

Tahoe Basin Climate Action Database Inventory Results Memo

US ACE Climate Change Project

Date: 12/3/2010



PURPOSE & SCOPE

Climate change poses a real and serious risk to the Tahoe Basin. Effective mitigation and adaptation actions to address this risk require that decision makers understand the state of current and planned climate change actions from a regional perspective. Currently, Tahoe Basin project implementers, planners, policymakers and interested stakeholders do not have a comprehensive resource or accepted method to assess these actions, and neither the EIP nor any other program coordinates information regarding climate change actions. The **Climate Action Database** (CAD) fills this information gap by establishing a structure to inventory and compare actions based on a consistent methodology.

PURPOSE

The CAD contains an inventory of recently completed, in-progress and planned actions to address climate change adaptation and mitigation in the Tahoe Basin. This memo summarizes initial findings to:

- Provide an overview of the current state of climate change planning and implementation in the Tahoe Basin across planning focus areas, geographic boundaries, and implementing entities.
- Expand understanding of the climate change adaptation and mitigation benefits resulting from actions primarily related to watershed improvement, forest health and transportation.
- Demonstrate the utility of the CAD to encourage commitment from interested stakeholders to maintain and update the CAD in the future.

SCOPE

The 2010 CAD inventory is a non-exhaustive list of recently completed, ongoing, or planned climate change mitigation and adaptation actions in the Tahoe Basin. Actions include projects, programs, plans, policies, and science as defined in the adjacent textbox. Actions completed prior to 2010 or with defined budgets less than \$10,000 are not included. However, planned actions with undefined budgets are included. Actions with an out-of-basin focus, such as county-wide GHG emissions inventories, are accepted in the CAD for information sharing purposes, but can be filtered out of the results for basin-specific data analysis and reporting purposes.

The current inventory contains 334 climate change actions: 161 physical projects, 37 programs, 53 plans, 22 science actions, and 61 proposed policies. These actions were compiled by reviewing 48 planning documents and project lists from Tahoe Basin organizations and conducting 32 interviews. Research and interviews were conducted from July to September, 2010.

INFORMATION SOURCES

The Tahoe Basin Environmental Improvement Program (EIP) provides a starting point for the CAD inventory research, as a majority of EIP projects and programs relate to climate change in at least some capacity. Of the 188 EIP projects either in progress or completed in 2010, 148 (79%) are included in the 2010 CAD inventory.

What constitutes a climate change action?

An action that reduces GHG emissions, increases the resiliency of a vulnerable system, or both.

Policy: An action that guides the decisions of members of an individual organization or a community with the intent of achieving a specific outcome.

Project: An action that produces planned physical changes to the environment or built infrastructure.

Program: An action that requires ongoing resources to affect a change in the environment or in the behavior of many people.

Plan: An action that demonstrates intent to implement a future program, project or policy aimed at achieving specific goals and objectives within a specified timeframe.

Science (Research, Monitoring, Synthesis or Data Management): An action that searches to develop new knowledge (research), tracks and documents change in specific measures (monitoring), combines two or more information sources to create new findings (synthesis), or builds, analyzes, or reports on data.

To provide a more complete picture of climate change planning in the Tahoe Basin, 187 additional actions are identified in the 2010 CAD inventory that are not associated with the EIP. These actions were identified in other documents or by individuals through interviews. Examples of planning documents, organizations and identified actions incorporated outside of the EIP are provided in Table 1. A complete list of interview contacts, planning documents and project lists reviewed for the 2010 CAD inventory is in Appendix I: Table 2.

Table 1. Examples of planning documents, organizations and identified actions incorporated outside of the EIP

PLANNING DOCUMENT	ORGANIZATION	EXAMPLE OF ACTIONS IDENTIFIED
City of South Lake Tahoe Sustainability Plan	CSLT	CSLT Energy Efficiency Program, Energy and Water Audit
Heavenly Mountain Resort Mitigation and Monitoring Plan	Heavenly Ski Resort, LTBMU	Construction Erosion Reduction Program, Cumulative Watershed Effects Restoration Program
Regional Transportation Plan – Mobility 2030	TMPO	Complete Streets Program, Land Use Redevelopment Strategies
Stormwater Management Program Manual	NDOT	Construction Site BMP Program, Public Outreach and Education Program

INFORMATION OVERVIEW

The CAD includes descriptive fields that identify the unique elements of each action, identify how actions are related to the EIP database and other action tracking systems, and capture high level information necessary for decision makers to understand the relevance of each action. Appendix II: Climate Action Database Field Descriptions defines the descriptive fields contained in the CAD and provides a web link to the database.

The CAD attempts to be consistent with the current version of the EIP database with necessary exceptions regarding planning areas. Although EIP projects and programs are associated with only one planning focus area, most identified actions provide benefits to multiple focus areas. In order to be comprehensive while allowing for consistency with the existing EIP database, the CAD lists all relevant planning focus areas, as well as includes a single primary planning focus area for each action.

PROJECT CONTEXT

The 2010 CAD inventory informs or builds on a suite of climate change adaptation tools being developed for the Tahoe Basin through the US ACE Climate Change Project. The CAD inventory is contained within the broader CAD evaluation tool, which provides a way to efficiently 1) catalog potential climate change action ideas, 2) evaluate and prioritize future actions, and 3) identify climate change actions that are in-progress or recently completed. The Tahoe Basin Climate Change Planning Framework, developed through the US ACE project, identifies the need for a Tahoe Basin Sustainability Action Plan, which will be informed by actions identified in the CAD inventory.

SUMMARY OF FINDINGS

The following findings are based on the actions inventoried in the CAD as of September 2010. Being that this is a non-exhaustive inventory, these results provide a snapshot from the information currently compiled, and additional actions will be identified in the future that may change these results.

The majority of the identified climate change actions taking place in the Tahoe Basin are not being undertaken to achieve climate change benefits, but instead are environmental improvement actions resulting in numerous ancillary benefits including climate change adaptation and mitigation.

- Ancillary benefits are secondary benefits of an action beyond the listed planning focus area. Most climate change actions in the 2010 CAD inventory benefit numerous planning focus areas.
- Often, climate change benefits are tied to the reduction of other air and water pollutants.
 - Improved transit systems can improve local air quality and reduce GHG emissions.
 - Stormwater BMPs improve local water quality and increase watershed resiliency to higher peak flows and longer low flow periods.
- Table 2 provides additional examples of climate change benefits resulting from actions implemented for non-climate change reasons and how those climate change benefits relate to projected climate change impacts in the Tahoe Basin.

Table 2. Example climate change benefits resulting from actions primarily implemented for non-climate change reasons

EXAMPLE ACTION	EIP ACTION PRIORITY	CLIMATE CHANGE BENEFIT	CLIMATE CHANGE IMPACTS ADDRESSED
Bicycle Path	Improving Transit and Trails Connections, Improving Air Quality	Reduced GHGs	Increased Temperatures
SEZ Restoration	Restoring Priority Watersheds	Increase Water Storage, Improve Water Quality	Increased Water Demand in CA & Earlier, Higher Peak Flows

The EIP does not capture many of the climate change actions currently being planned and implemented in the Tahoe Basin.

- 56% of the actions in the 2010 CAD inventory are not listed in the EIP database. An example of a non-EIP project is included in the adjacent text box.
- The proportion of climate change actions outside of the EIP is likely to grow. The current inventory is non-exhaustive and it is expected that more non-EIP actions will be identified in the future.

Physical projects providing climate change benefits primarily increase system resiliency. Climate mitigation is addressed primarily through plans and policies.

- Most of the identified physical projects were not undertaken to achieve climate change benefits but to improve ecosystem processes. However, improving ecosystem processes typically improves system resiliency and the ability to adapt to climate change.

Tahoe Basin Biomass to Energy Facility

An example of an action included in the CAD inventory but not in the EIP is the biomass facility being jointly implemented by Placer County, the US Forest Service, and private entities. The project entails developing a new small scale combined heat and power facility in the Tahoe Basin. This facility will utilize technology that uses woody biomass, a byproduct of hazardous forest fuels reduction activities. Scheduled to be operational in the 2012/13 timeframe, the facility will provide renewable power to NV Energy for distribution in the Tahoe Basin.

- Physical projects represent 91% of the total known budget for identified climate change actions in the Tahoe Basin.
- Figure 1 shows the number of in-progress and planned climate change actions classified by action type identified in the Tahoe Basin targeted at adaptation, mitigation or both.

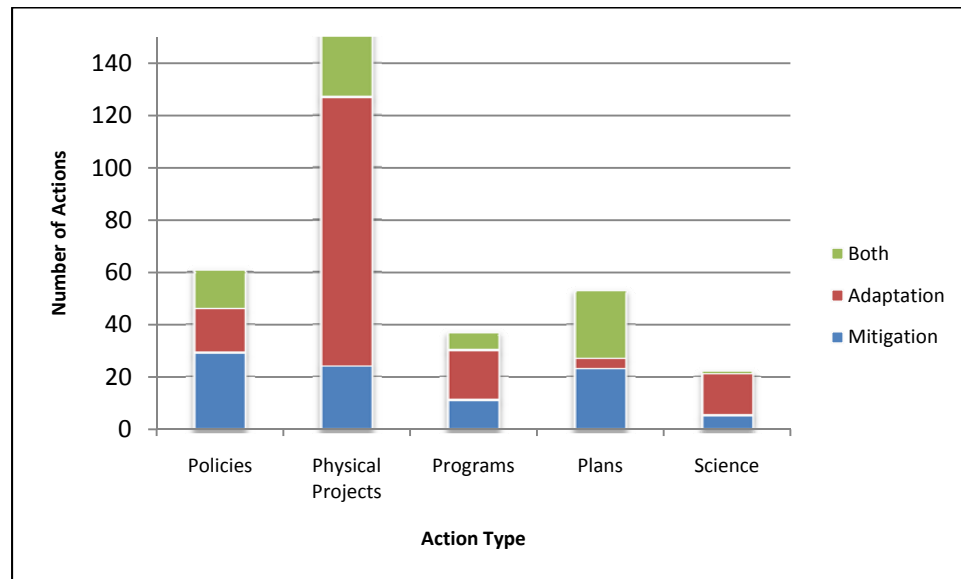


Figure 1. Number of identified climate change actions targeted at adaptation, mitigation, or both.

Science actions identified are focused primarily on adapting to the effects of climate change.

- Of the 22 science actions included in the 2010 CAD inventory, five are focused on climate change mitigation and only one addresses both adaptation and mitigation (defensible space and fire prevention).
- Mitigation actions identified relate primarily to transportation forecasting or carbon storage in forest biomass and soils.
- Mountainous regions are particularly vulnerable to the impacts of climate change, and climate adaptation is largely a local issue. Furthermore, changes in the amount and timing of snowpack melt have politically and socially contentious ramifications in terms of California water supply. Understanding how to adapt to these changes projected under future warming scenarios is an emphasis in the Tahoe Basin and throughout the Sierra, as demonstrated by the fact that climate change is dedicated as a SNPLMA subtheme.
- Two example science actions, one long-running and the other more recent, are described in the adjacent textbox.

Science in the Sierra

Snow Survey and Water Supply Forecasting

Starting in 1911, NRCS has collected and maintained approximately 100 years of climate data through their annual snowpack monitoring. The program includes eight automated weather stations in the Tahoe Basin and manual snow courses to estimate water supply availability, spring runoff and summer streamflows to inform decision making related to annual water availability.

Global Warming Impacts on GHG Emissions from Sierra Nevada Forest Soils

This SNPLMA-funded project, led by Matt Busse of the US Forest Service, investigates:

- How much the soil temperature profile will change relative to air temperature under climate change scenarios
- Where soil temperature changes will have the greatest impact
- How much additional carbon will be released from the soil in a positive feedback system

This research is intended to inform understanding of long-term carbon product storage pools in the Sierra.

Over the next 10 years, approximately one billion dollars is budgeted for in-progress or planned climate change actions in the Tahoe Basin.

- A total budget of \$1,331,290,095 has been identified for actions with climate change benefits, including actions still in need of funding. This figure does not include costs for the actions included in the 2010 CAD inventory that do not have an estimated cost provided.
- Table 3 lists the total identified budget for climate change actions in the 2010 CAD inventory by planning focus area. These focus areas include each of the EIP focus areas and an additional five focus areas uniquely identified that address climate change adaptation and mitigation issues. See Appendix I: Table 1 for a list of planning focus areas and subareas used.

Table 3. Total budget for climate change actions and number of actions in need of funding by planning focus area (* indicates not an EIP Focus Area)

PRIMARY PLANNING FOCUS AREA	NUMBER OF ACTIONS	ACTIONS IN NEED OF FUNDING	TOTAL IDENTIFIED BUDGET
Watersheds, Habitat, and Water Quality	139	15	\$616,422,356
Air Quality and Transportation	61	14	\$328,685,484
Cross-Focus Areas*	57	27	\$272,635,944
Forest Management	34	0	\$69,096,774
Waste Management*	10	2	\$16,000,000
Recreation and Scenic Resources	2	0	\$11,150,000
Energy Infrastructure*	21	7	\$10,520,000
Public Health*	5	0	\$3,965,000
Water Supply*	5	0	\$2,814,537

Privately funded actions in the 2010 CAD inventory are focused primarily on green building and development, which has both mitigation and adaptation benefits.

- Mixed-use, transit-oriented development and green building projects have both climate change adaptation and mitigation benefits. Green building projects in the 2010 CAD inventory include development projects under TRPA's Community Enhancement Program and the new multi-million dollar Tamarack Lodge at Heavenly Ski Resort, being designed to pursue LEED certification with an expected opening in February of 2011.
- Private Parcel BMP Implementation was the only privately funded and implemented action identified that focused specifically on adaptation, and although budget estimates for this project are unavailable, they are material and highly relevant.
- Privately funded mitigation actions are focused on waste management from privately owned and operated waste management companies, such as the South Tahoe Refuse Company. Climate change mitigation benefits of waste management result from avoided export costs and avoided methane generation from landfills.

Climate change mitigation actions are focused on reducing vehicle miles traveled (VMTs), while energy efficiency in the built environment is not currently a focus in the Tahoe Basin.

- 61% of identified climate change mitigation actions in the Tahoe Basin deal with air quality and transportation, such as improving public transit, constructing bicycle and pedestrian pathways, and complying with SB 375.
- Reducing VMTs is an important climate change mitigation strategy partly because of the numerous ancillary benefits provided, such as increasing public health and local livability.
- Few actions in the 2010 CAD inventory directly address increasing energy efficiency in the built environment directly, even though buildings account for almost half of all GHG emissions and 40% of total energy consumed in the US annually, making energy efficiency a significant economic opportunity.¹ The cost-effectiveness of increasing energy efficiency in the built environment can be further capitalized on through tax rebates, lowered construction costs and reduced energy and water bills.²

A significant portion of identified climate change actions are being implemented by collaborative partnerships that cross political and geographic boundaries.

- 26% of identified actions are implemented by more than one entity.
- 46% of identified actions are multijurisdictional or basin-wide.
- The multijurisdictional nature of the Tahoe Basin makes collaborative actions more valuable, since needs often span political and geographic boundaries and regional actions can leverage resources more effectively. An example program is described in the adjacent textbox.
- Figure 2 shows the number of identified actions taking place within a single jurisdiction and those that cross jurisdictional boundaries.

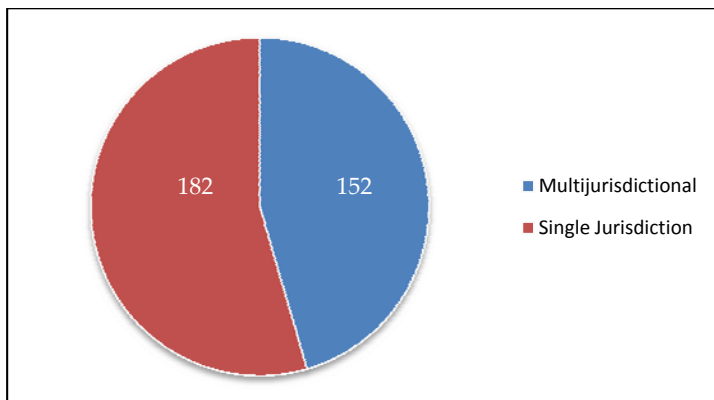


Figure 2. Number of actions that take place within a single jurisdiction and those that cross jurisdictional boundaries.

**Aquatic Invasive Species:
A Basin-wide Issue**

The Lake Tahoe Aquatic Invasive Species Program and its associated subprograms, which encompass all projects working to reduce existing and prevent new infestations in the Lake Tahoe region, are being jointly implemented by many entities, including:

- CA Water Quality Control Board - Lahontan Region
- CA Tahoe Conservancy
- Army Corps of Engineers
- CA Division of State Lands
- NV Division of State Lands
- Tahoe Regional Planning Agency
- Tahoe Resource Conservation District
- UC Davis/UN-Reno
- US Fish and Wildlife Service
- CA State Parks
- NV State Parks
- Tahoe City Public Utility District
- Incline Village General Improvement District
- CA Department of Fish and Game
- US Forest Service
- Local Jurisdictions
- Private entities

This program encompasses all counties within the Tahoe Basin, since controlling the spread of aquatic invasive species is a basin-wide issue and requires collaborative management.

¹<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=124>; <http://www.aia.org/aiaucmp/groups/aia/documents/pdf/aia077675.pdf>

²<http://www.aia.org/aiaucmp/groups/aia/documents/document/aia078385.pdf>

Most of the climate change actions identified in the 2010 CAD inventory (82%) list public agencies and organizations as likely funding entities.

- Actions listing private entities as likely funders represent only 5% of the total number of actions and 19% of the total identified budget in the 2010 CAD inventory. This figure may rise as information gaps related to privately funded projects are filled.
- During the interview process, some stakeholders identified regulatory hurdles as an impediment to implementing private sector projects and gaining private sector investment to address climate change issues in the Tahoe Basin.
- Budget estimates were not included for some privately funded actions such as residential BMPs and cost of climate change actions at ski resorts. Of the nine privately funded redevelopment projects originally included in the Tahoe Regional Planning Agency (TRPA)'s Community Enhancement Program (CEP), two are currently moving forward and only one has a defined budget estimate available. One of the two CEP projects moving forward is described in the adjacent textbox.
- Figure 4 shows the identified budgets of actions listing public, private and both public and private funding entities for climate change actions identified in the Tahoe Basin. This figure does not include actions without identified budget needs.

Crystal Bay, Boulder Bay LLC

The Boulder Bay project, an example of a privately funded action included in the CAD inventory, entails the redevelopment of the existing Tahoe Biltmore property into a mixed-use, transit-oriented community center. Project includes incorporating retail and tourist amenities, pedestrian and multi-modal transportation, improved streetscape, energy efficiency measures, and reduction in impervious surfaces.

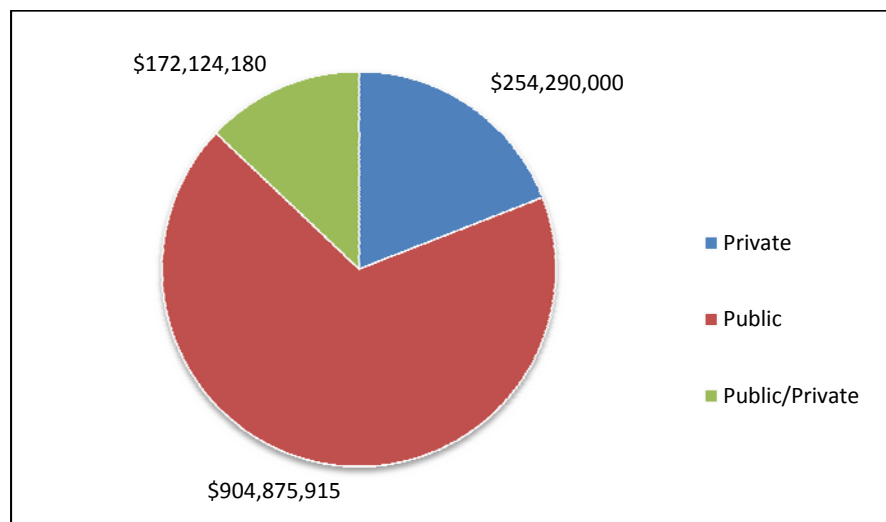


Figure 4. Budget amounts for actions listing public, private, and both public and private likely funding entities for identified climate change actions in the Tahoe Basin.

Transportation and private development projects have larger identified budgets than other climate change actions taking place in the Tahoe Basin.

- Caltrans and TTD are implementing an average number of actions, yet have identified budgets much larger than other entities.
- Private entities are implementing more climate change actions in the Tahoe Basin than any single public entity. Private entities also have the second largest identified budget.

- Jurisdictions have many planning actions that do not currently have budget estimates developed. Once these budgets are identified, this finding could change significantly.

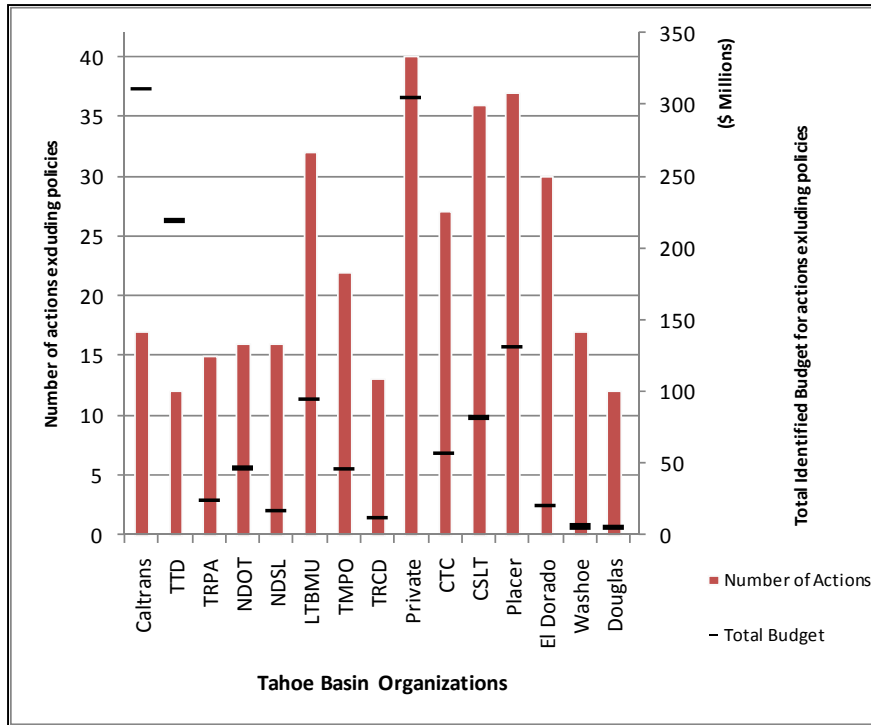


Figure 3. Number and cost of actions (excluding policies) for each of the most active implementing entities (includes double counting of projects with multiple implementing entities).

RECOMMENDATIONS

Climate change adaptation actions should be prioritized to increase the resiliency of the systems in the Tahoe Basin most vulnerable to climate change. Climate change adaptation actions identified strengthen system resiliency. However, most actions providing adaptation benefits are funded for other reasons. Scarce resources for climate change adaptation should be targeted to strengthening systems most vulnerable to climate change impacts.

Leverage the multi-faceted nature of environmental improvement actions to broaden support and funding for climate change planning. Tahoe Basin organizations are already planning and implementing climate change actions, often for reasons completely separate from climate change. Climate change co-benefits of environmental improvement actions should be acknowledged to raise awareness of the interconnectedness of climate change to other environmental issues, and increase funding for climate change actions in the Tahoe Basin.

Increase inter-jurisdictional collaboration to achieve regional climate change goals. Due to the multijurisdictional nature of the Tahoe Basin, many climate change actions span political and geographic boundaries, and are implemented by more than one entity. These partnerships should be utilized and resources pooled to more efficiently adapt to and mitigate climate change impacts. The existence of a Tahoe Climate Collaborative would facilitate inter-jurisdictional collaboration.

Continue to identify private funding sources and leverage opportunities for public/private partnerships to address climate change. Privately funded projects identified in the 2010 CAD inventory are limited. Additional engagement with private investors can expand understanding of their contribution to climate change adaptation and mitigation efforts. Additionally, public/private partnerships can create new opportunities for climate change planning and implementation and substantially increase impacts. The existence of a Tahoe Climate Collaborative would facilitate engagement with private funders and the interested stakeholders.

Update and maintain the CAD as an important augmentation to the EIP. 56% of the actions captured in the 2010 CAD inventory are not in the EIP, and further, many are not listed in other planning documents or databases. In order for the information in the CAD to effectively support the development of a Sustainability Action Plan and to inform funding acquisitions and resource allocations decisions the CAD must be maintained and updated on an annual or ongoing basis. The current CAD is available online at <http://tiny.cc/ClimateChangeWorkingGroup>. For more information about the CAD or the 2010 CAD inventory, please contact Tricia York (tyork@tahoe.ca.gov).

APPENDICES

APPENDIX I: SUPPLEMENTAL INFORMATION

Each action included in the CAD lists a primary planning focus area and a primary planning subarea. These are based on EIP focus areas, but include additional options, such as Energy Infrastructure and Water Supply. Table 1 shows all planning focus areas and planning subareas for actions included in the CAD.

Table 1. Planning Subareas by Planning Focus Area (* Not an EIP Focus Area)

PLANNING FOCUS AREA	PLANNING SUBAREA
Watersheds, Habitat, and Water Quality	Stormwater Management
	Watershed Management
	Threatened, Endangered, and Sensitive Species
	Invasive Species
Forest Management	Forest Ecosystem Health and Hazardous Fuels Reduction
Air Quality and Transportation	Air Quality and Transportation
Recreation and Scenic Resources	Recreation
	Scenic
Public Health*	Education
	Housing
	Community Health
	Public Safety
Energy Infrastructure*	Energy Generation
	Energy Efficiency
Water Supply*	Water Storage
	Water Efficiency
Waste Management*	Waste Reduction
Cross-Focus Areas*	Cross- Focus Areas

Many actions included in the 2010 CAD inventory are not associated with the EIP. Therefore, numerous planning documents and project lists were researched to identify non-EIP actions and provide a more comprehensive inventory of actions in the Tahoe Basin that produce climate change benefits. Interviews with Tahoe Basin organizations were conducted to identify additional actions and fill information gaps. Table 2 provides a comprehensive list of planning documents and project lists researched, as well as interviews conducted arranged by organization.

Table 2. List of interview contacts (* indicates e-mail correspondence only) and planning documents/project lists reviewed for 2010 CAD inventory

ORGANIZATION	INTERVIEW CONTACT(S)	RELEVANT PLANS & PROJECT LISTS REVIEWED
Alpine Meadows	n/a	Online Project List
Boulder Bay Resort	Brian Helm	Boulder Bay Final Environmental Impact Statement
California Department of Fish and Game	n/a	California's Wildlife Action Plan

ORGANIZATION	INTERVIEW CONTACT(S)	RELEVANT PLANS & PROJECT LISTS REVIEWED
California Natural Resources Agency	n/a	California Climate Adaptation Strategy, Climate Action Plan of the Sierra Nevada: A Regional Approach to Address Climate Change
California State Parks	Tamara Sasaki	The State Park System Plan 2002
California Tahoe Conservancy	Karin Edwards	Lake Tahoe Region Aquatic Invasive Species Management Plan
Caltrans	n/a	California Transportation Plan 2025
City of South Lake Tahoe	Stan Hill, Nancy Kerry*	City of South Lake Tahoe Sustainability Plan
Douglas County	Mahmood Azad	n/a
El Dorado County	Donaldo Palaroan	El Dorado County Wildland Fire Hazard Mitigation Plan, El Dorado Department of Transportation Capital Improvement Projects
Heavenly Mountain Resort	Andrew Strain, Matt Dickinson (LTBMU)	Heavenly Mountain Resort Mitigation and Monitoring Plan Annual Report
Incline Village General Improvement District	Brad Johnson Rebecca Sawyer Williams	2010/2011 Fiscal Operating Budget
JMA Ventures, LLC	David Tirman	Homewood Resort Master Plan
Lahontan Regional Water Quality Control Board	n/a	Lake Tahoe TMDL Draft Report, Water Quality Control Plan for the Lahontan Region (Basin Plan)
Lake Tahoe Community College	n/a	Online Project List
Lake Tahoe South Shore Chamber of Commerce	n/a	Green Business Website
League to Save Lake Tahoe	n/a	Online Project List
Mt. Rose Resort	n/a	Online Project List
Natural Resources Conservation Service	Woody Loftis	n/a
Nevada Division of Environmental Protection	n/a	Bureau of Water Quality Planning's 5-year Plan: 2006-2011
Nevada Division of Forestry	Roland Shaw	n/a
Nevada Division of State Lands	Jeff Haas	Public Lands Planning and Policy Development Activities of the Nevada Division of State Lands
Nevada Division of State Parks	Peter Maholland	n/a
Nevada Division of Transportation	Matt Nussbaumer	NDOT 2009 Performance and Major Projects Annual Report, NDOT Stormwater Management Program, Stormwater Quality Manual Planning and Design Guide
Nevada Fire Safe Council	n/a	Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy
Nevada Tahoe Conservation District	Scott Brown	Stormwater Project Inventory

ORGANIZATION	INTERVIEW CONTACT(S)	RELEVANT PLANS & PROJECT LISTS REVIEWED
North Lake Tahoe Resort Association	n/a	3 rd Quarter Report to Placer Co. – Fiscal Year 2009/2010, NLTRA FY 2010/2011 Strategic Planning and Budget Development Process Jan-June 2010, North Lake Tahoe Tourism and Community Investment Master Plan
North Lake Tahoe Chamber of Commerce	n/a	North Lake Tahoe Chamber of Commerce Business Plan, Keep the Sierra Green Sustainability and Waste Reduction Regional Green Business Recognition Program
Northstar-at-Tahoe	n/a	Online Project List
Placer County	Kansas McGahan	Placer County Local Hazard Mitigation Plan
Sierra-at-Tahoe	n/a	Online Project List
Sierra Business Council	n/a	Planning for Prosperity, Sustaining Rural Places Toolkit
Sierra Nevada Alliance	n/a	Sierra Climate Change Toolkit
South Tahoe Public Utility District	Sarah Jones*	Proposition 50 Integrated Regional Water Management Implementation Grant Agreement between the State Water Resources Control Board and the TRCD
South Tahoe Refuse Co.	Jeanne Lear	n/a
Tahoe City Public Utility District	Jon LeRoy	n/a
Tahoe Metropolitan Planning Organization	Nick Haven	Lake Tahoe Bicycle and Pedestrian Master Plan, Regional Transportation Plan – Mobility 2030, TMPO 2009/2010 Draft Work Program
Tahoe Regional Planning Agency	John Hitchcock, Jeanne McNamara, David Landry*	Environmental Improvement Program (EIP) Database, Regional Plan Update, TRPA Water Quality Management Plan for the Tahoe Basin
Tahoe Resource Conservation District	Nicole Cartwright, Courtney Walker	Online Project List, Tahoe Sierra Integrated Regional Water Management Plan
Tahoe Science Consortium	n/a	Comprehensive Science Plan for the Tahoe Basin
Tahoe Transportation District	Alfred Knotts	Tahoe Transportation District FY 2009/2010 Work Program
Town of Truckee	Nichole Dorr*	n/a
US Forest Service	Cheryl Beyer, Richard Vacirca, Daniel Cressy*, Bruce Goines*, Scott Parsons*, Paul Potts*, Raul Sanchez*	LTBMU Draft Forest Plan
Washoe County	Kris Klein, Yann Linn-Barnes, Dick Minto, Joaquin Tabadda, Bill Whitney*	Washoe County GHG Inventory Report

APPENDIX II: CLIMATE ACTION DATABASE FIELD DESCRIPTIONS

The CAD includes descriptive fields that identify the unique elements of each action, identify how actions are related to other action tracking systems, like the EIP database, and capture the high level information necessary for managers to understand the relevance of each action. Descriptions of the policy descriptive fields are included in Table 3, and descriptions of physical project, program, plan and science actions are included in Table 4. The CAD and the complete CAD Guidance Document can be found online at:

<http://tiny.cc/ClimateChangeWorkingGroup>

Table 3. List and descriptions of policy descriptive fields in the CAD

Policy Descriptive Fields		
Description: The draft Climate Action Database currently contains the descriptive fields listed below for Policy type actions.		
Purpose: This list of fields is for the US ACE Climate Change Working Group to understand the information that the Climate Action Database provides decision-makers. These fields may change as a result of Working Group feedback and experience from the Project Team identification of policy actions.		
FIELD NAME	FIELD TYPE	FIELD DESCRIPTION
Title	Description	Brief, unique descriptive identifier of the action (formal name if available)
Description	Description	Description of the action (50-200 words)
Contact Information	Description	Contact's name, employer, title, e-mail address and phone number
Issue Type	List	Options: Adaptation, Mitigation or Adaptation & Mitigation (both Adaptation and Mitigation)
Action Type	List	Options: Physical Project, Policy, Program, Plan or Research, Monitoring, and Data Management
Goal & Objectives	Description	Description of what the action is expected to accomplish (1-2 sentences). Description of expected, quantifiable benefits or emission reductions from proposed action (3 to 5)
Primary Planning Focus Area	List	Choose one: "Watersheds, Habitat, and Water Quality", "Forest Management", "Air Quality and Transportation", "Recreation and Scenic Resources", "Public Health", "Energy Infrastructure", "Water Supply", "Waste Management", "Cross-Focus Areas"
Other Planning Focus Areas	List	Choose all that apply: "Watersheds, Habitat, and Water Quality", "Forest Management", "Air Quality and Transportation", "Recreation and Scenic Resources", "Public Health", "Energy Infrastructure", "Water Supply", "Waste Management", "Cross-Focus Areas"
Primary Planning Subarea	List	Choose one: "Stormwater Management", "Watershed Management", "Threatened, Endangered, and Sensitive Species", "Invasive Species", "Forest Ecosystem Health and Hazardous Fuels Reduction", "Air Quality and Transportation", "Recreation", "Scenic", "Education", "Housing", "Community Health", "Public Safety", "Energy Generation", "Energy Efficiency", "Water Storage", "Water Efficiency", "Waste Reduction", "Cross-Focus Areas"
Other Planning Subareas	List	Choose all that apply: "Stormwater Management", "Watershed Management", "Threatened, Endangered, and Sensitive Species", "Invasive Species", "Forest Ecosystem Health and Hazardous Fuels Reduction", "Air Quality and Transportation", "Recreation", "Scenic", "Education", "Housing", "Community Health", "Public Safety", "Energy Generation", "Energy Efficiency", "Water Storage", "Water Efficiency", "Waste Reduction", "Cross-Focus Areas"
Likely Implementing Entity	List	Choose all that apply: "CSLT", "CTC", "TRPA", "USFS", etc.
Agency Plan Relationship	List	Choose all that apply: "TRPA Regional Plan", "USFS Tahoe Forest Plan", "CSLT Sustainability Commission Work Plan", "Lake Tahoe TMDL", etc.
Geographic Area	Description	Description of geographic or political boundaries and scale directly related to the action effects
Scope	List	Choose one: Tahoe-specific or County-wide
System(s) Addressed	List	Choose all that apply: "Built Environment", "Forest", "Lake Tahoe" or "SEZ/Riparian"
Status	List	Options: Incomplete Policy Idea, Policy Idea, In Progress, Completed, Terminated
Web/Document	Description	Provide a web link or reference to action description

Table 4. List and descriptions of physical project, program, plan and science descriptive fields in the CAD

Physical Project, Program, Plan, and Science Descriptive Fields		
Description: The draft Climate Action Database currently contains the descriptive fields listed below for Project, Program, Plan, and Science type actions.		
Purpose: This list of fields is for the US ACE Climate Change Working Group to understand the information that the Climate Action Database provides decision-makers. These fields may change as a result of Working Group feedback and experience from the Project Team identification of project actions.		
FIELD NAME	FIELD TYPE	FIELD DESCRIPTION
Title	Description	Brief, unique descriptive identifier of the action (formal name if available)
Description	Description	Description of the action (50-200 words)
Contact Information	Description	Contact's name, employer, title, e-mail address and phone number
Issue Type	List	Options: Adaptation, Mitigation or Adaptation & Mitigation (both Adaptation and Mitigation)
Action Type	List	Options: Physical Project, Policy, Program, Plan or Research, Monitoring, and Data Management
Goal & Objectives	Description	Description of what the action is expected to accomplish (1-2 sentences). Description of expected, quantifiable benefits or emission reductions from proposed action (3 to 5)
Primary Planning Focus Area	List	Choose one: "Watersheds, Habitat, and Water Quality", "Forest Management", "Air Quality and Transportation", "Recreation and Scenic Resources", "Public Health", "Energy Infrastructure", "Water Supply", "Waste Management", "Cross-Focus Areas"
Other Planning Focus Areas	List	Choose all that apply: "Watersheds, Habitat, and Water Quality", "Forest Management", "Air Quality and Transportation", "Recreation and Scenic Resources", "Public Health", "Energy Infrastructure", "Water Supply", "Waste Management", "Cross-Focus Areas"
Primary Planning Subarea	List	Choose one: "Stormwater Management", "Watershed Management", "Threatened, Endangered, and Sensitive Species", "Invasive Species", "Forest Ecosystem Health and Hazardous Fuels Reduction", "Air Quality and Transportation", "Recreation", "Scenic", "Education", "Housing", "Community Health", "Public Safety", "Energy Generation", "Energy Efficiency", "Water Storage", "Water Efficiency", "Waste Reduction", "Cross-Focus Areas"
Other Planning Subareas	List	Choose all that apply: "Stormwater Management", "Watershed Management", "Threatened, Endangered, and Sensitive Species", "Invasive Species", "Forest Ecosystem Health and Hazardous Fuels Reduction", "Air Quality and Transportation", "Recreation", "Scenic", "Education", "Housing", "Community Health", "Public Safety", "Energy Generation", "Energy Efficiency", "Water Storage", "Water Efficiency", "Waste Reduction", "Cross-Focus Areas"
Likely Funding Entity	List	Choose all that apply: "CSLT", "CTC", "TRPA", "USFS", etc.
Likely Implementing Entity	List	Choose all that apply: "CSLT", "CTC", "TRPA", "USFS", etc.
Public/Private Partnerships	List	Choose one: Public, Private or Public/Private
Agency Plan Relationship	List	Choose all that apply: "TRPA Regional Plan", "USFS Tahoe Forest Plan", "CSLT Sustainability Commission Work Plan", "Lake Tahoe TMDL", etc.
Geographic Area	Description	Description of geographic or political boundaries and scale directly related to the action effects
Scope	List	Choose one: Tahoe-specific or County-wide
System(s) Addressed	List	Choose all that apply: "Built Environment", "Forest", "Lake Tahoe" or "SEZ/Riparian"
Status	List	Options: Incomplete Project Idea, Project Idea, In Progress, Completed, Terminated
Duration/Expected Lifetime	List	Estimate length of time to plan and implement the action. Can be grouped into: Long lifetime (in perpetuity), Medium Lifetime (25 yrs), Short Lifetime (less than one year)
Funds Secured or Anticipated	List	Estimate the amount of funding currently allocated to the action, or the amount reasonably anticipated to be secured in the future
Unsecured Funding Need	List	Estimate the amount of funding needed to complete the action
Estimated Total Cost	List	Estimate total cost of planning and implementing the action (can be a range). Include staff time at the rate of \$120,000 per person year/full time equivalent.
Web/Document Reference	Description	Include a link or reference to project

APPENDIX III: PROCESS & FUTURE RECOMMENDATIONS

INFORMATION SOURCES

As mentioned under 'Information Sources' in the Scope section, the research process for the 2010 CAD inventory began by identifying relevant EIP projects; the remainder of identified actions were found in planning documents, project lists or through interviews conducted throughout the summer (see Appendix I: Table 2 for a complete list). The EIP Reporting Tool available on the TIIMS server (<http://dev.tiims.org/Projects/EIPPortal.aspx>) was the most complete list available to the project team as of June 2010. EIP program managers suggest that the EIP 5-Year Priority List will be the future EIP information source for the CAD inventory, which is anticipated to be complete late fall 2010.

This Results Memo initially included findings regarding unfunded vs. funded actions, but when initial findings were presented at the Climate Change Working Group meeting at the end of September, it was apparent that cost information is neither readily available nor reliable enough in the EIP Reporting Tool to include without compromising the integrity of this memo. In the 2010 CAD inventory memo, findings with total identified budget estimates remain, but unfunded vs. funded action have been removed. Moving forward, however, it is recommended that this distinction be considered since funding needs and gaps are highly relevant information for stakeholders in the Tahoe Basin. To facilitate this information collection, columns have been added to the CAD to capture necessary information to determine funding findings with confidence.

FUTURE FINDINGS & RECOMMENDATIONS

In the current database, there is an option under Status for 'Needs Funding'. In the future, the additional 'Funds Secured or Anticipated' and 'Unsecured Funding Need' descriptive fields eliminate the need for that option, since they are more precise and provide a greater level of detail. Analysis and findings initially included in the 2010 CAD inventory regarding funding needs could be conducted in the future once more robust cost information is collected. These suggested recommendations and findings are listed below.

Potential Findings

Which types of actions (physical project, plan, program or science) are in need of funding?

- Identify percentage of each type of action in need of funding, and include the corresponding dollar amounts.
- Identify amounts of total budget, unfunded budget, total number of actions, and number of actions still in need of funding for each primary planning focus area. Consider putting these numbers into a table like the one shown below.

Table xx. Total budget for climate change actions and number of actions in need of funding by planning focus area (*indicates not an EIP Focus Area)

PRIMARY PLANNING FOCUS AREA	NUMBER OF ACTIONS	ACTIONS IN NEED OF FUNDING	TOTAL BUDGET	UNFUNDED BUDGET
Watersheds, Habitat, and Water Quality	xx	xx	\$xx	\$xx
Air Quality and Transportation	xx	xx	\$xx	\$xx
Cross-Focus Areas*	xx	xx	\$xx	\$xx
Forest Management	xx	xx	\$xx	\$xx
Waste Management*	xx	xx	\$xx	xx
Recreation and Scenic Resources	xx	xx	\$xx	\$xx

PRIMARY PLANNING FOCUS AREA	NUMBER OF ACTIONS	ACTIONS IN NEED OF FUNDING	TOTAL BUDGET	UNFUNDED BUDGET
Energy Infrastructure*	xx	xx	\$ xx	\$xx
Public Health*	xx	xx	\$ xx	\$x
Water Supply*	xx	xx	\$ xx	\$x

Which entities have secured a higher portion of funds for climate change actions?

- Identify those entities implementing the most actions and those implementing the least.
- Identify which entities have funding gaps for planned or in-progress actions. Include dollar amounts of funding needs, as well as percentages of actions in need of funding.
- Consider including a graphic like the figure shown below that presents the number and costs of all funded and unfunded actions identified for each of the most active implementing entities.

Note: Funding data from this figure should not be distributed or used for any purpose.

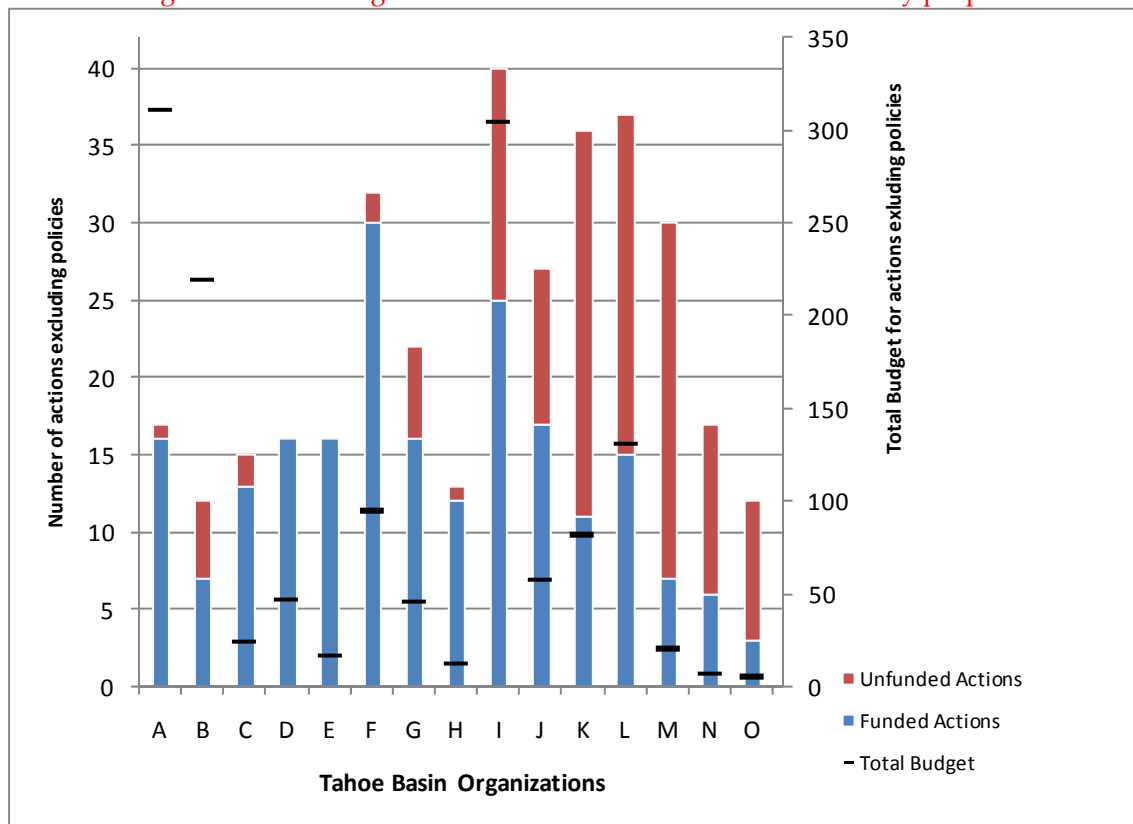


Figure xx. Number and cost of actions (excluding policies) for each of the most active implementing entities (includes double counting of projects with multiple implementing entities).

Potential Recommendations

Suggest identifying funding opportunities for those types of actions (physical project, plan, program or science) with the greatest funding needs.

- Include percentages of those types of actions that are in need of funding and the dollar amount of identified funding gaps.
- Include an explanation of why those actions might be potentially significant in the Tahoe Basin.