



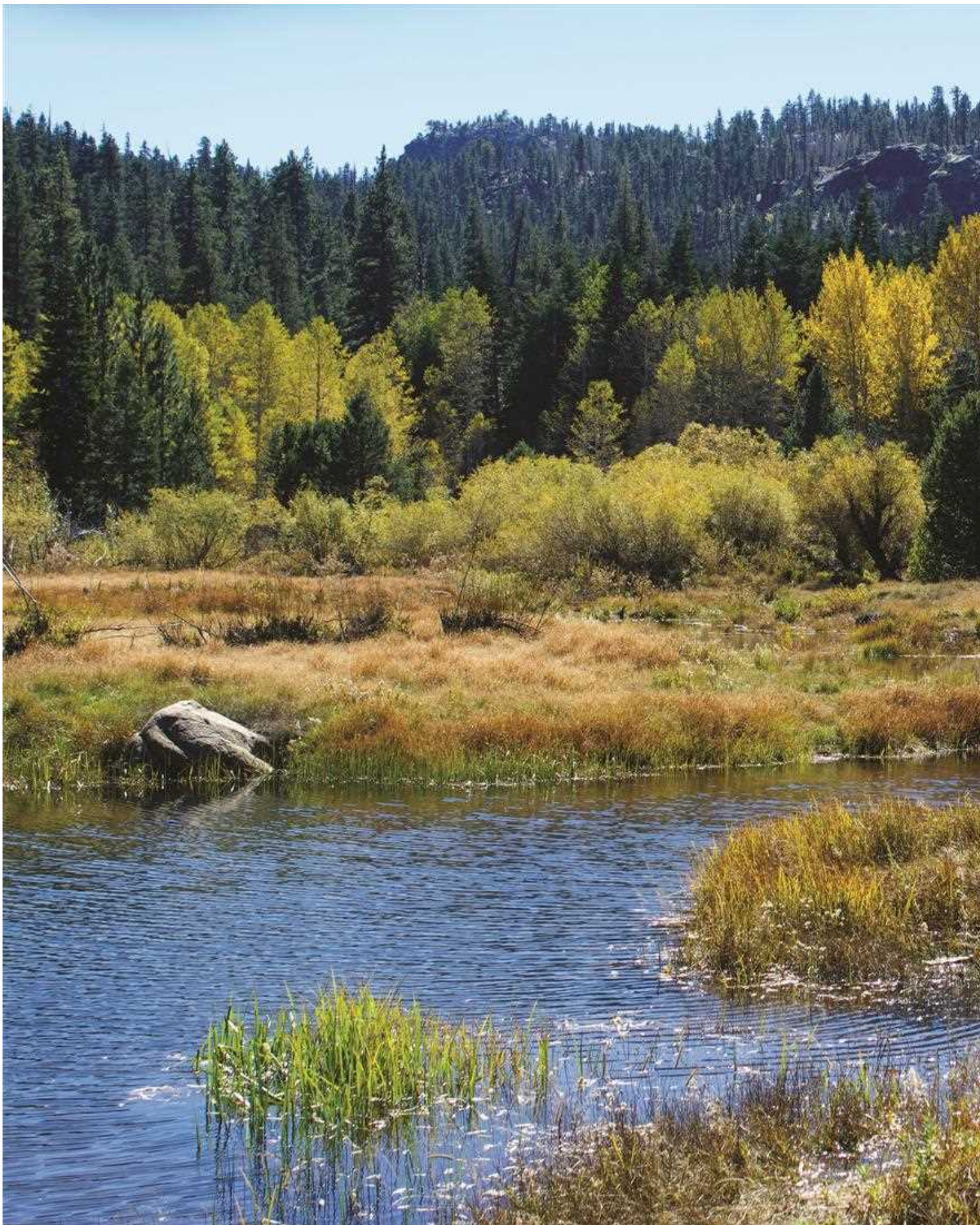
Climate Ready Truckee

A Climate Change Adaptation Plan



July 2020





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Town of Truckee

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Lynn Saunders – Truckee Chamber of Commerce
Bill Seline – Truckee Fire Protection District
Lisa Wallace – Truckee River Watershed Council
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Special Thanks

Much of the information in this report was developed during two day-long stakeholder workshops, two community workshops, and two online surveys, which are described in more detail in Appendices D and E. Thank you to the following people and organizations who helped make these workshops a success:

David Tirman, Town Council Member (Former Mayor)
Ben and Evan Anderson
Andrea Fernández-Landa
Claire Lawrenson
Jean Fournier
Angele Carroll
Truckee Donner Recreation and Park District

June, 2020

Dear Truckee Community,

Global climate change is a serious and immediate concern for our local environment, as well as our mountain character and way of life in Truckee.

The impacts of climate change can greatly increase potential hazards, such as wildfire and flooding, and adversely impact our local businesses, winter sports, outdoor recreation, and more. We must take action now to simultaneously reduce future greenhouse gas emissions and prepare for changes that are imminent.

As a Town Council, we are committed to action, working collaboratively across all sectors to build partnerships and develop a roadmap for long-term resiliency. This collaborative process has been in process for nearly a year. It is with great pleasure that we introduce *Climate Ready Truckee*, Truckee's first climate vulnerability assessment and adaptation plan.

This plan describes how climate change is projected to impact Truckee and the vulnerabilities that we will need to address. Bold strategies have been developed to protect our residents, infrastructure, and local environment. These strategies were created through extensive stakeholder input by community members, industry-diverse local stakeholders, and professional consultants to ensure Truckee maintains its character and quality of life.

Climate Ready Truckee – A Climate Change Adaptation Plan is a crucial first step in the process of preparing Truckee for the effects of climate change. This plan will serve as a launching point for policy adoption and implementation, while also complementing our greenhouse gas reduction efforts and climate action plan.

I encourage you to dive into this plan and evaluate how you can contribute to each resiliency measure. In order to create a climate-ready Truckee, we must all take action to reduce our individual carbon footprints and prepare to adapt to the cascading effects of a changing climate. Together as a community we can ensure that Truckee endures as a safe and vibrant community for years to come.

Sincerely,

A handwritten signature in dark ink, appearing to read "David Polivy", with a stylized flourish at the end.

David Polivy
Mayor



Executive Summary

Introduction

Truckee, California is taking action on climate change. Recognizing that conditions are changing and that those changes affect the very nature of the town itself, the Town of Truckee is leading concrete and meaningful action to protect future generations. As cities and towns around the nation and globe move to reduce emissions and prevent catastrophic climate change, Truckee is doing its part.

Climate change is already underway and must be addressed. Truckee is dedicated to investing in a vibrant future for all residents, by shifting to clean energy and protecting both people and nature from ongoing and future impacts.

RESILIENCE is the ability of people and their communities to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions and hazard events.

Resilient communities enjoy a high quality of life, reliable systems, and economic vitality, and they conserve resources for present and future generations.

Urban Sustainability Directors' Network



Truckee has adopted aggressive greenhouse gas emissions targets that reflect the seriousness of the challenge. By 2030, Truckee aims for all electricity to come from renewable sources. Truckee has committed to reducing emissions by 80% by 2040. By 2050, all energy will be renewable.

At the same time, Truckee needs to adapt to changing climate conditions that affect the economy and environment of the community, as well as the health of its residents. Truckee has a chance to harness the innovation, compassion, diversity, and strong networks of its residents to make serious and systemic change for the better. To make sustainable progress for all, action will be required by every member of the community, as well as businesses, faith communities, non-profit organizations, and others.

This plan is for all members of the community, not just the Town of Truckee government. By prioritizing nature-based solutions, mental and physical health, social equity, and sustainability, this plan aims to create greater resilience and prosperity today, as well as for future generations.

Climate Change Adaptation (n.)

Anticipating the adverse effects of climate change and taking appropriate action to prevent or minimize the damage.

Resilience (n.)

The capacity to recover quickly from disruption.

This plan is a combination of both concepts. We strive to anticipate adverse effects, so we can prevent and minimize their damage. In doing so, we must create new approaches that allow our community to spring back from disruptions.

This investment in change presents an opportunity to do things in new ways, so that all members of our community can prosper and flourish, even if the future is very different from what we experience today.

Climate Equity

Climate change does not affect all residents evenly. Many people experience more severe impacts than others. Preparing Truckee for the impacts of climate change requires significant investment in time and resources across all parts of the community, including businesses, health, emergency services, government, schools, infrastructure, culture, and natural resources. New, bold, and adaptable approaches to how people live, move, and manage vital resources are needed. As new investments are made, they need to be made in ways that support and empower those who are most at risk.

Truckee's Changing Climate

Climate change may be a global phenomenon, but the impacts are felt at the local level all around the world. The Western U.S. has warmed about 1.5° F since the historical period (1901-1960). Truckee has warmed an average of 2.0° F over the last 80 years when we compare the historical 30-year period (1937-1966) and the recent 30-year period (1987-2016). There are now eight fewer days per year below freezing, and the number of days above 90° F has increased by 10 days per year. Average snowfall has declined by 15%. All of this from a 2.0° F temperature increase.

If greenhouse gas emissions continue at current levels globally, Truckee's average temperatures are expected to warm by 5-7° F by the 2050s and 8-11° F by the 2080s. By the 2080s, April snowpack could be reduced by 84% to 96%. However, if emissions are significantly reduced in the near term, warming could level off in the 2050s.



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By the middle of this century, Truckee can expect:

Reduction of days below freezing per year of **55-68 days**



Up to **31 more days** above 90° F



Reduction of April snowpack by **68-71%**

32-51% higher drought stress



Up to **61% more acres burned per year in wildfire**



These changing climate conditions can create new hazards or make existing hazards worse. Truckee is facing significant climate hazards that will impact the community in various ways.

Truckee's Climate Vulnerabilities

Climate impacts affect every person, structure, business, natural resource, and organization in Truckee. And yet, some will be impacted far more than others. Vulnerability depends on many factors, including ongoing stressors, potential

climate impacts, and existing adaptive capacity. In the creation of this plan, vulnerabilities across the community were assessed, including infrastructure, health, culture, natural systems, and business. Through extensive work with Truckee stakeholders, residents, and experts, the following vulnerabilities were identified.

- Wildfire risk to forests, affecting wildlife, natural areas, and recreation
- Declining service and recreation industry jobs
- Economic costs of wildfire and smoke
- Loss of nature-based and small-town culture

Climate Hazards Facing Truckee



- Impacts to trails, forests, wetlands, and meadows
- Overburdened infrastructure
- Lower revenue from tourism
- Non-profit organizations overburdened from increasing demand for services
- Loss of outdoor recreation, winter activities, and nature-based culture
- Increased traffic congestion
- Sustainability goals increasingly difficult to achieve
- Electrical blackouts and damage to electrical infrastructure
- Higher utility and insurance costs
- Mental health impacts and increased trauma
- Risk to lives, property, and homes
- Impacts to school and youth experience by loss of winter sports and nature activities
- Increased violence and domestic disputes during extreme events
- Damage to roads and culverts from more flooding, fire, freeze/thaw, and traffic
- Degradation of nature and loss of native species
- Loss of revenue for local government and the town at large from ski area decline
- Washoe cultural sites and resources impacted from extreme events, erosion, and disturbance
- Increased homelessness and food insecurity
- Increased financial and housing instability
- Forest health impacts from insects, pests, pathogens, drought, and invasive species
- Vulnerable populations and Latinx community affected by extreme events
- Overburdening of the health care system and increased cost
- Overburdening of emergency services
- Loss of work opportunities and income for outdoor workers
- Increase in pests, disease, water-borne and food-borne illnesses
- Meeting GHG emissions targets could become more difficult
- Damage to water, storm drain, and sewer infrastructure
- Increased respiratory and heart disease and heat and smoke-related illnesses
- Increased algae blooms, loss of wetlands, and degradation of riparian areas
- Flood damage and declines in water quality in streams and rivers

Climate Adaptation Strategies

The Town of Truckee, local residents, businesses, civic organizations, faith communities, and others are working together to adapt to the impacts of a changing climate. *Climate Ready Truckee* provides specific strategies and actions to meet the following goals.

Healthy Residents

Climate change affects the health of all in our community, particularly those who are already vulnerable or disadvantaged. Objectives to ensure healthy residents include:

- ✓ Improve Mental Health
- ✓ Protect People from Smoke and Heat
- ✓ Improve Availability of Healthy Food
- ✓ Improve Overall Community Health



Examples of Strategies:

- ▶ Expand youth programs that promote strong mental health and resilience
- ▶ Outreach regarding protective measures for smoke and heat
- ▶ Promote consumption of locally grown food
- ▶ Increase preparedness for pandemic diseases and other outbreaks
- ▶ Implement a preventative care initiative to improve the health of all residents

Natural Capital

Natural systems provide valuable functions to both residents and visitors in the form of ecosystem services (water storage, etc.) in the watershed and open space within the town limits. Objectives to maintain and strengthen natural capital include:

- ✓ Create Wildfire Resistance and Resilience
- ✓ Protect and Restore Native Habitats and Species
- ✓ Enhance Ecosystem Services

Examples of Strategies:

- ▶ Provide information to residents on how to reduce fuel loads and ignition sources near homes and in surrounding areas
- ▶ Require native, fire-resistant species for Town properties, parks, yards, and grounds
- ▶ Protect and connect existing native habitats to provide wildlife corridors
- ▶ Identify, prioritize, and restore degraded habitats, especially wetlands and meadows

Sustainable Businesses

Local businesses can take action on climate change through sustainable practices, which often reduce overall costs. Objectives to promote a sustainable business sector include:

- ✓ Increase Business Sustainability
- ✓ Ensure Green Jobs and Living Wages

Examples of Strategies:

- ▶ Diversify the economy to increase resilience for future climate scenarios
- ▶ Support efforts to develop a regional approach for business resiliency
- ▶ Encourage businesses to pay a living wage
- ▶ Provide cross-training and/or training programs for new jobs to low-income groups

Resilient Infrastructure

Truckee's roads, bikeways, housing, historic buildings and sites, water, energy, and other

infrastructure are central to the quality of life for local residents and appeal to visitors. Objectives to protect and enhance these infrastructure assets include:

- ✓ Plan for Climate Refugees
- ✓ Reduce Reliance on Cars
- ✓ Protect Homes and Businesses
- ✓ Improve Energy Reliability

Examples of Strategies:

- ▶ Support housing development at all levels
- ▶ Assess needs of public infrastructure and services
- ▶ Invest in multi-modal transportation opportunities
- ▶ Create shuttle-only and pedestrian-only zones
- ▶ Assist in the development of innovative solutions for fire insurance
- ▶ Relocate energy infrastructure underground, where possible, to reduce fire ignition



Todd Lappin / CC BY-NC 2.0

Community Readiness

With key hazards expected to worsen in coming decades, local government and residents will need to increase their preparation, response, recovery, and mitigation efforts. Objectives to strengthen community readiness include:

- ✓ Strengthen Safety Nets
- ✓ Expand Community Preparedness and Resilience
- ✓ Improve Technology and Transportation Flow for Emergency Response
- ✓ Increase Resilience among Disadvantaged Groups

Examples of Strategies:

- ▶ Expand emergency relief services and shelters
- ▶ Increase collaboration with county and state agencies for joint emergency preparedness and response
- ▶ Incorporate future climate conditions in emergency operations plans



- ▶ Expand education on disaster preparedness, focusing on low-income and non-English speakers
- ▶ Create an overarching plan for extreme congestion and evacuation situations
- ▶ Partner with Latinx organizations to expand outreach and education

Town of Truckee

In addition, the Town of Truckee will undertake a set of internal strategies to ensure that government services are maintained through climate change-driven disruptions. These actions will also help the Town lead by example and support other local entities in taking action.

Examples of Strategies:

- ▶ Incorporate climate change considerations into decisions made at all levels
- ▶ Showcase equitable, nature-based solutions
- ▶ Include climate change experience as a criterion for staff leadership positions
- ▶ Educate all staff, departments, and decision makers on climate change

Implementation

Ongoing community engagement will be a key element as Truckee moves from planning to implementation. To ensure a strong implementation process, the Town of Truckee will convene an Implementation Taskforce made up of Town staff and civic leaders whose organizations are tasked with implementing strategies within the *Climate Ready Truckee* adaptation plan. Throughout implementation, this Taskforce will report annually or semi-annually to the Truckee Town Council on progress, obstacles, and new opportunities to move strategies in the plan forward.



Introduction

Truckee, California is taking action on climate change. Recognizing that conditions are changing and that those changes affect the very nature of the town itself, the Town of Truckee is leading concrete and meaningful action to protect future generations. As cities and towns around the nation and globe move to reduce emissions and prevent catastrophic climate change, Truckee is doing its part.

Truckee has adopted aggressive greenhouse gas emissions targets that reflect the seriousness

When people were asked what was important in their choice to live in Truckee*

71%
said
"Weather and Climate"

* Quality of Life Survey – <https://www.truckee.com/truckee-chamber-commerce/socio-economic/>

of the challenge before us. By 2030, Truckee aims for all electricity to come from renewable sources. Truckee has committed to reducing emissions by 80% by 2040. By 2050, all energy will be renewable. As other communities also reduce emissions, these cuts are intended to reduce the magnitude of climate change over the long term.

Many of the impacts of climate change are already being felt and will continue to worsen even as emissions are reduced. A resilient community will be better able to withstand and bounce back from extreme events, such as severe heat, bigger storms, flooding, drought, and wildfire. To build this resilience, we must create thriving and strong neighborhoods, families, businesses, cultural and faith communities, food systems, infrastructure, and other key community components. These actions go hand-in-hand with reducing greenhouse gas emissions and shifting to clean energy.

Climate change will challenge the very structure of every city in the U.S. It affects such basic functions as how we create and distribute energy, how we manage our forests, what grows in our yards, and the types and virulence of diseases and illnesses.

Natural beauty and community safety are two of the primary features that attract people to live, work, and play in Truckee. Protecting these values is key to Truckee's future. This plan provides information on how climate change is expected to impact the community, and what measures we can take to ensure that Truckee remains true to its values for future generations.

Climate change also presents us with opportunities. Truckee has a chance to harness the innovation, compassion, diversity, and strong networks of its residents to make serious and systemic



Truckee – A town defined by nature

Truckee is a town defined by the mountains, forests, lakes, and rivers of the Sierra Nevada mountains. The scenic vistas, diverse resources, and abundant fish and wildlife are of great value to Truckee's residents and visitors. True to our values, Truckee has focused on living sustainably and conserving the natural resources of the region.

Climate change is recognized as one of the greatest threats to nature. Changes in heat, snowpack, drought, wildfire, insects, and disease will lead to massive changes in local ecosystems. As our environment is impacted, there is much uncertainty around how people will respond.

Truckee has an opportunity to take the lead on climate action. The Town is well-situated to lead the way with new strategies that protect people from climate impacts while also protecting the natural habitats and species that are so important to this region.

change for the better. To make sustainable progress for all, action will be required by every member of the community, as well as businesses, faith organizations, non-profit groups, and others. This plan is for all members of the community, not just the Town of Truckee government. By prioritizing nature-based solutions, mental and physical health, social equity, and sustainability, this plan aims to create greater resilience and prosperity today, as well as for future generations.

Climate action in Truckee creates:

- Green jobs and living wages
- Neighborhood networks and support
- Investment in underserved areas
- More active and healthier citizens
- More efficient and healthier homes
- Preparedness for extreme events
- Cleaner air, waterways, and parks
- Resilient ecosystems
- Environmental and social awareness



The Great Ski Race: A Tahoe City to Truckee Tradition

Evidence of climate change abounds in Truckee. For instance, the Tahoe Nordic Search & Rescue Team was forced to cancel the 2020 Great Ski Race™, their annual fundraiser which takes skiers from Tahoe City to Truckee, for the 6th time in history due to lack of snow. From 1977 to 2010, the race was only canceled once, in 1991. But between 2011 and 2020, organizers have had to cancel the race 6 times!



Advancing Climate Equity in Truckee

Climate change does not affect all residents evenly. Many people experience more severe impacts than others. Those who are most impacted often contributed the least to the problem. Climate inequities stem from the inequitable distribution of social, political, and economic power. By implementing climate solutions in ways that address these power disparities, we can make progress towards climate equity.

Preparing Truckee for the impacts of climate change requires significant investment in time

and resources across all parts of the community, including businesses, health, emergency services, government, schools, infrastructure, culture, and natural resources. New, bold, and adaptable approaches to how people live, move, and manage vital resources are needed. As new investments are made, they need to be made in ways that support and empower those who are most at risk.

What is Climate Equity? Climate equity requires that different histories, abilities, and needs are accounted for in the design and implementa-

tion of climate change solutions. Residents of Truckee have differing levels of ability to protect themselves from impacts. As climate change pro-



Pictured above are youth from SOS Outreach, a local youth development non-profit. SOS offers mentoring in the outdoors for underserved youth in the North Lake Tahoe community. A core component of their program is service. Youth pictured are planting sugar pine trees at Truckee River Day.

gresses, important work on social and environmental justice will increasingly need to focus on climate impacts.

Many residents of Truckee are disadvantaged due to lower income, race, language, gender, LGBTQ+ status, mobility, disability, housing status, health condition, age, etc. By engaging and empowering disadvantaged residents to take on leadership roles and become the recipients of much of the investment resources, existing inequities can begin to be corrected. All residents of Truckee benefit when those who are most vulnerable become resilient and empowered.

Equitable climate action must:

1. Actively **seek direction** from historically disadvantaged groups or populations
2. **Prioritize investment** in historically disadvantaged groups or populations
3. **Reduce stressors** and prevent new stressors to historically disadvantaged groups or populations
4. **Shift power** to historically disadvantaged groups or populations over time





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Truckee Past and Present

The lands where Truckee sits were originally inhabited by the Washoe (Wáshiw) Tribe. When the European settlers arrived, many Washoe people were displaced and the natural resources they depended upon were exploited. The Washoe people are working to revitalize their heritage and culture throughout the Tahoe Sierra. Many of the species and habitats that are culturally important to the Washoe are at risk from climate change.

The Town of Truckee, which is in the center of the original Washoe territory, traces its foundation to the Gold Rush and the expansion of the railroad. Listed on the National Register of Historic Places, Truckee's cultural and historical importance as an authentic mountain town is part of its appeal to many visitors. Truckee is working to maintain balance between attracting tourists as a major economic driver and maintaining its small town and close-knit community feel.

As the Truckee community looks to the future, climate change will need to be considered in all decisions. In that consideration is the opportunity to plan for climate impacts in ways that make the town more equitable for people of different income levels and backgrounds, while continuing to support visitors who are increasingly likely to seek out Truckee's cooler temperatures, cleaner air, and abundant water.

Truckee's young people face a future very different from the past, with warmer temperatures, less snow, and a faster rate of change. We have a responsibility to prepare for this future by building resilience across all parts of the community to allow people and nature to respond and adapt in positive ways.



Forging a Path Forward

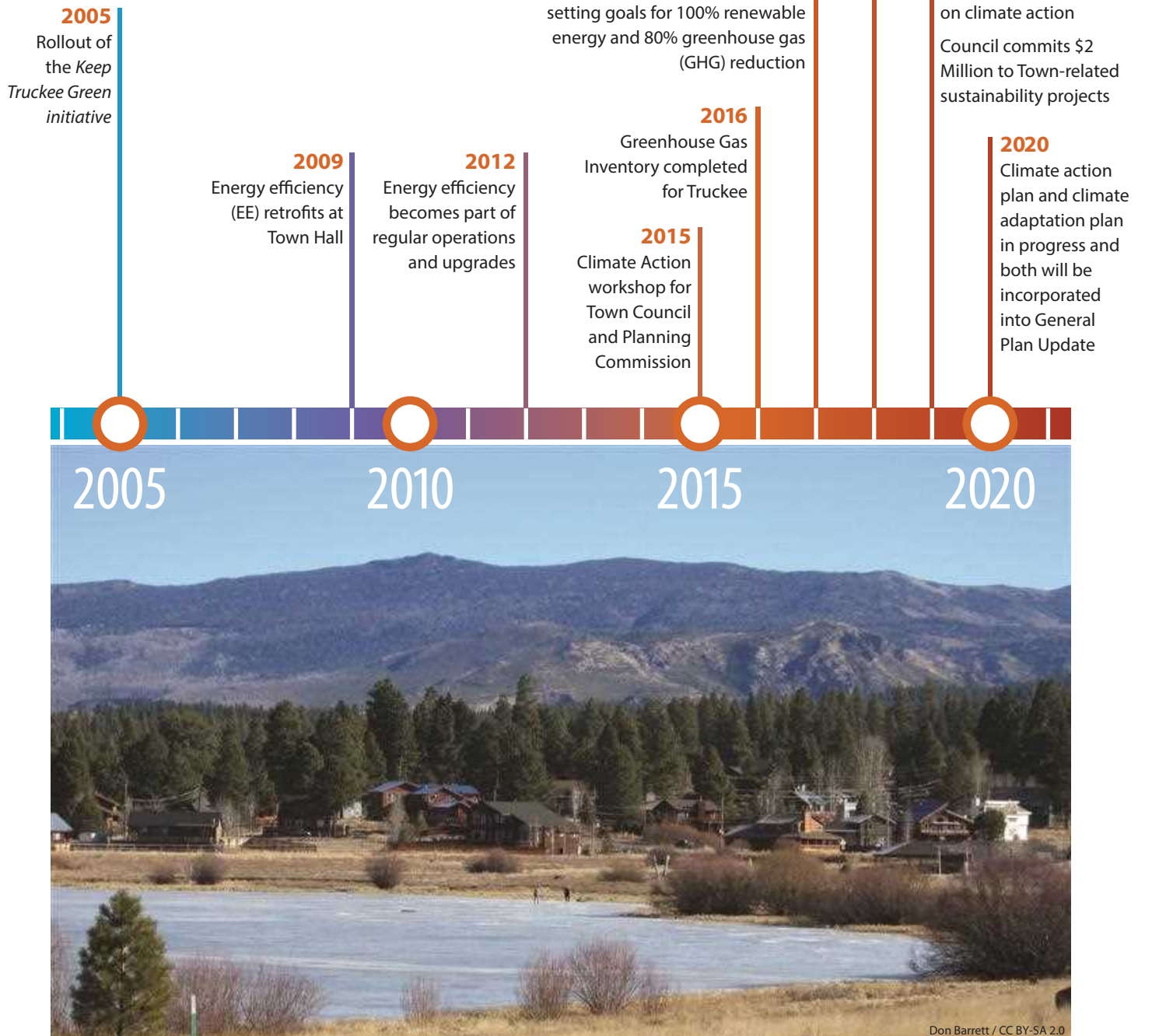
In 2020, Truckee is committing to substantial and effective climate action on two fronts – reducing our greenhouse gas emissions (climate change “mitigation” through development of a Climate Action Plan) and protecting people and resources from the impacts already in motion (climate change “adaptation,” which is the purpose of this document). These actions will protect current and future generations from increasingly severe impacts, such as heat waves, wildfires, flooding, loss of nature, and declining air and water quality.

Truckee’s Climate Action Plan (CAP) was guided by a subcommittee of the General Plan Advisory Committee, and joined by other stakeholders, to

Understanding climate change trends and impacts is imperative for creating an effective plan. *Climate Ready Truckee* is based on the best available science to ensure that robust strategies are directly linked to likely future conditions.

develop strategies for reducing GHG emissions in the community. Those strategies are being incorporated into a climate-specific element of the General Plan, which will also include the adaptation strategies in this document.

CLIMATE ACTION TIMELINE



Don Barrett / CC BY-SA 2.0



A Collaborative Approach

Climate Ready Truckee is the culmination of an intensive and highly participatory, community-driven process. A steering committee from diverse sectors of the community was tasked with guiding the process and ensuring that all policies and actions were designed to conserve nature, advance equity, and protect the most vulnerable populations from climate impacts. (See Appendix C – Community and Stakeholder Outreach)

To ensure that *Climate Ready Truckee* is based on local community values and reflects the expertise of local residents, the following stakeholder and community workshops were conducted to engage the community and solicit input and feedback throughout the process:

Climate Ready Truckee is a plan to reduce climate-related risk to both people and nature. Strategies and actions presented in this plan are designed to protect the most vulnerable residents while building resilience across all people, businesses, and natural resources throughout the community.



K. Crocker / Used with permission



K. Crocker / Used with permission

Stakeholder Workshops

Subject matter experts from a diversity of community sectors were invited to come together on two occasions to guide this planning process. At the first workshop, these stakeholders were asked to consider climate change projections for the region. Group members identified and prioritized the impacts these changes would cause to specific sectors and systems throughout the community. The results of this effort, coupled with broad community input, drove much of the content included in the Vulnerability Assessment found in Appendix E.

Five months later, the same stakeholders were again convened to identify cross-sector and col-

laborative strategies to address vulnerabilities identified in the earlier workshop. Those strategies form the foundation of this adaptation plan.

Stakeholder Workshop Participants

Ben Anderson – Students/Sierra Watershed Education Partnerships
 Evan Anderson – Students/Sierra Watershed Education Partnerships
 Gary Arnold – Caltrans
 Paul Bancroft – Sierra Community House
 Jazmin Breaux – Placer and Nevada Counties Health and Human Services
 Ray Brown – Truckee Sanitary District
 Tony Commendatore – Aegis Insurance, CATT
 Teresa Crimmens – Truckee Family Resource Center
 Linda Ferguson – Truckee Ranger District – USFS
 John Friedrich – Liberty Utilities
 Bill Hauck – Truckee Meadows Water Authority
 Cassie Hebel – Truckee Downtown Merchants Association
 Jason Ko – US Forest Service
 Robert Leftwich – Truckee Police
 Missy Mohler – Sierra Watershed Education Partnerships
 Shon Nelson – Southwest Gas

Ted Owens – Tahoe Forest Hospital District
 Ashley Phillips – Sierra Watershed Education Partnerships
 Steven Poncelet – Truckee Donner Public Utility District
 Steve Randall – Truckee Donner Recreation and Park District
 Will Richardson – Tahoe Institute for Natural Science
 Sharon Romack – Sierra Senior Services
 Joanne Roubique – Retired Truckee Ranger District – USFS
 Tchelet Segev – US Forest Service
 Bill Seline – Truckee Fire Protection District
 Tim Stansell – Vail Resorts
 Blake Tresan – Truckee Sanitary District
 Robin Van Valkenburgh – Nevada Co. Transportation
 Emily Vitas – Truckee Chamber of Commerce
 Lisa Wallace – Truckee River Watershed Council
 Robert Womack – Town of Truckee Emergency Services Coordinator

Stacy Woodbury – Southwest Gas Company
 Mike Woodman – Nevada County Transportation Commission
 Jaime Wright – Truckee North Tahoe Transportation Management Agency

Town of Truckee

Leslie Caratachea	Nicholas Martin
Melanie Conti	Scott Mathot
Gillian Greenberg	Erica Mertens
Anna Klovstad	Julie Paping
Jeff Loux	Erin Ronald

Geos Institute

Ken Crocker	Marni Koopman
Tonya Graham	Geoff Weaver



Community Workshops and Surveys

The larger community was also asked to weigh in with their own experiences and solution ideas through two community workshops. The community workshops offered an interactive feel with live poetry reading, musical performance, free childcare, Spanish interpretation, and an artistic climate collage, providing an upbeat and easy format for a tough topic.

The in-person community workshops were augmented by electronic surveys conducted in both English and Spanish to identify community vulnerabilities and develop local strategies. All input was instrumental in developing the Truckee-specific strategies in this document.

See Appendix C – Community and Stakeholder Outreach and Appendix D – Community Survey Details.



Whole Community Adaptation

Climate change affects everyone and everything in our communities at the same time. As people start to make changes to adapt to climate change, some of these changes can have unintended consequences. Close coordination and communication are needed to prevent redundancy or conflicting actions. People will need to work together to ensure all sectors and populations of Truckee are protected.

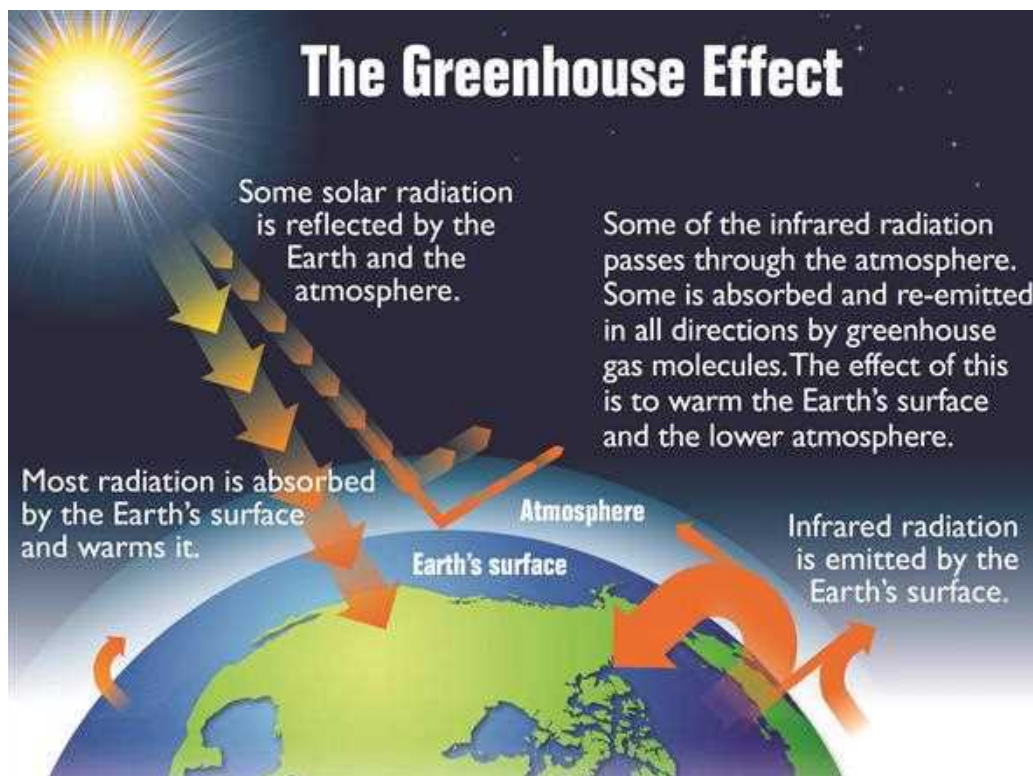


Climate Change in Truckee

Global Climate Change

Human caused greenhouse gas emissions have been influencing the global climate for 140 years. As the quantity and rate of emissions have increased, it has become increasingly clear that our climate is changing quickly and with

global repercussions. Current levels of CO₂ in the atmosphere (over 410ppm) have not been experienced since the Pliocene Epoch (3-5 million years ago), when seas were 24 feet higher than they are today, and temperatures were, on average, 5-7° F degrees warmer.



Climate Hazards Facing Truckee



Truckee's Climate is Already Changing

Climate change may be a global phenomenon, but the impacts are felt at the local level all around the world. The Western U.S. has warmed about 1.5° F since the historical period (1901-1960). Truckee has warmed an average of 2.0° F over the last 80 years (Fig. 1) when we compare the historical 30-year period (1937-1966) and the recent 30-year period (1987-2016). There are now eight fewer days per year below freezing, and the number of days above 90° F has increased by 10 days per year. Average snowfall has declined by 15%. See Appendix B for detailed climate change projections.

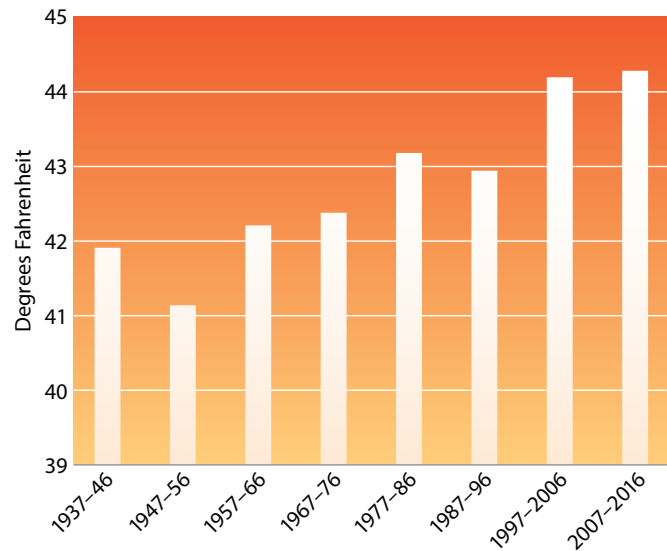


Figure 1. Average historical temperature at the BOCA weather station near Truckee, California.

Future Climate Change in Truckee

Atmospheric scientists created models that help us predict future climate. To determine how Truckee will be affected, Global Climate Models (GCMs) were adjusted to the local

scale. Truckee's climate is expected to continue to change. If greenhouse gas emissions are reduced, this change will level off mid-century. If higher emissions continue, the projected impacts for late-century and beyond are likely to threaten the very fabric of our societies.

	By the 2050s...	By the 2080s...	By the 2080s, IF emissions are reduced...
Maximum temperature	↑ 5-7° F	↑ 8-11° F	↑ 5-7° F
Number of days per year above 90° F	↑ 14-31 days	↑ 32-57 days	↑ 19-29 days
Number of days per year below freezing	↓ 55-68 days	↓ 78-115 days	↓ 48-75 days
Change in precipitation	↑↓ -11% to +37%	↑ +1% to +61%	↑↓ -12% to +28%
April snowpack*	↓ -68% to -71%	↓ -84% to -96%	↓ -70% to -76%
Drought stress	↑ +32% to +51%	↑ +44% to +78%	↑ +32% to +51%
Annual average area burned in wildfire*	↑↓ -5% to +61%	↑↓ -10% to +95%	↑ +21% to +72%

Cal-Adapt data based on a higher emissions scenario (RCP 8.5) and reduced emissions scenario (RCP 4.5)

* All projections based on Truckee town limits except snowpack and wildfire, which were analyzed within Prosser Creek-Truckee River Watershed boundaries.



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Truckee's Vulnerabilities

Climate impacts affect every person, structure, business, natural resource, and organization in Truckee. And yet, some will be impacted far more than others. Vulnerability depends on many factors, including ongoing stressors, potential climate impacts, and existing adaptive capacity. In the creation of this plan, vulnerabilities across

the community were assessed, including infrastructure, health, culture, natural systems, and business. Through extensive work with Truckee stakeholders, residents, and experts, the following populations and resources were identified as especially vulnerable.

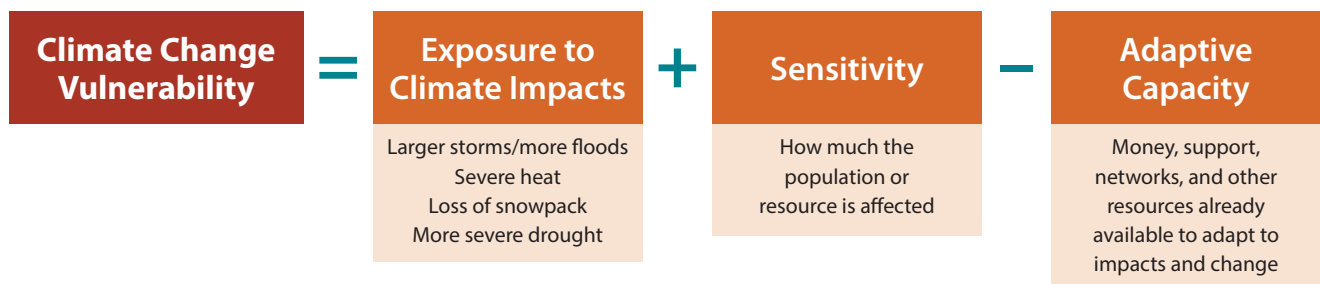


Table 1. Truckee’s climate change vulnerabilities, as identified by local stakeholders and community members. *Please note that the recent pandemic occurred after the vulnerability assessment, and this table, were completed. The topic, and lessons learned from Truckee’s response, are addressed in other sections of this plan.*



Declining Snowpack – April snowpack is expected to decline by 84-96%



Wildfire and Smoke – Wildfire area could increase by 21-72%



Loss of Nature – About half of native habitat in the Sierra could become marginal



Rain-on-Snow – Rain-on-snow could become twice as frequent, causing flooding



Pests and Disease – Pests and disease could spread, affecting people and crops



Larger Storms – The amount of precipitation in the largest storms could increase 5-30%



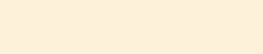
Severe Heat – Truckee could experience 32-57 more days/year above 90° F



Drought – Drought stress could increase by 44-78%

Rank	Sector	Impact/Risk	Climate Hazard(s)	Time frame	Sensi- tivity	Adaptive Capacity
1	Nature	Wildfire risk to forests, affecting wildlife, natural areas, and recreation		Near term	High	Low
2	Culture/ Economic	Declining service and recreation industry jobs in both winter and summer	   	Near term	High	Low
3	Economic	Economic costs of wildfire and smoke related to infrastructure losses, tourism declines, and local business expenses		Near term	High	Low
4	Culture/ Built/ Economic	Loss of nature-based and small-town culture as conditions become less conducive to outdoor recreation and more people move to the area to escape impacts elsewhere	     	Near term	High	Low
5	Nature/ Built	Impacts to trails, forests, wetlands, and meadows as more people visit during snow-free seasons		Near term	High	Low
6	Built	Overburdened infrastructure (water, sanitation, roads, public buildings and services) as people come to Truckee from other areas to escape heat and drought	 	Near term	High	Low
7	Economic	Lower revenue from tourism affecting government resources, public infrastructure and services for the community	     	Near term	High	Low
8	Culture/ Health	Non-profit organizations (health, safety, environmental, etc.) overburdened from increasing demand for services at the same time as lower funding resources	    	Near term	High	Low
9	Culture/ Health/ Nature	Loss of outdoor recreation, winter activities, and nature-based culture leading to change in values and health declines	  	Near term	High	Low
10	Built	Traffic congestion to increase with wildfires, flooding, and climate refugees	   	Near term	High	Low/Med
11	Culture	Sustainability goals increasingly difficult to achieve with higher costs for housing, energy	 	Near term	High	Low/Med

Rank	Sector	Impact/Risk	Climate Hazard(s)	Time frame	Sensi- tivity	Adaptive Capacity
12	Built/ Health	Electrical blackouts and damage to electrical infrastructure are expected to affect prices, distribution and sourcing, and peoples' health		Near term	Med	Medium
13	Economic	Higher utility and insurance costs, as well as difficulty obtaining insurance, could affect businesses, residents, and local government		Near term	High	Medium
14	Health	Mental health impacts and trauma associated with disasters and degradation of natural environment		Near term	High	Medium
15	Built/ Health	Risk to peoples' lives (safety), property and homes (real estate)		Near term	High	Low/Med
16	Culture/ Health	School and youth experience are likely to be impacted by loss of winter sports, limited outdoor activity, and loss of nature-based values and activities for learning		Near term	High	Medium
17	Health	Increased violence and domestic disputes during extreme heat and other events		Mid term	High	Low
18	Built	Damage to roads and culverts from more flooding, fire, freeze/thaw, and traffic		Near term	Med	Low/Med
19	Nature	Degradation of nature and loss of native species as climate related impacts, including more drastic year-to-year variability, affect natural ecosystems		Near term	High	Medium
20	Economic	Ski industry decline is expected to result in a loss of revenue for local government and the town at large, and affect the workforce		Near term	High	Low/Med
21	Culture	Washoe cultural sites and resources impacted from extreme events, erosion, and disturbance		Mid term	High	Low
22	Economic	Increased homelessness and food insecurity as extreme events cause disruptions to daily life		Mid term	High	Low
23	Economic/ Built	Financial and housing instability expected to increase with climate related maintenance and policies for higher efficiency		Mid term	High	Low
24	Nature	Forest health impacts from insects, pests, pathogens, drought, and invasive species		Mid term	High	Low
25	Culture/ Health	Vulnerable populations and Latinx community affected by extreme events due to lower quality housing, fewer backup resources, and exposure to the elements		Mid term	Med	Low
26	Health	Overburdening of the health care system and increased cost		Mid term	High	Medium

Rank	Sector	Impact/Risk	Climate Hazard(s)	Time frame	Sensi- tivity	Adaptive Capacity
27	Health	Overburdening of emergency services may result in lower preparedness, higher mortality, and mental health impacts to emergency responders		Mid term	High	Medium
28	Economic/ Culture	Loss of work opportunities and income for outdoor workers due to severe conditions limiting their hours		Mid term	High	Medium
29	Health	Increase in pests, disease, water-borne and food-borne illnesses that affect peoples' health		Mid term	Med	Medium
30	Built	Meeting GHG emissions targets could become more difficult as costly impacts, ongoing disruptions, and increasing population threaten goals		Mid term	Med	Medium
31	Built	Damage to water, storm drain, and sewer infrastructure from wildfire, flood events, and more people		Mid term	Med	High
32	Health	Asthma, allergies, respiratory disease, heart disease, and other heat and smoke-related illnesses expected to increase		Mid term	Med	High
33	Nature	More variable and lower water levels and warmer temperatures in lakes, rivers and streams affect algae blooms, loss of wetlands, and degradation of riparian areas		Mid term	Low/ Med	High
34	Nature	Flood damage and declines in water quality in streams and rivers from larger storms, extreme events, erosion and sedimentation		Mid term	Med	High



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U.S. Army / CCO

PANDEMIC RESPONSE

What we can learn about community readiness and resilience from the COVID-19 pandemic of 2020

This plan was in its final stages of completion as the pandemic hit, which is why the possibility of a pandemic was not included as part of the vulnerability assessment or adaptation strategy development process. There are, however, several locations and strategies throughout this document that have been added or adjusted to consider such a pandemic, in the context of community health, readiness, and emergency response. The Town's General Plan Update will also consider adding specific policies related to lessons learned from the pandemic. The strategies included in this plan to address the possibility of future pandemics represents our perspective and lessons learned at this moment in time. That perspective, and those lessons, may change over time as we continue to work to move through this current public health crisis.

Many of Truckee's systems for preparedness and resilience were put to the test during the Novel Coronavirus (COVID-19) pandemic in early 2020. To prepare Truckee for the ramifications of COVID-19, the Town and its many community and agency partners launched a series of initiatives to keep the community safe and to enable economic and cultural recovery following the prolonged shut-down. After the Town declared a state of emergency, it immediately launched its Emergency Operations Center (EOC). Extensive coordination was initiated with the Tahoe Forest Hospital District to plan for a potential surge in cases and to track key data about the disease, as well as with the Nevada County Emergency Management Office, Nevada County Executive Office, Placer County

EOC, State EOC and Public Health, Nevada County and Placer County Public Health Officers, Fire District, the Sierra Business Council, and a variety of other key agencies and organizations.

The Town immediately modified its internal procedures moving to remote working for most (non-field) staff, meetings for Town Council, commissions, and public workshops. Strict procedures were also put in place for physical distancing, hygiene and safety precautions, and reporting. The Town worked with its partners to obtain needed medical supplies and space, secure disease testing and tracking, and managed a complete (and instant) overhaul of its social media and web-based communications systems to become one of the key voices in the community for timely information. The Town assisted in closing non-essential businesses for nearly two months to prevent disease spread, and then worked

closely with the County on a gradual re-opening strategy based on health risk data. The Town also offered assistance and guidance to businesses to ensure long term worker and customer safety.

To expand the Town's long term resilience to emergencies, the Town helped create a day time shelter for the homeless, provided immediate funding for food delivery for seniors and lower income residents, and for low and moderate income renters who had lost their jobs due to COVID. Along with the Chamber of Commerce, the Town of Truckee became the financial catalyst for the Sierra Resilience Fund, a program of the Sierra Business Council, offering low interest, quick micro-loans for businesses to survive the shut-down. The Town also supported recovery efforts, such as the statewide postponement of business sales taxes for a year across California (worth \$1.4 million); and the return of over \$750,000 in



Capt. Brendan Mackie / CC BY 2.0

paid transient occupancy taxes to the hospitality industry to endure the shut-down by the Truckee Tourist Business Improvement District.

The Town and all of our partners learned many valuable lessons about emergency response and resilience which can be applied in the future and are reflected in many of the policies in this document. Below is a short list of some of those important takeaways.

- A robust and up to date Emergency Operations Center should be maintained, with a full time Emergency Services Coordinator on staff who regularly practices various emergency scenarios. This should involve close cooperative relationships with State and County emergency services offices and related local and regional partner organizations.
- Channels for disseminating information are crucial, and the Town should maintain a robust public information office adequately staffed and trained to operate under “normal” as well as emergency conditions to disseminate information and serve as a critical community voice.
- Continued support and strengthening of the Sierra Resilience Fund and related emergency and recovery funding infrastructure, such as the Tahoe Truckee Community Foundation and Sierra Community House, is essential for emergency relief.
- Procedures and technological capacity must be kept up to date to support future remote work and engagement with the community on key issues, including Town Council and Commission meetings.
- To be able to access state, federal, and other emergency assistance and relief funds when they might become available, the Town must maintain strict and up-to-date accounting and financial tracking processes.
- To support the Town’s essential operations in the event of a prolonged shutdown, or reduced revenues, a “rainy day” unrestricted reserve account should be strengthened and maintained, in addition to the designated reserves to support the building division, vehicle and equipment, road maintenance, and trail/bikeway maintenance.
- To ensure available medical capacity, equipment, personnel expertise, and availability in times of emergency, the Town should work to maintain its close and collaborative relationship with the Tahoe Forest Hospital District.



COMMUNITY ENGAGEMENT

Climate change affects every person, business, and sector throughout Truckee, so climate action needs to happen at every level of the community. While the Town of Truckee can implement many bold new strategies, adjust its priorities, and change some of the systems and policies in place, residents and businesses also have a critical role to play in making lasting change.

Like the community-driven process to create this plan, many of the strategies and actions presented in this plan require significant support from the public and/or specific sectors of the community. Engagement on climate change can help to create support for changes that the Town of Truckee makes, while also helping to further change at the individual level. This engagement, which includes both education and meaningful

feedback processes, can also help identify allies, champions, and civic leaders who are ready to take action throughout the community. Identifying and empowering these leaders, particularly those from traditionally underrepresented communities, can be a powerful force in building community-wide climate resilience.

Outreach on many topics can be conducted in a cohesive and collaborative way that reflects the intertwined nature of climate change, social equity, health, economics, culture, and the environment. Rather than treating individual topics as separate, and creating redundant efforts to reach the public, many topics can be addressed in a coordinated manner. Local values, culture, and history need to guide and influence the engagement to be conducted as part of the strategies identified in this plan.



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Climate Ready Truckee is a plan to create...

- ▶ Healthy Residents
- ▶ Natural Capital
- ▶ Sustainable Businesses
- ▶ Resilient Infrastructure
- ▶ Community Readiness

Strategies to Prepare for Change

The Town of Truckee, local residents, businesses, civic organizations, faith communities, and others are working together to adapt to the impacts of a changing climate. *Climate Ready Truckee* provides specific strategies and actions to meet that goal.

Climate Ready Truckee was developed by many stakeholders from throughout the community. The success of this plan involves commitment by many public and private entities, with increasing engagement and participation over time.

The following sections provide an overview of the ways that the community can become prepared and resilient in the face of advancing climate impacts. Many of the goals, strategies, and actions within this plan provide benefits to the community regardless of climate change, thereby strengthening the community as a whole. Areas where the Town of Truckee can take the lead through direct governmental action are highlighted.

Climate Ready Truckee is organized into themes that reflect the future of Truckee as

Climate actions that help to address other important community values are highlighted throughout the plan.



= Enhances environmental health and biological diversity



= Supports efforts to reduce greenhouse gas emissions (mitigation)



= Helps to build equity for marginalized groups



= Cross-sector action addresses many different types of needs across the community



= Action developed through community input

Throughout this plan, this symbol → represents a high priority strategy.

climate change progresses. Within each theme is a goal, and a suite of strategies to address those objectives. *Climate Ready Truckee* must be implemented collaboratively by government, residents, businesses, neighborhoods, NGOs, faith communities, schools, and others.



Mo Pie / CC BY-NC-ND 2.0

HEALTHY RESIDENTS

Many residents of Truckee are attracted to the area because of recreational opportunities and the outdoors. Residents of Truckee are, on average, more active and healthier than other Californians. Rates of obesity and diabetes are substantially lower than in the rest of the state.¹

Climate change can affect the health of both tourists and residents of Truckee. Impacts include respiratory impacts from smoke, heat-related illnesses, increasing allergies and asthma, food-borne and water-borne illnesses, and mental health impacts from extreme events. More frequent

Snow Sports Losing Ground

As avid Nordic skiers, Ben and Evan Anderson savor ascending snowy hills on their cross-country skis. They find this form of outdoor recreation to be “a perfect way to enjoy the beauty of the Sierra Mountains” and “an amazing medium of exercise.” Ben and Evan are on the high school Nordic ski team, which has sparked their appreciation of the sport and desire to solve climate change.



Evan Anderson

As snow sport athletes, Ben and Evan have seen the changing climate alter their training grounds from sudden drought to too much snow or rain. They both worry about their ability to consistently enjoy the sport they love in the face of these changing conditions. Memories made gliding through snow with their team “could be the last of their kind” as climate change transfigures the Tahoe region.

and severe storms, floods, heat waves, wildfires, and other extreme events create additional stresses to healthcare systems, employees, and infrastructure.

Maintaining and improving the physical and mental health of Truckee's residents is a top priority. Young people need strong mental health and resilience to adapt to change, while older adults need a robust health care system that can quickly adapt to new and emerging stressors and needs.

Vulnerable Residents

Health-related impacts of climate change are not evenly distributed across the community. Those who are most vulnerable include lower-income residents, people who work or live outdoors, infants and older adults, and people with existing health conditions such as asthma, emphysema, and heart disease, and people experiencing mental health challenges and isolation.



KEY FACTS

**50%
CLEANER**

Average air quality in
Truckee compared to the
national average²

Over 1,000

The number of people who died
from air-pollution after California's
Camp and Woolsey fires in 2018³



Twice as many

The change in cases of tick-borne
diseases from 2004-2018, largely
because of climate change⁴



12,796 lbs.

The amount of food
distributed by Sierra
Community House to
community members in
January 2020





shortCHINESEguy / CC BY-NC-ND 2.0

GOAL 1

Improve Mental Health

Nature-based recreation is known to promote positive mental health, including elevated mood and reductions in stress and anxiety.⁵ Climate change impacts mental health in many ways. Direct impacts result from extreme events (larger storms, floods, and wildfires), which can cause trauma and post-traumatic stress disorder, as well as ongoing addiction or other declines in mental health. Loss of employment or housing from extreme events also contributes to poor mental health. Extreme heat, smoke and prolonged confinement to the indoors increase violence and abuse.

The Tahoe Forest Health System, county health departments, and nonprofit organizations all actively engage the community in promoting optimal health. The socioeconomic indicators

Youth Health Initiative

In 2015, the Youth Health Initiative was formed with community partners to identify best practices for improving the health of Tahoe Truckee's youth. Best practices for mental health include:

- School-based therapists
- Advancing drug-free culture in schools
- Mental/behavioral health screenings to identify at-risk youth
- Professional development on topics such as trauma, depression, and other emotional health issues

recently adopted to track Truckee's progress includes mental health indicators.

Many groups work in schools and with youth to promote healthy habits focusing on food choices, immunizations, suicide prevention, and others.

Expanding these efforts to focus on mental health can help to build long-term community resilience. Mental health awareness and proactive approaches to reducing stress and recognizing depression are important for young people. Such efforts will create resilient and adaptive youth able to address climate impacts.

Strategies

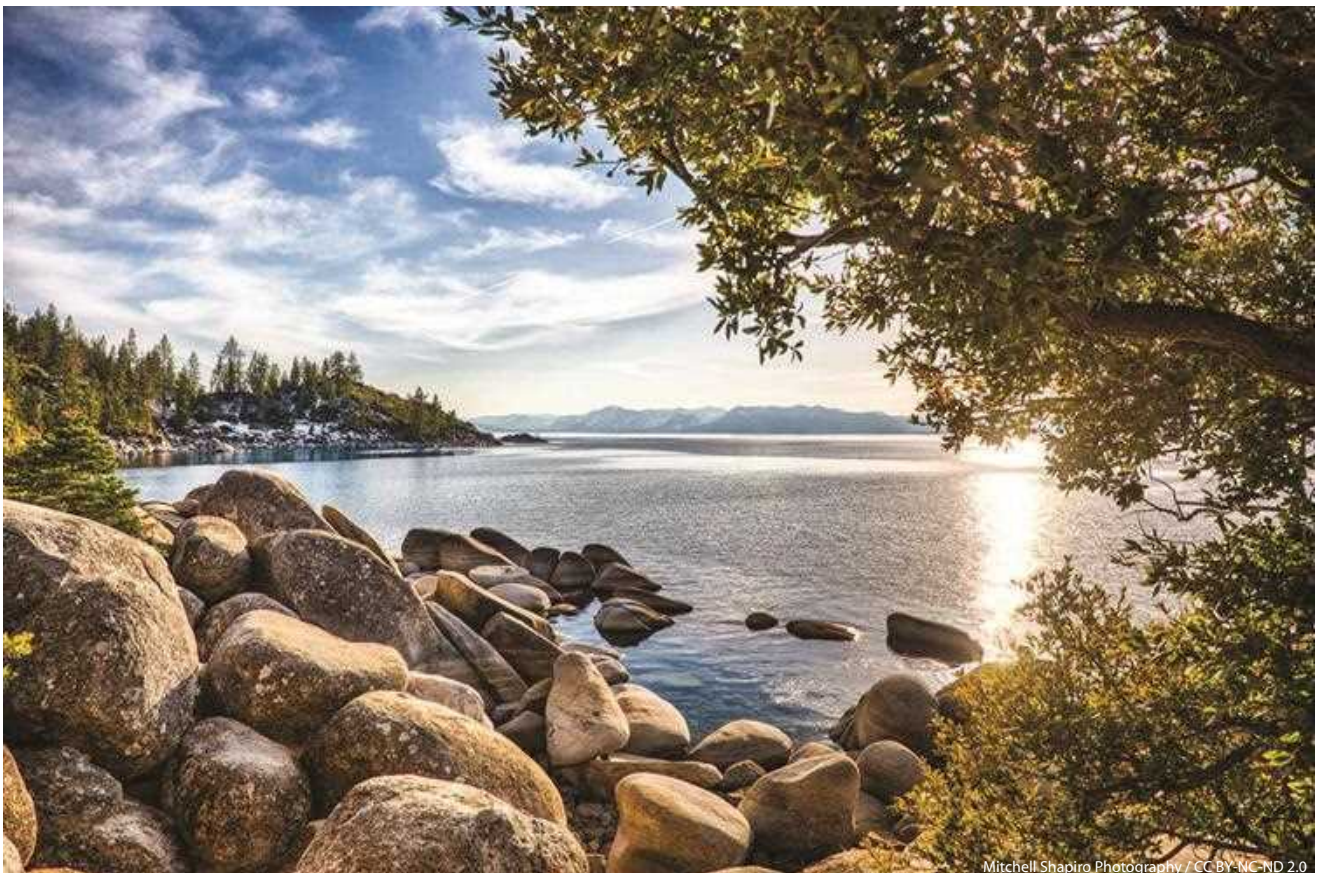
- ➔ 1.1 *Service Access*: Ensure that services and outreach are accessible to non-English speakers and people with disabilities to expand the accessibility of mental health program opportunities 🤝👤
- ➔ 1.2 *Youth Programming*: Work with Tahoe Truckee Unified School District, local sports teams, and Sierra Community House to advocate for the expansion of youth programs and cur-

riculum that promote strong mental health and resilience (e.g. Keep It Cool program) 🧑🏫

1.3 *Funding*: Increase public agency funding, grants and resources allocated to mental health programs, institutions, and nonprofit organizations

1.4 *Needs Assessment*: Work with community health professionals and the Wellness Neighborhood to conduct a needs assessment to identify proactive mental health support options for local residents

1.5 *Resident Programming*: Partner with and/or support in-person and virtual mental health efforts by Sierra Community House (e.g. Promotora program), Nevada and Placer Health and Human Services, and other partner agencies to expand mental health programming and engage residents in mental health programs 🧡



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GOAL 2

Protect People from Smoke and Heat

Truckee is fortunate to have some of the cleanest air in the nation. During large wildfires, however, air quality can quickly deteriorate. Even wildfires far from Truckee can affect local air quality.

Climate change is expected to increase wildfire and smoke. Wildfire smoke contains particulate matter, carbon monoxide, nitrogen oxides, and volatile organic compounds (which can lead to ground level ozone).

Of primary concern is particulate matter (specifically PM_{2.5}) – fine particles of soot and dust that are about 30 times smaller in diameter than a strand of human hair. These particles can reach deep into the lungs. Health impacts include heart attacks, strokes, asthma, emphysema, and cancer. During periods with dangerous particulate levels,

lower income residents are highly vulnerable because they are less likely to have access to HVAC systems that filter the air. People who work and/or live outdoors, and those with existing respiratory diseases are also vulnerable.

Extreme heat is the most dangerous natural hazard in the U.S. in terms of health impacts. Average high temperature in Truckee is 82°F in the heat of summer. The highest temperature recorded in Truckee was 104°F in 2007. Future summers could be significantly warmer (5-7°F warmer by mid-century) with many more weeks above 90°F each year. Those who are most affected include older adults, infants, people working and living outdoors, and lower income residents, especially those without air conditioning.

Strategies

2.1 Smoke and Heat Protection: Work with health professionals, local utilities, businesses, and Sierra Community House to conduct educational outreach and provide purchasing information on masks, air filters, HVAC systems, and other measures to protect all residents, including outdoor workers and other particularly vulnerable populations from smoke and heat 🍷👥

2.2 Flexible Work: Support and provide opportunities for alternative and/or flexible schedules, including remote working, for government and private outdoor workers 🍷

2.3 Information Sharing: Connect with other mountain communities to share best practices for addressing smoke and heat impacts



Erik Scheel / CCO

GOAL 3

Improve Availability of Healthy Food

Food insecurity is hard to see in Truckee, but many families and individuals have to choose between enough food and other daily needs like housing or medicine. Children and older adults are most at risk. In Nevada County, 15% of adults and 24% of children experience food insecurity.⁶ Some of the major barriers to

people having food are affordability, access, and awareness.

As climate change progresses, those with the least resources are expected to be the most impacted by large storms, heat waves, wildfire, pandemics, and other extreme events. Food supplies



Tahoe Food Hub

The Tahoe Food Hub is working to galvanize the community to build a regional, sustainable, equitable food system through the following programs:

Farm to Market – a program to promote the sourcing and consumption of regionally-produced and sustainably grown foods. They represent producers within 100-miles of consumers.

Grow Local – This program takes advantage of the 280 days of sun in the region to grow food in the mountains.

could become restricted on a national and even global level, inflating prices. Current food availability, transportation, and security concerns are expected to be exacerbated by these climate impacts. Because little food is grown in Truckee, regional and global pressures are likely to affect local residents.

However, a warmer climate and longer growing season could benefit Truckee in terms of local food production. The abundant water resources available in the Sierra Nevada could also prove to be an asset.

Increasing access, affordability, and awareness are key priorities to provide residents with healthy and nutritious food. Work is already being done to address food insecurity in our community. Expanding and growing this work is vital. Truckee Community Farmers Market, Truckee Certified Farmers Market, Slow Food, Tahoe Food Hub, Mountain Bounty CSA, and Sierra Community House are great examples of programs already addressing this need and that will need to increase capacity over time.

Strategies

3.1 Local Food Consumption: Work with local food providers/organizations (e.g. Tahoe Food Hub, farmer's markets) and their partners to promote consumption of locally grown food to residents and tourists 🌱

3.2 Education for Growing Food: Promote educational opportunities in local community gardens, demonstration gardens (Slow Food), etc. through incentives and partnerships 🌱

3.3 Food Recovery and Distribution: Provide support for Sierra Community House, Sierra Senior Services, Boys and Girls Club, and local businesses to increase food donations and distribution (quantity and access) as need increases 🌱❤️



GOAL 4

Improve Overall Community Health

Truckee residents generally enjoy healthy lifestyles rich in recreation, nutrition, and healthy choices. Truckee has lower rates of obesity, higher rates of physical activity, fewer cigarette smokers, and more people in excellent health than most other parts of the U.S.

As climate change progresses, Truckee residents may need to shift their activities from winter sports to warm-season sports and activities. Increasingly hot or smoky summers may force people indoors. Spring and fall seasons are likely to be longer and more amenable to outdoor activity, although smoke from wildfires may last into the fall as well.

Truckee residents and visitors may be increasingly affected by pests and disease due to warmer air and water. As pests and diseases expand their ranges, people, plants, and animals may be exposed to diseases for which they have no natural immunity. Populations that are already vulnerable due to race, age, and/or economic status are often at particular risk of health impacts from disease outbreaks. This reality makes it increasingly important to monitor, control, and reduce the impacts of outbreaks while raising awareness of the risks for all community members.



Wellness Neighborhood

The Wellness Neighborhood is a collaborative department of the Tahoe Forest Health System, specifically focused on community needs and bringing together core community organizations to work towards common results.

The current goals of the Wellness Neighborhood include optimizing health and primary/preventative health, substance abuse, mental and behavioral health, and access to care and care coordination.

Every 3 years, the Community Health Needs Assessment is conducted to better understand the broad health concerns of the Tahoe community.

Strategies

➔ **4.1 Disease Preparedness:** Collaborate with all community, county, and state partners to increase preparedness for pandemic diseases and other outbreaks 🧑🏻🧑🏻🧑🏻

4.2 Disease Surveillance: Partner with Nevada County Public Health to increase surveillance, and testing, of new diseases, vectors, and climate related health impacts, including infectious, food-borne, and water-borne disease 🧑🏻🧑🏻

4.3 Preventative Care: Work with Tahoe Forest hospital, local employers, and other partners

to develop and implement a preventative care initiative to improve the general health of all Truckee residents ❤️🔄

4.4 Extreme Event Education: Work with local healthcare institutions and community groups to conduct extensive outreach to educate all community members, particularly vulnerable populations and health care workers, about climate risks, potential for extreme events, and their own risks during extreme events ❤️



NATURAL CAPITAL

Natural Capital is the value of natural systems and the services that they provide for humanity, from the inherent value of biodiversity to the economic value of flood abatement, natural pest control, or forest products.

The character of Truckee comes from the mountains, forests, lakes, and rivers that surround us. The beauty and abundance of natural resources are what attract people to the area and provide the day-to-day quality of life that Truckee residents and tourists enjoy. Open space is a valued resource in Truckee, providing a visual and physical connection to the natural environment.

Natural systems provide valuable functions to both residents and visitors. For example, intact meadows and riparian areas act as sponges as the snowpack melts, holding water at higher elevations rather than allowing it to cause flooding

Mclver Dairy Meadow

The Mclver Dairy Meadow (Town of Truckee), known for its historical use as a dairy, was determined by the Truckee River Watershed Council (TRWC) to be releasing two tons of polluted sediment annually into the Truckee River.

In a collaborative effort, the Town and TRWC restored the meadow by removing fill, reconnecting the local creek to its meadow floodplain, and re-introducing native plants. This restoration increases the quality of the water running directly to the Truckee River and provides more habitat for native plants, birds, and wildlife.

downstream. By storing water, healthy meadows also help maintain stream flow and temperature throughout the summer. In the Sierra Nevada, meadows have experienced widespread deterior-

KEY FACTS

24%

The percent of Truckee's land that has been designated for open space, resource conservation, or recreation

\$64 billion per year – The economic value of ecosystem services provided by U.S. forests, including climate regulation, erosion control, recreation, and others⁷

SSS

3 degrees – The amount streams will warm with each 3.5° F rise in air temperature⁸

40-60% – The wetland and meadow habitat in the Sierra Nevada that has been severely degraded or lost in the last 150 years⁹

ration over the past 150 years due to development activities, such as mining, logging, and roadbuilding, and are under increasing stress due to changing climate conditions.

Similar to natural lands outside the city, natural lands and open space within town limits are increasingly being affected by climate change and will need to be managed for continued natural function. Some of the climate-related threats include pests and diseases that can affect native trees, drought that weakens vegetation, floods

and large storms that knock down trees and destroy landscaping, and overall climate shifts that make existing vegetation incompatible with the new conditions.

Vulnerable Resources

Wetlands, riparian areas, meadows, and cold-water fisheries are highly vulnerable to climate impacts. Native trees are susceptible to drought, wildfire, disease, and pests.



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GOAL 5

Create Wildfire Resistance and Resilience

Wildfire is a landscape-scale natural process that is integral to healthy forests of the Western U.S. Wildfire acts to thin vegetation, eliminate dead or dying vegetation, spur new growth and soil nutrients, and create diverse habitat.

Because much of Truckee is embedded in forested landscapes, most lands are classified by CalFire as “Very High Fire Hazard Severity Zones.” Included in these zones are emergency response infrastructure, schools, bridges, government buildings, and other critical infrastructure.

Fire risk within Truckee is increased by property owners who do not manage the defensible space and vegetation (e.g. fuel) on high risk property. Further development in forested areas will continue to increase this risk to infrastructure and lives, including those of firefighters.

Strategies

- ➔ **5.1 Fuel Loads:** Work with CalFire and Truckee Fire Protection District to provide information to residents and property owners on how to reduce fuel loads and ignition sources near homes and in surrounding areas (e.g. outside the current PRC 4291 100-foot requirements) 🏠
- ➔ **5.2 Native Species:** Require native, fire-resistant species for Town properties, parks, yards, and grounds. Work with Nevada County Department of Agriculture and other stewardship groups and public land managers to remove invasive and/or fire-spreading species (e.g. cheat grass) on public lands 🌱👥
- ➔ **5.3 Firewise Neighborhoods:** Provide residents with resources and guidance to organize Firewise

neighborhoods and expand outreach to help residents create defensible space 🧑🏿🧑🏿🧑🏿

➔ **5.4 Outreach Efforts:** Shift the social perception on prescribed burns through social media, art, school outreach, and keeping people informed in real time

5.5 Forest Material: Support efforts to develop local markets or applications for thinned materials (e.g. art, biomass, mulch, etc.) 🧑🏿🧑🏿🧑🏿

5.6 Ignition Sources: Assist with efforts by the Truckee Fire Protection District to reduce ignition sources and potential near homes and in the wildland urban interface (e.g. campfires, BBQs, chainsaws, smoking, electrical and power equipment, etc.)

5.7 Controlled Burns: Partner with US Forest Service, Truckee Fire Protection District, and CalFire to reintroduce fire into the ecosystem through controlled burns and other measures 🌿🧑🏿🧑🏿🧑🏿

5.8 Forest Thinning: Work with US Forest Service, Truckee Fire Protection District, and CalFire to organize forest thinning events, such as cut-a-tree day, Christmas tree harvest, and other community activities 🌿

5.9 Reduce Fire Risk: Work with the US Forest Service, CalFire, and local public agencies like Truckee Donner Recreation and Park District, Truckee Sanitary District, Tahoe Truckee Sanitation Agency, Tahoe Truckee Airport District, CA State Parks, and other land managers to reduce fire fuels on their lands, explore closure of certain public lands during high risk conditions, and work with Truckee Fire Protection District to implement campfire and barbeque restrictions during fire season

5.10 Defensible Space Funding: Work with the Truckee Fire Protection District to develop a sustainable funding source to support residential defensible space and fuels reduction work

■

FOREST⇌FIRE Education Project

Conceived, designed and curated by Nevada County Arts Council Artist-in-Residence, Michael Llewellyn, and featuring 18 California artists, FOREST⇌FIRE is a free, interpretive exhibit offering science-based solutions to catastrophic fire, as well as a hopeful, sustainable, future for the Sierra Nevada forest. It is supported by two public engagement platforms, *Fire Circle* and *Forest Home*, connecting Truckee-Donner citizens and students to our changing landscape, and offering in-the-field learning and an opportunity to vision the future forest. FOREST⇌FIRE is created as a partnership with Nevada County Arts Council, Truckee Donner Recreation and Park District, and UC Berkeley's Sagehen Creek Field Station.

<https://www.nevadacountyarts.org/forestfire>



Michael Llewellyn



GOAL 6

Protect and Restore Native Habitats and Species

Native species and habitats are a vital part of the landscape, aesthetics, and ecosystem stability in Truckee. They are also important for ecological health throughout the region. As climate change progresses, native species are expected to become increasingly stressed and less able to compete with invasive and non-native species. Many species will need to shift to new areas or face extinction as the climate of the region changes.

Maintaining and protecting native species diversity and connectivity so species can move in response to the changing climate, is imperative for the continued functioning of natural systems. Important functions that native species provide include pollination of plants and crops, protection of banks and riparian areas from erosion, shading and cooling of waterways, water stor-

Martis Wildlife Area

One of the most popular areas in the Tahoe Truckee Basin is the Martis Wildlife Area. Efforts are underway to restore 70 acres of meadow and increase the meadow capacity to clean and store water, provide a habitat for fish, birds, and wildlife, and mitigate threats of drought, fire, and flood. Restoration includes reconnecting two miles of streams to its meadow floodplain to slow run off, prevent erosion, and maintain moisture in the meadow. The restoration project is one of several in the Martis Valley that are bringing back birds, bugs, frogs, and fish to the area.

age during large storms, and natural removal of toxins and pollutants. Native species also provide

recreational activities and aesthetic benefits to residents and tourists.

Strategies

➔ 6.1 *Wildlife Corridors*: Work with US Forest Service and local non-profits to protect and connect existing native habitats to provide wildlife corridors 🌿👥

➔ 6.2 *Stewardship Education*: Work with Truckee River Watershed Council, US Forest Service, Take Care Tahoe, and Truckee Donner Recreation and Park District to create informative signage, ad campaigns, and social media in English and Spanish for residents and tourists to promote environmental responsibility, stewardship, and appreciation to reduce human-caused stressors to critical wildlife habitat and as a necessary element of climate change response 🌿❤️🔄👥

6.3 *Restore Habitats*: Partner with local non-profits and agencies to restore degraded habitats and conservation areas, especially areas supporting high biodiversity and important species 🌿🔄👥

6.4 *Support Fish Passage*: Work with the Truckee River Watershed Council to protect and restore native fish populations and fish passage 🌿👥

6.5 *Research Future Forests*: Partner with US Forest Service, Tahoe Institute for Natural Science, UC Davis Tahoe Environmental Research Center, and other organizations to research which species will thrive in forests of the future, and work with partners to develop a plan to manage for them 🌿👥

6.6 *Protect Persistent Spaces*: Work with the US Forest Service, other local agencies, and local non-profits to develop strategies that identify, protect, and manage intact natural systems most likely to persist over time, or refugia (e.g. areas of cool water, north-facing habitats, areas of high biodiversity, etc.) 🌿

6.7 *Ecology Education*: Collaborate with Truckee River Watershed Council, One Truckee River, and Sierra Watershed Education Partnerships to provide education to all residents, with a particular focus on low-income and underserved communities, on native plant species and the ecosystem services of plant diversity 🌿❤️



Grant Kaye



GOAL 7

Enhance Ecosystem Services

Natural systems provide many essential services to the community. By providing functions that a community requires, such as flood control or water filtration, natural systems can often replace more expensive traditional infrastructure. When natural systems are used in such a way, they are often referred to as “green infrastructure.”

Green infrastructure is often highly attractive economically, because it provides critical services at a fraction of the cost of traditional infrastructure. In addition, it offers many co-benefits, such as supporting native species and habitats, allowing flexibility over time (especially important with climate change), aesthetic values, lower energy use, and recreational value.



Ecosystem services are provided by naturally occurring ecosystems, such as wetlands, rivers, floodplains, and meadows. These systems can be



Green Infrastructure is the use of natural and engineered ecological systems to provide specific services to the community, often in relation to stormwater management, but also including cooling, pollination, and filtration.

Some examples include:

- Rainwater harvesting
- Bioswales
- Permeable pavement
- Green roofs
- Green streets and alleys
- Urban tree canopy

For examples and case studies, please visit <https://www.epa.gov/green-infrastructure/what-green-infrastructure>

conserved, protected, and restored to continue to provide essential functions, such as downstream flood abatement, clean water, and recreational opportunities.

Strategies

7.1 Permeable Surfaces: Continue to promote nature-based methods and best management practices (e.g. bioswales, natural ground cover, etc.) through the Town's stormwater program and permit to increase permeable surfaces to reduce runoff 🌿 ➡ 🧑🏫

7.2 Open Space Management: Use planning tools and collaborate with Truckee Donner Recreation and Park District and Truckee Donner Land Trust to manage open space and forests for carbon storage and heat reduction 🌿 🌿 ➡

7.3 Ecosystem Services: Expand ecosystem services (including shade, flood abatement, water quality, recreational opportunities), especially in underserved areas 🌿 ❤️ ➡ 🧑🏫

7.4 Identify Sensitive Areas: Work with Truckee River Watershed Council and other organiza-

tions to conduct mapping and site assessment to identify sensitive areas and those that provide ecosystem services and develop policies which ensure their protection 🌿 ➡

7.5 Wetland Restoration: Work with Truckee River Watershed Council and other restoration partners to identify, prioritize, and restore degraded habitats, especially wetlands and meadows that store water during large storms, with a focus on areas located near underserved populations 🌿 ❤️ ➡

7.6 Watershed Ecosystem Management: Develop a collaboration among the Town, US Forest Service, NGOs, and other partners, to develop a climate-informed (science-based) and integrated (addressing flood risk, water quality, wildfire, etc.) approach to managing across ecosystems and green infrastructure throughout the watershed 🌿 ➡

7.7 Nature-Based Flooding Solutions: Support the Town in showcasing equitable, nature-based solutions to flooding and other hazards 🌿



SUSTAINABLE BUSINESSES

Much of Truckee's economy relies on a strong tourist base. The largest employment sector is the accommodation and food service sector (22%), with the second largest education and health (21%). Continued tourism even as snowpack declines and temperatures rise is important for maintaining this sector of the economy. Other types of businesses may relocate to Truckee as Reno and the Central Valley experience more severe heat, air quality impacts, and drought.

Local businesses can take action on climate change through sustainable practices, which often reduce overall costs. Other chapters of *Climate Ready Truckee* will also help to create more sustainable businesses, including those that help

Green Business Certification Program

Sierra Business Council (SBC) offers a certification program and free environmental consulting services to help businesses save energy and water, increase use of alternative transportation, reduce pollution of waterways, and use less toxic materials and products.

SBC offers workshops, online information, and site visits. Additional support includes membership in the Sierra Green Business network and promotion of member businesses. Over 50% of businesses saw an increase in customers after earning their Green Business Certification!

businesses recover after extreme events and those that provide affordable housing, ensure adequate healthcare, and increase transportation options for the local workforce.

Vulnerable Businesses and Resources

Businesses and industries located in high and medium flood risk areas are vulnerable to larger storms and rain-on-snow events. Construction and other outdoor businesses could be sensitive to the impacts of extreme heat and/or smoke, as outdoor workers' hours of safe exposure become limited. All businesses are vulnerable to increasing insurance rates and uncertainty of coverage.



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KEY FACTS

35%

The percent of Truckee residents who work in Truckee¹⁰

19% - The percent of Truckee residents who work remotely



\$362 million

Visitor spending in Nevada County in 2018



3,770 – The number of jobs supported by tourism in Nevada County¹¹



GOAL 8

Increase Business Sustainability

Local businesses have a vital role to play in reducing the threat of climate change in Truckee. Not only are they some of the largest energy users, they are also likely to be affected by rising energy prices, increasing insurance premiums, and repeated extreme events like flooding and wild-fire. By creating more resilient and sustainable businesses, Truckee can lower its greenhouse gas emissions while also reducing costs for workers and businesses and retaining jobs.

Businesses are affected by climate impacts not just in Truckee, but at larger scales due to global supply chains and consumer networks. Efforts to make businesses more sustainable may take upfront investment, but can lead to savings of money and resources. They can also lead to more

Keep Truckee Green

The Town of Truckee is committed to sustainability and works closely with businesses to reduce waste sent to the landfill. One way this is accomplished is through *Keep Truckee Green's* Green Box Program. Community members and visitors simply buy their first green to-go container for \$5, rinse the box after eating, and trade it in for a clean box at one of the five participating restaurants. This system continues to reduce single-use cardboard, plastic, and styrofoam throughout Truckee.

holistic, lifecycle or systems-level approaches and innovation. Efforts by businesses to reduce energy, water, and resource use and/or shift to

renewable and environmentally friendly materials can also improve marketability and economic viability over longer time frames.

Strategies

➔ **8.1 Diversification:** Diversify the economy to increase resilience for future climate scenarios (see the General Plan Economic Development element)

➔ **8.2 Business Resiliency:** Work with other agencies and regional chambers of commerce to support community efforts to develop a regional approach for business resiliency 🧑🏫

8.3 Rent Policy: Develop policy for how landlords treat rents during times of economic hardship, including disasters and pandemics ❤️

8.4 Warm Climate Activities: Promote tourist activities that accommodate a warmer climate and partner with ski resorts and stakeholders in the outdoor recreation industry to identify feasible alternatives or additions to the winter recreation industry 🧑🏫

8.5 Business Recognition: Promote (reward, recognize, and/or incentivize) green and minority-owned businesses 🌱❤️🧑🏫

8.6 Economic Development: Work with the Truckee Chamber of Commerce, Truckee Donner Merchant Association, Tourism Business Improvement District, Sierra Business Council, and others to identify sectors that will be negatively or positively impacted by climate change to focus economic development efforts (see the General Plan Economic Development element) 🧑🏫

8.7 Climate Legislation: Work with local businesses to lend support to bipartisan climate legislation in Congress 🌱

8.8 Information Sharing: Engage with other ski towns and resorts to learn new approaches to adapting to a more variable climate (e.g. through Mountain Towns Quality of Life Project)

8.9 Sierra Resilience Fund: Work with the Truckee Chamber of Commerce and Sierra Business Council to expand the Sierra Resilience Fund and develop other business resilience programs



GOAL 9

Ensure Green Jobs and Living Wages

Truckee has a goal of reducing greenhouse gases by 80% below 2008 levels by 2040. This is an ambitious, but necessary goal in order to prevent the most catastrophic impacts of climate change. Reducing emissions will take a community-wide approach to retrofitting homes and businesses, changing behaviors, installing new technology, and adopting renewable energy for residences, businesses, and at the utility-scale.

In order to make these changes, a new green job workforce focused on sustainability and resilience will include solar installers, sustainability managers, energy efficiency engineers, weatherization workers, modular housing builders, health care professionals, distance working and learning experts, communications, and others. Some of these jobs are traditional jobs, such as construction, with a layer of new knowledge and skills to meet new efficiency standards.

Because green jobs are mainly skilled and well paid, the growth of this field presents an opportunity for progress in equity. Job training programs can target lower-income residents, non-English speakers, people of color, people with



disabilities, and others who otherwise may not have access to job growth opportunities.

A living wage covers a basic level of living expenses, such as food, childcare, healthcare, transportation, and taxes. Much can be done to ensure that all residents receive a living wage. Many governments, universities, large corporations, and other large employers, for example, require that all contractors pay their employees a living wage. As technology advances and automation increases, more people are expected to lose their jobs, and a universal basic income or other macro-economic solution may need to be considered to reduce homelessness and food insecurity.

Strategies

9.1 *Living Wage:* Continue paying a living wage at the Town of Truckee and encourage businesses in Truckee to do the same 💖

9.2 *Job Training:* Partner with Sierra Community House, Sierra College, Tahoe Truckee Unified School District, and others to provide cross-training and/or training programs for new jobs to low-income groups 💖

9.3 *Energy Retrofits:* Work with Truckee Donner Public Utility District to help promote and provide accessible opportunities for energy efficiency retrofits for homeowners, prioritizing low-income households 🌱💖🔄





RESILIENT INFRASTRUCTURE

Truckee's roads, bikeways, housing, historic buildings and sites, water, energy, and other infrastructure are central to the quality of life for local residents and appeal to visitors. The extensive system of trails offers people access to the outdoors. Truckee's water is abundant and clean. And while the housing market is tight and costly, Truckee is working to improve the affordability of housing for people of all income levels.

There are complicated benefits associated with the safety, cleanliness, and attractiveness of Truckee. These features make it an ideal place to live, work, and play. And yet, as climate change progresses, they may also make it a primary destination for people escaping heat, drought, poor air quality, and sea level rise in other areas.

Stormwater Upgrades

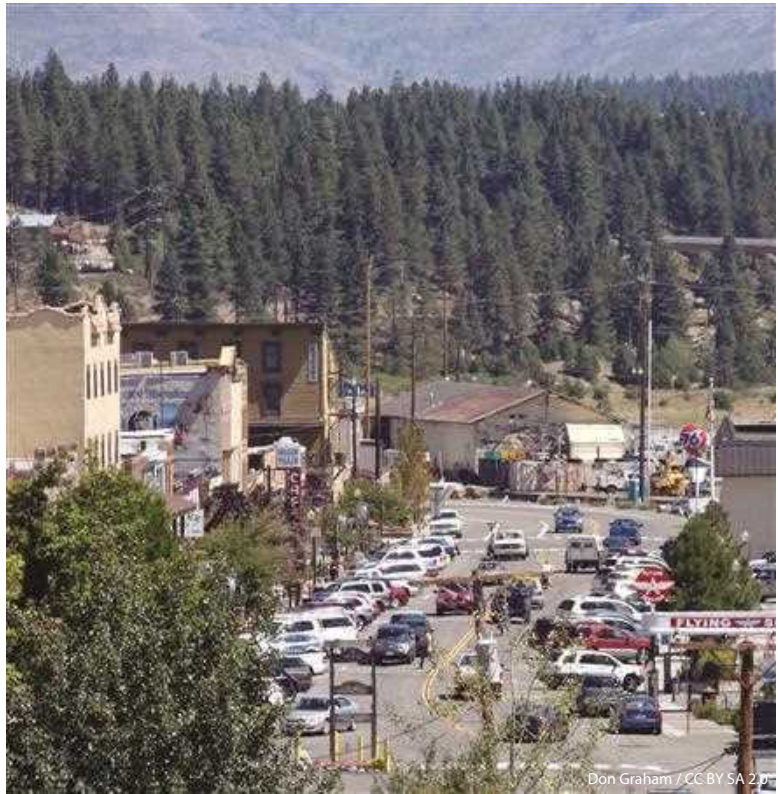
The Town of Truckee has invested in improving water quality and mitigating future impacts of climate change on stormwater infrastructure in nearly all recent infrastructure projects and collaborative restoration efforts.

To support the efforts of the McIver Dairy Open Space Restoration Project, the Town plans to install stormwater treatment facilities in key locations along Donner Pass Road adjacent to the McIver Dairy open space. The Town will also construct bioswales to treat stormwater prior to discharging it into the wet meadow.

A "streetscape project," Envision Donner Pass Road, was implemented to increase the resiliency of existing and aging stormwater infrastructure. This work has drastically reduced pooling water and trapped sediment in intersections, allowing harmful materials to be removed before the water gets released into the Truckee River. The combination of natural processes and engineered solutions creates a more resilient network of stormwater, preparing Truckee for changes well into the future.

Vulnerable Infrastructure

Truckee's infrastructure is vulnerable to more frequent and larger storms, floods, wildfires, and heat waves. Roads are vulnerable to increasing congestion, especially during emergencies. Culverts, bridges and structures in and near flood zones are vulnerable to more frequent and severe storms and/or rain-on-snow events. Most of the town is vulnerable to wildfire, but especially homes in the Wildland Urban Interface (WUI), those with overgrown vegetation, and second homes.



KEY FACTS

30-40%

Estimated occupancy rate for 2nd homes in peak season



52% - The percent of Truckee's housing stock that is frequently unoccupied (non-rented second-homes)

28 million

The number of people affected by power outages in CA in 2019



\$2.4 billion - The cost to businesses of a single power outage, affecting 800,000 customers, on Oct 7, 2019¹²

916,000 - The number of U.S. residents displaced from their homes due to extreme events in 2019¹³



GOAL 10

Plan for Climate Refugees

Interest in Truckee as a destination for travel, recreation, and full and part-time living has been increasing steadily, with the Chamber of Commerce branding Truckee as the *Base Camp for a Big Life*. Much of Truckee's appeal is based on attractive and well-maintained infrastructure, including public buildings, trails, roads, office spaces, and a historic and bustling downtown.

Climate change affects not only Truckee's quality of life, but also that in surrounding areas, including the Central Valley and Reno/Sparks areas. Both areas are expected to experience extreme heat, declining air quality from ozone, and more drought. In fact, Reno is expected to experience a 10-fold increase in severe heat by the middle of this century, making it increasingly inhospitable.¹⁴

The Age of Climate Migration

Hurricane Katrina displaced 400,000 people from their homes in New Orleans. The Camp Fire in Paradise, CA destroyed nearly 19,000 structures in just 6 hours. The Thomas Fire and subsequent landslides in Ventura and Santa Barbara Counties forced over 100,000 residents to evacuate. Events like these and more slowly advancing threats like sea level rise are increasing the number of people forced to move to new and safer locales.

At the global level, extreme weather has displaced over 20 million people per year, according to Oxfam. And this number is rising with climate change. The total number of disasters leading to displacement jumped from just 200 in 2008 to 1,500 a decade later.

Truckee, on the other hand, will become warmer but still highly hospitable to daily life. As more people are able to work remotely, Truckee is likely to appeal to those looking for clean air and water, as well as a respite from the heat and drought. Overburdening of basic infrastructure in response to an influx of new residents is highly likely, especially sewer systems, roads, and affordable housing.

Strategies

➔ 10.1 *Housing Development*: Support housing development at all levels except high end single-family homes, with focus on affordable housing through the Housing Element and regional housing program 🏡

➔ 10.2 *Density*: Rezone areas to allow denser housing to limit sprawl, provide access to transit and services, improve walkability and bikability, and increase open space per the updated General Plan 🚶🚲

➔ 10.3 *Public Infrastructure Capacity*: Assess needs of public infrastructure and services (sanitary, health & human, water, shelter, roads, alternate routes, etc.) as the number of residents and climate refugees increase

10.4 *Recreation Infrastructure*: Increase and improve bikeways, trails, parking, and other recreational infrastructure as per the Trails and Bikeways Master Plan 🏔️

10.5 *Complete Neighborhoods*: Create complete neighborhoods to ensure jobs, services, trails, transit, etc. are within 1 mile or a 5-minute drive 🏡

10.6 *Implement Plans*: Implement existing plans, including Housing Element and Land Use Element (General Plan), detailed Specific Plans, Development Code, Long Range Transit Plan, Trails and Bikeways Master Plan, and Regional Transportation Plan



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10.7 *Stormwater Management*: Continue to require stormwater management plans to be climate-informed to promote on-site water retention

10.8 *Transit-oriented Development*: Use regulatory measures, partnerships, and education to create transit-oriented development through the General Plan, Specific Plans, and zoning code

10.9 *Microgrants*: Incentivize equitable and ecologically responsible large development projects

10.10 *Tourism Management*: Partner with local organizations and collaborations, such as Take Care Tahoe, Truckee Chamber, and Visit Truckee, and participate in regional efforts to form strategies that mitigate the negative effects of over-tourism in the Tahoe region 🏡



GOAL 11

Reduce Reliance on Cars

Truckee's traffic varies by season. Winter ski season brings heavy traffic, as does summer visitation to lakes and forests.

Transportation routes are not only fundamental for people going about their daily lives within Truckee, they are also vital as escape routes during flooding or wildfire, and for delivery of goods and services. Reducing congestion and single-passenger cars will help support these other important uses of Truckee's main arteries.

The Town's Climate Action Plan (CAP) and the Mobility Element of the General Plan, both cur-

rently under development, include many actions to reduce reliance on cars and should be consulted for further understanding of all actions the Town is taking. The CAP and Mobility Element aim to encourage shifting transportation modes to more biking, walking, and transit, and call for more infrastructure for electric vehicles to reduce emissions. By increasing alternative modes of transportation, the Town can streamline traffic, reduce congestion, and reduce its emissions.

Climate Ready Truckee aims to create more resilient and sustainable modes of transportation. The following strategies, in addition to those

Free Bus Rides

As of July 1st 2018, Tahoe Truckee Area Regional Transit (TART) and the Town of Truckee have provided free bus rides on all fixed routes operating throughout Truckee Monday-Saturday between 9a.m. and 5p.m. Truckee TART also offers free door-to-door service for seniors, persons with disabilities, and ADA certified riders through Dial-A-Ride, throughout Truckee 7 days a week. After the first year of these free fares, bus ridership increased 114% in Truckee, with another 45% increase the following year.

By eliminating fares, the accessibility of mobility is increased exponentially. This not only takes cars off the road, reducing vehicle pollution and improving air quality, but expands opportunities for mobility and access to jobs.



Placer County / CC BY-NC 2.0

in the CAP and Mobility Element, will help to prepare local residents for extreme events and climate impacts.

Strategies

→ 11.1 *Transit Expansion*: Expand public transportation availability and access throughout town, including neighborhood micro-transit 🚶 🗺

→ 11.2 *Multi model transit*: Invest in multi-modal transportation opportunities 🚶 🗺

→ 11.3 *Transportation Demand Management*: Partner with local transit agencies and businesses to provide incentives and outreach to increase the use of public transportation through car-pools, ride-share programs, and non-peak work hours 🚶 🗺

→ 11.4 *Car-free Zones*: Create shuttle-only and pedestrian-only zones where possible 🚶 🗺

→ 11.5 *Access to Transportation*: Develop funding sources to make public transportation in the Tahoe Basin and school buses free 🗺

11.6 *Transit for All*: Ensure public transit and associated infrastructure is ADA accessible 🗺

11.7 *Train Connectivity*: Advocate for train connectivity to longer distance destinations (e.g. Bay Area) and incentivize ridership 🚶 🗺 🗺

11.8 *Toll-Road*: Work with Caltrans, Federal Highways, One Tahoe, and other agencies and organizations to investigate effectiveness of a toll road on I-80, Hwy 267 and Hwy 89



GOAL 12

Protect Homes and Businesses

Truckee's infrastructure includes historical buildings that tell the story of the western pioneer movement and expansion of the railroad. Newer development includes a mix of buildings, including sprawling neighborhoods of second homes. Most of Truckee falls within the highest fire risk zone, and large fires have crossed into the town in the past. Human sources of ignition are also a threat within Town limits.

Homes and businesses within flood zones are also at risk as storms become larger and snow shifts to rain. Flood maps will need to be updated to account for changes in flood risk over time.

Upgrades to businesses and homes to reduce fire and flood-related vulnerability can be combined with efforts to increase energy efficiency and

reduce greenhouse gas emissions. Both objectives lead to meaningful climate action that save money and improve quality of life for residents.

Strategies

➔ **12.1 Fire Insurance:** Assist in the development of innovative solutions for fire insurance, ensure all residents have fire insurance and advocate for lower cost for insurance if property owners have fire-proofed or flood-proofed their homes or businesses 🏠🔥👥

12.2 Development in WUI: Enact local policies that limit development in the Wildland Urban Interface (WUI) to areas that can be adequately protected in the event of a fire without significantly increasing risk to firefighters 🌿🔥👥

12.3 *Culture Shift*: Promote a culture of personal responsibility for emergency preparedness among homeowners (including vacation homeowners) by communicating the concept through programs that help residents reduce fire risk for their homes and properties 🧑🏻🔥

12.4 *Advocacy*: Support efforts to enact climate-friendly building codes at the state level

12.5 *Home Hardening*: Collaborate with the Truckee Fire Protection District to mandate home hardening (fire resistance) best practices, such as replacing shake roofs; protecting vents, eaves, and soffits from embers; and installing dual pane windows, screen gutters, etc. Provide additional outreach and resources to low-income households 💗

12.6 *Utility Payment Support*: Develop policy with utility providers for rate stability and/or price freezing for utilities during an emergency or pandemic 💗

12.7 *Map Climate Risks*: Work with data provided by Sierra Nevada Recreation & Infrastructure Vulnerability Assessment and Adaptation Strat-

“Wildfire safety really begins at home”

Bill Seline – Fire Chief,
Truckee Fire Protection District

The Sierra Nevada is home to fires, and residents across the Truckee region must work to ensure their homes and communities are safe. To keep Truckee thriving, community members must each protect their residences through defensible space.

Truckee Fire Protection District plays an active role in promoting and providing resources for residents in and around Truckee to harden their homes and create defensible space. This includes offering defensible space inspections and other green waste disposal options to support Truckee residents in removing vegetation around their homes. These resources, along with consistent public outreach and engagement, allow Truckee residents to stay informed and safe in the face of wildfires.

egy to map areas in Truckee particularly vulnerable to climate risks. Conduct outreach with local partners to share information.



GOAL 13

Improve Energy Reliability

Truckee Donner Public Utility District (TDPUD) Electric Department and Liberty Utilities deliver electricity to the Town of Truckee. TDPUD is one of 240 of the nation's more than 2,000 public power utilities to earn the Reliable Public Power Provider (RP₃®) designation from the American Public Power Association. TDPUD first achieved a gold designation for providing reliable and safe electric service in 2015 and in 2018 improved to the platinum designation.

As TDPUD does not generate power locally, the majority of resources are spent ensuring operational excellence. With this continual recognition, TDPUD goes beyond reliability, and provides safety, workforce development, and system improvements for the Truckee community.

Climate change can affect energy systems in many ways, including affecting distribution, demand, and sourcing. Energy infrastructure is both a culprit in causing fires, as well as being highly vulnerable to the impacts of wildfire. Heat waves and severe storms can also disrupt electrical transmission lines. Disruptions can be deadly, especially for older residents and people who cannot afford alternatives for heating or cooling. While numbers for TDPUD were not available, it is estimated that 32,000 PG&E customers depend the reliability of electrical service for medical needs.

Strategies

➔ **13.1 Relocate Infrastructure:** Collaborate with Truckee Donner Public Utility District to explore funding opportunities to relocate energy infrastructure underground, where feasible, to reduce fire ignition potential 🧑🏫



13.2 Planning for Energy Rates: Support Truckee Donner Public Utility District in long-term financial planning to balance energy rates, renewables, and reliability

13.3 Power Generation: Evaluate feasible options for large-scale local power generation 🌿🧑🏫

13.4 Energy Backup: Create backup energy supply and energy redundancy with focus on clean energy backups to prevent outages to essential services 🌿🧑🏫

13.5 Renewable Energy: Work with partners to evaluate energy self-reliance and renewable energy options for residents, including micro-grids, Community Choice Aggregation, and other options 🌿🧑🏫



M. Koopman / Used with permission

COMMUNITY READINESS

Truckee's key hazards, including severe winter storms, wildfire, flooding, and drought are being exacerbated by climate change and are expected to worsen in the coming decades. Town of Truckee government and residents will need to increase their preparation, response, recovery, and mitigation efforts.

Communities with close-knit neighborhoods and active networks fare the best during emergencies and recover faster. Community networks, including faith organizations, neighborhood associations, and less formal systems of friends, family, and neighbors who look out for one another are vital to resilience. Truckee has strong community connections and values that can be leveraged for improving preparedness.

Vulnerable populations

Those with the fewest resources are often the most susceptible to natural hazards and other extreme events. Lower-income residents, those without financial safety nets, people without homes, older adults, people with limited mobility, people with existing health conditions, those reliant on medical equipment, people who work outdoors, people living in abusive households, and those without access to a vehicle are all more vulnerable during extreme events. Also at risk are people in care facilities, or other group settings. Finally, non-English speaking communities often receive delayed evacuation information, even when they are in the most at-risk areas.

COVID-19 a Test Run for Climate Change

Truckee's preparedness systems and procedures were put to the test during the recent Coronavirus outbreak. To prepare Truckee for the ramifications of COVID-19, the Town launched procedures to keep community members safe. It was essential that the Town's Emergency Operations Center (EOC) was quick to coordinate with regional counterparts, health systems, and emergency services. This enabled procurement of equipment, personnel, medications, space for an infection surge, and resources to house homeless residents with COVID symptoms in safe locations.

To increase resilience, the Town also provided funding to key non-profits already equipped to serve vulnerable populations in the Tahoe region in order to expand food delivery and services to low-income, youth and senior populations. To prepare community members for future changes, all Town media channels were overhauled to push out key information and updates.

KEY FACTS



30-40%

Truckee's estimated occupancy rates for 2nd homes during peak periods. Any increase of these rates if people flee other areas could quickly overwhelm critical infrastructure.



Cpl. Jonathan G. Wright, US Marine Corps / CC0



Matthias Zomer / CCO

GOAL 14

Strengthen Safety Nets

In an ideal situation, all residents, businesses, government entities, and others have savings, preparation, resources, and insurance that allow them to withstand extreme events and other shocks to the community. Unfortunately, many families live paycheck to paycheck and experience severe hardship when unexpected events disrupt their lives.

Safety net programs are intended to help families, individuals, and businesses get back on their feet after a disruption, so that they can return to their jobs and lives as soon as possible. Safety net services include Promotors business loans (Small Business Administration), home or renter's insurance, non-eviction ordinances during

Safety Net Service Providers

The local non-profit, Sierra Community House, provides resources to Truckee's most vulnerable populations. This keystone non-profit works to provide hunger relief, rental assistance, legal aide, and crisis intervention and prevention of domestic violence, sexual assault, and child abuse. Sierra Community House continues to be a central hub of information for our Spanish-speaking community members, providing additional translation services and resources through a group of Latinx community leaders, called Promotores.

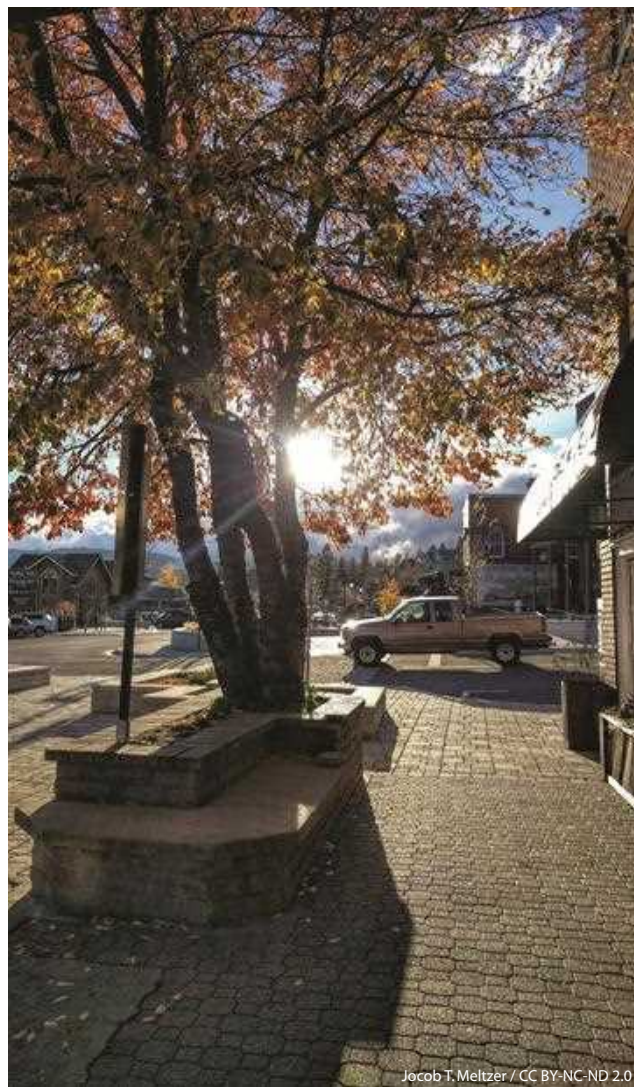
The importance of these critical services was highlighted during the COVID-19 crisis, when many social inequities were exacerbated. Sierra Community House, working with funding from many community partners, helped provide food distribution in response to a much greater demand. They also provided rental assistance. These safety nets will prove to be vital in future challenging times.

emergencies, Medicaid, school lunch programs, food stamps, local community resilience funds, and others. As climate stressors worsen, more people may need to access safety net services during disruptions.

Increasing the strength of safety nets includes both expanding resources and access. Some populations, such as undocumented residents, are explicitly excluded from certain services. Others, such as non-English speakers, may not be aware of their availability. Older adults, people with disabilities, or lower-income residents may have limited access to a computer or transportation that is needed to access services. Undocumented residents and other marginalized groups may also be deterred from accessing the assistance they need due to the threat of deportation or other exposure to law enforcement. Mental health needs also rise during emergencies and economic recessions, and resources, such as crisis lines, should be made accessible to all. Overcoming these obstacles to access is needed to expand services.

Strategies

- ➔ 14.1 *Emergency Relief Services*: Expand emergency relief services and shelters (cooling and warming) for all residents 🍷
- ➔ 14.2 *Insurance Stability*: Advocate for price and availability stabilization within the insurance industry
- ➔ 14.3 *Inclusive Outreach*: Work with partner agencies and non-profit organizations on culturally specific outreach/education efforts to ensure that all residents understand job opportunities, housing rights, and support available through the social services system 🍷🔄👥
- 14.4 *Financial Support for Social Services*: Increase financial support for safety net services that



Jacob T. Meltzer / CC BY-NC-ND 2.0

provide food, housing, health care, and financial assistance for those most at need 🍷

14.5 *Emergency Preparedness for Houseless*: Expand access to services and emergency preparedness planning for unhoused residents 🍷

14.6 *Social Service Awareness*: Expand awareness of, and advocate for increased access to, social service benefits 🍷

14.7 *Advocate for Renters Rights*: Adopt and advocate for policies to strengthen renters' rights, such as non-eviction ordinances, rental assistance relief, small business loans, and rent relief programs 🍷👥



GOAL 15

Expand Community Preparedness and Resilience

Responding to emergencies is a primary goal of the Town's Emergency Operations Plan and a primary function of the Emergency Services Coordinator position. When unexpected and extreme events occur, the Emergency Services Coordinator works with all local agencies and special districts in order to respond. Depending on the emergency, response would be coordinated through the Town's Emergency Operations Center (EOC), and include support from Truckee Fire Protection District, Nevada County Office of Emergency Services (OES), Nevada County Public Health, and others.

Resilience Hubs

Resilience Hubs (recommended below) are becoming increasingly common in cities across the U.S. They are trusted neighborhood locations or facilities where residents can access resources, materials, and support on a regular basis. These hubs are designed to provide services that increase day-to-day resilience as well as providing support during and after extreme events. They are focused in communities most vulnerable to climate change stressors. Resilience Hubs are designed to shift power from the government to local neighborhoods and dismantle systems of economic and social disparity.

Climate change creates a pressing need for preparedness for extremes. Recent events, such as the Camp Fire in Paradise, the Ranch Fire in Mendocino County, and the extended drought from 2011-2019, have all surpassed historical records. These events, as well as the COVID-19 pandemic of 2020 are providing us with valuable lessons that can help us become more resilient as climate change progresses.

During the Thomas Fire and subsequent floods, for example, many residents who did not speak English were not advised of evacuation orders because translators were in short supply or did not speak all locally-spoken languages. Also, many people with disabilities, older adults, and those without vehicles were unable to evacuate.

These lessons and others are important indicators of where our preparedness plans have holes in them, and who might fall through the cracks. Efforts to ensure that all residents are prepared for extreme events and able to recover afterwards are vital.

During the COVID-19 pandemic we have seen tremendous efforts to expand preparedness. The Town passed temporary moratoriums on evictions, utilities suspended service shutoffs, and the new Sierra Resilience Fund was launched.

Strategies

➔ 15.1 *Emergency Response*: Increase collaboration and partnerships with county and state agencies for joint action on emergency preparedness and response

➔ 15.2 *Emergency Operation Planning*: Continue to develop emergency operations plans that incorporate future climate conditions in collaboration with all special districts, stakeholders, businesses, and non-profit organizations

15.3 *Resilience Hubs*: Develop Resilience Hubs (see box) and other community-building approaches

(e.g. block parties) to improve resilience of disadvantaged neighborhoods and others 🍷👥

15.4 *Disaster Preparedness*: Partner with Sierra Community House and other local partners to expand education on how to be prepared for disasters, with particular focus on low-income and non-English speakers 🍷

15.5 *Youth Preparedness Education*: Work with Sierra Watershed Education Partnerships to engage youth on community preparedness topics, specifically with wildfire prevention 🌿

15.6 *Business Recovery*: Work with Truckee Chamber of Commerce and Sierra Business Council to develop and implement programs, such as the Sierra Resilience Fund and the Nevada County Recovery Fund, to speed business recovery after extreme events

15.7 *Operation Continuity*: Identify minimum staffing for continuity of operations during and after emergencies (part of comprehensive Emergency Operations Plan)

15.8 *Evacuation Education*: Increase outreach to visitors, residents, and vulnerable populations on evacuation processes 🍷

15.9 *Preparedness Guide*: Create a cross-jurisdiction agency resource guide on resilience and extreme events preparedness

15.10 *Health Care Capacity*: Work with hospitals, emergency services, and other care facilities to ensure adequate surge capacity and personal protective equipment in the event of a natural disaster or virus outbreak

15.11 *Training Programs*: Strengthen Town of Truckee's emergency response training programs

15.12 *Preparedness Culture*: Provide resources, outreach, and drills to foster a culture of preparedness and self-reliance in the event of emergencies, including longer potential blackouts, among residents and businesses



Sen. Airman Jessica Green National Guard / CC BY 2.0

GOAL 16

Improve Technology and Transportation Flow for Emergency Response

Emergency preparedness, response, recovery, and mitigation efforts greatly depend on timely and accurate dissemination of information. Technological advancements and tools that provide information to a wide variety of users for streamlined response can save lives and property and prevent suffering. Because many tools are electronic, the dissemination of new technology needs to also take into account distribution and safety of electrical supply and/or battery power for reliability.

Tools that can support emergency preparedness, response, recovery, and mitigation include:

- Publicly available mapping tools that manage traffic and congestion, especially during emergencies
- Information gateways that connect federal, state, local, non-governmental, and other parties involved in response or recovery
- Portals with resources for streamlining recovery efforts and sharing information
- Networks that connect neighborhood groups and/or vulnerable residents
- Coordinated health reporting systems
- Clinical diagnosis, response to, and treatment of emerging diseases
- New risk assessment tools and information that incorporate climate change data
- Systems to assist emergency responders in hazardous materials incidents
- Evacuation and emergency information translated into different languages

- Tools to help deliver effective mental health resources and guidance after disasters
- Mapping tools that track people reliant on home medical equipment during disasters

Group coordination of technology and application will need to include:

- Town of Truckee
- Truckee Fire Protection District
- US Forest Service
- Truckee Donner Recreation and Park District
- Truckee Sanitary District
- Tahoe-Truckee Sanitation Agency
- Truckee Tahoe Airport District
- Caltrans
- Tahoe Forest Health District
- California State Office of Emergency Services
- Nevada County Office of Emergency Services and Public Health
- Placer County Office of Emergency Services and Public Health

- CalFire
- Inciweb
- Tahoe Truckee Unified School District
- Sierra College

Strategies

➔ **16.1 *Evacuation Planning*:** Work with community stakeholders and the Emergency Operations Center to create an overarching plan for extreme congestion and evacuation situations utilizing emerging technologies to improve traffic flow during extreme events when appropriate 🧑🏫

16.2 *Communication Technology*: Improve communication technology and use by diverse collaborators 🔄

16.3 *Emergency Response App*: Develop or procure an app for streamlining transportation and emergency response 🧑🏫

16.4 *Transportation Evacuation Planning*: Continue to integrate a regional transportation evacuation plan into regional transit plans focused on reducing daily trips



Kari Greer USFS / CCO



Daryl Stinchfield, Courtesy of Sierra College

GOAL 17

Increase Resilience among Disadvantaged Groups

Many people in Truckee have fewer resources or greater obstacles than others, leading to unequal opportunity and quality of life. Disadvantages are often due to biases and/or systemic discrimination in our governing structures. Those with fewer resources experience additional stressors, including lower housing quality, worsened physical and mental health, more exposure to pollution, higher rates of violence and crime, and fewer educational opportunities.

Climate change acts to make existing stressors far worse than they would be otherwise. Those already suffering or struggling are expected to experience disproportionate impacts. Because of

this, working with disadvantaged populations to empower individuals and increase their resilience is imperative. The goal is to implement climate action in ways that reduce overall inequity in Truckee and increase opportunity and quality of life.

Whether or not people have advantages or disadvantages comes from many different influences, including race, disability, and income. In Truckee, about 18% of the population is Hispanic or Latinx and about 8% of the overall population has a disability.¹⁶

Vulnerable populations

Populations most vulnerable to climate impacts in Truckee include non-English speakers, people of color, immigrants, older adults, people with disabilities, lower-income residents, people without cars, people without cars or homes, outdoor workers, LGBTQ+ residents, residents of care facilities, people with chronic health conditions (especially respiratory or heart disease), people living in flood- or heat-prone areas, those who do not have access to healthy food, and others.

Strategies

- ➔ 17.1 *Inclusive Emergency Planning*: Ensure emergency planning is representative of the diversity of Truckee and provide leadership roles to members of disadvantaged populations 🍷
- ➔ 17.2 *Multilingual Communication*: Work with partners to provide reliable and effective multilingual communication for health care, and emergency preparedness and response 🍷
- ➔ 17.3 *Community-based Organization Partnerships*: Form partnerships with community-based organizations to actively improve understanding of localized issues pertaining to the Latinx community 🍷
- ➔ 17.4 *Latinx Community Engagement*: Partner with community-based organizations to expand outreach and education to the Latinx community on job opportunities, housing rights, and emergency preparedness 🍷🔗
- ➔ 17.5 *Support Sierra Community House Expansion*: Work with Sierra Community House to expand operations and have resource officers available at multi-family housing complexes 🍷





TOWN OF TRUCKEE GOVERNMENT

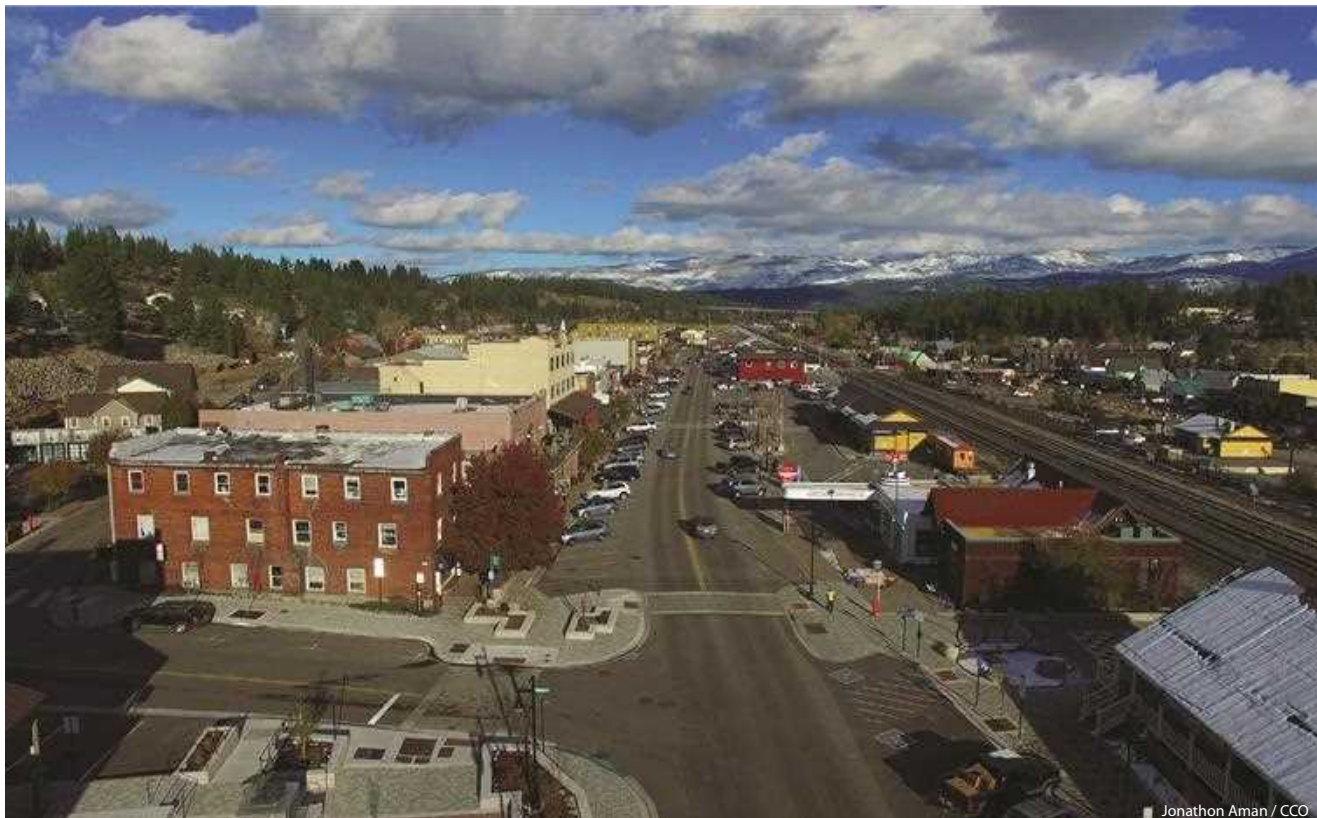
In building climate resilience, there are some tasks that are uniquely held by local government.

In addition to leading or supporting implementation of many of the strategies identified above, the Town of Truckee will work internally to become more prepared and resilient. These strategies will ensure that government services and function are maintained through climate change-driven disruptions. They will also help the Town of Truckee lead by example and support other local government and civic entities in taking action to strengthen local climate resilience.

Strategies

- ▶ Incorporate climate change considerations (scientific projections and consideration of ongoing change) into decisions made at all levels of Town government ↻
- ▶ Build and strengthen partnerships across jurisdictions to plan for regional impacts and advocate for state and federal policies as needed ↻
- ▶ Enhance understanding of equity issues at all levels of government and advance it in all processes ♥

- ▶ Demonstrate the feasibility and effectiveness of new resilience measures so that they can be adopted by businesses, residents, organizations, and others
- ▶ Consistently share information about climate change and engage the entire community on the issue ❤️
- ▶ Demonstrate sustainability in day-to-day operations and at city events 🌱🌿
- ▶ Highlight and support sustainable businesses and organizations 🌿🌿
- ▶ Ensure presence of bilingual staff at events ❤️
- ▶ Showcase equitable, nature-based solutions to flooding and other hazards 🌱
- ▶ Engage all residents through demonstration projects ❤️
- ▶ Implement a climate-friendly purchasing program for the Town of Truckee and support a similar program for local businesses 🌿
- ▶ Evaluate feasibility of installation of solar energy production at high profile sites 🌿
- ▶ Schedule regular plan implementation updates to Town Council
- ▶ Include climate change consideration in every decision-making process at all levels of government
- ▶ Investigate the possibility of a climate recovery ordinance
- ▶ Include climate change experience as a criterion for staff leadership positions
- ▶ Educate all staff, departments, and decision makers on climate change science, projections, adaptation and mitigation actions, and priorities
- ▶ Create a collaborative agency working group to communicate about climate change



Jonathon Aman / CCO

IMPLEMENTATION

Central to an effective climate adaptation plan is the process of implementation. It is also critical to revise the plan over time to integrate new data and information regarding what strategies are, or are not, working well.

To ensure a strong implementation process, the Town of Truckee may convene an Implementation Taskforce made up of Town staff and civic leaders whose organizations are tasked with implementing strategies within the *Climate Ready Truckee* adaptation plan. It is important to recognize that much of the work outlined in this plan falls on the shoulders of community groups, organizations, and partner agencies. Coordination and collaboration with these entities will be essential in ensuring a full implementation of these strategies.

This Taskforce's first order of business will be to develop 1-year and 3-year implementation plans focusing first on the strategies identified as high priority in the plan. Within that high priority focus, some strategies will be identified as near-term, while others are mid-term. The Taskforce should use that timing, along with an understanding of what resources are needed to get the strategy fully underway, to determine how to distribute the highest priority strategies across the 1-year and 3-year implementation plans.

At the conclusion of the 1-year implementation plan, the Taskforce will assess the resources needed to keep those strategies moving forward and determine whether any changes need to be made to the 3-year plan. At the conclusion of this initial 3-year plan, the Taskforce will create another 3-year plan, within which it will address the question of what type of planning process needs to be undertaken to update the plan.



Throughout implementation, this Taskforce will report annually or semi-annually to the Truckee Town Council on progress, obstacles, and new opportunities to move strategies in the plan forward.

Concurrently, the Town of Truckee will undertake implementation of the strategies identified as internal to the Town's organizational structure. Implementation of those strategies will be complete and maintenance of them will be underway within three years of the completion of the plan. During this time, staff will incorporate updates regarding progress, obstacles, and opportunities to implement these internal strategies on the same timeline as progress reports on the other strategies in this plan.

GLOSSARY

Americans with Disabilities Act (ADA) – Civil rights law enacted in 1990 that prohibits discrimination against individuals with disabilities in all areas of public life.

Adaptive Capacity – The ability to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

100-year Flood Zone – The land that is expected to be flooded due to a flood event that has a 1 in 100 chance of being equaled or exceeded in any given year.

Biodiversity – The overall number and types of species of plants and animals in a particular place or habitat.

Bioswales – Channels or other low-lying areas that use plant materials and soil mixes to treat, absorb, and convey stormwater runoff, as an alternative to storm sewers. They improve water quality by removing debris and pollution. They also provide landscaping that, depending on the plant species chosen, may create habitats for birds, butterflies, and local wildlife.

Carbon Dioxide (CO₂) – A colorless gas comprised of a carbon atom and two oxygen atoms, commonly released during the combustion of fossil fuels. (See also “Greenhouse Gas”)

Clean Energy – Energy used by people and businesses that doesn’t directly cause pollution.

Climate Change Adaptation – Anticipating the adverse effects of climate change and taking appropriate action to prevent or minimize the damage.

Climate Change Mitigation – Reducing greenhouse gas emissions (primarily from fossil fuels combustion) and/or increasing the storage of carbon in soils, forests, and other natural systems.

Climate Equity – Removing obstacles to climate resilience such as discrimination, poverty and their consequences.

Climate Refugees – People forced to leave their homes due to impacts of climate change, such as sea-level rise, extreme weather events, smoke, and drought.

Complete Neighborhoods – A neighborhood where one has safe and convenient access to the goods and services needed in daily life. This includes housing options, grocery stores and other commercial services, quality public schools, open spaces and recreational facilities, affordable transportation and civic amenities. A complete neighborhood is built at a walkable and bikeable scale and meets the needs of people of all ages and abilities.

Contaminant/toxin/pollutant – A substance that makes something less pure or makes it poisonous (contaminant); any substance poisonous to an organism (toxin); any substance, as certain chemicals or waste products, that renders the air, soil, water, or other natural resource harmful or unsuitable for a specific purpose (pollutant).

Defensible Space – The area around a building in which vegetation, debris, and other combustible fuels have been reduced to slow the spread of fire to and from the building.

Ecosystem – The community of living organisms in conjunction with the nonliving components of their environment, interacting as a system.

Ecosystem Services – The many and varied benefits of a healthy natural environment. They include the production of food and water, the control of climate and disease, flood abatement, nutrient cycles and oxygen production, timber production, and spiritual/recreational benefits.

Energy Efficiency – Reductions in the amount of energy required to provide products and services.

Energy Self-Reliance – The ability to meet all your energy needs with locally produced or generated sources, often renewable energy sources.

Equity – Achieving the same level of opportunity based on variable levels of support and assistance depending on the difference in historical disparity and current need. Some types of equity of concern include racial, economic, social, and intergenerational.

Flood Abatement – Efforts to limit the impacts of flooding by holding, controlling or diverting floodwaters before they cause damage to people or resources of interest.

Food Insecurity – An economic or social condition of limited or uncertain access to adequate food supply.

Green Building Design – Creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle.

Green Infrastructure – Natural and engineered ecological systems used to provide specific services to the community, often in relation to stormwater management, but also including cooling, pollination, filtration, and others.

Green Jobs – Jobs that produce goods or services that benefit the environment or conserve natural resources. Examples include water conservation, sustainable forestry, biofuels, geothermal energy, environmental remediation, sustainability, energy auditors, recycling, electric vehicles, solar power, and wind energy.

Greenhouse Gas (GHG) – A gas that absorbs infrared radiation (heat) in the atmosphere and contributes to climate change. Greenhouse gases include carbon dioxide, methane, water vapor, nitrous oxide, and others.

HVAC – Heating, ventilation, and air conditioning systems.

Impervious Surfaces – Land surfaces that repel rainwater and do not permit it to soak into the ground, such as rooftops or pavements made of asphalt, concrete, brick, stone. Soils compacted by urban development are also highly impervious. (Also see "Pervious surfaces").

Infrastructure – The built environment such as buildings, energy generation and distribution systems, water delivery, storm- and wastewater, floodwalls, roads and highways, bridges, culverts, and many other basic structures.

Natural Capital – The value of natural systems and the services they provide for humanity, from the inherent value of biodiversity to the economic value of flood abatement, natural pest control, or forest products.

Particulate Matter – Refers to the mixture of solid particles and liquid droplets found in the air. It includes PM10 (inhalable particles, with diameters that are generally 10 micrometers and smaller) and PM2.5 (fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller).

Pervious Surfaces – Surfaces that allow water to percolate through to the area underneath rather than becoming runoff (Also see "Impervious surfaces").

Parts per million (PPM) – The concentration of contaminants in the air by volume

Post-traumatic stress disorder (PTSD) – A psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event (such as a natural disaster).

Resilience – The capacity to recover quickly from disruption or accommodate and positively adapt to or thrive amidst changing climate conditions and hazard events.

Renewable Energy – Energy produced from sources that can be replenished within a human’s life time. Examples include wind, solar, geothermal, biomass, and hydropower.

Resilience Hubs – Trusted neighborhood locations or facilities where residents can access resources, materials, and support on a regular basis. These hubs are designed to provide services that increase day-to-day resilience as well as providing support during and after extreme events. Resilience Hubs are designed to shift power from the government to local neighborhoods and dismantle systems of economic and social disparity.

Retrofitting – The addition of new technology or features to older systems. For example a home energy retrofit is the improving of existing buildings with new energy efficiency equipment.

Riparian Areas – The interface between land and a river or stream. Plant habitats and communities along the river margins and banks are called riparian vegetation.

Sedimentation – When the particles that are usually suspended in water settle out.

Snowpack – Snow that accumulates. Snowpacks are an important water resource that feed streams and rivers as they melt.

Stressors – Events, policies, and behaviors that cause stress and reduce the functioning, value, health, longevity, or quality of life of people and resources. Existing stressors can be exacerbated by climate change.

Sustainability – Meeting the needs of the present without compromising the ability of future generations to meet their needs.

Systemic Discrimination – Patterns of behavior, policies or practices that are part of the structures of an entity or organization, and that create or perpetuate disadvantage for some populations or individuals.

Vectors – Organisms, such as insects, that transmit diseases. The disease is referred to as a vector-borne disease.

Weatherization – Modifying a building to reduce energy consumption and optimize energy efficiency.

Wildland-Urban Interface (WUI) – The zone of transition between wildland (unoccupied land) and human development.

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APPENDIX A

Adaptation Strategy Table

Key to Acronyms

BMPs – Best management practices
CCA – Community Choice Aggregation
NCPH – Nevada County Public Health
NGOs – Non-Governmental Organizations
SBC – Sierra Business Council
SWEP – Sierra Watershed Education Partnerships
TART – Tahoe Truckee Area Regional Transit

TBID – Tourism Business Improvement District
TCOC – Truckee Chamber of Commerce
TTMA – Truckee Tahoe Merchant Association
TDPUD – Truckee Donner Public Utility District
TDRPD – Truckee Donner Recreation and Park District
TFPD – Truckee Fire Protection District
TRWC – Truckee River Watershed Council

TOT – Town of Truckee
TSD – Truckee Sanitary District
TDAD – Truckee Downtown Airport District
TTSA – Tahoe Truckee Sanitation Agency
TTUSD – Tahoe Truckee Unified School District
UC Davis TERC – Tahoe Environmental Research Center
USFS – U.S. Forest Service

➔ = Highest Priority Policies and Actions

Risk – Risks are listed by number at the end of this table

Mitigation? – Does the strategy reduce greenhouse gas emissions?

Time frame – Near-term = within 5 years; Mid-term = 5-10 years or more

Priority – High priority items should be implemented first, with red arrow strategies at the top of that list for immediate action

NOTE: "TOT*" in the Lead/Partner agency or organization indicates that while not the content leader, the Town of Truckee will convene the partners and process necessary to begin implementation of the strategy.

Healthy Residents

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 1: Improve Mental Health						
➔ 1.1. Ensure that services and outreach are accessible to non-English speakers and people with disabilities	14, 25			TTUSD / Sierra College	Near	High
➔ 1.2. Work with TTUSD, local sports teams, and Sierra Community House to expand youth programs and curriculum that promote strong mental health and resilience (e.g. Keep It Cool program)	4, 9, 14, 16, 25			TTUSD / Sierra Community House, local sports and youth programs	Near	High
1.3. Increase public agency funding, grants, and resources allocated to mental health programs, institutions, and nonprofit organizations	4, 8, 9, 14, 16, 25, 26			TOT / Nevada County	Near	High

Healthy Residents, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
1.4. Work with community health professionals and the Wellness Neighborhood to conduct a needs assessment to identify proactive mental health support options for local residents	4, 9, 14, 16, 25, 26			TFHD / Wellness Neighborhood	Near	High
1.5. Partner with and/or support in-person and virtual mental health efforts by Sierra Community House (e.g. Promotora program), Nevada and Placer County Health and Human Services, and other partner agencies to expand mental health programming and engage residents in mental health programs	4, 9, 14, 16, 25, 26			Sierra Community House / Nevada County Behavioral Health	Near	High

GOAL 2: Protect People from Smoke and Heat

2.1. Work with health professionals, local utilities, businesses, and Sierra Community House to conduct educational outreach and provide purchasing information on masks, air filters, HVAC systems, and other protective measures to protect all residents, including outdoor workers and other particularly vulnerable populations from smoke and heat	9, 15, 28, 32	Wildfire and smoke, severe heat		Sierra Community House / TDPUD, businesses, health professionals	Near	High
2.2. Support and provide opportunities for alternative and/or flexible schedules, including remote working, for government and private outdoor workers	15, 28, 32	Wildfire and smoke, severe heat	✓	TOT / TCOC, local businesses	Mid	High
2.3. Connect with other mountain communities to share best practices for addressing smoke and heat impacts	1, 3, 4, 7, 9, 15, 28, 32	Wildfire and smoke, severe heat		TOT	Near	High

GOAL 3: Improve Availability of Healthy Food

3.1. Work with local food providers/organizations (e.g. Tahoe Food Hub, farmer's markets) and their partners to promote consumption of locally grown food to residents and tourists	2, 11, 30	All	✓	Tahoe Food Hub / farmer's markets	Near	High
3.2. Promote educational opportunities in local community gardens, demonstration gardens (Slow Food), etc. through incentives and partnerships	2, 8, 14, 22, 23, 25, 28	All	✓	Slow Food	Mid	High
3.3. Provide support for Project Mana, Sierra Senior Services, Boys and Girls Club, and local businesses to increase food recovery and distribution (quantity and access) as need increases	2, 8, 14, 22, 23, 25, 28	All		TOT / Project Mana, Sierra Senior Services, Boys & Girls Club, businesses	Near	Medium

Healthy Residents, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 4: Improve Overall Community Health						
➔ 4.1. Collaborate with all community, county, and state partners to increase preparedness for pandemic diseases and other outbreaks	26, 29, 32	All		Nevada County / TOT, Placer County	Near	High
4.2. Partner with Nevada County Public Health to increase surveillance of new diseases, vectors, and climate related health impacts, including infectious, food-borne and water-borne disease	26, 29	All		Nevada County Public Health	Near	High
4.3. Work with Tahoe Forest hospital, local employers, and other partners to develop and implement a preventative care initiative to improve the general health of all Truckee residents	9, 14, 16, 25, 26, 29, 32	All		Tahoe Forest Hospital / employers	Near	High
4.4. Work with local healthcare institutions and community groups to conduct extensive outreach to educate all community members, particularly vulnerable populations and health care workers, about climate risks, potential for extreme events, and their own risks during extreme events	9, 14, 16, 25, 26, 29, 32	All		Nevada County Social Services / Sierra Community House	Near	High

Natural Capital

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 5: Create Wildfire Resistance and Resilience						
➔ 5.1. Work with CalFire and Truckee Fire Protection District to provide information to residents on how to reduce fuel loads and ignition sources near homes and in surrounding areas (e.g. outside the current PRC 4291 100-foot requirements)	1, 3, 15, 18, 22, 25	Wildfire and smoke, loss of nature	✓	TFPD / TOT, USFS, CalFire, Landowners	Near	High
➔ 5.2. Require native, fire-resistant species for Town properties, parks, yards, and grounds. Work with Nevada County Department of Agriculture and other stewardship groups and public land managers to remove invasive and/or fire-spreading species (e.g. cheat grass) on public lands	1, 3, 4, 9, 14, 15, 19, 22, 24	Wildfire and smoke, loss of nature		TOT / TRWC	Near	High
➔ 5.3. Provide residents with resources and guidance to organize Firewise neighborhoods and expand outreach to help residents create defensible space	1, 3, 15, 18, 22, 25	Wildfire and smoke		TFPD / Jurisdiction lobbyist (Nevada County, Placer, TOT), Insurers	Near	High
➔ 5.4. Shift the social perception on prescribed burns through social media, art, school outreach, and keeping people informed in real time	1,3,4, 7, 8, 9, 12, 13, 15, 18, 32	Smoke		SWEP / TOT, TFPD	Near	High

Natural Capital, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
5.5. Support efforts to develop local markets or applications for thinned materials (e.g. art, biomass, mulch, etc.)	1, 3, 15, 18, 22, 25	Wildfire and smoke		TDPUD / TOT	Near	High
5.6. Assist with efforts by the Truckee Fire Protection District to reduce ignition sources and potential near homes and in the wildland urban interface (e.g. chainsaws, torches, smoking, electrical equipment, etc.)	1, 3, 15, 18, 22, 25	Wildfire and smoke		TFPD	Near	High
5.7. Partner with USFS, TFPD, and CalFire to reintroduce fire into the ecosystem through controlled burns and other measures	1, 3, 15, 18, 19, 22, 24	Wildfire and smoke, loss of nature		USFS / TFPD, CalFire	Near	High
5.8. Work with USFS to organize forest thinning events, such as cut-a-tree day, Christmas tree harvest, and other community activities	1, 3, 15, 18, 19, 22, 24	Wildfire and smoke, loss of nature		USFS	Near	High
5.9. Work with the USFS, CalFire, and local public agencies like TDRPD, TSD, TTSA, TDAD, CA State Parks, and other land managers to reduce fire fuels on their lands, explore closure of certain public lands during high risk conditions, and work with Truckee Fire Protection District to implement campfire and barbecue restrictions during fire season	1, 3, 15, 18, 22, 25	Wildfire and smoke		TOT* / USFS, TDRPD, TSD, TTSA, TDAD, CA state parks, TFPD	Near	High
5.10. Work with CalFire and TFPD to develop a sustainable funding source to support residential defensible space work	1, 3, 15, 18, 22, 25	Wildfire and smoke		TFPD / CalFire	Near	High

GOAL 6: Protect and Restore Native Habitats and Species

➔ 6.1. Work with US Forest Service and local non-profits to protect and connect existing native habitats to provide wildlife corridors	1, 5, 9, 14, 16, 19, 24, 31, 33	Loss of nature		Truckee Donner Land Trust / USFS, local nonprofits	Mid	High
➔ 6.2. Work with TRWC, USFS, Take Care Tahoe, and Truckee Donner Recreation and Park District to create informative signage, ad campaigns, and social media in English and Spanish for residents and tourists to promote environmental responsibility, stewardship, and appreciation to reduce human-caused stressors to critical wildlife habitat and as a necessary element of climate change response	1, 4, 5, 9, 14, 19, 24	Wildfire and smoke, loss of nature		Take Care Tahoe / TRWC, USFS, TDRPD	Mid	Medium
6.3. Partner with local non-profits and agencies to restore degraded habitats and conservation areas, especially areas supporting high biodiversity and important species	1, 4, 5, 9, 14, 19, 24, 33, 34	Wildfire and smoke, loss of nature, larger storms, drought		TRWC	Mid	High

Natural Capital, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
6.4. Work with the Truckee River Watershed Council to protect and restore native fish populations and fish passage	5, 16, 21, 29, 33, 34	Loss of nature, larger storms, severe heat, drought		TRWC	Mid	High
6.5. Partner with USFS, Tahoe Institute for Natural Science, UC Davis TERC, and other organizations to research which species will thrive in forests of the future, and work with partners to develop a plan to manage for them	1, 4, 5, 9, 19, 24	Wildfire and smoke, loss of nature		TOT* / USFS, Tahoe Institute for Natural Science, UC Davis TERC, NGOs	Mid	Medium
6.6. Work with the USFS, other local agencies, and local non-profits to develop strategies that identify, protect, and manage intact natural systems most likely to persist over time, or refugia (e.g. areas of cool water, north-facing habitats, areas of high biodiversity, etc.)	1, 4, 5, 9, 19, 24	Wildfire and smoke, loss of nature		TOT* / USFS, Tahoe Institute for Natural Science, NGOs, others	Mid	Medium
6.7. Collaborate with Truckee River Watershed Council, One Truckee River, and Sierra Watershed Education Partnerships (SWEP) to provide education to all residents, with a particular focus on low-income and underserved communities, on native plant species and the ecosystem services of plant diversity	4, 9, 14, 16	Loss of nature		TRWC / One Truckee River, and SWEP	Mid	Medium

GOAL 7: Enhance Ecosystem Services

7.1. Continue to promote nature-based methods and BMPs (e.g. bioswales, natural ground cover, etc.) through the Town's stormwater program and permit to increase permeable surfaces to reduce runoff	15, 18, 22, 25, 29, 31, 34	Rain-on-snow, larger storms		TOT	Near	High
7.2. Use planning tools and collaborate with Truckee Donner Recreation and Park District and Truckee Donner Land Trust to manage open space and forests for carbon storage and heat reduction	1, 11, 13, 14, 17, 24, 26, 30	Loss of nature, severe heat	✓	TOT / TDRPD, TDRPD	Near	High
7.3. Expand ecosystem services (including shade, flood abatement, water quality, recreational opportunities), especially in underserved areas	1, 3, 5, 6, 11, 13, 14, 15, 17, 18, 19, 24, 25, 26, 30, 31	Loss of nature, rain-on-snow, larger storms, severe heat	✓	TOT	Near	High
7.4. Work with TRWC and other organizations to conduct mapping and site assessment to identify sensitive areas and those that provide ecosystem services and develop policies which ensure their protection	1, 4, 5, 9, 19, 21, 24, 33, 34	All		TRWC / TOT, NGOs	Near	High

Natural Capital, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
7.5. Work with TRWC and other restoration partners to identify, prioritize, and restore degraded habitats, especially wetlands and meadows that store water during large storms, with a focus on areas located near underserved populations	5, 14, 15, 18, 21, 25, 29	Loss of nature, rain-on-snow, larger storms, severe heat		TRWC / TOT, NGOs	Near	High
7.6. Develop a collaboration among the Town, USFS, NGOs, and other partners, to develop a climate-informed (science-based) and integrated (addressing flood risk, water quality, wildfire, etc.) approach to managing across ecosystems and green infrastructure throughout the watershed	1, 4, 5, 8, 9, 14, 15, 16, 18, 19, 21, 24, 29, 31, 33, 34	All		TOT / TDPUD, USFS, NGOs, landowners	Mid	Medium
7.7. Support the Town in showcasing equitable, nature-based solutions to flooding and other hazards	6, 9, 15, 18, 19, 25, 27, 31, 34	Rain-on-snow, larger storms		TRWC / TOT, USFS	Mid	Medium

Sustainable Business

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 8: Increase Business Sustainability						
➔ 8.1. Diversify the economy to increase resilience for future climate scenarios (see the General Plan Economic Development element)	2, 7, 20, 23	Declining snowpack, loss of nature		TCOC / TOT, NGOs	Mid	High
➔ 8.2. Work with other agencies and regional chambers of commerce to support community efforts to develop a regional approach for business resiliency	2, 3, 4, 7, 11, 20, 23	Declining snowpack, loss of nature		TCOC / TOT, NGOs, local businesses	Mid	High
8.3. Develop policy for how landlords treat rents during times of economic hardship, including disasters and pandemics	8, 22, 23, 25	All		TOT	Near	High
8.4. Promote tourist activities that accommodate a warmer climate and partner with ski resorts and stakeholders in the outdoor recreation industry to identify feasible alternatives or additions to the winter recreation industry	2, 7, 20, 23	Declining snowpack, loss of nature		TCOC / TOT, NGOs, ski resorts	Mid	High
8.5. Promote (reward, recognize, and/or incentivize) green and minority-owned businesses	11	All	✓	TCOC / TOT, local businesses	Mid	High
8.6. Work with the Truckee Chamber of Commerce, TTMA, TBID, SBC, and others to identify sectors that will be negatively or positively impacted by climate change to focus economic development efforts (see the General Plan Economic Development element)	2, 7, 9, 20, 22, 23, 28	Declining snowpack, loss of nature		TCOC / TOT, TDMA, TBID, SBC, NGOs	Near	High

Sustainable Business, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
8.7. Work with local businesses to lend support to bipartisan climate legislation in Congress	11	All	✓	Local environmental advocacy groups / TOT, TCOC, local businesses,	Mid	Medium
8.8. Engage with other ski towns and resorts to learn new approaches to adopting to a more variable climate (e.g. through Mountain Towns Quality of Life Project)	2, 7, 20, 23	Declining snowpack, loss of nature		TOT / TCOC, ski resorts, other towns	Mid	Medium
8.9. Work with the Truckee Chamber of Commerce and Sierra Business Council to expand the Sierra Community Relief fund and develop other business resilience programs	2, 3, 4, 7, 11, 20, 23	Declining snowpack, loss of nature		Sierra Business Council / TOT, TCOC, local businesses	Mid	Medium

GOAL 9: Ensure Green Jobs and Living Wages

9.1. Continue paying a living wage at the Town of Truckee and encourage businesses in Truckee to do the same	2, 4, 7, 9, 20, 22, 23, 28	Declining snowpack, wildfire and smoke, loss of nature, severe heat		TOT	Near	High
9.2. Partner with Sierra Community House, Sierra College, TTUSD, and others to provide cross-training and/or training programs for new jobs to low-income groups	2, 4, 7, 9, 20, 22, 23, 28	Declining snowpack, loss of nature		TOT* / Sierra Community House, Sierra College, TTUSD	Near	High
9.3. Work with TDPUD to help promote and provide accessible opportunities for energy efficiency retrofits for homeowners, prioritizing low-income households	6, 11, 12, 23, 25, 30	All	✓	TDPUD	Near	Medium

Resilient Infrastructure

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 10: Plan for Climate Refugees						
➔ 10.1. Support housing development at all levels except high end single-family homes, with focus on affordable housing through the Housing Element and regional housing program	6, 23, 25	All		TOT	Mid	High
➔ 10.2. Rezone areas to allow denser housing to limit sprawl, provide access to transit and services, improve walkability and bikability, and increase open space per the updated General Plan	4, 5, 6, 10, 11, 14, 23, 25, 30	Severe heat, drought	✓	TOT	Mid	High
➔ 10.3. Assess needs of public infrastructure and services (sanitary, health & human, water, shelter, roads, alternate routes, etc.) as the number of residents and climate refugees increase	5, 6, 10, 18, 23, 26, 31	All		TOT / TSD, TTSA, TDPUD, TDRPD, Caltrans,	Mid	High
10.4. Increase and improve bikeways, trails, parking, and other recreational infrastructure as per the Trails and Bikeways Master Plan	5, 6, 10, 18, 31	Severe heat, drought	✓	TOT	Mid	High
10.5. Create complete neighborhoods to ensure jobs, services, trails, transit, etc. are within 1 mile or a 5-minute drive	4, 5, 6, 10, 11, 14, 23, 25, 30	Severe heat, drought	✓	TOT	Mid	High
10.6. Implement existing plans, including Housing Element and Land Use Element (General Plan), detailed Specific Plans, Development Code, Long Range Transit Plan, Trails and Bikeways Master Plan, and Regional Transportation Plan	5, 6, 7, 10, 18, 23, 25, 31	All	✓	TOT / TFPD, other partners	Mid	High
10.7. Continue to require stormwater management plans to be climate-informed to promote on-site water retention	6, 15, 18, 31, 33, 34	Rain-on-snow, larger storms, drought		TOT	Mid	High
10.8. Use regulatory measures, partnerships, and education to create transit-oriented development through the General Plan, Specific Plans, and zoning code	6, 10, 11, 25, 30	All	✓	TOT	Mid	High
10.9. Incentivize equitable and ecologically responsible large development projects	6, 10, 23, 31	Severe heat, drought		TOT	Mid	High
10.10. Partner with local organizations and collaborations, such as Take Care Tahoe, Truckee Chamber, and Visit Truckee, and participate in regional efforts to form strategies that mitigate the negative effects of over-tourism in the Tahoe region	4, 5, 6, 10, 30	Severe heat, drought		Take Care Tahoe / TOT, TCOC, Visit Truckee	Mid	High

Resilient Infrastructure, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 11: Reduce Reliance on Cars						
➔ 11.1. Expand public transportation availability and access throughout town, including neighborhood micro-transit	6, 10, 11, 20, 22, 23, 25	All	✓	TOT / Nevada & Placer Counties, Caltrans, Federal Agencies	Near	High
➔ 11.2. Invest in multi-modal transportation opportunities	6, 10, 11, 20, 22, 23, 25	All	✓	TOT / Nevada & Placer Counties, Caltrans, Federal Agencies	Near	High
➔ 11.3. Partner with local transit agencies and businesses to provide incentives and outreach to increase the use of public transportation through carpools, ride-share programs, and non-peak work hours	6, 10, 11, 18, 27	All	✓	TOT / Caltrans, businesses	Near	High
➔ 11.4. Create shuttle-only and pedestrian-only zones where possible	6, 10, 11, 18, 27	All	✓	TOT	Near	High
➔ 11.5. Develop funding sources to make public transportation and school buses free	6, 10, 11, 18, 27	All	✓	TOT / Caltrans, TTUSD businesses	Near	High
11.6. Ensure public transit and associated infrastructure is ADA accessible	25	All		TOT / Caltrans	Near	High
11.7. Advocate for train connectivity to longer distance destinations (e.g. Bay Area) and incentivize ridership	6, 7, 10, 18	All	✓	TOT / Caltrans, Amtrak	Mid	Medium
11.8. Work with Caltrans, Federal Highways, One Tahoe, and other agencies and organizations to investigate effectiveness of a toll road on I-80, Hwy 267 and Hwy 89	3, 6, 7, 10, 18	All	✓	One Tahoe / TOT, Caltrans, Federal Highways,	Mid	Medium

GOAL 12: Protect Homes and Businesses

➔ 12.1. Assist in the development of innovative solutions for fire insurance, ensure all residents have fire insurance, and advocate for lower cost for insurance if property owners have fire-proofed or flood-proofed their homes or businesses	3, 13, 14, 15, 22, 23, 25	Wildfire and smoke, rain-on-snow, larger storms		TOT* / Jurisdiction lobbyist (Nevada county, Placer, TOT), TFPD, Insurers	Near	High
12.2. Enact local policies that limit development in the Wildland Urban Interface (WUI) to areas that can be adequately protected in the event of a fire without significantly increasing risk to firefighters	1, 3, 4, 6, 15, 18, 23, 27, 31	Wildfire and smoke		TOT	Near	High
12.3. Promote a culture of personal responsibility for emergency preparedness among homeowners (including vacation homeowners) by communicating the concept through programs that help residents reduce fire risk for their homes and properties	3, 6, 15, 23, 26, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT / landowners	Near	Medium

Resilient Infrastructure, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
12.4. Support efforts to enact climate-friendly building codes at the state level	6, 11, 15, 18, 31	Wildfire and smoke, rain-on-snow, larger storms, severe heat	✓	TOT	Near	Medium
12.5. Collaborate with the TFPD to mandate home hardening (fire resistance) best practices, such as replacing shake roofs; protecting vents, eaves, and soffits from embers; and installing dual pane windows, screen gutters, etc. Provide additional outreach and resources to low-income households	3, 13, 15, 22, 23	Wildfire and smoke		TFPD / TOT	Near	High
12.6. Develop policy with utility providers for rate stability and/or price freezing for utilities during an emergency or pandemic	3, 13, 15, 22, 23	Wildfire and smoke, rain-on-snow, larger storms		TOT / TDPUD, Liberty Utilities	Near	High
12.7. Work with data provided by Sierra Nevada Recreation & Infrastructure to map areas particularly vulnerable to climate risks and conduct outreach with local partners to share information	3, 13, 15, 22, 23	Wildfire and smoke, rain-on-snow, larger storms		TOT / Sierra Community House	Near	Medium

GOAL 13: Improve Energy Reliability

➔ 13.1. Collaborate with TDPUD to explore funding opportunities to relocate energy infrastructure underground, where feasible, to reduce fire ignition potential	1, 3, 12, 13, 15, 22, 23, 27	Wildfire and smoke	✓	TDPUD / TOT, landowners	Near	High
13.2. Support TDPUD in long-term financial planning to balance energy rates, renewables, and reliability	3, 6, 12, 13	Wildfire and smoke		TDPUD / TOT	Near	Medium
13.3. Evaluate feasible options for large-scale local power generation	3, 6, 12, 13	All	✓	TDPUD / TOT	Near	Medium
13.4. Create backup energy supply and energy redundancy with focus on clean energy backups to prevent outages to essential services	3, 6, 12, 13	Wildfire and smoke	✓	TDPUD / TOT, landowners	Near	High
13.5. Work with partners to evaluate energy self-reliance and renewable energy options for residents, including micro-grids, Community Choice Aggregation, and other options	3, 6, 12, 13	Wildfire and smoke	✓	TDPUD / TOT, Sierra Business Council, landowners	Near	Medium

Community Readiness

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 14: Strengthen Safety Nets						
➔ 14.1. Expand emergency relief services and shelters (cooling and warming) for all residents	14, 22, 23, 27	All		TOT	Near	High
➔ 14.2. Advocate for price and availability stabilization within the insurance industry	3, 13	All		TOT* / Jurisdiction lobbyist (Nevada county, Placer, TFPD, Insurers)	Mid	High
➔ 14.3. Work with partner agencies and non-profit organizations on culturally specific outreach/education efforts to ensure that all residents understand job opportunities, housing rights, and support available through the social services system	14, 22, 23, 27	All		Sierra Community House / TOT	Near	Medium
14.4. Increase financial support for safety net services that provide food, housing, health care, and financial assistance for those most at need	2, 7, 8, 20, 22, 23, 25, 28	All		Nevada County / TOT	Near	High
14.5. Expand access to services and emergency preparedness planning for unhoused residents	14, 22, 23, 27	All		Nevada County / TOT	Near	High
14.6. Expand awareness of, and advocate for increased access to, social service benefits	14, 22, 23, 27	All		Nevada County, Sierra Community House / TOT	Near	High
14.7. Adopt and advocate for policies to strengthen renters' rights, such as non-eviction ordinances, rental assistance relief, small business loans, and rent relief programs	2, 20, 22, 23, 25, 28	All		TOT / Nevada County, State	Near	High
GOAL 15: Expand Community Preparedness and Resilience						
➔ 15.1. Increase collaboration and partnerships with county and state agencies for joint action on emergency preparedness and response	3, 10, 12, 14, 15, 22, 26, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT* / Nevada County, businesses, NGOs, special districts	Near	High
➔ 15.2. Continue to develop emergency operations plans that incorporate future climate conditions in collaboration with all special districts, stakeholders, businesses, and non-profit organizations	14, 15, 16, 17, 22, 23, 25, 26, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT / businesses, NGOs, special districts	Near	High
15.3. Develop Resilience Hubs and other community-building approaches (e.g. block parties) to improve resilience of disadvantaged neighborhoods and others	2, 8, 11, 12, 14, 15, 16, 17, 20, 22, 23, 25, 26, 27	All		TOT* / NGOs, neighborhoods	Near	High

Community Readiness, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
15.4. Partner with Sierra Community House and other local partners to expand education on how to be prepared for disasters, with particular focus on low-income and non-English speakers	14, 15, 16, 17, 22, 23, 25, 26, 27	Wildfire and smoke, rain-on-snow, larger storms		Sierra Community House / NGOs	Near	High
15.5. Work with SWEPP to engage youth on community preparedness topics, specifically with wildfire prevention	3, 12, 14, 15, 16, 22, 23, 25	Wildfire and smoke, rain-on-snow, larger storms		SWEPP / TOT	Near	High
15.6. Work with Truckee Chamber of Commerce and Sierra Business Council to develop and implement programs, such as the Sierra Resilience Fund and the Nevada County Recovery Fund, to speed business recovery after extreme events	2, 3, 8, 14, 17, 22, 25	All		Truckee Chamber of Commerce / Sierra Business Council	Near	High
15.7. Identify minimum staffing for continuity of operations during and after emergencies (part of comprehensive Emergency Operations Plan)	7, 15, 22, 26, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT	Near	High
15.8. Increase outreach to visitors, residents, and vulnerable populations on evacuation processes	3, 6, 10, 15, 23	Wildfire and smoke, rain-on-snow, larger storms		TOT	Near	High
15.9. Create a cross-jurisdiction agency resource guide on resilience and extreme events preparedness	2, 14, 17, 22, 23, 25, 26, 27	All		TOT* / Multi-jurisdictional agencies, NGOs, regional agencies	Mid	High
15.10. Work with hospitals, emergency services, and other care facilities to ensure adequate surge capacity and personal protective equipment in the event of a natural disaster or virus outbreak	14, 25, 26, 27, 29	All		Tahoe Forest Health System / TOT	Near	High
15.11. Strengthen Town of Truckee's emergency response training programs	14, 15, 16, 17, 22, 23, 25, 26, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT	Near	High
15.12. Provide resources, outreach, and drills to foster a culture of preparedness and self-reliance in the event of emergencies, including longer potential blackouts, among residents and businesses	4, 11, 12, 13, 14, 20, 22, 23, 25, 26, 27, 28	All		TOT	Near	High

Community Readiness, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
GOAL 16: Improve technology and Transportation Flow for Energy Response						
➔ 16.1. Work with community stakeholders and the Emergency Operations Center to create an overarching plan for extreme congestion and evacuation situations utilizing emerging technologies to improve traffic flow during extreme events when appropriate	6, 10, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT* / NGOs, private corporations, TART, local and state law enforcement, Cal-Trans, TFPD, others	Near	High
16.2. Improve communication technology and use by diverse collaborators	6, 10, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT* / TART, local and state law enforcement, Cal-Trans, TFPD, others	Mid	High
16.3. Develop or procure an app for streamlining transportation and emergency response	6, 10, 27	Wildfire and smoke, rain-on-snow, larger storms		TOT* / TART, local and state law enforcement, Cal-Trans, TFPD, others	Mid	Medium
16.4. Continue to integrate a regional transportation evacuation plan into regional transit plans focused on reducing daily trips	6, 10, 11, 27	Wildfire and smoke, rain-on-snow, larger storms	✓	TOT / NGOs, private corporations, TART, local and state law enforcement, Cal-Trans, TFPD, others	Near	High
GOAL 17: Increase Resilience Among Disadvantaged Groups						
➔ 17.1. Ensure emergency planning is representative of the diversity of Truckee and provide leadership roles to members of disadvantaged populations	10, 12, 15, 17, 22, 23, 25, 27	Wildfire and smoke, rain-on-snow, larger storms, severe heat		TOT	Near	High
➔ 17.2. Work with partners to provide reliable and effective multilingual communication for health care, emergency preparedness, and response	14, 17, 22, 25, 26, 27	All		Sierra Community House / TOT, Nevada County, Tahoe Forest Health System	Near	High
➔ 17.3. Form partnerships with community-based organizations to actively improve understanding of localized issues pertaining to the Latinx community	2, 16, 17, 22, 23, 25	All		TOT / Sierra Community House, Multi-jurisdictional agencies, NGOs, regional agencies	Near	High

Community Readiness, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
→ 17.4. Partner with community-based organizations to expand outreach and education to the Latinx community on job opportunities, housing rights, and emergency preparedness	2, 22, 23, 25, 26, 27	All		TOT / Sierra Community House, Family Resource Center	Near	High
→ 17.5. Work with Sierra Community House to expand operations and have resource officers available at multi-family housing complexes	2, 14, 17, 22, 23, 25, 26, 27	All		TOT* / Sierra Community House, Multi-jurisdictional agencies, NGOs, regional agencies,	Near	High

Town of Truckee Government

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
Town of Truckee Government						
Incorporate climate change considerations (scientific projections and consideration of ongoing change) into decisions made at all levels of Town government						
Build and strengthen partnerships across jurisdictions to plan for regional impacts and advocate for state and federal policies as needed						
Enhance understanding of equity issues at all levels of government and advance it in all processes						
Demonstrate the feasibility and effectiveness of new resilience measures so that they can be adopted by businesses, residents, organizations, and others						
Consistently share information about climate change and engage the entire community on the issue						
Demonstrate sustainability in day-to-day operations and at city events						
Highlight and support sustainable businesses and organizations						
Ensure presence of bilingual staff at events						
Showcase equitable, nature-based solutions to flooding and other hazards						

Town of Truckee, continued

Goals and Strategies	Risk	Climate Hazard	Mitigation?	Lead/Partner Agency or Organization	Time Frame	Priority
Engage all residents through demonstration projects						
Implement a climate-friendly purchasing program for TOT and support a similar program for local businesses						
Evaluate feasibility of installation of solar energy production at high profile sites						
Schedule regular plan implementation updates to Town Council						
Include climate change consideration in every decision-making process at all levels of government						
Investigate the possibility of a climate recovery ordinance						
Include climate change experience as a criterion for staff leadership positions						
Educate all staff, departments, and decision makers on climate change science, projections, adaptation and mitigation actions, and priorities						
Create a collaborative agency working group to communicate about climate change						