees |

Strategic Initiative Process: The initiative activities and respective processes for recommendation and approval are summarized in the table below. Any new performance metrics that may be identified will be integrated into the separate *Measuring What Matters: Thresholds and Monitoring Update* strategic initiative.

| Strategic Initiative Activity | Recommendation and Approval Process | | | | |
|--------------------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------------------|-----------------------------------------------|---------------------------|
| | Tahoe Living Working Group (TLWG) | TRPA Advisory Planning Committee (APC) | Local Government and Housing Committee (LGHC) | Regional Plan Implementation Committee (RPIC) | TRPA Governing Board (GB) |
| Intensity, Density, Dimensional Standards Alternatives | Consultation | | | | |
| Conceptual Proposal | Consultation | | Informational | | |
| Code Recommendations | Consultation | Recommendation | Recommendation | Recommendation | Approval |
| Residential Unit of Use Environmental Analysis | Consultation | Informational | Informational | | |

FY 2021/2022 Strategic Initiative Activities: During the next fiscal year, the tasks listed below are anticipated to be completed. They are also referenced in the responsible division performance measures table. The target dates are tentative, subject to additional timing recommendations by the Working Group.

| Task (Division) | Consultation/Recommendation Body(ies) | Target Date | Approval Body | Target Date |
|---------------------------------------------------------------------|---------------------------------------|---------------|---------------------------|-------------------------------------------------|
| Intensity, Density, and Dimensional Standards Alternatives Feedback | Tahoe Living Working Group (TLWG) | 10.28.21 | N/A | |
| Intensity, Density, and Dimensional Standards Conceptual Proposal | TLWG | February 2022 | N/A | |
| Intensity, Density, and Dimensional Standards Code Recommendations | Tahoe Living Working Group (TLWG) | April 2022 | LGHC APC RPIC GB | May 2022 June 2022 June 2022 July 2022 |

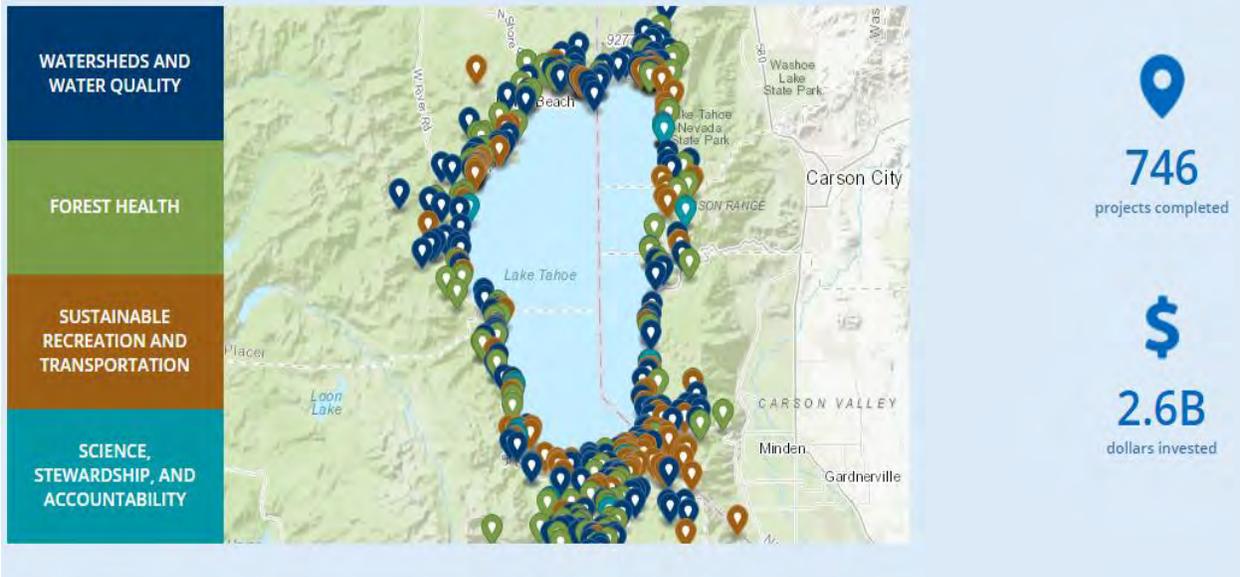
Restoration Blueprint: Environmental Improvement Program Implementation Strategic Initiative

Strategic Initiative Description: This strategic initiative includes the following activities:

- Update the EIP Program of Work.** The EIP partnership recently updated the core focus areas of the EIP to ensure the program aligns with today’s emerging threats and drives the right priority projects. Now the partnership must focus on the EIP 5 Year Priority List to ensure it is inclusive of all the partners’ actions to respond to climate change and will result in climate resilience. New projects to specifically adapt to a changing climate must be considered and be prioritized such as water quality infrastructure upgrades, community fire breaks, and expanded technologies to predict weather patterns and outcomes.

Focus on Climate Change and Sustainability: *The Environmental Improvement Program is the Region’s ‘Blueprint to a Resilient Future’. Climate has long been integrated as a key theme within each program area of the EIP. As the 5 year priority list is updated, climate adaptation and resiliency projects will be highlighted and prioritized among partners for funding and implementation.*

Strategic Initiative Process: The EIP is implemented by 80+ partner organizations and operates under a collaborative governance structure. The deliverables within this strategic initiative will be reviewed and approved through EIP Working Groups and the Tahoe Interagency Executives (TIE) Steering Committee which represents all sectors of the EIP and guides the overall implementation of the program.



FY 2021/2022 Strategic Initiative Activities: During the next fiscal year, the tasks listed below are anticipated to be completed.

| Deliverable | Recommendation and/or Collaboration Body(ies) | Target Date | Approval Body | Target Date |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------|---------------|-------------|
| TIE Steering Committee Retreat: Review of EIP Program and provide Direction for update to 5-year list | TIE SC, EIP Coordinating Committee | 12.31.21 | N.A. | N.A. |
| EIP implementers recommendations for specific additional project and prioritization of 5-year EIP list | TIE SC, EIP Coordinating Committee | 1.30.2022 | N.A. | N.A. |
| EIP Working Groups compare, update, and prioritize projects | AISCC, SWQIC, UTRWAG, Take Care, TFFT | 2.28.2022 | N.A. | N.A. |
| Review and finalize revised Program of Work and revised 5-year list | TIE SC | 3.15.2022 | N.A. | N.A. |

Measuring What Matters: Thresholds and Monitoring Update Strategic Initiative

Strategic Initiative Description: The initial threshold standards set the course for the Region forty years ago, but were never intended to be immutable. The adopted standards were a reflection of the time period. The region had just emerged from a post-Olympics development boom, during which it was widely believed that development was causing environmental degradation and threatening Tahoe. The findings and declarations of the Compact summarize the sentiment of the time succinctly, “Increasing urbanization is threatening the ecological values of the region and threatening the public opportunities

for use of the public lands.” Over fifty years ago lawmakers wrote; *“The waters of Lake Tahoe and other resources of the region are threatened with deterioration or degeneration, which endangers the natural beauty and economic productivity of the region.”* The sentiment is as true today as it was fifty years ago. The Region is still threatened, but the threats have changed. Catastrophic wildfire, congestion, lack of affordable housing, over tourism, invasive species, biodiversity loss, and climate change, have replaced “deficiencies of environmental control” related to development as the primary threats.

As a region we are entering a third phase of restoration and conservation in Tahoe. The hallmark of the first phase from late 1960s to the early 1990s was a focus on controlling development and preventing environmentally harmful development. The birth of the EIP and the modern Tahoe partnership marked the start of the second phase and a shift from preventing development to restoration to address the impacts of past development. Today, we are acknowledging that we have again moved to a new phase in our collective focus. We are working not just to restore our region, but to chart a new, more resilient future for Tahoe. Our programs have evolved, and now it’s time to revisit our goals.

This multi-year, multi-phase initiative focuses on how the partnership is collecting, analyzing, and applying information to support better decisions that accelerate environmental improvement. The initiative’s scope includes not only review of the threshold standards that establish our ultimate goals, but also updating the suite of performance measures we use to assess project, program, and plan effectiveness.

The initiative will ensure that TRPA and the Tahoe Basin partners are individually and collectively measuring what matters and provide stakeholders, from funders to the general public, with the information they need to make informed decisions about the future of the Region. The initiative will reestablish Tahoe as global leader and a model to which others aspire.

Focus on Climate Change and Sustainability: *Climate change has the potential to impact attainment of Threshold Standards. Through the threshold update process, climate considerations will help frame changes to existing standards. The updated VMT per capita threshold standard recognizes greenhouse gas impacts resulting from land use, the transportation system, and how well they work together.*

This strategic initiative includes the following activities:

- Review and updating of threshold standards
- Review and updating of Environmental Improvement Program (EIP) performance measures

All of the thresholds need to be reviewed and updated with an eye towards the new threats and building resilience to the challenges of today. The initiative will work with the EIP partners and the TIE - SC to identify the focus areas most ripe to prioritize for accelerated review.

FY 2020/2021 Strategic Initiative Activities: During the next fiscal year, the tasks listed below will be completed. They are also referenced in the responsible division performance measures table.

| Task (Division) | Recommendation | Target Date | Approval Body | Target Date |
|-----------------|----------------|-------------|---------------|-------------|
|-----------------|----------------|-------------|---------------|-------------|

| | Body(ies) | | | |
|-------------------|-------------------------------|------------------------------------------|----------|---------|
| TIE-SC Guidance | EIP-CC | 12.12.21 | TIE - SC | 2.3.22 |
| Threshold Updates | TSAC TUISWG APC RPIC | 5.18.22 6.12.22 7.13.22 7.27.22 | GB | 8.24.22 |

Digital First Initiative: Innovation Initiative

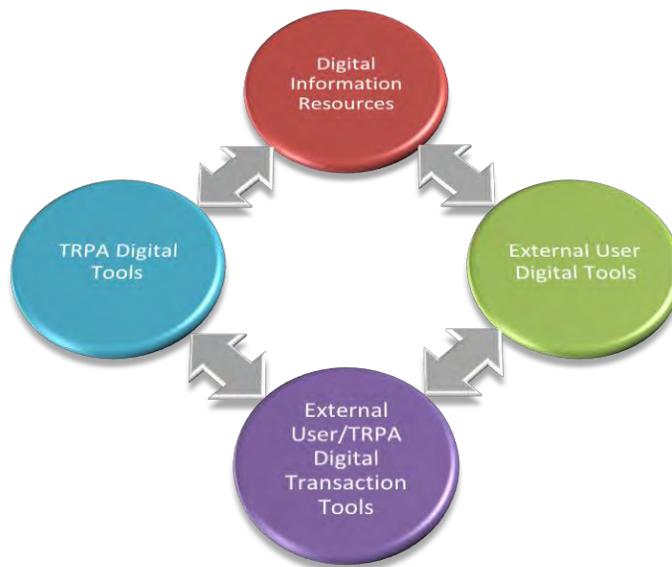
Strategic Initiative Description: This initiative recognizes the key agency opportunity to address external events, technology changes, and pursue continuous improvement. It involves significantly improving the ability of the agency to provide services in a “digital first” way, including:

- Rethinking TRPA’s technology, systems, people, and processes to proactively reimagine how we do what we do, what we track, how we tell the TRPA story.
- Use of new technology for the public and customers to obtain information (e.g., parcel records, project files) and submit information (e.g., permit applications and associated records) online, and to interact with staff through mobile devices and virtual meetings.
- Driving efficiency through automation, innovation, and creativity in how we operate; and continuing the transformation into a more connected, streamlined, efficient, and paperless agency.
- Using digital technology and data management practices to solve problems; simplify how we find, analyze, and share information; and improve how we collaborate internally and externally.

Strategic Initiative Process: An organization-wide transformation as envisioned with this initiative will necessarily be phased over multiple years. The graphic below provides a framework for the activities in each division that will work together to implement this initiative.

- **Digital Information Resources** include all types of data from mapped information (e.g., GIS data) to case files (e.g., development applications and permits), to tabular numerical data (e.g., vehicle miles traveled), to images (e.g., EIP project photos).
- **External User Digital Tools** are online and mobile tools that allow the external user to utilize digital information resources and/or to prepare information for a transaction with TRPA. For example, an online version of the TRPA Code could be used with digital information on allowed land uses (e.g., an online GIS land use map from an adopted area plan) and then used with an online application for the type of permit identified in the Code for that land use (e.g., an online special use permit application). LT Info is an example of a tool external users can employ to access information on EIP projects, parcel information, current science and monitoring data, etc.
- **External User/TRPA Digital Transaction Tools** are the online and mobile tools both the external user and TRPA staff use for transacting with each other. One of the most common examples is permitting software which handles multiple transactions. Typically these tools can be used to make all or most of the transactions in the permitting process digital by allowing the user to submit an application online, staff to provide online responses, users to check the status of their application and provide

additional information if needed online, staff to issue a permit online, applicants to schedule site inspections online, etc. Examples of other digital transactions include requests for information, conducting webinars and public meetings online, purchasing and billing, etc. These tools should use and update digital information resources (e.g., update case files and development rights inventories, track deed restrictions, etc.).



- **TRPA Digital Tools** are used internally for support of different TRPA functions by allowing the internal user to utilize or generate digital information resources and/or to prepare information for a transaction with an external user. For example, the Geographic Information System (GIS) is used to build and maintain spatial data. Often the spatial data are a part of the Agency’s Digital Information Resources (e.g., parcel maps that are available online) and are used by both internal and external users. TRPA now uses scanning and image storage software for all case files and that information is used in a similar manner. Mobile inspection apps are another tool that is used to generate digital data.

Focus on Climate Change and Sustainability: Providing digital tools and permitting for the public will reduce vehicle trips to and from the TRPA office, in turn reducing related emissions.

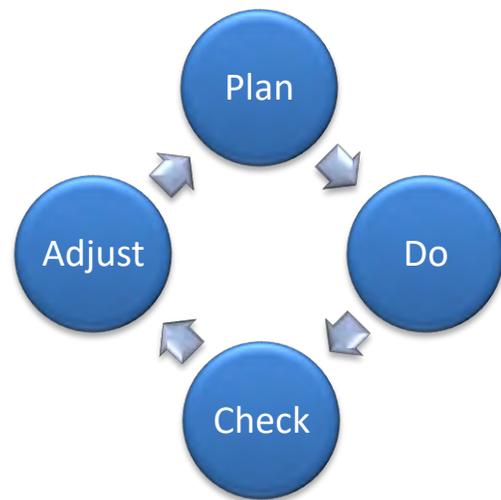
FY 2021/2022 Digital First Innovation Initiative Activities: During the next fiscal year, work on the tasks listed below will continue. The tasks assigned to each division are summarized below.

- **Long Range and Transportation Planning Division** - As key part of the Digital First Initiative, the Long Range Planning Program staff is responsible for the code modernization effort that will result in a more user-friendly digital code with features like linked graphics and explanatory videos, the ability to link to the code from a GIS map with regulatory zones, the ability to use code information to populate applications, etc.

- **Current Planning Division** - Current Planning is the lead for land capability verification system improvements and will be working in partnership with the Long Range and Transportation Division and the Research and Analysis Division to create the online parcel-level development information component of the Digital First Initiative. In FY 2021-2022, TRPA will initiate update of the agency’s current permitting software environment that was first installed 15 years ago. TRPA will be upgrading to an advanced permitting and land management software that is cloud-based, has easy-to-use interfaces for the public and staff users, uses automated tools to streamline and accelerate review times, includes email/text notifications, supports electronic document review with markup tools and e-signatures, includes integrated document management, and offers robust reporting and dashboard tools.
- **Environmental Improvement Division** – As the changes to the subject areas included in the Environmental Improvement Program are made as part of the EIP Implementation Strategic Initiative, the EI Division will take the lead and work with the Research and Analysis Division to continue upgrades to LT Info and the EIP project tracker to improve project tracking, public transparency and partner engagement.
- **Research and Analysis Division** – As the lead for this initiative, the Research and Analysis Division will partner with other divisions, modify their core activities to align with this initiative where necessary, and set the strategic direction and priorities for future components of the Digital First Initiative working in conjunction with appropriate stakeholders.

Organizational Structure

To address the strategic plan objectives, strategic initiatives, internal initiatives and core activities, TRPA has embraced the adaptive management or continuous improvement “plan-do-check-adjust” approach. The TRPA Operations divisions and programs are organized to reflect the adaptive management model. The Long Range and Transportation Planning Division represents the “plan” function. The Current Planning Division and Environmental Improvement Division correspond to the “do” function. The “check” function is the responsibility of the Research and Analysis Division. TRPA uses this approach on an ongoing basis to “adjust” the day-to-day operations of the Agency. This same approach is used by the TRPA Governing Board to annually “adjust” the focus of the agency through this Operations Work Plan and Annual Budget. This is also the concept underlying the ongoing threshold evaluation and regional planning process.

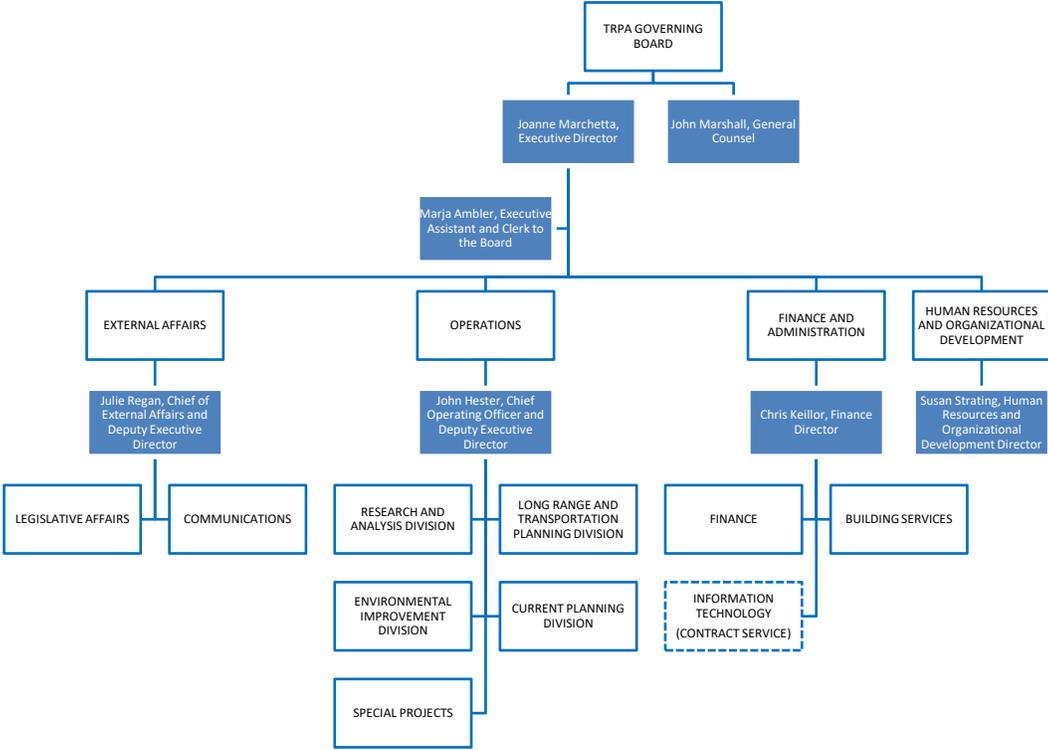


The organization chart below illustrates the application of the adaptive management model for the four TRPA Operations divisions:

- Long Range and Transportation Planning Division
(Note: Transportation Planning Program staff from this Division also serve as the Tahoe Metropolitan Planning Organization and Regional Transportation Planning Agency staff)

- Current Planning Division
- Environmental Improvement Division
- Research and Analysis Division

The Chief Operating Officer is responsible for these divisions, as well as the Special Projects Manager, Paul Nielsen, who is assigned to key projects throughout the Agency as needed and funded.



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Research and Analysis Division



Research and Analysis Division staff.

The TRPA monitors hundreds of environmental Threshold Standards, performance measures, and management actions for progress and effectiveness. TRPA's Research and Analysis Division connects the science community to the implementation of the Regional Plan and provides the best possible information for policy decisions, operations, and accountability. The division organizes

science inputs, builds data platforms, monitors and maintains current data, and analyzes information needed for policy development and decision making. The **Research and Analysis Division** performs these tasks through leading **two strategic initiatives and 11 core activities** via three programs: **Data Resources and Analysis; Science, Modeling, and Monitoring; and Planning Support.**

Core Activities

- 1. Analysis** - Provide value-added data analysis, evaluation and recommendations to division managers, leadership team and others. Use Threshold Evaluation and ongoing monitoring reports to provide insight to Long-Range Planning for Regional Plan modifications, Current Planning for development review, and to Environmental improvement for proposed EIP project prioritization. Provide the Agency with evaluation of program effectiveness, reports on permitting activity, or other value-added analysis (such as land capability evaluation, development rights transfer analysis, etc.).
- 2. Transportation Planning support** - Support transportation planning and environmental analysis, including primary responsibility for air quality monitoring and data analysis, transportation data collection, and transportation modeling and forecasting. Deliver the first Transportation Measures Report, required by the VMT threshold update, in March 2022.
- 3. Current Planning support** – Update and upgrade TRPA's permitting software. Develop and implement tools to support e-submission and electronic plan review for Current Planning projects; identify and implement tools to simplify project reviews and improve data entry/collection and reporting. Provide help-desk support for internal and external Accela users. Integrate data collection into the LakeTahoeInfo.org platform and eliminate unnecessary project review data fields in Accela.
- 4. Implementation support** - Support the implementation of the Development Rights initiative and Shoreline Initiative with data management and system support, including development of permitting systems and reporting tools in Lake Tahoe Info. Maintain and update Lake Tahoe Boating App to support the Shoreline enforcement and boater education programs.

5. **Geographic information system** - Maintain GIS databases and perform data QA/QC, update map templates, maintain GIS-related data (including at least bi-annual parcel updates), and “backend” systems; provide GIS analyses and implement new interactive map viewers where appropriate for internal and external customers; continue to implement the in-house GIS training program, including identification of “power users” in each division and program. Maintain and update field data collection systems for TRPA monitoring programs. Continue to convert paper maps to digital layers. Develop map services to support the use of TRPA GIS information with information from LakeTahoeInfo.org. Develop new datasets and improve existing data to manage historical parcel tables and genealogical relationships.
6. **IT coordination** - Collaborate and coordinate with TRPA’s information technology (IT) contractor to ensure that the systems that R&A manages are operating properly and that planned upgrades and maintenance are performed and scheduled when appropriate.
7. **Monitoring** - Coordinate and conduct field monitoring data collection stream health wildlife, noise, air quality, bike/pedestrian travel, and coordinate with internal/external partners for the collection and analysis of other monitoring data. Administer monitoring contracts with outside/partner agencies.
8. **Reporting** - Collect information from our partner agencies and other divisions within TRPA and provide analysis for regularly scheduled TRPA reports (e.g., quarterly and annual reports), produce an annual TRPA monitoring report, and assist with the annual report for the Environmental Improvement Program. Develop infographics, dashboards, or other tools for use on LakeTahoeInfo.org or TRPA.org to report on Agency results.
9. **Online information** - Continue the development of the LakeTahoeInfo.org platform, lead continued improvements to the EIP Project Tracker and lead the improvements to the Parcel Tracker and other LakeTahoeInfo.org tools. Maintain all Stormwater Management Program related systems, including BMP Database, BMP Website, interactive BMP Map, and support reporting requests.

Focus on Climate Change and Sustainability: The Lake Tahoe Info website (<https://sustainability.laketahoeinfo.org/>) includes a Sustainability Dashboard for all stakeholders to use to track progress toward achieving climate resiliency.

10. **Customer service** - Provide excellent customer service for a wide range of internal and external customers, including front counter, LakeTahoeInfo.org (especially Parcel Tracker) requests for updated information, file research, electronic/scanned and hard-copy file requests, External Affairs/Communications support for decision makers and other outreach efforts, and support EIS-EIR Review for Current Planning and Long-Range Planning analyses. R&A staff also provides Notary Services to the Agency.
11. **Document management** - Implement document management policy including public file requests and the conversion to digital documents to increase efficiency of records retention and inspections. Enhance procedures for application file scanning, document warehousing or destruction, and posting to websites. Integrate local jurisdictions permit history and project approvals and newly issued permit information into the Parcel Tracker on LakeTahoeInfo.org.

Performance Measures

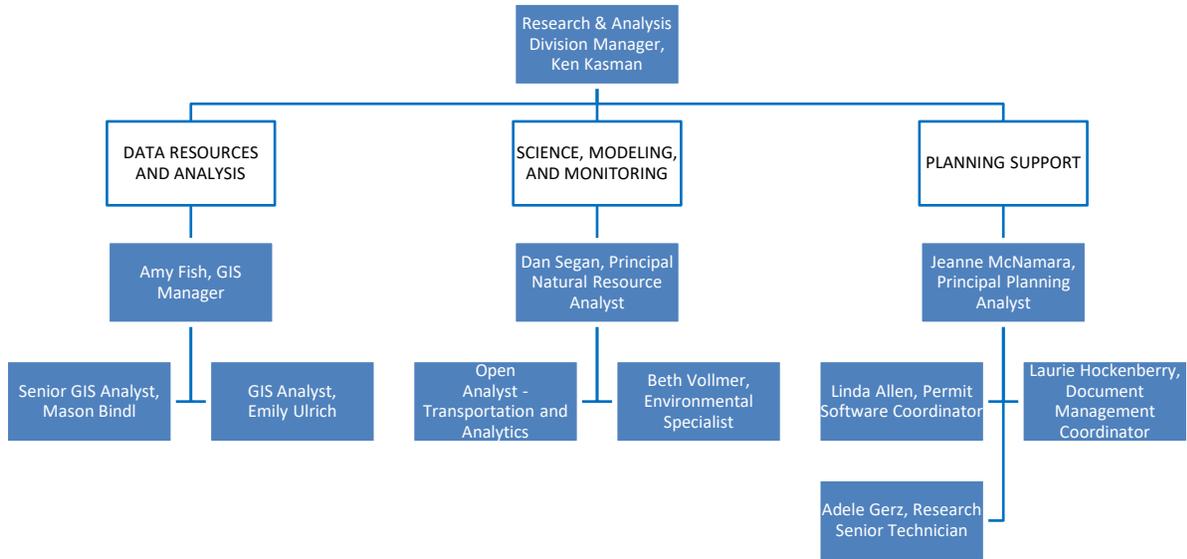
| Measure | 2019/2020 Actual | 2020/2021 Actual | 2021/2022 Target |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|
| Update all GIS parcel data semiannually. Includes parcels, addresses, owners and attributes for all property-based systems, including the BMP Database, BMP Calculation Sheet, and Accela, and GIS. | 2 | 2 | 2 |
| Develop or upgrade (i.e., redesign) at least two interactive map viewers | 6 | 13 | 2 |
| Complete changes in LT Info and/or Accela to support the second phase of the Shoreline Plan initiative implementation , including the development of a lottery for applicants and mooring allocation tracking by 12/31/2020. | N.A. ¹ | N.A. ¹ | 12/31/2020 |
| Number of sites where field data is effectively and accurately collected following standard protocols to inform Threshold Evaluation (40 stream sites; 40 SEZ sites; 50 noise sites – 35 plan areas, 8 shore zone locations, 7 highway locations; 3 air quality sites; 20 bicycle and pedestrian counting sites; TBD number of wildlife sites based on given year population of Osprey and Peregrine Falcon. | 153 | *** | 153 |
| Create or update field data collection systems for at least two field monitoring or survey programs | 8 | 4 | 2 |
| Number (and percent) of all regularly- scheduled TRPA reports and EIP report produced on time (3 Quarterly, 1 Annual, 1 EIP, 1 monitoring) | 5 (100%) | 5 (100%) | 5 (100%) |
| Permit outtake processing (audit, scan, data entry into Accela/Parcel Tracker) for all acknowledged permits issued by Current Planning and all completed projects following security return within 60 business days of TRPA action | 100% | *** | 95% |
| Updates to parcel information in the Parcel Tracker on LakeTahoelInfo.org, including file conversions, site plan snapshots and land capability, coverage/development rights data entry | 2,983 | *** | 2,500 |
| File requests processed and scanned within 15 business days | 95% | *** | 95% |

Notes:

*** FY2020-2021 performance was affected by unforeseen scheduling disruptions (e.g., COVID-19, lockdowns/office closures, and staff changes) that delayed TRPA's ability to deliver these objectives on time.

1. N.A. indicates this is not applicable and/or information is not available.
2. X/FY is the number to be completed in fiscal year.

Division Organization and Positions



Long Range and Transportation Planning Division



Long Range and Transportation Planning Division staff.

The Long Range and Transportation Planning Division includes four programs: **Long Range Planning, Transportation Planning, Sustainability, and Housing**. It is the lead for three of the six **strategic initiatives**: **Building Resiliency: Climate Change and Sustainability, Keeping Tahoe Moving: Transportation and Sustainable Recreation, and Tahoe Living: Housing and Community Revitalization**. The division is also responsible for the **core activities (1-11)** listed below.

Core Activities

The **five Long Range Planning Program core activities (1-5 below)** include review, maintenance, and update of the TRPA Regional Plan; support for local government area plan, community plan, and plan area statement amendments; maintenance and update of the TRPA Code of Ordinances; environmental document review and coordination; and special projects. The **four Transportation Planning Program core activities (6-9 below)** include integrated, intermodal regional and corridor planning; coordinated project tracking and financial management; transportation impact analysis and mitigation tools updates; and MPO Transportation Program administration and outreach. The **Sustainability Program core activities (10 below)** are focused on implementing the **Climate Change and Sustainability Strategic Initiative**. The **Housing Program core activities (11 below)** include implementation of the **Housing and Community Revitalization Strategic Initiative** as well as acting as the Agency’s ombudsperson for local employee-serving housing projects.

- 1. Regional Plan administration** - Following Regional Plan policy adoption there are permit processing, monitoring, reporting, advisory, and similar implementation tasks that will be coordinated and carried-out by multiple divisions (e.g. town center redevelopment, transfer of development rights implementation, etc). Additionally, TRPA staff identify necessary amendments to the Regional Plan as a result of strategic initiatives and day to day application of the Plan (e.g., identification of locations for public health and safety facilities on the shoreline or alternative energy regulatory incentives as part of the Climate Change and Sustainability Strategic Initiative). Long Range Planning Program staff work with other divisions and partners to identify, develop, and process such amendments. For policy amendments that do not fall under an existing initiative, staff will facilitate a planning process and prepare recommendations as needed for the Regional Plan Implementation Committee and Governing Board. This task focuses on policies that may hinder Regional Plan

implementation. Periodic policy amendments are part of TRPA's adaptative management approach. Such amendments maintain a regional planning system that accelerates the delivery of environmental and economically balanced improvements that strengthen our communities.

- 2. Area Plan, Plan Area Statement, and Community Plan amendments** - Area plans are intended to be prepared and adopted by local governments and reflect more detailed local aspirations within the framework of the Regional Plan. Area plans will ultimately update and replace the older plan area statements and community plans. Long Range and Transportation Planning Division staff support local government development and adoption of new or amended area plans by providing technical assistance. Community plans and plan area statements still exist in some areas of the Lake Tahoe Region and periodically local governments initiate amendments to these plans as an interim step before preparing and adopting an area plan. Similar to the area plan process, staff provide technical assistance to local governments that decide to initiate plan area statement and community plan amendments.
- 3. Code maintenance and update** - The Code of Ordinances is an essential tool used to implement the Lake Tahoe Regional Plan. On an ongoing basis the Division staff identifies and processes technical and minor policy amendments that have been discovered through day to day administration of the Code. In addition, as part of the *Digital First: Innovation Initiative*, staff will work with Research & Analysis staff to develop innovative and intuitive online tools to help applicants, staff, and partners implement the regional plan effectively and efficiently .
- 4. Environmental document review and coordination** - Many partner organizations submit plans that require more detailed environmental review and comments. In addition, most TRPA projects and plans require some level of environmental analysis, often involving the engagement of a consultant. For different subject area expertise, TRPA staff review and coordinate with consultants and project proponents.
- 5. Special projects** - On occasion the Long Range Planning staff will take the lead on key projects that align with other TRPA work plan priorities. A current example is the Meeks Bay Ecosystem Restoration Project, a multi-benefit EIP watershed restoration and recreation priority project being conducted in cooperation with the USDA Forest Service, which will result in a draft EIR/EIS for the Project. Another example is the Lake Tahoe Regional Trails plan, the first of its kind to develop a shared vision amongst stakeholders for a connected, world class recreation trail network.
- 6. Integrated, intermodal regional and corridor transportation planning** - This includes the Regional Transportation Plan; transit planning, coordination, analyses, and grants oversight; bicycle and pedestrian planning (Active Transportation Plan); transportation demand management (TDM) activities; intelligent transportation systems (ITS) project support and coordination; air quality conformity, monitoring and data analysis; transportation data collection and forecasting; and corridor planning.
- 7. Coordinated project tracking and financial management** - This includes coordinating the Federal Transportation Improvement Program (FTIP) and the Regional Transportation Improvement Program (RTIP) and evaluating projects for consistency with the RTP and Lake Tahoe Environmental

Improvement Program; and coordination and support of local (e.g., corridor) transportation planning projects through the Regional Grant Program.

- 8. Transportation impact analysis and mitigation tools updates** - Building from a comprehensive update of data sources for the Regional Transportation Plan, a more in depth look into future improvements related to regional and local project review for plans and larger development proposals will occur. This will also include update of the air quality mitigation fee system based on an assessment of the existing system and will address consistency between project- and regional-level practices, use of vehicle miles travelled instead of trip generation, and best practices from other areas.
- 9. Transportation Program and administration and outreach** - This includes the development and ongoing management of the annual MPO budget and work program, support of boards and other stakeholders, California Transportation Development Act and MPO public outreach.
- 10. Sustainability** - This Program is focused on continued implementation of the award-winning Sustainable Communities Action Plan (e.g., implementing the Plug-In Electric Vehicle Plan, maintaining the sustainability dashboard, etc.) while updating and enhancing the TRPA bi-state regional efforts to address climate change by leading the Climate Change and Sustainability Strategic Initiative.

Focus on Climate Change and Sustainability: *The Long Range Planning Program is systematically reviewing TRPA's Plans and Code to identify potential amendments that will support climate resiliency. These range from planning for public safety facilities that provide access to the Lake given fluctuating levels, to re-examining impervious surface standards for electric vehicle charging stations, to changing roof height and pitch requirements to reduce the internal volume of buildings that require heating and cooling.*

- 11. Housing** – The primary focus of this Program is implementation of the Housing and Community Revitalization Strategic Initiative described above. In addition, staff acts as an ombudsperson for applicants proposing to build affordable and achievable housing for local employees, participates in both the Housing Tahoe Partnership and Mountain Housing Council, supports the TRPA Local Government and Housing Committee as it addresses housing issues, and works with local governments and other partners on housing-related issues.

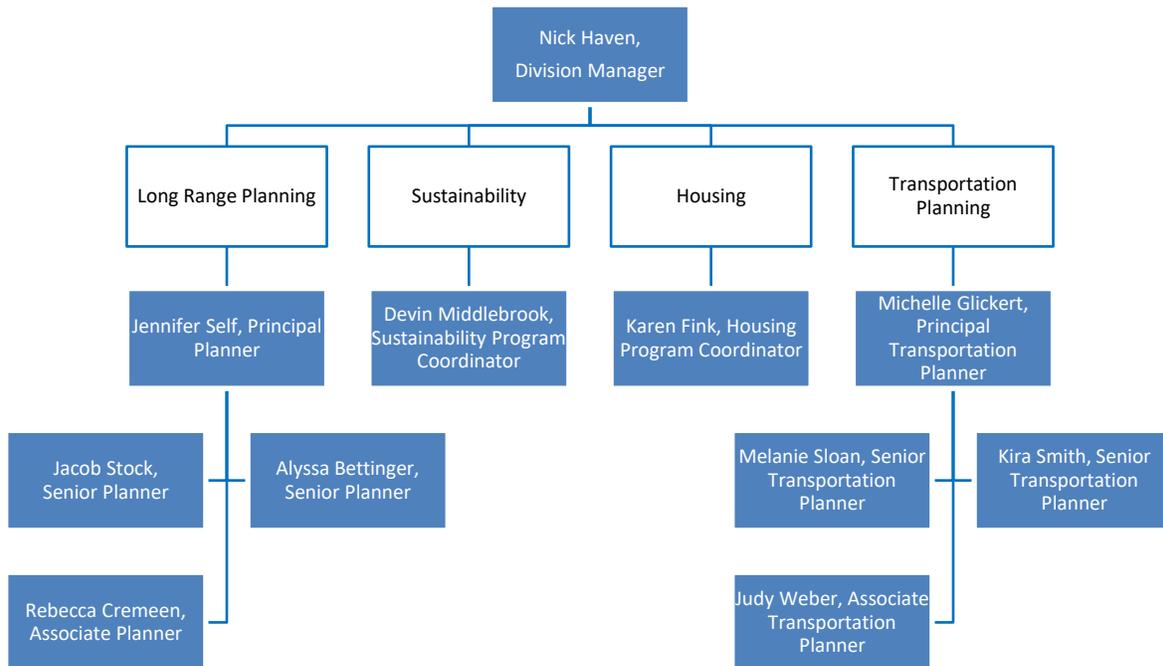
Performance Measures

| Measure | 2016/2017 Actual | 2017/2018 Estimated | 2018/2019/2020 Target |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|--------------------------|
| Process all Strategic Initiative tasks as scheduled in the descriptions of those initiatives. | N.A. ¹ | N.A. ¹ | 100% |
| Provide support to complete environmental analyses for TRPA strategic initiatives projects (e.g., thinning on steep slopes) | | | |
| Facilitate the preparation and review of the draft EIR/EIS for the Meeks Bay Restoration project in collaboration with other lead agencies and stakeholders. | | | |
| Convene partners and facilitate a planning process to identify appropriate locations for public health and safety facilities on the shoreline as implementation of the Regional Plan. | | | |
| Provide technical assistance for Regional Plan policy and code amendments as needed for other projects and strategic initiatives outlined in this work plan. | | | |
| Facilitate local jurisdiction Area Plan approvals and amendments , including bringing to APC, RPIC and/or TRPA Governing Board | 100% | 100% | 100% |
| Administer the 2019 Federal Transportation Improvement Program and coordinate and support local (e.g., corridor) transportation planning projects as scheduled (see OWP) | 100% | 100% | 100% |
| Administer and manage the MPO annual budget and work program , and administer the California Transportation Development Act consistent with all deadlines and schedule requirements of the MPO Overall Work Program (OWP) | 100% | 100% | 100% |

Notes:

1. N.A. indicates this is not applicable and/or information is not available.
2. X/FY is the number to be completed in fiscal year.

Division Organization and Positions



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Environmental Improvement Division

The TRPA’s Environmental Improvement Division provides collaborative leadership and administration of the **Lake Tahoe Environmental Improvement Program (EIP)**, a public and private, multi-jurisdictional capital investment program to conserve and restore Lake Tahoe’s environment and enhance public recreation opportunities. Under the EIP, 80+ partners work together in a collective impact model to set priorities, develop financing strategies, implement projects, and track results of the program. TRPA serves as the backbone agency in the partnership to convene, facilitate, and align partners to achieve program results. The Division is also responsible for three programs that implement the **Environmental Improvement Program: Forest Health, Aquatic Resources, and Stormwater Management**. The division is the lead on the **Restoration Blueprint: Environmental Improvement Program Implementation** and is responsible for the ten **core activities (1-10)** below.



Environmental Improvement Division staff.

Focus on Climate Change and Sustainability: Working with the Tahoe Fire and Fuels Team, the Forest Health Program and Forest Health and Wildfire Committee have developed revised standards for forest thinning on steeper slopes. These standards will enable more cost effective thinning which is critical for reducing the intensity of fires in the Basin.

Core Activities

1. **Environmental Improvement Program (EIP) leadership support** – Lead, manage and support the bi-state regional collaborative EIP through convening and facilitation of the EIP governance structure. This includes the Tahoe Interagency Executive Steering Committee, the EIP Coordinating Committee, and the EIP Working Groups. Through this structure, the EIP partnership implements the Lake Tahoe Regional Plan to accelerate threshold attainment.
 - a. **EIP working groups support** - Actively participate in EIP stakeholder working groups including:
 - Tahoe Fire and Fuels Team
 - Stormwater Quality Improvement Committee
 - Parcel BMP Working Group (Chair)
 - Aquatic Invasive Species Coordinating Committee (Co-Chair)
 - Nearshore Working Group
 - Sustainable Recreation Working Group
 - Upper Truckee River Watershed Advisory Group

- SB630 Stakeholder Committee
- Take Care Working Group

2. **Caldor Fire Recovery Team** – The EIP Division manager leads the internal TRPA Caldor Fire Recovery Team to ensure coordination across divisions in response to the approximately 10,000-acre fire that occurred in August of 2021. This includes coordinating permitting needs for recovery projects as well as science, funding, outreach, sustainable recreation, data management, and project prioritization needs.
3. **EIP Accountability Tracking** - Provide financial and accomplishment tracking of the EIP. This includes providing oversight, management, and quality control of data entered by EIP partners in the online EIP Project Tracker and compiling yearly reports for a variety of audiences including Lake Tahoe’s congressional delegation.
4. **EIP Outreach** – Work with the TRPA communications team and EIP partners to develop outreach materials, press stories and articles, project reports to bring awareness to the EIP. Organize tours of EIP projects for the public, elected officials, and other agencies.
5. **EIP Funding Coordination** - Work with EIP partners and working groups to develop coordinated funding proposals to fund the EIP. Determine funding gaps and needs and work with partner to seek out new and creative ways to fill gaps. Lead the development of the Lake Tahoe Restoration Act EIP priority project list and annual report to Congress.
6. **EIP Mitigation Funding** - Manage and track mitigation funds collected from Current Planning projects and release to local jurisdictions for use on EIP projects.
7. **EIP Project Permitting** – Work with EIP Partners in project planning and development to ensure best project design and that it is in compliance with TRPA goals, policies and Code of Ordinances. Issue EIP permits as needed.
8. **Forest Health Program Management** – Support the land management agencies in implementing EIP projects that improve Forest Health. Specifically, the program manager:
 - Provides streamlined reviewed and permitting of forest restoration projects.
 - Updates and maintains TRPA vegetation regulations and thresholds to meet basin needs
 - Engages in collaborative forest planning with partner agencies to increase forest health and resilience in the face of climate change impacts and risk of high-severity wildfire.
 - Serves as Plans Section Chief in the Tahoe Fire and Fuels Team.
 - Engages in leadership role through Tahoe Fire and Fuels Team on Caldor Fire recovery and restoration.

9. Aquatic Resources Program Management - TRPA leads the collaborative basin-wide program to prevent, control, and monitor existing Aquatic Invasive Species (AIS) in the region. Specifically, the program manager focuses on:

- AIS prevention - Implements the AIS Watercraft Inspection Program in partnership with inspection contractor.
- AIS control - Implements and manages contracts for AIS control projects identified in the AIS Implementation Plan and AIS Action Agenda.
- AIS monitoring – Tracks AIS reductions and/or spread to demonstrate progress on achieving goals stated in the AIS Action Agenda- 90% reduction of AIS (in acres) by 2031.
- National Leadership - Serves in a leadership capacity for the Aquatic Nuisance Species Task Force, the Western Regional Partnership on Aquatic Nuisance Species (Chair), and National Invasive Species Awareness Week Planning Committee.

10. Stormwater Program Management – TRPA implements a region-wide water quality program that focuses on supporting local jurisdictions and private property owners in reducing stormwater pollution to Lake Tahoe in accordance with the TMDL. Specifically the program manager:

- Coordinates with local governments and the Stormwater Quality Implementation Committee (SWQIC) to support TMDL implementation and make progress towards water quality threshold attainment.
- Pursues funding for and facilitates area-wide stormwater treatment and green infrastructure project planning and implementation.
- Provides technical assistance, project review, permitting, and on-site inspections to facilitate BMP installation and maintenance on developed parcels.
- Coordinates with local governments and SWQIC on Caldor Fire recovery and restoration related to water quality impacts and issue abatement.

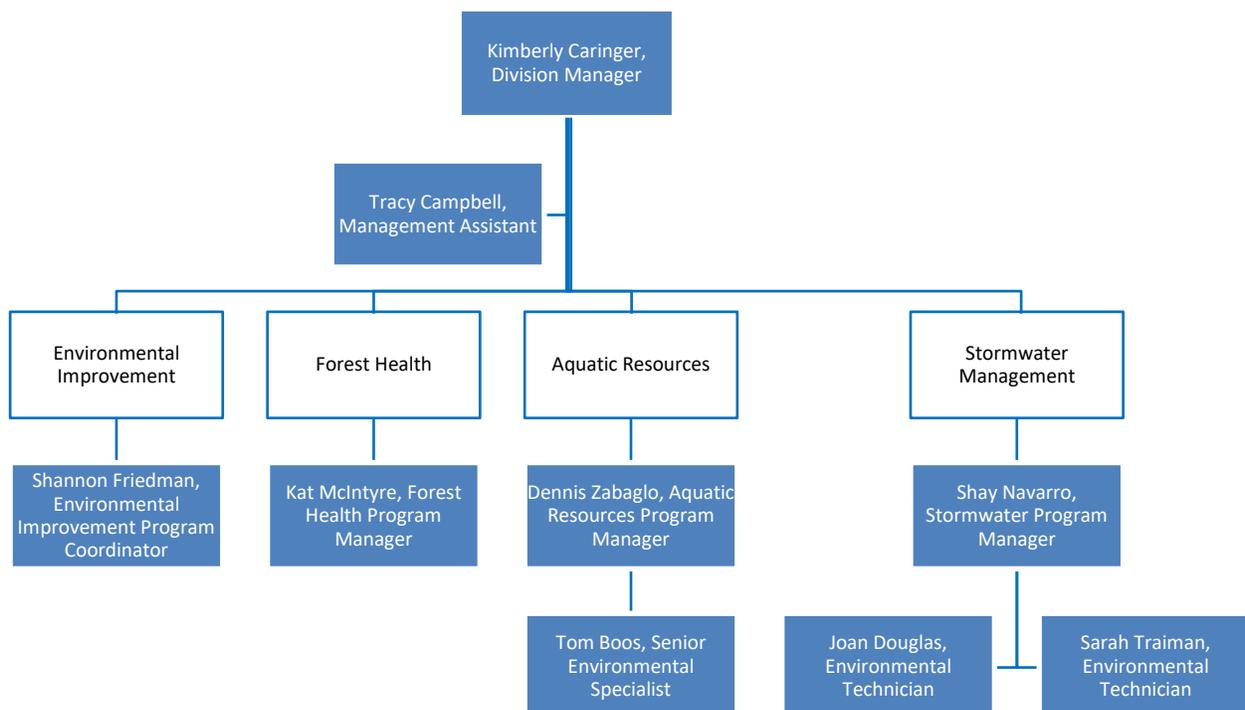
Performance Measures

| Measure | 2021/2022 Target |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Updated 5 year EIP Priority Project List with focus on climate adaptation and resilience | 3.15.2022 |
| Complete Chapter 61 Vegetation Code Update on ground-based mechanical equipment and steep slopes. | 6.30.2022 |
| Complete all necessary permitting needs for Caldor Fire Recovery | 6.30.2022 |
| Implement Taylor Tallac Phase 1: AIS Control and Eradication Project | 12.31.2021 |
| Complete Final Environmental Impact Statement for the Tahoe Keys Control Methods Test Project and bring to GB for project decision | 3.15.2022 |
| Initiate one new AIS control project derived from the AIS Implementation Plan and Action Agenda | 6.30.2022 |
| Complete design and engineering for Lower Kingsbury Area-Wide Water Quality Treatment Project | 6.30.2022 |
| Collaboratively develop and design a draft plan for the Ski Run “Mountain to Marina” Green Infrastructure Project | 6.30.2022 |
| Complete 100% of 2021 EIP project reporting | 3.15.2022 |
| Lead and complete the update of the Lake Tahoe Restoration Act priority project list and 2022 report to Congress | 3.15.2022 |

Notes:

1. X/FY is the number to be completed in fiscal year.

Division Organization and Positions



Current Planning Division



Current Planning Division staff.

Environmental Threshold Standards are achieved and maintained through projects being built by private investors and developers. The Current Planning Division reviews, permits, and inspects private projects in a timely and consistent manner to serve the public and help facilitate environmental improvement and economic investment in Lake Tahoe communities. The division is also responsible for compliance activities both on land and water. This division is comprised of five programs: **Customer Service, Permitting, Compliance, Local Government Coordination, and Special Projects**. The Current Planning Division programs support the **Digital First: Innovation Initiative** and implement the following **core activities (1-5 below)**.

Core Activities

1. **Customer Service Program** - In addition to providing exceptional customer service on the phone, virtually, and through email, and coordinating activities with the Digital Initiative, this includes the following:
 - a. Identify and implement changes to improve and streamline application review (i.e., recommendations from continuous improvement process teams, existing reports and studies, stakeholder assessments, user feedback, and staff recommendations).
 - b. Implement technology improvements to create consistent, electronic application processing.
 - c. Develop customer tools and other media to better educate the community about environmental review and regulations, development potential, and permitting processes in the Lake Tahoe Basin.
2. **Permitting Program** – This includes the following:
 - a. Maintain an application completeness review time of 30 days or less, and a total review time of 120 days or less for all complete applications including those applications reviewed by staff, Hearing Officer, and TRPA Governing Board.
 - b. Provide accounting and tracking to support transfers of development rights that result in environmental improvements consistent with the adopted Regional Plan.
 - c. Reduce the length of staff reports while enhancing content for all types of applications.

- d. Implement 2018 Shoreline Plan including creating programs and systems to track, register and/or permit existing moorings, new moorings, and new piers.

3. Compliance Program – This includes:

- a. Inspections – Maximize permit compliance by providing prompt and thorough pre-grade inspections and by effectively tracking permits during construction.
- b. Complaints – Minimize the time required to resolve complaints.
- c. Compliance – Quickly and effectively resolve and abate any problems associated with code violations.
- d. Tree removal permitting – Conduct tree evaluations and issue tree removal permits in a timely manner.
- e. Enhanced BMP enforcement – In coordination with the TRPA Stormwater Program and local jurisdictions, increase BMP enforcement by targeting highest priority BMP non-compliance properties.
- f. Watercraft enforcement – Effectively enforce TRPA watercraft rules through outreach and education.
- g. Partnerships – Collaborate with partner entities to facilitate and support their code administration activities and help them implement the Regional Plan and Code through approved memoranda of understanding.
- h. Memoranda of understanding (MOU) and area plan monitoring – Monitor local government compliance with adopted area plans per approved MOUs, as well as compliance with other MOUs, and provide MOU compliance information for inclusion in appropriate reports (e.g., Local Government Coordination Report) that address area plan performance.
- i. Continue to standardize monitoring requirements (Current Planning Division and Research and Analysis Division assisting) – Review and standardize project monitoring conditions required by the Current Planning Division when permits are issued to better utilize limited inspection resources and to better integrate data with other Research and Analysis Division monitoring efforts.
- j. Continue to improve customer service, communication, and efficiency – Streamline compliance workflows and reports in Accela and implement remote applications for electronic tracking and recording of field inspections.
- k. Performance measures – Continue to update Code Compliance performance measures to be in line with new streamlined processes.

4. Local Government Coordination Program – This program is intended to implement the Regional Plan by supporting and coordinating with local governments and other partner agencies. Its components include preparation and execution of memoranda of understanding (MOUs) to issue permits consistent with the adopted area plans including training (also see 4 a and 4 b below); improvement and coordination of permitting across jurisdictions; participation in annual auditing and reporting (also see 4 c below); and the ongoing area plan certification and bi-annual allocations processes.

- a. Standardize MOUs – Continue standardization of MOUs for delegation of application processing to local governments with conforming area plans, delegation of residential application processing using TRPA regulations, and/or processing of qualified exempt projects as defined in the TRPA Code of Ordinances.
- b. MOU appeals process – Administer the appeal process for local government projects processed pursuant to an MOU associated with a conforming area plan or plans.
- c. MOU and area plan monitoring – Monitor local government compliance with adopted area plans per approved MOUs, as well as compliance with other MOUs, and provide MOU compliance information to include in appropriate reports that address area plan performance and in the LT Info Parcel Tracker.

5. Special Projects Program – In addition to projects listed above, this includes cross-cutting or legacy projects such as updating and maintaining the Administrative Interpretations Manual, etc.

Focus on Climate Change and Sustainability: *With ongoing implementation of new technology applicants have access to information online 24 hours/day and 7 days/week. In addition, both TRPA’s Current Planning Division staff and applicants can work together from remote locations. The result is reduced energy use and emissions and improved service to technology-savvy applicants.*

Performance Measures

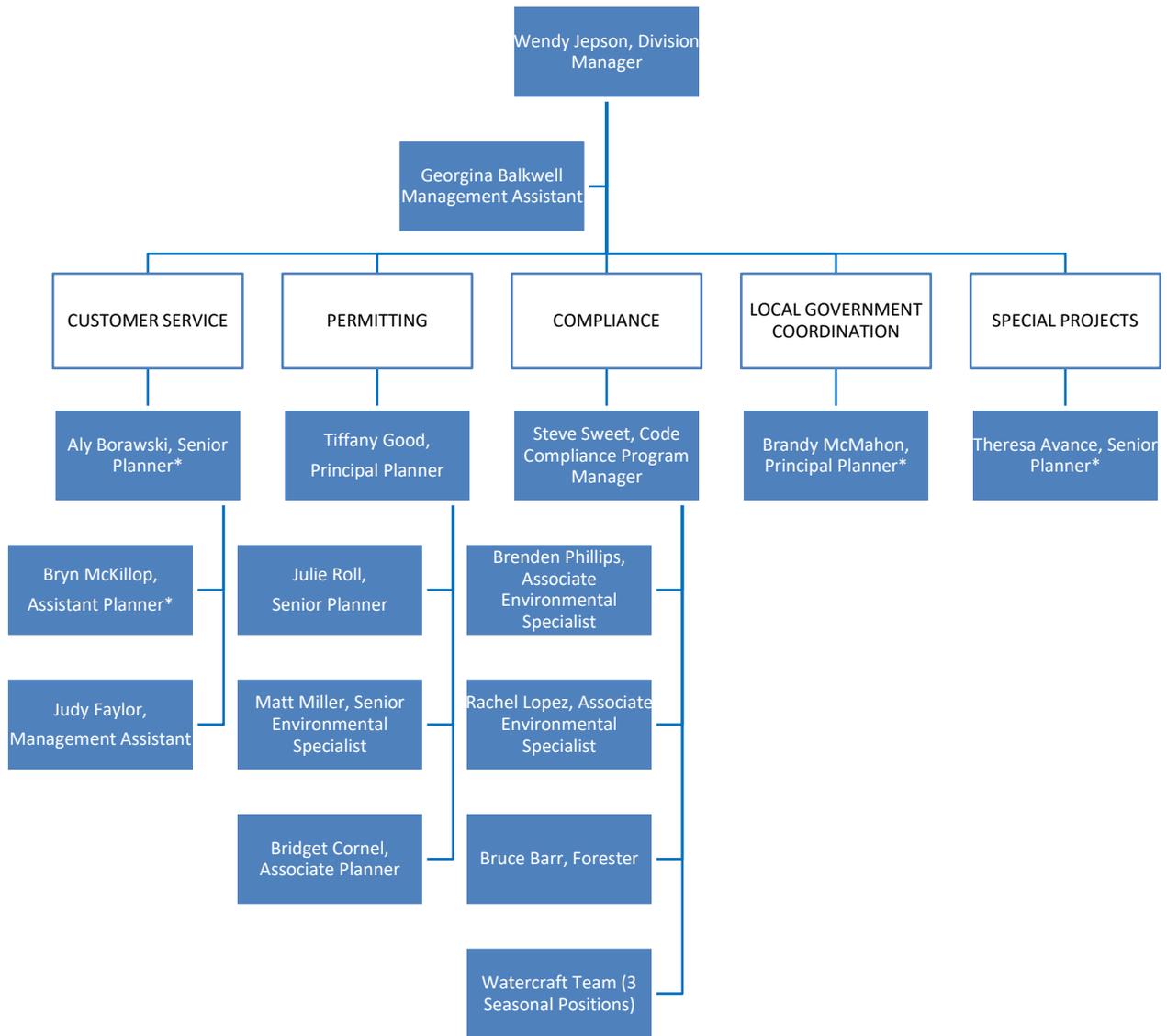
| Measure | Jan 2020 – Oct 2021 Actual | Jul1 2021 – June 30 2022 Estimated | 2022/2023 Target |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------|------------------|
| Number of phone calls and emails received | 6652 | 3800 | 3700 |
| Number of phone calls and emails responded to in 72 hours | 99% | 99% | 99% |
| Number of applications received | 1829 | 1140 | 944 |
| Percent of applications deemed complete /not complete within 30 days ³ | 98.5% (1300 of 1320) | 99.4% (173 of 174) Fiscal TYD | 100% |
| Percent of all applications reviewed within 120 days of application being deemed complete | 98.9% (992 of 1003) | 100% (62 of 62) Fiscal YTD | 100% |
| Initiate new pier lottery and prioritization process for the biennial new pier allocations | 100% | N.A. ¹ | 6.2023 |
| Implement new pier permitting system per the Shoreline Plan Implementation Plan-review and bring to Hearings Officer and Governing Board all eligible and complete pier applications | 100% | N.A. ¹ | 2.2023 |
| Manage the mooring registration program in accordance with the Shoreline Plan, Shoreline Implementation Plan, and Rules of Procedure | 100% | 100% | 100% |
| Conduct new mooring lottery in accordance with the Shoreline Plan | 12.2020 | 12.2021 | 12.2022 |

| | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|-------------------|
| Permit existing moorings eligible for and applied for within Phase 1 of the Mooring Permitting and Registration Program, and which have provided a complete submittal | 100% | 100% | 100% |
| Number of development rights (commodities) transfer applications received and processed. | 69 of 81 | 7 of 8 Fiscal YTD | 45 |
| Number of pre-grade inspections (percent complete or scheduled within 3 days of request) | 340(100%) | 175(100%) | 180(100%) |
| Number of final inspections (percent complete within 15 days of request during construction season) | 485(99%) | 280(99%) | 260(100%) |
| Number of grading exception applications received (percent reviewed within 3 days of request) | 410(100%) | 240 (100%) | 250 (100%) |
| Number of MOU Compliance audits (percent complete by November 30 each year) | 100 (100%) | 100(100%) | 100 (100%) |
| Number of MOU Partner Trainings | 6 | 6 | 6 |
| Number of Code Compliance training sessions | 6 | 4 | 4/FY ² |
| Number of complaints received (percent response within 1 week) | 224(100%) | 150(100%) | 140(100%) |
| Percent of all tree removal permits issued within 2 weeks of submitted application | N.A. ¹ | 100% | 100% |
| Local government coordination annual report completed and submitted to Governing Board | N.A. ¹ | 12.30.2021 | 12.30.2021 |
| Number of MOUs supported and monitored | 50 | 51 | 52 |
| Complete allocations performance report and make bi-annual allocations recommendations to the TRPA Governing Board | 5.17.19 | N.A. | 4.28.21 |

Notes:

1. N.A. indicates this is not applicable and/or information is not available.
2. X/FY is the number to be completed in fiscal year.

Division Organization and Positions



* In addition to the 4 permitting staff listed above, these 4 staff also process permits.

Attachment B

Greenhouse Gas Inventory Infographic

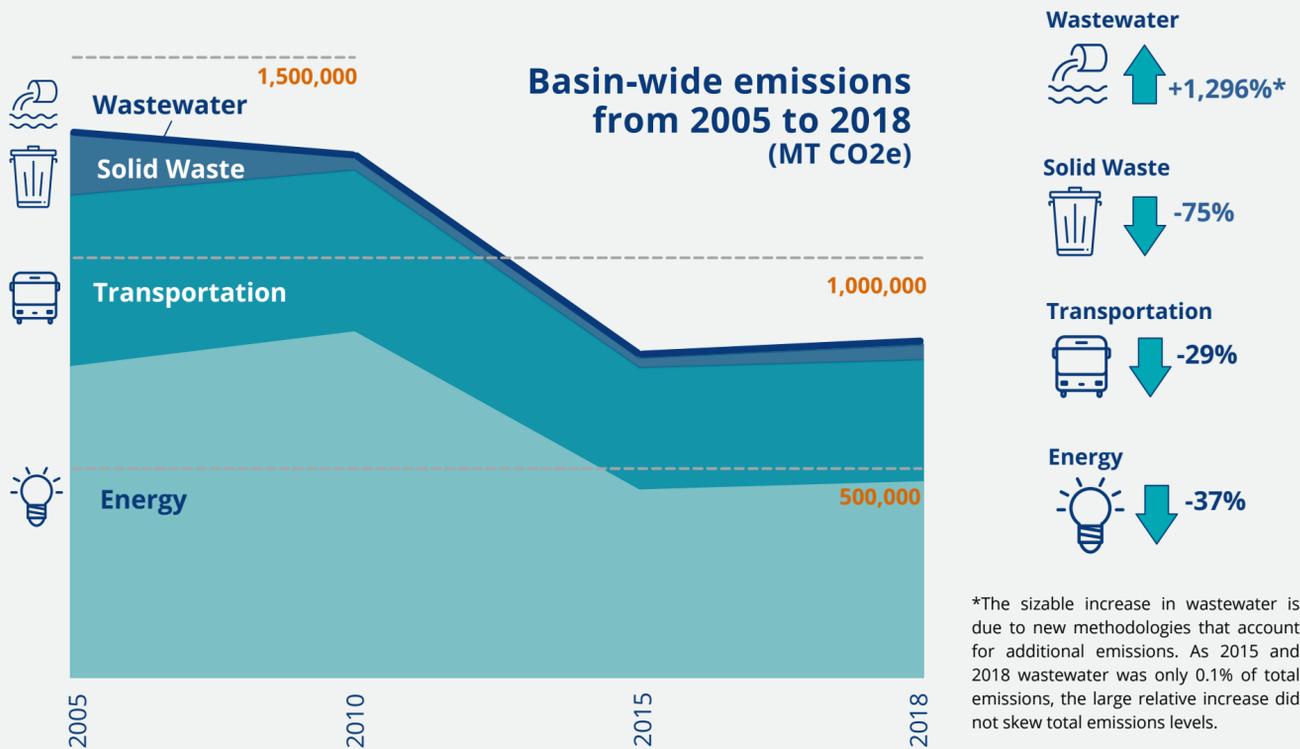
Lake Tahoe Basin

EMISSIONS & SEQUESTRATION

TOTAL 2018 GREENHOUSE GAS EMISSIONS: ~800,000 MT CO₂e

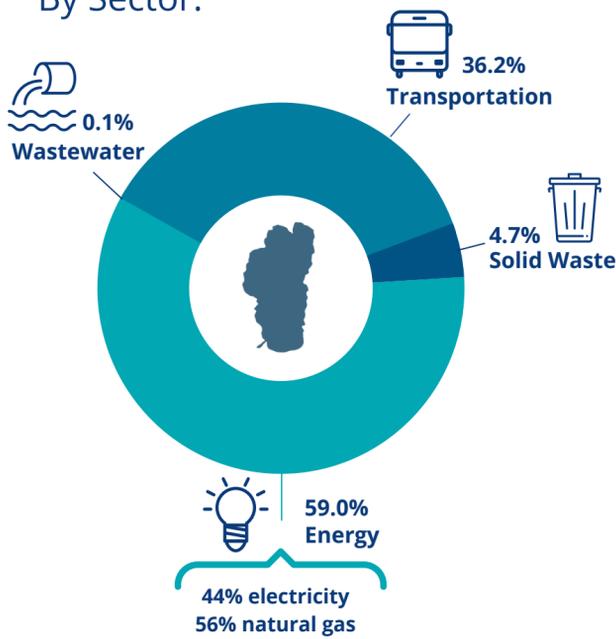
Over half of the emissions in the Lake Tahoe Basin come from energy. Energy + transportation account for over 95% of total emissions in the basin.

Emissions decreased from 2005 to 2018, but slightly increased from 2015 to 2018.

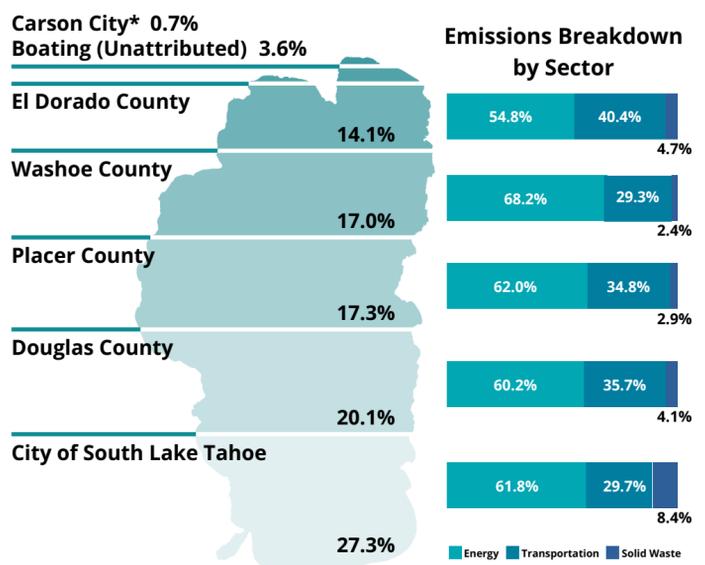


2018 EMISSIONS BREAKDOWN

By Sector:



By Jurisdiction:



*The rural portion of Carson City's emissions (within the Tahoe Basin) all come from the Transportation sector.

2014-2018 CARBON SEQUESTRATION

Forest Sequestration in the Tahoe Basin:

Resilient forests are carbon sinks. Fire-suppressed forests are carbon sources.

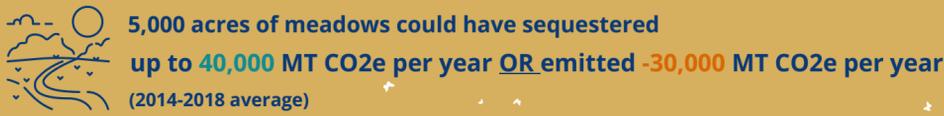


Carbon Sequestration is an emerging science

The wide range in carbon values for the Tahoe Basin is a result of the variation in forest carbon model outputs, as well as unknown meadow condition status.

Meadow Sequestration in the Tahoe Basin:

Meadows sequester more carbon per acre than forests, but meadows are a diminishing resource as they dry out and are converted into forests.



Meadows have the potential to play a very important role in carbon sequestration.



REDUCING EMISSIONS IS CRUCIAL

If no further action is taken to continue reducing emissions, overall emissions in the basin are forecast to increase 5.7% by 2045.

CARBON ACCOUNTING BALANCE (2018)

Emissions



-800,000 MT CO₂e

Sequestration



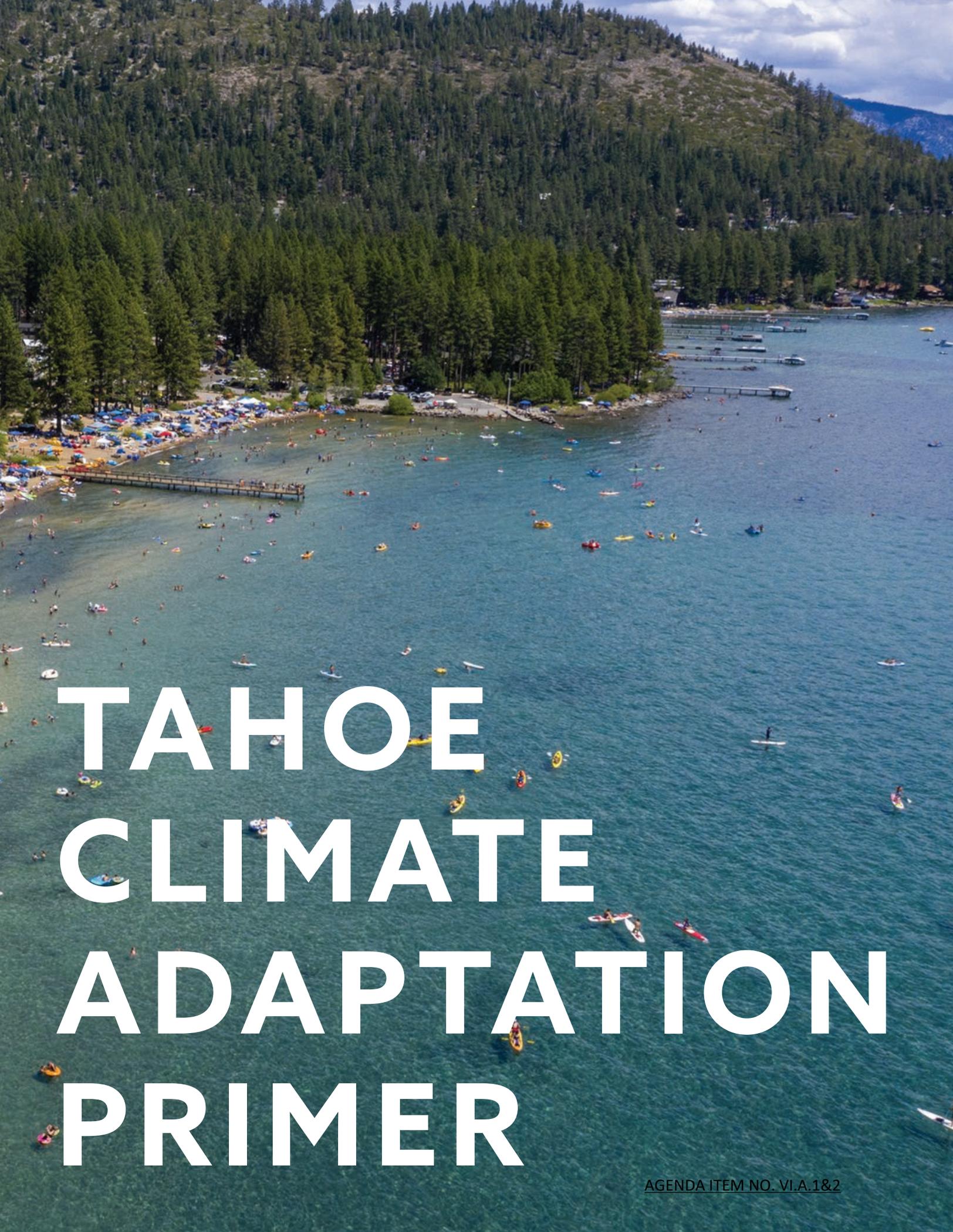
+300,000 to +1,000,000 MT CO₂e*

NET BALANCE =
-500,000 to +200,000
MT CO₂e*

*The wide range in 2018 carbon sequestration values for the Tahoe Basin is a result of the variation in forest carbon outputs compared in this analysis, as well as unknown meadow condition status.

Attachment C

Climate Adaptation Primer



TAHOE CLIMATE ADAPTATION PRIMER



ADAPTING TO CLIMATE CHANGE AT LAKE TAHOE

LAKE TAHOE'S CLEAR BLUE WATERS and breathtaking forested mountains make it a world-renowned recreation and tourism destination. Sixty-five thousand residents and 15 million visitors enjoy Tahoe each year. The landscape provides easy access to hiking, biking, snowsports, beaches, boating, fishing, paddling, and wildlife viewing. The Basin encompasses ski resorts, hundreds of miles of trails, 20 communities, and one city. Its cosmopolitan mountain culture is unique in the Sierra Nevada. Climate change threatens these cherished aspects of Tahoe with warmer temperatures and longer droughts, less snowpack, earlier runoff, more severe floods, increased erosion, greater fluctuations in lake level, and more severe wildfires and smoke.

Tahoe's high number of visitors combine with its delicate ecosystems to make it challenging to build resilience. Yet Tahoe benefits from decades of strong environmental stewardship, perhaps best embodied in the Lake Tahoe Environmental Improvement Program that has guided over \$3 billion of public and private investment in restoration since 1997. These commitments make Tahoe a promising place for adaptation with the potential to serve as a national model.

Our bi-state partnership has protected Tahoe for fifty years. We are committed to continuing this partnership to get ahead of the climate change curve, and ensure that all Californians, all Nevadans, and all visitors to the Lake can enjoy its natural beauty and welcoming mountain culture far into the future.



WADE CROWFOOT
SECRETARY
California Natural
Resources Agency



BRADLEY CROWELL
DIRECTOR
Nevada Department
of Conservation and
Natural Resources

CONTENTS

| | | | |
|-----------------------------|----|------------------|----|
| Key messages | 4 | Lake Tahoe | 12 |
| Overview | 6 | Forested Uplands | 15 |
| Existing Mandates and Plans | 8 | Communities | 18 |
| Impacts & Adaptation | 10 | Looking Ahead | 25 |

KEY MESSAGES

ADAPTING TO THE IMPACTS OF CLIMATE CHANGE is necessary to safeguard the quality of life, land, and waters at Tahoe. The states of California and Nevada, Tahoe Regional Planning Agency (TRPA), Tahoe Transportation District (TTD), Washoe Tribe of Nevada and California (Washoe Tribe), and federal, local, and private partners are proactively adapting to climate change and making our communities, infrastructure, and natural resources more resilient. Key findings of this work include the following:

TEMPERATURE & PRECIPITATION

HOTTER SUMMERS: By 2100 summer in Tahoe will feel almost as hot as summer in Reno does today.

EXTREME STORMS AND FLOODING: The amount of rainfall from the largest storms

will increase by up to 30 percent, causing more flooding to communities. It would cost three times less to adapt to flooding than to pay for damages.

SNOWPACK: Rising temperatures will cause more precipitation to fall as rain rather than snow at lake level.

LAKE TAHOE

LAKE CLARITY: Warmer temperature and decreased deep-water mixing will diminish clarity. Larger and more frequent wildfire and floods will increase sediment flows into the Lake.

LAKE LEVEL: The lake level will be above and below the natural rim more often in

the future. Tahoe City Dam will overtop one or two times each decade.

STREAM RUNOFF: Runoff will peak five months earlier, and affect ecosystems and downstream water resources.

INVASIVE SPECIES: Warmer temperatures will make nearshore water more hospitable for aquatic invasive species.

FORESTED UPLANDS

WILDFIRES: Wildfires will be larger and more frequent. By 2100 the total area burned each decade is projected to be 61 percent larger than in 2000. Wildfire threatens people and \$26.9 billion in total property value. Each \$1 million invested in adaptation would reduce property damages by \$10 million.

DROUGHTS AND FOREST HEALTH: Longer, more frequent droughts and increased insect outbreaks will kill more trees, further increasing wildfire risk.

NATIVE SPECIES: Reduced habitat will cause some native species to decline or even become locally extinct.

MEADOWS: Many meadows will dry out for longer periods, and eventually convert to forest or shrubs.



COMMUNITIES & INFRASTRUCTURE

WINTER RECREATION: By 2100 the length of the winter recreation season will decrease by half. The 12 ski resorts in the Tahoe region could lose \$268 million annually.

SUMMER RECREATION: The length of the summer recreation season will increase. Lower lake levels caused by extended droughts will impact boating, beaches, and water sports.

CULTURAL LANDSCAPES: Large high-severity wildfires will destroy culturally important resources, artifacts, and sites.

SMOKE EVENTS: Wildfires will cause more smoky days. By 2050 the health-related costs from a single wildfire could be \$7 million to \$40 million.

ROADS: The risk that landslides, wildfire, flooding, and avalanches damage highways will increase. Annual road damages could exceed \$75 million by 2100.

INFRASTRUCTURE: Extreme weather, wildfire, and other hazards could create more frequent outages for water, energy, and communication infrastructure. Higher lake levels may flood lakefront properties.

OVERVIEW

The California Tahoe Conservancy (Conservancy) has partnered with two dozen agencies and stakeholders, and a large team of technical experts, to produce three interlocking documents:

- 1. A SCIENTIFIC ASSESSMENT** of the vulnerability of the Lake, forests, and communities to climate change impacts (released in April 2020)*
- 2. THIS PRIMER** of major climate impacts and existing adaptation partnerships
- 3. A PROJECT PORTFOLIO** that lists adaptation actions that partners are already undertaking (forthcoming in 2021)

THIS PRIMER REVIEWS:

- 1.** Anticipated climate change impacts based on the integrated vulnerability assessment.
- 2.** Ongoing adaptation work by existing partnerships involving California and Nevada agencies, the TRPA, federal agencies, the Washoe Tribe, local jurisdictions, nonprofit organizations, and businesses.

This information is categorized into three Basin sub-systems: Lake Tahoe, Forested Uplands, and Communities



LAKE TAHOE including its chemistry, hydrology, water quality, and native fish.



FORESTED UPLANDS including vegetation, wildlife, and groundwater.



COMMUNITIES including cultural landscapes, public health and safety, recreation, and water, power, communication, and transportation infrastructure.

The primer concludes with what lies ahead for Tahoe. It reviews ongoing and upcoming statewide planning led by California and Nevada. It also reviews the goals of a new Basinwide mitigation, adaptation, and resilience initiative led by the TRPA, as well as local jurisdiction plans and initiatives.

RESILIENCE: The ability of a system to withstand disturbance without fundamental change.

ADAPTATION: Changing processes and behaviors in response to actual or expected climate conditions.

*INTEGRATED VULNERABILITY ASSESSMENT OF CLIMATE CHANGE

An assessment of how patterns of temperature and precipitation will change at Tahoe, and how these patterns will affect the things people care about, including an analysis of economic impacts by Industrial Economics, Incorporated. Economic data and modeled projections in this primer come from this assessment.

tahoe.ca.gov/climate-change



EXISTING MANDATES & PLANS

Several mandates and plans guide the adaptation work of public agencies and stakeholders in Tahoe.

STATE MANDATES & PLANS

California and Nevada have several laws, executive orders, and policies that require state agencies to integrate climate change adaptation into planning and investment, and to create corresponding programs and regulations.

KEY CALIFORNIA GUIDANCE

SAFEGUARDING CALIFORNIA PLAN (required by Executive Order S-13-08) serves as the State's climate adaptation strategy.

EXECUTIVE ORDERS B-30-15 AND B-52-18 require California state agencies to consider climate change impacts in all planning and investment, and direct state agencies to increase resilience to wildfire and adapt to climate change.

EXECUTIVE ORDER N-82-20 on biodiversity requires state agencies to conserve at least 30 percent of California's lands and coastal waters by 2030, including a Natural and Working Lands Climate-Smart Strategy to advance the State's carbon neutrality goal and build climate resilience.

THE CALIFORNIA TRANSPORTATION PLAN 2050 provides a vision, statewide goals,

The vulnerability assessment, this primer, and the project portfolio are consistent with these mandates and frameworks. These documents incorporate the best available science; stakeholder, agency, and public input; and adaptation strategies and actions that partners have tailored to the Basin.

and corresponding implementation recommendations. Caltrans is also developing a Strategic Management Plan and convening a Climate Action Goal Team to guide climate change integration throughout its programs.

KEY NEVADA GUIDANCE

NEVADA EXECUTIVE ORDER 2019-22 directs state agencies to collaborate with partners to help implement and accelerate climate solutions. Nevada agencies continue to evaluate policies and regulatory strategies to reduce greenhouse gas emissions, coordinate statewide efforts, and implement the State Climate Strategy (completed December 2020). This executive order complements and builds on Senate Bill 254 (2019), which calls for reductions in Nevada's greenhouse gas emissions.

REGIONAL AND LOCAL MANDATES & PLANS

The Basin has concurrent regional and local mandates.

THE LAKE TAHOE REGIONAL PLAN, which stems from the Tahoe Regional Planning Compact, and the Regional Transportation Plan both identify climate resilience as a goal and serve as the local implementation plans for state and federal climate mandates.

THE LAKE TAHOE ENVIRONMENTAL IMPROVEMENT PROGRAM (EIP) identifies actions and principles for forest and watershed restoration projects that advance adaptation.

THE TRPA'S 2014 SUSTAINABILITY ACTION PLAN provides a toolkit of potential mitigation and adaptation actions.

THE LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD'S (LAHONTAN WATER BOARD) 2019 CLIMATE CHANGE MITIGATION AND ADAPTATION STRATEGY protects water resources and infrastructure and promotes resilience to wildfire.

FEDERAL MANDATES & PLANS

The Basin also has concurrent federal mandates.

EXECUTIVE ORDER 14008: Tackling the Climate Crisis at Home and Abroad calls for a government-wide approach to climate change and places the climate crisis at the forefront of foreign policy and national security planning. In addition, the executive order commits to conserving 30 percent of federal lands and waters by 2030.

THE REGION 5 ECOLOGICAL RESTORATION LEADERSHIP INTENT from the USDA Forest



Several local jurisdictions also recently completed climate change plans. Placer County's 2020 Sustainability Plan provides a roadmap to reduce greenhouse gas emissions and increase resilience to climate hazards. The City of South Lake Tahoe's 2020 Climate Action Plan outlines strategies to reduce emissions and adapt to climate change. The South Tahoe Public Utility District's (STPUD) 2019 climate action plan identifies actions STPUD will take to address the causes and effects of climate change. This primer reinforces these regional and local mandates and plans.

Service, Pacific Southwest Region calls for restoring landscapes and increasing capacity to adapt to climate change.

THE 2016 LAND MANAGEMENT PLAN of the USDA Forest Service, Lake Tahoe Basin Management Unit (LTBMU) guides management on 78 percent of Basin lands. The plan includes an overarching climate change strategy to increase resilience and protect vulnerable resources and incorporates adaptation actions throughout its management activities.

IMPACTS & ADAPTATION

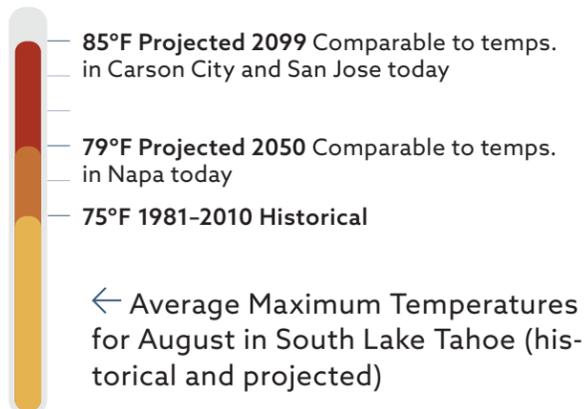
This section summarizes the vulnerability of Lake Tahoe and the surrounding forests and communities to climate change. It also identifies ongoing adaptation work in the region. It begins by identifying projected changes in temperature and shifts in precipitation, which touch all aspects of Tahoe’s ecology, economy, and culture.

■ **AVERAGE TEMPERATURES WILL INCREASE** by 3.6 to 9 degrees by 2100. This will make August at the end of the century as hot as August currently is in San Jose—85 degrees on average. (All degrees in this primer are given in Fahrenheit.)

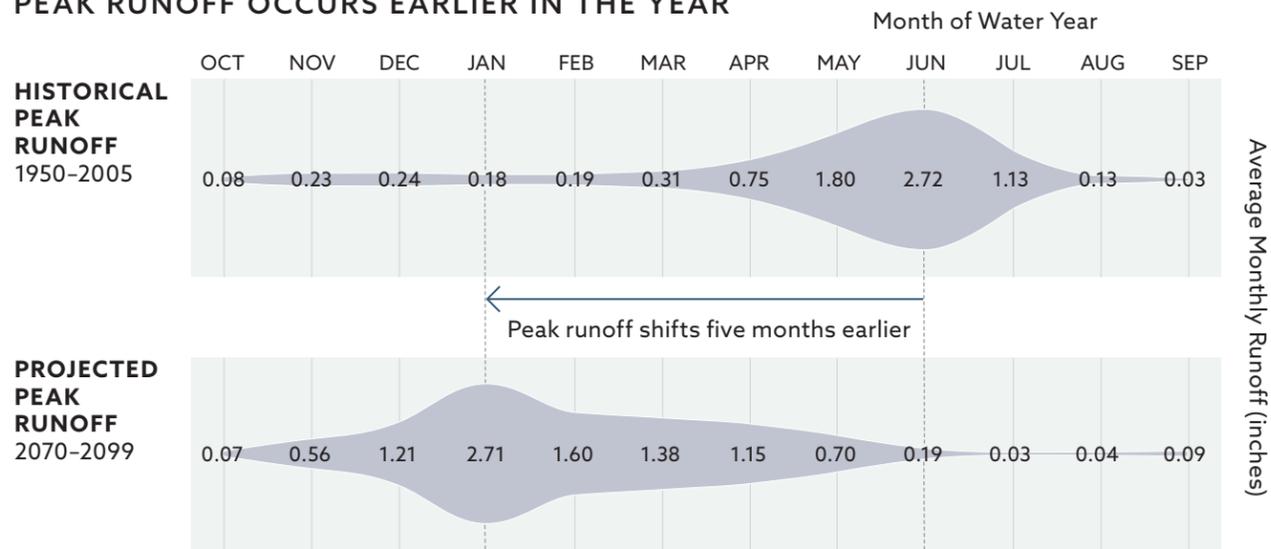
■ **PRECIPITATION AT LAKE LEVEL WILL SHIFT** from primarily snow to primarily rain due to warmer temperatures. In addition, rising temperatures will lead to more rain-on-snow events and earlier snowmelt.

■ **STORMS WILL BECOME MORE INTENSE.** While the total amount of precipitation in the Sierra Nevada will not likely change, year-to-year precipitation will become more variable and peak storm events will increase by up to 30 percent.

■ **BY THE END OF THE CENTURY PEAK RUN-OFF IN THE BASIN WILL OCCUR FIVE MONTHS EARLIER** in the year. This is because precipitation will fall more regularly as rain rather than snow, and flow into streams immediately, rather than accumulating as a snowpack that slowly melts into the summer.



PEAK RUNOFF OCCURS EARLIER IN THE YEAR



LAKE CLARITY

IMPACT Climate change will disrupt the deep water mixing in the Lake that occurs during the wintertime. This stronger thermal stratification, with warm water sitting on top of colder water for prolonged periods, will in turn expand the portions of the Lake that have low levels of dissolved oxygen (a critical factor for aquatic life), increase the trapping of sediment and nutrients near the Lake’s surface, and promote algal blooms. Ultimately this will decrease the Lake’s famed clarity.

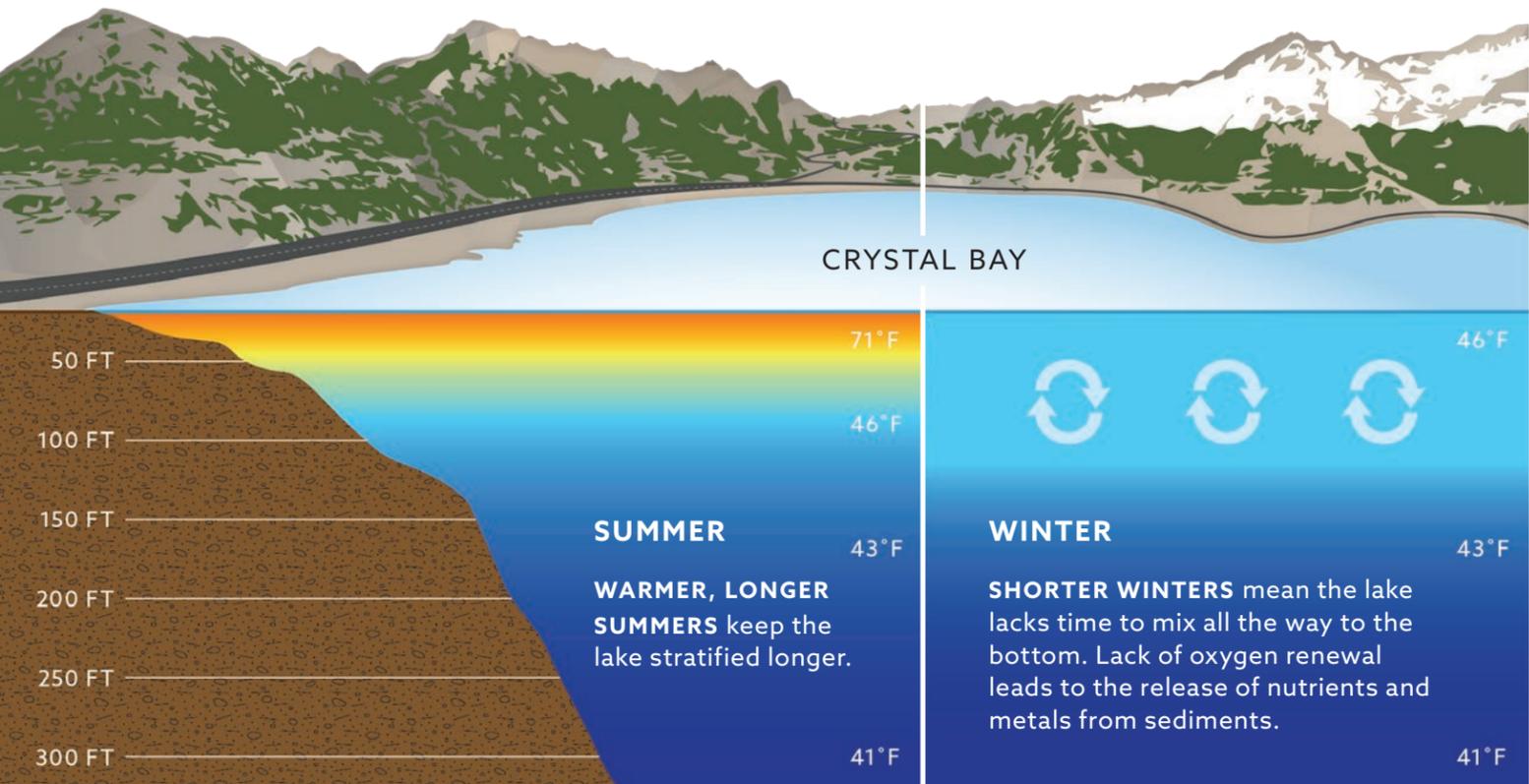
IMPACT The lake level will rise markedly during extreme precipitation events, and exceed the operable range of the dam at Tahoe City one to two times every decade. Steep slopes along the shoreline will fail more often, thus impacting infrastructure and water quality, and putting people at risk.

PROTECTING LAKE CLARITY

→ Numerous agencies are monitoring environmental and public health risks from storms; conducting outreach and advocacy for protecting lake clarity; and assessing the effectiveness of existing storm water infrastructure, design standards, and best management practices to account for changes in future hydrology.

→ Basin partners are also assessing how to update and integrate projected climate data into the models that provide the basis for regulating and improving storm water quality, including the Lake Tahoe Clarity Model and associated Pollutant Load Reduction Model. In collaboration with the two states and the TRPA, the Tahoe Science Advisory Council (TSAC) completed the 2019 Science to Action Planning, Project Briefing and Science Vision primer. The primer provides a framework for understanding and adaptively managing Lake Tahoe’s clarity as the climate changes.

DIMINISHED LAKE MIXING THREATENS LAKE CLARITY



ADAPTATION EXAMPLE

Lake Tahoe’s **Total Maximum Daily Load (TMDL)** provides a science-based approach to restoring the Lake’s clarity. The TMDL establishes targets for agencies to reduce storm water pollution from developed lands.

The Lahontan Water Board and Nevada Division of Environmental Protection oversee the program. Partners track progress at laketahoeinfo.org.

WATERSHED HYDROLOGY & STREAMFLOW

IMPACT Changes in temperature and the timing of peak stream runoff will shift hydrologic patterns, leading to long-term changes in ecosystem structure and function. With more annual precipitation arriving as rain rather than snow, the amount of water the Basin snowpack

holds will decrease, and summer streamflow will decline. Conversely, more intense storms, rain-on-snow events, and floods will lead to more runoff, and corresponding increases in erosion, transportation of pollutants downstream and into the Lake, and damage to infrastructure.

RESTORING STREAMS & WETLANDS

→ State, federal, and local agencies and the Washoe Tribe are planning, funding, and implementing wetland and stream restoration projects to accommodate increased flooding, withstand prolonged drought, and provide refuge for native species threatened by climate change. Locations of these projects include along the Upper Truckee River such as the Upper Truckee Marsh and Johnson Meadow, and at Meeks Meadow, Antone Meadows, Tahoe State Recreation Area, Burke Creek/Rabe Meadow, Marlette Creek, Spooner Meadow, and Polaris Creek.

→ The TSAC is assessing mitigation measures designed to offset potential impacts to streams from landscape-scale forest management practices like vegetation thinning and prescribed burning.

→ The Greater Upper Truckee River Watershed Partnership is an informal group of land and resource stewardship agencies that is preparing a synthesis of historical EIP investments in the watershed; identifying opportunities to coordinate project implementation and funding applications; and identifying regional and statewide planning trends to help guide future restoration.

ADAPTATION EXAMPLE

The **Upper Truckee River Watershed Advisory Group** partner agencies have invested over \$70 million in restoration projects covering nine miles of the river and over 1,000 acres of floodplain. The river is Lake Tahoe’s largest source of sediment. The Upper Truckee water-

shed includes the Basin’s most extensive and biologically diverse wetlands and provides outstanding recreation. Partner agency projects improve resilience by filtering more sediments, providing wildlife habitat, and maintaining groundwater levels.

AQUATIC BIOLOGICAL DIVERSITY

IMPACT Fluctuating lake levels and an earlier peak in stream runoff will impact aquatic habitat and the ability of native fish species to reproduce. This is because many native fish require cool streams in the summertime for spawning. Under climate change, these streams will become warmer much earlier in the spring and summer.

ADAPTATION EXAMPLE

The interagency **Lake Tahoe Aquatic Invasive Species (AIS) Coordinating Committee** prevents AIS from establishing in Lake Tahoe; controls existing AIS populations; and identifies new infestations. The committee coordinates education and outreach; secures funding; inspects watercraft; and implements priority projects.

trpa.gov/invasive-species



Photo courtesy of California State Parks

PROTECTING AQUATIC BIODIVERSITY

→ State, federal, and regional agencies are improving the cross-jurisdictional monitoring of existing AIS populations to prevent their spread, and to rapidly remove any newly discovered infestations. These agencies are also researching new technologies, climate scenario data, and strategies to increase the speed, efficiency, and effectiveness with which they control AIS populations and restore nearshore habi-

tat to benefit native species. While acting lakewide, Basin partners are focusing on iconic areas like Emerald Bay and Lake Tahoe Nevada State Park, and hot spots like the Tahoe Keys.

→ State and federal agencies are also monitoring the status and trends of stream temperatures to guide conservation, enhancement, and restoration of habitat for the growth, reproduction, and survival of native fish species.

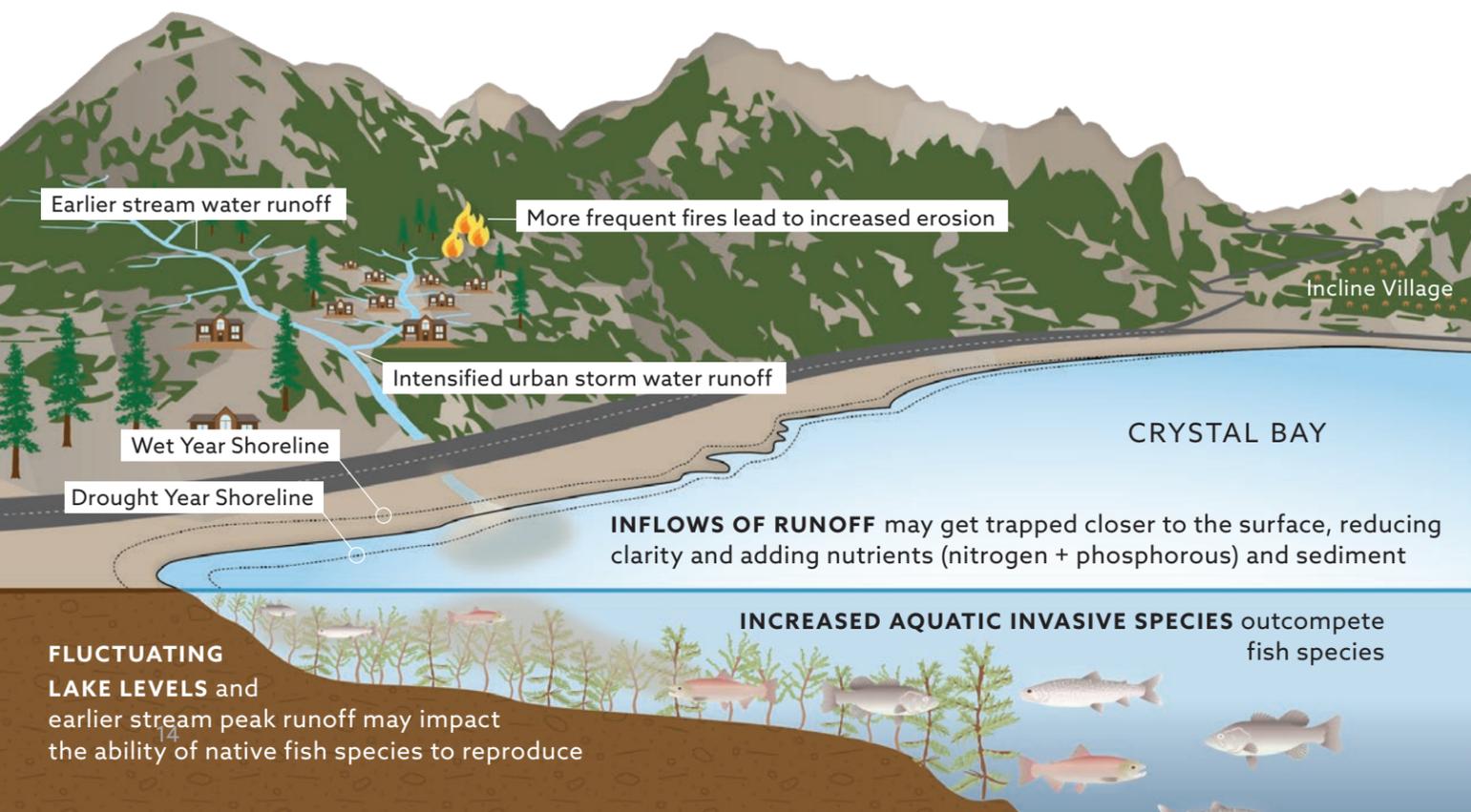
FORESTED UPLANDS

FOREST ECOSYSTEMS

IMPACT Longer droughts and reduced moisture in the soil will impact forests in many ways. These changes will lead to bark beetle and other insect outbreaks; kill large numbers of aspen trees; degrade

and reduce the size of meadows; increase the risk of wildfire, and threaten native plants, mammals, and birds. Conifers will entirely supplant meadows that lack consistently high groundwater. Drought stress is likely to be greatest on the east side of the Lake.

MULTIPLE CLIMATE IMPACTS DEGRADE NATIVE FISH HABITATS



MANAGING THE FORESTED LANDSCAPE

Basin land management and regulatory agencies are taking a multijurisdictional, landscape approach to more rapidly restore the resilience of the Basin's forests and watersheds (see diagram). This work improves the health of forest vegetation; uses biomass from forest thinning for home heating and energy; sequesters carbon in trees, meadows, and the soil; and creates efficiencies through novel management agreements and regulatory approaches. It also uses prescribed burning to cheaply reduce fuel loads and provide ecological benefits that enhance resilience to climate change across large tracts of land.



BIOLOGICAL DIVERSITY OF FORESTS

IMPACT Rising temperatures and shifts in precipitation will alter high-elevation forest habitat and change the composition of species within this ecosystem.

Species that inhabit small ranges within alpine ecosystems may experience significant habitat loss and fragmentation.

PROTECTING NATIVE AND SENSITIVE BIODIVERSITY

→ State, federal, and regional agencies are monitoring sensitive wildlife like the pika, California spotted owl, and mountain beaver to ascertain changes in their population sizes or distribution, and their use of habitat.

→ Agencies will adjust their revegetation and reforestation practices, including the seed stocks that they use for replanting, to align with emerging climate science and monitoring findings.

WETLANDS, RIPARIAN AREAS, AND AQUATIC WILDLIFE

IMPACT Conifers will encroach upon and reduce meadow habitat as upland groundwater tables lower. And as mentioned earlier, changes in temperature and the timing of peak stream runoff will impact the structure and function of aquatic ecosystems. Increased stream water temperatures and reduced stream-flow in late spring and summer will affect which aquatic species can persist, and impact the cycling of nutrients and concentration of dissolved oxygen in streams.

ACQUIRING AND RESTORING SENSITIVE WETLANDS TO BUFFER CLIMATE CHANGE IMPACTS

→ State and federal agencies continue to acquire and restore environmentally sensitive riparian areas, aspen stands, and meadows. When planning restoration projects, however, ecologists and engineers are designing native revegetation plots and stream channels to provide greater resilience to extreme precipitation and flooding. Along with removing conifers and prescribed burning, these adaptations should improve the ability of native plants and animals to persist.

ADAPTATION EXAMPLE

Lake Tahoe West

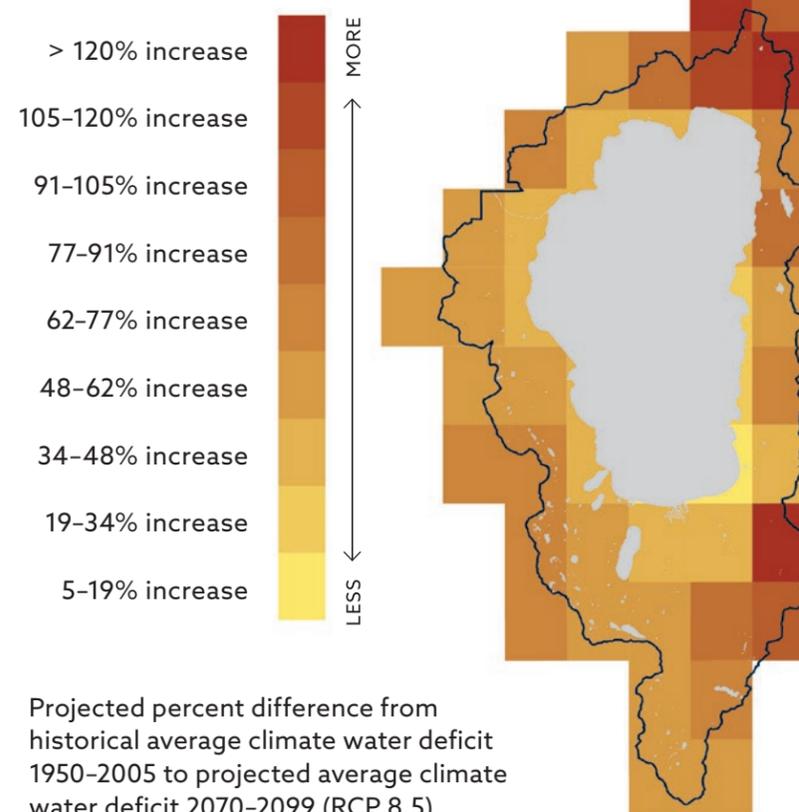
Restoration Partnership.

This interagency and stakeholder collaborative is restoring the resilience of 59,000 acres of west shore forests and watersheds to flooding, drought, insects and disease, and wildfire, all of which are amplified by climate change. Strategies include restoring creeks, floodplains, forest habitat, and meadows; removing barriers that prevent fish from swimming upstream; and connecting habitats to help native species thrive.

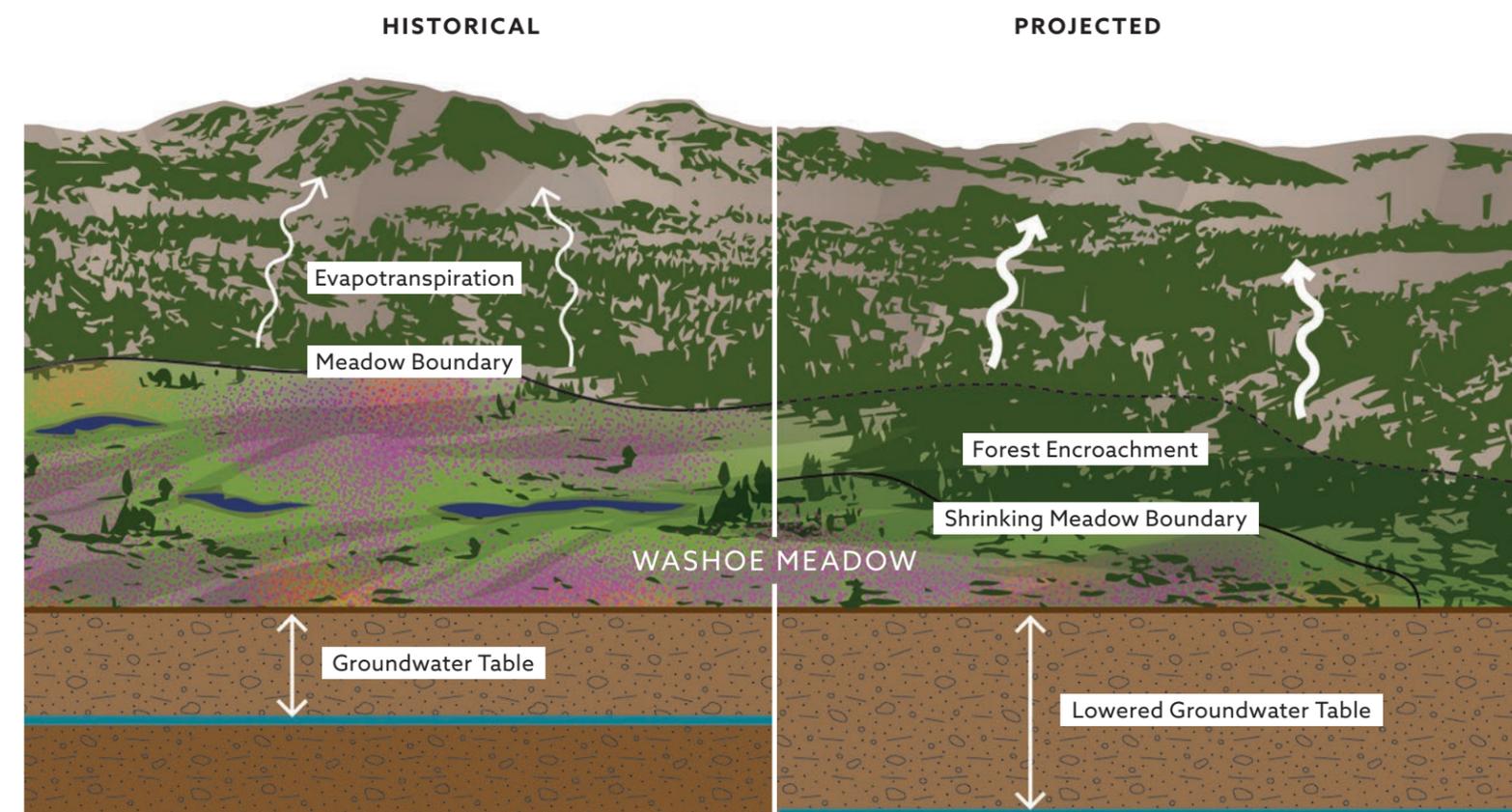
laketahoewest.org

CLIMATE CHANGE INCREASES DROUGHT STRESS ON SOILS AND PLANTS

2070-2099 MODELED CLIMATIC WATER DEFICIT:
An Estimate of Drought Stress on Soils and Plants



FOREST ENCROACHMENT LEADS TO LOSS OF WETLAND, MEADOW, AND RIPARIAN HABITAT



COMMUNITIES

PUBLIC HEALTH & SAFETY, INCLUDING WILDFIRE AND EMERGENCY RESPONSE

IMPACT The extent of wildfires is expected to increase significantly. Extreme heat events and wildfire smoke from inside and outside the Basin will jeopardize public health and summer recreation. According to modeling from the Lake Tahoe West Restoration Partnership, by mid-century the healthcare costs from a single large

and severe wildfire, including chronic respiratory illness and premature death, could range from \$7 million to \$40 million.

IMPACT The total area burned by wildfires each decade is expected to be 61 percent greater by 2100, and to threaten more than \$26.9 billion in total property value. By reducing the severity of future wildfires, each \$1 million invested in forest management actions would reduce property damages by \$10 million.

ADAPTATION EXAMPLE

The Tahoe Fire and Fuels Team (TFFT)—comprising 21 state, regional, and federal agencies, and the Washoe Tribe—protects communities and the environment from wildfire. Partners reduce forest fuels in neighborhoods and the surrounding lands. TFFT’s Tahoe Network of Fire Adapted Communities educates residents about making their homes safe from fire. TFFT’s Fire Public Information Team educates the public about fire risk and safety.

tahoelivingwithfire.com

STRENGTHENING DISASTER PREPAREDNESS & COMMUNITY RESILIENCE

State and regional agencies are planning and implementing a wide range of disaster preparedness and community resilience measures. These include updating and enforcing policies and standards for defensible space, home hardening, and evacuation and emergency response; advocating for improved fire insurance; preparing local and regional evacuation plans and shared communication systems; using specialized cameras to rapidly detect fires; and continuing overall wildfire prevention and response. These agencies are also completing community-scale plans that improve the efficiency and effectiveness of first responders.



TRANSPORTATION INFRASTRUCTURE

IMPACT Wildfire, landslides, and flooding will damage high-voltage powerlines, natural gas transmission lines, highways, and recreation facilities. All these impacts

will increase the risks to visitors and residents. Annual road damages could exceed \$75 million by 2100. Under a more variable anticipated climate, it would cost three times less to increase flooding prevention actions now than to pay for damages from a major flood event.

PREPARING, MITIGATING, AND RESPONDING TO HAZARDS THROUGH INTERAGENCY COORDINATION

→ Federal, state, and regional agencies are integrating climate change into hazard mitigation and regional development plans, and implementing engineering and construction projects that prioritize climate adaptation benefits.

→ In addition, multiple agencies are involved in planning for entire highway corridors and promoting alternative modes of transportation. For example, agencies are implementing the State Route 28 Corridor Management Plan, including relocating highway parking to designated mobility hubs, undergrounding powerlines, relocating a sewer line, adding fire hydrants, and adding conduit for hardened communications as protection against wildfire, landslides, and other hazards.

ADAPTATION EXAMPLE

Bi-State Consultation on Transportation. California and Nevada continue a consultation to improve the Basin’s transportation infrastructure, including building resilience to climate change impacts through a ten-

year list of priority projects. Basin partners are identifying sustainable financing mechanisms to construct the projects and implement the Regional Transportation Plan.

trpa.gov/transportation

AGENDA ITEM NO. VI.A.1&2⁹

WATER, POWER, AND COMMUNICATION INFRASTRUCTURE

IMPACT Extreme precipitation events will increase erosion and water pollution, interrupt water supplies, damage wastewater and recreation infrastructure, and threaten the Lake's famed clarity and aquatic biodiversity.

ADAPTATION EXAMPLE

Through the **Powerline Resilience Corridors strategy**, Liberty Utilities and NV Energy are protecting high risk communities by removing hazards near utility lines, while the LTBMU, Nevada Tahoe Resource Team, and other participating TFFT agencies simultaneously improve the health of the surrounding forest. This approach can reduce wildfire ignitions, protect infrastructure, and create efficiencies by working across jurisdictions.

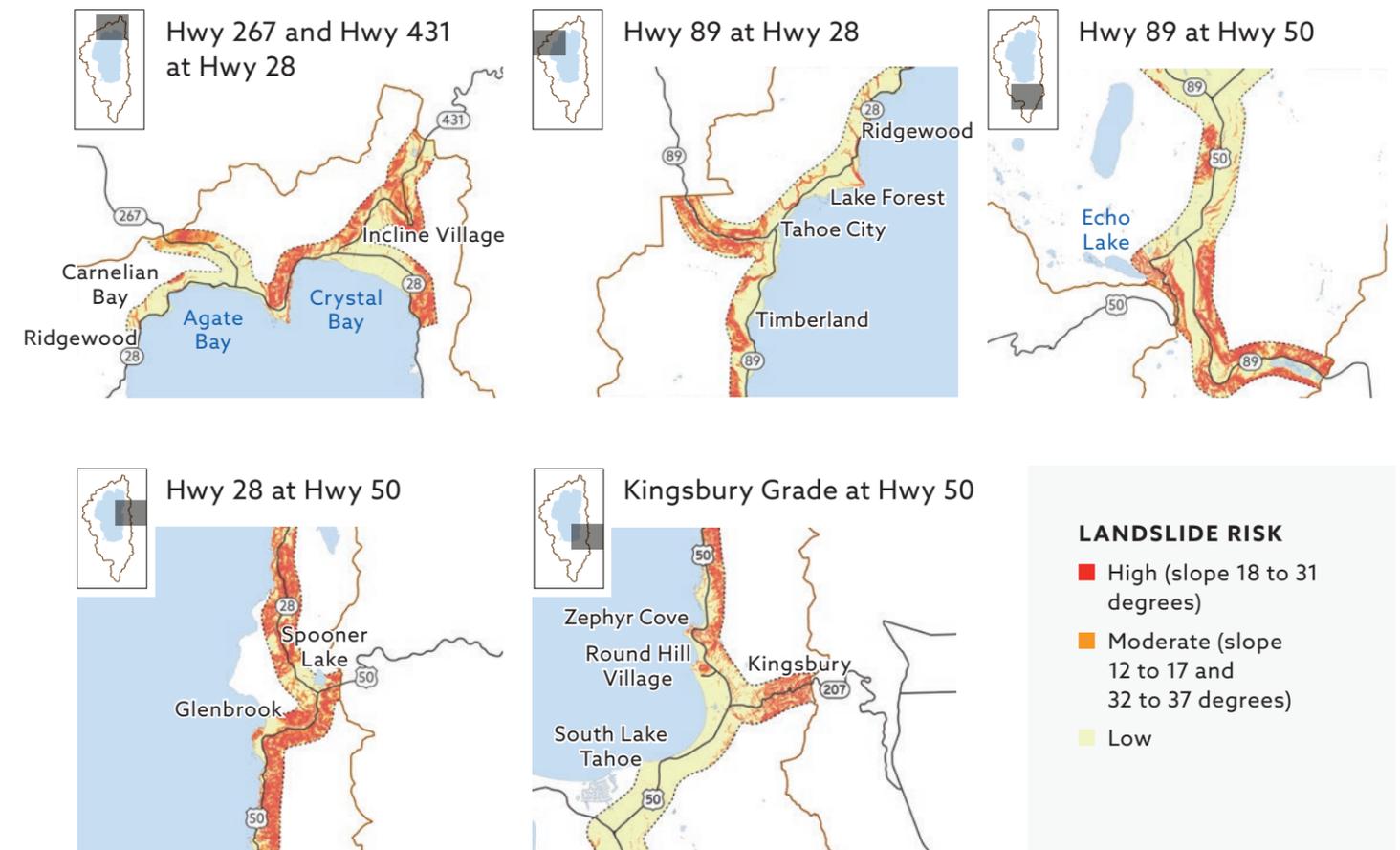
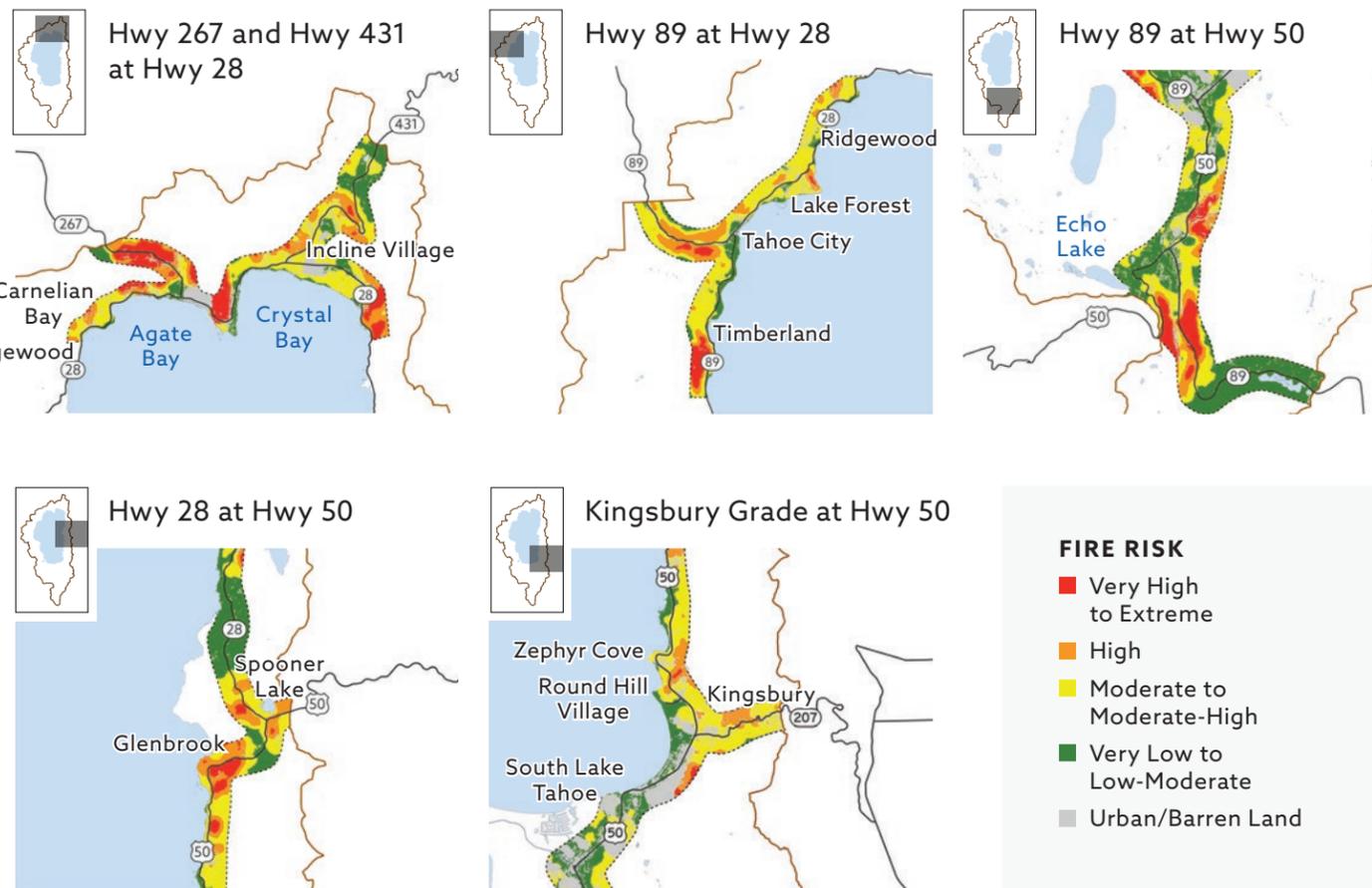
UPGRADING INFRASTRUCTURE TO WITHSTAND FUTURE HAZARDS

→ State and regional agencies as well as private companies are assessing the risks of extreme events to water and communication infrastructure, and monitoring this infrastructure for damages during winter storms and high wind events.

→ Local utility and fire districts are assessing the vulnerability of critical services such as drinking water supply, firefighting water supply, and wastewater systems, and upgrading this infrastructure accordingly.

WILDFIRE RISK SURROUNDING HIGHWAYS (Current conditions)

LANDSLIDE RISK SURROUNDING HIGHWAYS (Current conditions)



Fires grow faster on steep slopes. Climate change is expected to amplify the risk of wildfires to highways, leading to implications for mobility and evacuation routes.

Landslides occur more frequently on moderately steep slopes. Climate change is expected to amplify the risk of landslides to highways, leading to implications for mobility and evacuation routes.

TRIBAL LANDSCAPES

IMPACT Large high-severity wildfires will destroy culturally important biological resources, damage archaeological artifacts and cultural sites, and reduce access to traditional foods for the Washoe Tribe.

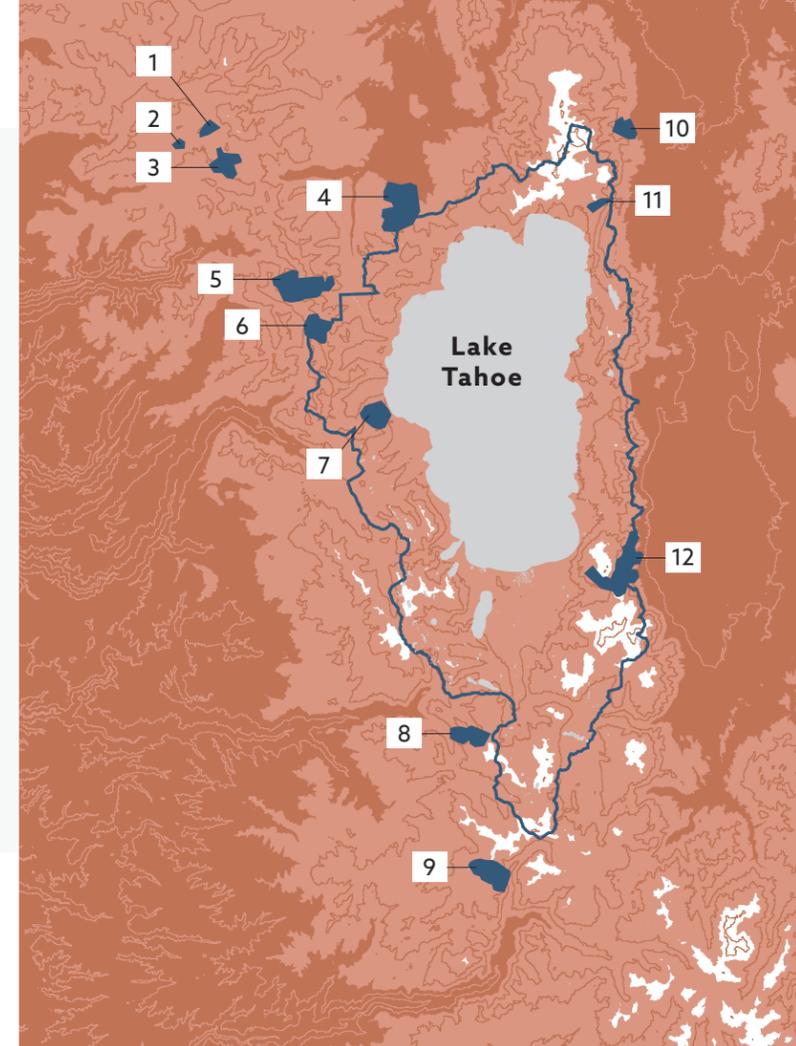
RAISING AWARENESS OF THE WASHOE TRIBE'S HISTORICAL AND ONGOING PRESENCE AT LAKE TAHOE.

→ Agencies are working with the Tribe to increase public education and awareness about its connections to Lake Tahoe, restore cultural heritage sites, and restore cultural place names.

→ In addition, agencies are implementing memoranda of understanding and co-management agreements to stabilize and enhance cultural resources and sites, and ensure they can withstand climate impacts.

ADAPTATION EXAMPLE

The **Máyala Wáta Restoration (Meeks Meadow)**. The Washoe Tribe is working with the LTBMU to restore 300 acres of Máyala Wáta. This project improves resilience for an important region of the Washoe Tribe's ancestral lands, and increases the Tribe's intergenerational capacity to restore land using tribal cultural practices. Work involves tribal elders, youth, and crews, and will include performing culturally guided prescribed burning. Goals include reducing wildfire risk, maintaining groundwater levels, improving species diversity.



INCREASING TEMPERATURES CAUSE RISING SNOWLINE

YEAR 2100 PROJECTION (RCP 8.5)
+9°F increase in average annual temperature from 2006

□ Snowfall likely (9,500 ft and above)

■ Rain more likely than snowfall (6,200 ft up to 9,500 ft)

■ Rain likely (6,200 ft and below)

— Lake Tahoe Basin Boundary

■ Ski Resorts

- | | |
|-------------------|----------------------|
| 1 Boreal Mountain | 7 Homewood |
| 2 Soda Springs | 8 Sierra-at-Tahoe |
| 3 Sugar Bowl | 9 Kirkwood Mountain |
| 4 Northstar | 10 Mt. Rose |
| 5 Squaw Valley | 11 Diamond Peak |
| 6 Alpine Meadows | 12 Heavenly Mountain |

RECREATION

IMPACT Rising temperatures will increase the elevation at which snow accumulates, decrease the size of the snowpack, and shorten the length of the winter recreation season by half. The Basin's ski resorts

and winter recreation economy will be heavily impacted. A study of the United States found that the ski season length is expected to decrease by 52 percent by 2099. Therefore, revenue generated from alpine skiing in the region is expected to decrease by \$268 million annually.

INTEGRATING CLIMATE CHANGE IN RECREATION MANAGEMENT AND FACILITIES.

→ The number of visitors to Lake Tahoe is rising steadily as people from the San Francisco Bay Area, Sacramento, the San Joaquin Valley, Reno, and Los Angeles seek cooler summertime temperatures. Warmer weather will lengthen the sum-

mer recreation season, requiring land managers to keep recreation sites open and staffed longer. Land managers are also adjusting how they design roads, trails, facilities, and parking.

→ Agencies are adjusting how they protect natural and cultural resources, and their management, educational, and emergency services.

ADAPTATION EXAMPLE

The interagency Tahoe-Truckee Sustainable Recreation and Tourism Council aims to provide high-quality outdoor recreation experiences and equitable and inclusive access while protecting natural and cultural resources. The group engages communities, integrates recreation in highway planning, and is developing a strategic plan.

trpa.gov/sustainable-recreation





LOOKING AHEAD

Basin partners have started adapting to climate change through numerous ongoing efforts. Successful adaptation integrates climate science and economics in building community resilience, resource management, infrastructure engineering, and business operations. Some climate change impacts may be so significant that they transform the ecology and culture of Tahoe. Adaptation will be essential for the foreseeable future, and will necessarily involve many more partners. The two states, the TRPA, the Washoe Tribe, and numerous federal and local agencies have already started leading the way. This closing section highlights what is already in motion and what is on the horizon.

STATE OF CALIFORNIA

- In 2021 the State of California is updating its Climate Adaptation Strategy, which will outline key climate resilience priorities; include specific and measurable steps; and serve as a framework for action across sectors and regions in California.
- In 2022 the California Air Resources Board will update its Climate Change Scoping Plan, which identifies how California will achieve carbon neutrality by 2045.
- The California Natural Resources Agency is coordinating the development of pathways to achieve the State's goal of conserving at least 30 percent of California's land and coastal waters by 2030.
- The California Natural Resources Agency is coordinating the first statewide Natural and Working Lands Climate

Smart Strategy to guide and accelerate long-term climate action across key California landscapes.

- Caltrans will consider and adopt adaptation options along the State Highway System based on each district's Climate Change Vulnerability Assessment. Caltrans is developing Adaptation Priority Primers that will evaluate and prioritize at-risk assets within each district, and help incorporate climate resilience in project development.
- The California State Transportation Agency will be finalizing its Climate Action Plan for Transportation Infrastructure in summer 2021. The plan details how the State recommends investing billions of discretionary transportation dollars annually to combat and adapt to climate change while supporting public health, safety, and equity.

STATE OF NEVADA

The State of Nevada has launched the Nevada Climate Initiative to collaborate with public, private, and nonprofit entities to implement the State Climate Strategy to reduce greenhouse gas emissions. Nevada agencies are developing innovative solutions that build resilience across communities and protect natural resources. Among other things, the strat-

egy describes climate impacts in Nevada, creative approaches to financing climate actions, effective climate governance, and the role of climate action in economic recovery. It provides a framework for Nevada policymakers to evaluate how well climate policies and programs align with the timelines and benchmarks necessary for Nevada to achieve its greenhouse gas emission reduction goals.

TAHOE REGIONAL PLANNING AGENCY

The TRPA has started a new Climate Resilience Strategic Initiative. Through stakeholder collaboration and public engagement, the TRPA will use the 2014 Lake Tahoe Sustainability Action Plan as a basis for developing a Tahoe Climate Resilience Strategy. The TRPA will integrate the states' actions into the strategy. Partners

will identify and prioritize mitigation, adaptation, and resiliency actions that fill climate information and implementation gaps. Ultimately, the TRPA will create a bi-state climate strategy that guides its environmental review, code, policy, and plan amendments. The TRPA will also update its sustainability indicator dashboard to create a real-time climate scoreboard to track regional progress.



Photo: courtesy of Tahoe Fund

IMPLEMENTATION OF EXISTING CLIMATE ACTION PLANS

Several state and local jurisdictions have already started or will begin to implement their recently completed climate plans. These include:

- Lahontan Water Board's 2019 Climate Change Mitigation and Adaptation Strategy
- Placer County's 2020 Sustainability Plan
- City of South Lake Tahoe's 2020 Climate Action Plan
- South Tahoe Public Utility District's 2019 Climate Adaptation Plan

OPPORTUNITY AREAS

Basin partners can provide additional state and national climate adaptation leadership by aligning more closely with California and Nevada planning frameworks in the following areas:

- 1.** Demonstrating the importance of equity and climate justice, including engaging tribal, low-income, and minority communities.
- 2.** Developing an implementation and monitoring plan to track adaptation success and adjust strategies as needed.
- 3.** Evaluating co-benefits and synergies between adaptation strategies to maximize multiple-benefit outcomes.
- 4.** Filling critical knowledge gaps, focusing on the research and monitoring needs identified by the Tahoe Science Advisory Council in its Science to Action Plans.

Through continued partnership, the Basin can get ahead of the climate change curve, and ensure that all Californians, all Nevadans, and all visitors to Lake Tahoe can enjoy its natural beauty and welcoming mountain culture far into the future.



Published by the California Tahoe Conservancy, May 2021.

AGENDA ITEM NO. VI.A.1&2