

Lake Tahoe Sustainable Communities Program Documents Series #4

# Sustainability Indicators Reporting Plan

December 2013



*lake tahoe*  
Sustainable Communities Program

# **California Strategic Growth Council**

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# Acknowledgements

## Tahoe Metropolitan Planning Organization Governing Board

The Tahoe Metropolitan Planning Organization (TMPO) Governing Board is comprised of the members of the Tahoe Regional Planning Agency (TRPA) Governing Board and one representative of the US Forest Service. The TRPA staff serves both the TMPO and TRPA. The TRPA Governing Board is responsible for adopting the Lake Tahoe Regional Plan and Code of Ordinances. The TMPO Governing Board is responsible for adopting the Regional Transportation Plan and Sustainable Communities Strategy.

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This citizens group is responsible for sustainability planning recommendations, projects, and programs. More information is available at [www.sustainabilitycollaborative.org](http://www.sustainabilitycollaborative.org).

## Tahoe Basin Partnership for Sustainable Communities

This group, comprised of representatives from the Tahoe Regional Planning Agency, Tahoe Metropolitan Planning Organization, California Tahoe Conservancy, El Dorado County, Placer County, City of South Lake Tahoe, North Lake Tahoe Resort Association, and Sierra Nevada Alliance, was responsible for preparing the original SGC Round 1 Sustainable Community Planning Grant application and has provided ongoing support for completion of these SGC grant-funded tasks.

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Tahoe Prosperity Center

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## INTRODUCTION TO THE LAKE TAHOE SUSTAINABLE COMMUNITIES PROGRAM

The need to embrace sustainability in all planning and implementation activities in the Lake Tahoe Region and beyond has been recognized in a number of ways. At the national level, the Department of Housing and Urban Development has created the Sustainable Communities Regional Planning Grant Program and the Department of Interior Bureau of Reclamation has initiated the Truckee River Basin Study that will include adaptive strategies to respond to climate change and other uncertainties. At the state level, California has adopted the Sustainable Communities and Climate Protection Act of 2008 requiring greenhouse gas emission reduction targets for passenger vehicles for 2020 and 2035 for each region covered by a metropolitan planning organization (MPO) and created the Strategic Growth Council, which has awarded grants for sustainable community planning and natural resource conservation. At the Lake Tahoe Region level, the Tahoe Regional Planning Agency (TRPA) has updated the Lake Tahoe Regional Plan to include sustainability policies and mitigation measures, and the Tahoe Metropolitan Planning Organization (TMPO) has adopted a Sustainable Communities Strategy as required by the Sustainable Communities and Climate Protection Act of 2008. At the local level, local governments in the Lake Tahoe Region are in the process of integrating sustainability principles into their local plans.

In the summer of 2010, a partnership of agencies, organizations, and jurisdictions came together as “The Tahoe Basin Partnership for Sustainable Communities” in order to apply for a grant from the Strategic Growth Council. Collectively, the Partnership is supporting execution of the Strategic Growth Council 2011 Sustainable Communities Planning Grant that was officially awarded to the TMPO in August of 2011. The Partnership is comprised of Tahoe Metropolitan Planning Organization, Tahoe Regional Planning Agency, El Dorado County, Placer County, City of South Lake Tahoe, California Tahoe Conservancy, and Sierra Nevada Alliance.

The TRPA, in partnership with other key stakeholders in the Lake Tahoe Region, is a participant in all of these national, state, regional and local efforts. Often they are complementary and of common interest to stakeholders. Hence, the Lake Tahoe Sustainable Communities Program has been created as a Basin-wide program with staff from different agencies and organizations participating in the various efforts. To the extent possible, the products from these efforts will be available through the Lake Tahoe Sustainable Communities Program website and as a series of documents.

## LAKE TAHOE SUSTAINABLE COMMUNITIES PROGRAM DOCUMENTS SERIES

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This series of documents is organized to generally reflect the tasks associated with the grants received from the California Strategic Growth Council (SGC). The series as currently envisioned includes the following:

1. **Sustainability Framework and Vision** – This document accompanies the California Tahoe Conservancy *Tahoe Basin Sustainability Planning Guidebook* document (Appendix A) and includes an overview of the Sustainable Communities Program, the framework within which all of the regional and local level plans work, and the vision for sustainability based on input from over 5,000 participants in the regional planning process. The *Tahoe Basin Sustainability Planning Guidebook* was prepared in 2011 and describes how this effort was originally envisioned. The Sustainability Framework and Vision has more detailed and updated language related to the newly adopted Regional Plan and the framework for Area Plans, input from participants in that process, and the interaction of sustainability components. This serves as the “deliverable” for the SGC Round 1 Sustainable Community Planning Grant Task 1: Roadmap & Organizational Structure.

- 2. Sustainability Action Plan Background** – This document includes the initial greenhouse gas emissions inventory and reduction targets, and climate change adaptation and mitigation strategies. It reflects the adopted Regional Plan, Regional Transportation Plan, and Sustainable Communities Strategy policies, and is the basis for the sustainability (a.k.a., climate change) action plan. This document serves as the “deliverable” for the SGC Round 1 Sustainable Community Planning Grant Task 3: Goals, Objectives, & Strategies.
- 3. Sustainability Action Plan: A Sustainability Action Toolkit for Lake Tahoe** – This includes the revised greenhouse gas emissions inventory and reduction targets, and climate change and adaptation strategies vetted through the Lake Tahoe Sustainability Collaborative and the Tahoe Basin Partnership for Sustainable Communities. This document also includes community level outreach and action strategies. This document serves as the “deliverables” for the SGC Round 1 Sustainable Community Planning Grant Tasks 3.D, 4.A, and 4.D: Lake Tahoe Sustainability Action Plan and Outreach Activities.
- 4. Sustainability Indicators Reporting Plan** – This document; it includes: (1) an assessment of existing Lake Tahoe Region measurement and monitoring efforts, (2) identification of a suite of sustainability indicators, (3) development of a sustainability metrics reporting plan, and (4) initiation of a sustainability dashboard. This measurement and tracking approach is intended to be consistent with and a key element of the larger Lake Tahoe Basin Monitoring, Evaluation, and Reporting Program required by California State Appropriations Bill #3110-0140 in addition to serving as the ‘deliverables’ for SGC Round 1 Task 4.B: Develop Performance Measures, Indicators and Monitoring Program, including a Tracking and Accounting System and SGC Round 2 Task 4.A: Obtain Regional Indicators Data.
- 5. Area Plans Framework** – This includes the framework for Area Plans and initiation of those Area Plans. The framework (i.e., Regional Plan policies and code, conformance review checklist, and model Area Plan contents) serves as the “deliverable” for SGC Round 1 Sustainable Community Planning Grant Task 4, Subtask C: Lake Tahoe Livable Communities Program.
- 6. Area Plans Background** – This includes an assessment of the sustainability and livability measures needed in each planning area and the barriers to local implementation of those sustainability measures. This document serves as the “deliverable” for the SGC Round 1 Sustainable Community Planning Grant Task 2: Situation Assessments.
- 7. Development Commodities Transfer Policies Analysis** – This includes identification and analysis of the potential market effectiveness of proposed transfer of development rights and bonus unit policies considered for inclusion in the Regional Plan. This serves as the “deliverable” for the SGC Round 1 Sustainable Community Planning Grant Task 4, Subtask E: Development Rights Incentives Program.
- 8. Development Commodities Tracking and Exchange System** – This includes the concepts, processes, software requirements, and other system specifications, as well as the results of implementing the development commodities and exchange system. This serves as the “deliverable” for the SGC Round 2 Sustainable Community Planning Grant Task 3: Regional Development Rights Tracking System.
- 9. Economic Development Strategy** – This includes analysis of existing and targeted industry clusters and recommendations on the clusters and incentives that will be most effective in creating and maintaining a sustainable economy for the Lake Tahoe Region. Also included is stakeholder outreach resulting in recommendations for implementation of commodities transfer policies. This serves as the “deliverable” for the SGC Round 1 Sustainable Community Planning Grant Task 4, Subtask F: Economic Incentives Strategy.

- 10. Lake Tahoe Sustainability Collaborative Strategic Plan** – This document includes the LTSC's mission, charter, and business plan which provides the strategy for the Lake Tahoe Sustainability Collaborative to continue, on an ongoing basis, to act as an independent entity that "champions" sustainability in the Lake Tahoe Region. This serves as the "deliverables" for the SGC Round 1 Sustainable Community Planning Grant Task 1.B: Establish Lake Tahoe Sustainability Collaborative and SGC Round 2, Task 4.E: Lake Tahoe Sustainability Collaborative Support.
- 11. Annual Report** – This is the initial annual report on the Lake Tahoe Sustainable Communities Program and will be included as part of future TRPA annual reports. It will be updated using current sustainability indicators data, and can act as a template for similar sustainability planning reports in other regions. This serves as the "deliverables" for the SGC Round 2 Sustainable Community Planning Grant Tasks 4.B: Implement Regional Data Sharing/Management Program, 4.C: Web-Based Dashboard Implementation and 4.D: Prepare and Publish Final Tahoe Annual Report.
- 12. Lake Tahoe Sustainable Communities Program Summary** - Other documents that are an integral part of the sustainability efforts in the Lake Tahoe Region include the Lake Tahoe Regional Plan, Regional Transportation Plan and Sustainable Communities Strategy, and various local government Area Plans. This document provides a summary of these plans, the products described in previous reports in this series, and how they work together within the Sustainability Framework for the Lake Tahoe Region. This serves as the "deliverable" for the SGC Round 2 Sustainable Community Planning Grant Task 2: SB375 Local Planning and Implementation Tool-Kit.

While providing valuable information about the Lake Tahoe Sustainable Communities Program to Lake Tahoe Region stakeholders, this series is also designed to provide a reference for other regions involved in addressing the critical issue of sustainability.

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## CHAPTER 1: INTRODUCTION TO SUSTAINABILITY INDICATORS REPORTING PLAN

The Lake Tahoe Sustainability Indicators Reporting Plan (Reporting Plan) guides the regular reporting of sustainability indicators for Lake Tahoe.

### PURPOSE & USE

The purpose of the Reporting Plan is twofold. First, consistently, accurately and efficiently report sustainability indicators for Lake Tahoe. Second, continually improve sustainability indicator reporting in Lake Tahoe. Regular and consistent reporting enhances trust amongst stakeholders, educates the general public, influences governmental and non-governmental resource allocations, and attracts capital for investments that will increase the sustainability of Lake Tahoe. Continual improvement ensures indicator reporting is updated to reflect changing priorities in Lake Tahoe, which increases demand for sustainability indicator reporting over time.

The primary audience and use of each chapter of the reporting plan are summarized in the following table.

CHAPTER	AUDIENCE	USE
Introduction	All	Gain understanding of the purpose and use of this Reporting Plan
Ch. 2 – Reporting Overview	All	Gain high-level understanding of processes, people, timeline and principles necessary to successfully implement this Reporting Plan
Ch. 3 – Indicator Overview	All	Gain understanding of indicators reported and rationale for reporting those indicators
C. 4 – Reporting & Program Improvement Procedures	Program Management & Staff	Report indicators on schedule, and maintain relevant indicators and streamlined reporting over time
Ch. 5 – Indicator Reporting Protocols	Program Staff	Report indicators accurately and consistently

### Dashboard

The Lake Tahoe sustainability indicators are expected to be reported on the State of the Basin Dashboard website (Dashboard), which is expected to be developed in 2014. The Reporting Plan defines a cost-effective and transparent indicator reporting process to support long-term sustainability of the Dashboard.

The Dashboard is yet to be developed, however it is expected to be targeted to the general public. This target audience desires summary information related to many agencies, plans and programs in Lake Tahoe on a single website to gain an understanding of what is being done to improve the sustainability of Lake Tahoe and how social, economic and environmental characteristics of the Lake Tahoe are reacting to these actions. The Dashboard is expected to present the status and trend of the indicators presented in this Reporting Plan

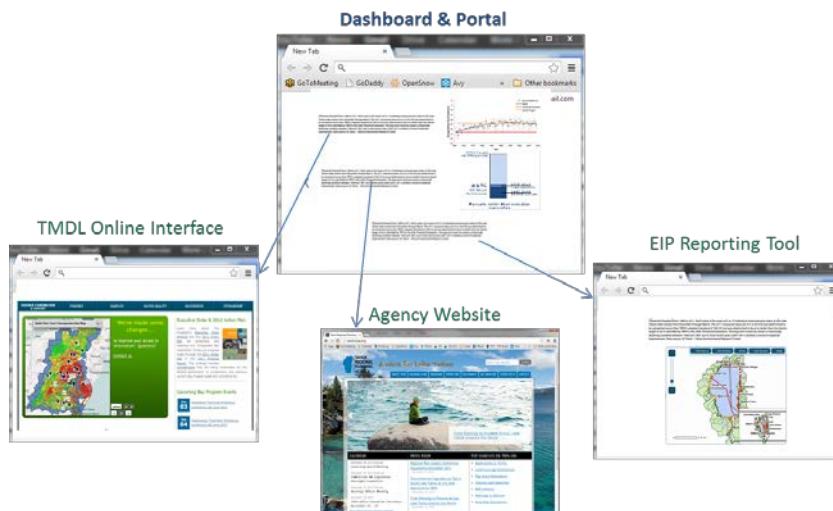


Figure 1: Illustration of the Dashboard serving as a portal for visitors to access more detail related to each indicator

using graphic displays, and accompany the indicators with qualitative descriptions such as why the indicator is important, what is measured by the indicator and additional important context to understand the indicator results. In addition, the Dashboard is expected to provide visitors access to greater detail on topics of their interest by acting as a portal to relevant websites, plans, program information, and science and analysis supporting the indicators. An illustration of the Dashboard serving as a portal to access supporting information is provided in Figure 1.

## USERS

The primary long-term users of the Reporting Plan are the **individuals responsible for regularly reporting and continually improving the sustainability indicators**. These individuals are charged with collecting new data from numerous data sources and producing content to explain changes to indicators. Further, these individuals are charged with collecting, prioritizing and implementing improvements to the reporting of sustainability indicators over time. These individuals are staff at public agencies, non-profit organizations, academic institutions and website development contractors that work collaboratively to execute the Reporting Plan. Most indicators are reported annually, thus these users need detailed instructions that are efficient to use and ensure accurate results are reported during each indicator reporting cycle.

An essential secondary group of users of the Reporting Plan are the **stakeholders that contribute important perspectives to the selection of the indicators included in the Reporting Plan**. These stakeholders assisted in the selection of the initial set of indicators, and will assist in updating the Reporting Plan as priorities change, and more is understood about sustainability in the region. These stakeholders range from public agency management to the engaged public. These stakeholders need to be able to understand the purpose of sustainability indicator reporting and rationale for selecting indicators.

## RELATIONSHIP TO OTHER INDICATOR REPORTING

The indicators in the Reporting Plan are intended to provide a summary understanding of the sustainability of Lake Tahoe. There is an extensive indicator reporting infrastructure in Lake Tahoe, such as the monitoring and reporting underlying the Regional Plan Threshold Indicators used by the Tahoe Regional Planning Agency (TRPA) to understand the status and trend of resources in relation to environmental quality standards. Further, several state and county agencies collect and report useful indicators for Lake Tahoe. The Reporting Plan utilizes these other indicator reporting efforts, and does not create indicators requiring new definitions of measurements, additional performance monitoring and data storage of primary data. In addition, an important purpose of the Dashboard is to make existing indicator reporting more accessible to a broader audience by efficiently directing users to more information related to topics of their interest located on other agency and non-governmental websites.

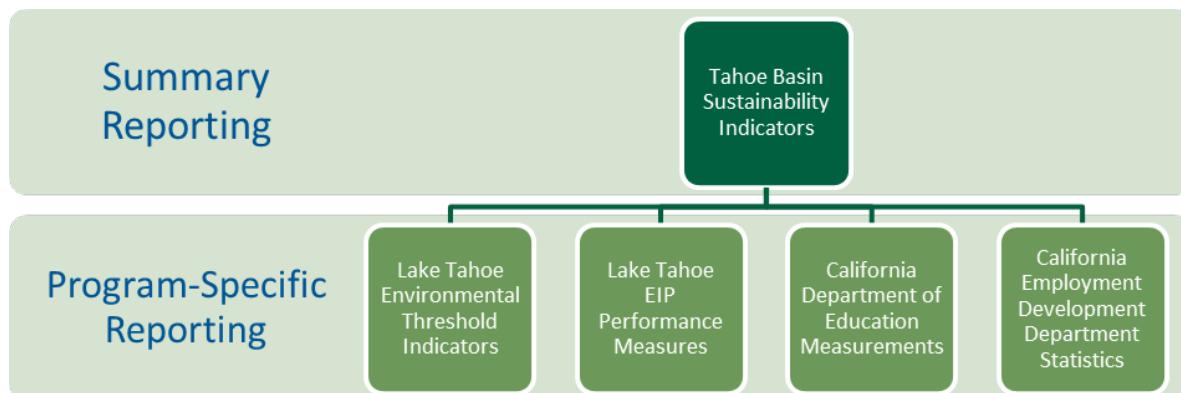


Figure 2: Demonstration of relationship of Lake Tahoe sustainability indicators to other reporting programs (does not include all other reporting programs)

## CHAPTER 2: OVERVIEW OF SUSTAINABILITY INDICATOR REPORTING

Sustainability reporting publishes information about the environmental, economic and social performance of a region so that it influences decision-making processes and inspires general public stewardship. Performance information enhances the understanding of how sustainable the region is and how the sustainability of the region is changing over time by using both quantitative and qualitative information. Performance information also allows for the evaluation of the impacts of strategies and actions, and enables more effective investments in the sustainability of the region. Lastly, reporting performance information attracts capital because it builds investor confidence and enables investors to quantify the performance of their investment and report this performance to their stakeholders.

This chapter contains an overview of the scope, roles and processes necessary to successfully implement this Reporting Plan. In addition, this chapter contains a description of the structure used to organize indicators, terms, and guiding principles that should guide indicator reporting and improvement processes over time.

### SCOPE

The suite of sustainability indicators defined in the Reporting Plan do not report performance information for a specific plan or program, but rather all the plans, programs and projects striving to improve the sustainability of Lake Tahoe.

### ROLES

The organizational structure, primary roles and individuals/groups associated with each role necessary to successfully implement the Reporting Plan are depicted in Figure 3 below.

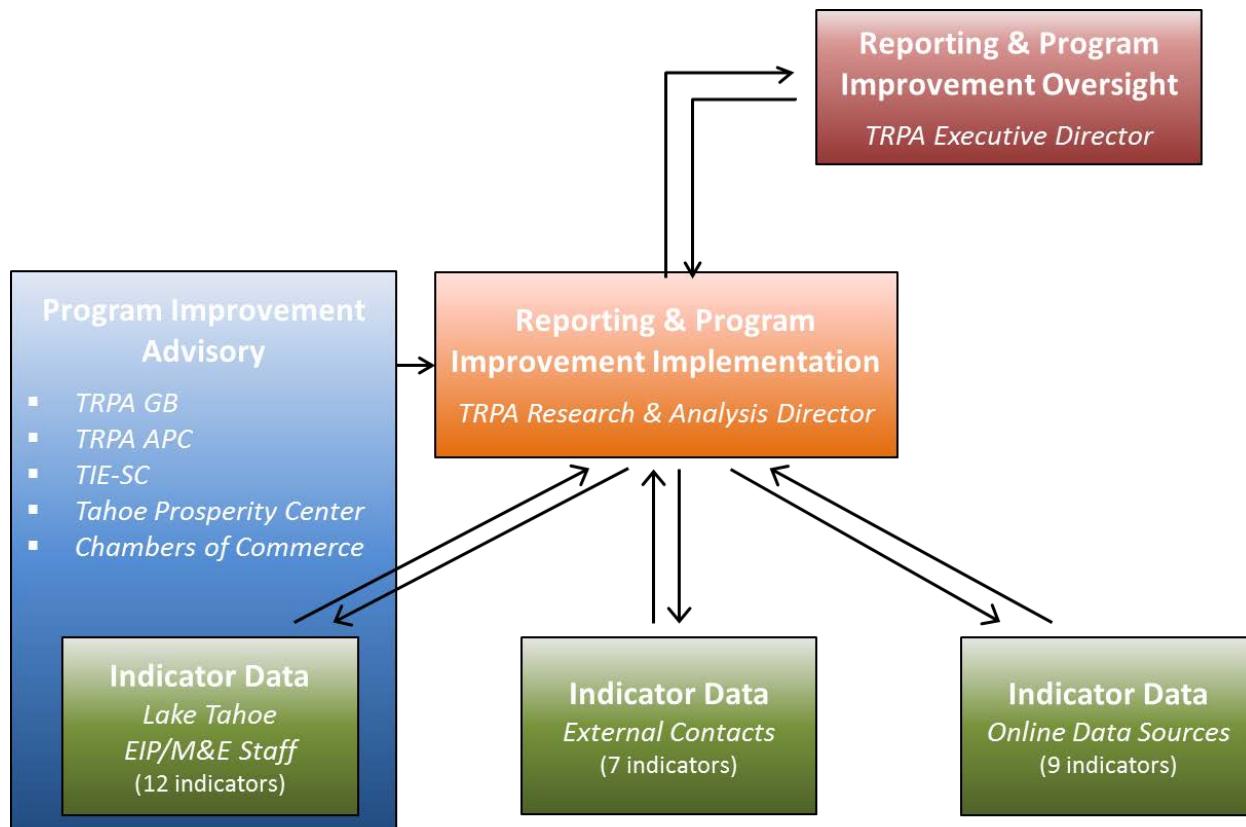


Figure 3: Reporting Plan implementation structure & roles

**Reporting & Program Improvement Oversight:** The group or individual responsible for decisions related to operational improvements and changes that influence policy. This group or individual is engaged by the **Reporting & Program Improvement Implementation** position as needed and can delegate responsibility to other groups or individuals depending on the decision.

**Reporting & Program Improvement Implementation:** The individual responsible for implementing the Reporting Plan, both the annual reporting of sustainability indicators and annual selection and implementation of program improvements. This individual will ensure the procedures outlined in Chapter 4: Reporting & Program Improvement Procedures are thoroughly and consistently followed, and can delegate specific tasks to other individuals, such as the collection of indicator data.

**Program Improvement Advisory:** The groups and individuals responsible for providing program improvement recommendations. Program Improvement Advisory groups and individuals are engaged by the individual responsible for **Reporting & Program Improvement Implementation** to provide input on sustainability indicators and processes, which are prioritized and implemented depending on resources available.

**Indicator Data:** The programs, individuals and websites that compile and own the raw data necessary to report on the sustainability indicators.

## **PROCESSES, SCHEDULE & EFFORT**

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This Reporting Plan is comprised of two primary processes in order to report sustainability indicators and improve sustainability reporting as needed:

- 1) Report Lake Tahoe Sustainability Indicators
- 2) Improve Lake Tahoe Sustainability Reporting

These processes are comprised of set of procedures implemented on an annual basis. The schedule for implementing these processes and procedures is depicted in Figure 4 below, along with key events driving the annual schedule and the expected minimum effort required by month. The procedures necessary to report indicators are labeled in blue and the procedures for improving the reporting program are labeled in green. Key events are labeled in red, and the minimum estimated monthly effort is illustrated by the background color of each month. Effort can be less than estimates if the individuals implementing the procedures are intimate with the procedures, while the effort could be significantly greater if the number of indicators to report is increased, new or improved indicators require additional monitoring and analysis, or significant improvements to the reporting process are selected for implementation. Each procedure in Figure 4 is described in detail in Chapter 4: Reporting & Program Improvement Procedures.

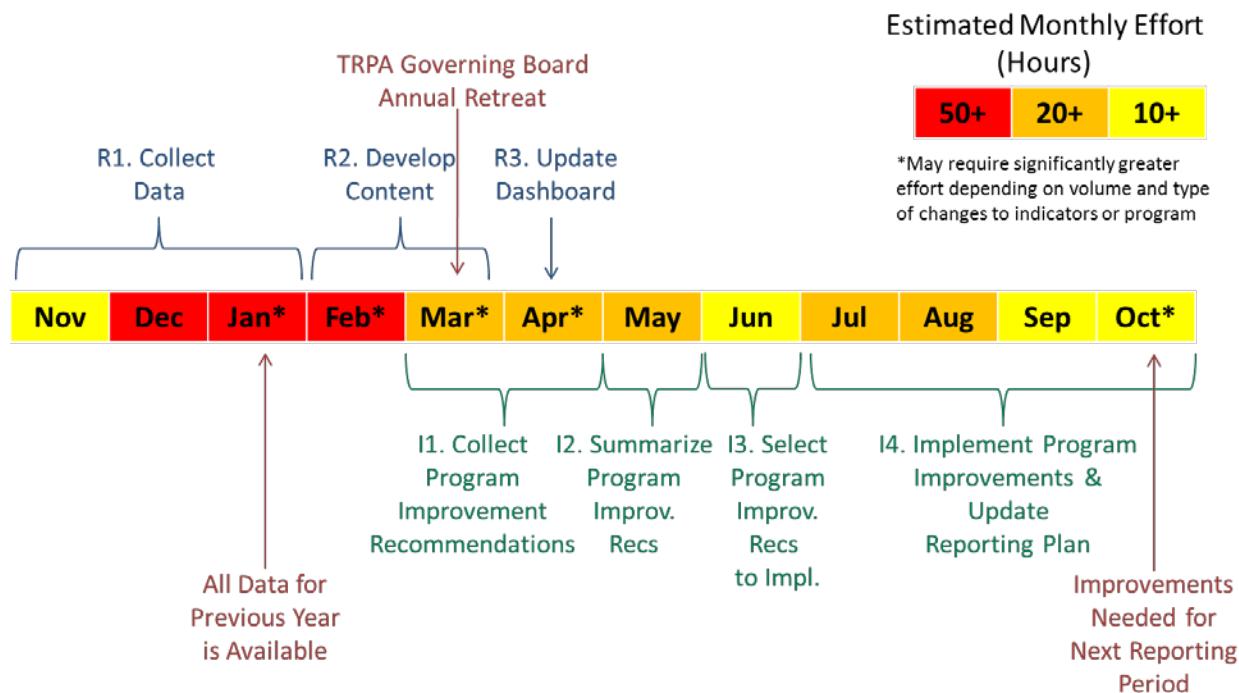


Figure 4: Reporting plan processes, procedures, schedule and effort

### Key Events & Adaptive Management

Key events drive the schedule depicted in Figure 4. First and foremost, the highest return on any investment in reporting of indicators is generated when the indicators influence decision-making processes. In addition, an annual report with indicators that include data from the previous calendar year is intuitive to general audiences. So it is important to get started on collecting data as early as data for the reporting year become available (in the fall for some indicators), and finish the collection of data soon after all data become available (by the end of January). This allows the indicators to be used at the TRPA Governing Board Annual Retreat (in March) and the Dashboard to be updated soon after the end of the reporting year and contextual content is produced (in April).

Indicator reporting becomes irrelevant and less valuable to decision makers over time if indicators are not continually improved as priorities change and identified issues are not addressed. Further, adaptive management becomes more and more difficult and ultimately impractical if some adaptive management is not implemented on a regular and consistent basis. Thus, it is essential that the *Process to Improve Lake Tahoe Sustainability Reporting* is implemented annually and program improvement recommendations are drafted and reviewed by the group or individual in the *Reporting and Program Improvement Oversight* role, even if no improvements are selected for implementation. Note that program improvements must be completed by before the next annual reporting process (end of October) to be incorporated in the next reporting of indicators. To invest limited resources in the most beneficial program improvement recommendation, it is useful to request program improvements soon after the data are provided by technical staff, used by decision makers and made accessible to stakeholders (March through April).

## INDICATOR ORGANIZATION & TERMS

An intuitive and consistent structure and set of terms to organize indicator communication increases the ability for the indicators to be understood by stakeholders. The structure and terms used in this Reporting Plan are outlined in this section.

### Pillars and Aspects of Sustainability

The sustainability indicator reporting structure illustrated in Figure 5 depicts how indicator information is organized in the Reporting Plan and will be used to communicate performance information (e.g. on the Dashboard). The reporting structure is comprised of pillars, aspects and indicators. **Pillars** emphasize the core elements of sustainability and ensure a balanced assessment of the sustainability of the region. The three pillars of sustainability are: Economy, Environment, Community (also referred to as Social or Equity in some sustainability reporting frameworks). **Aspects** are the environmental, economic and social subjects that are most important to the sustainability Lake Tahoe. For example, social aspects could include housing, transportation, education, public safety, food, health care, etc. **Indicators** are measurable variables used to represent the status and trend of each aspect, and what is being done to improve each aspect. Aspects and indicators are often related to more than one pillar or aspect, respectively; however, to simplify the reporting structure, aspects will be associated to the most related pillar and indicators the most related aspect.

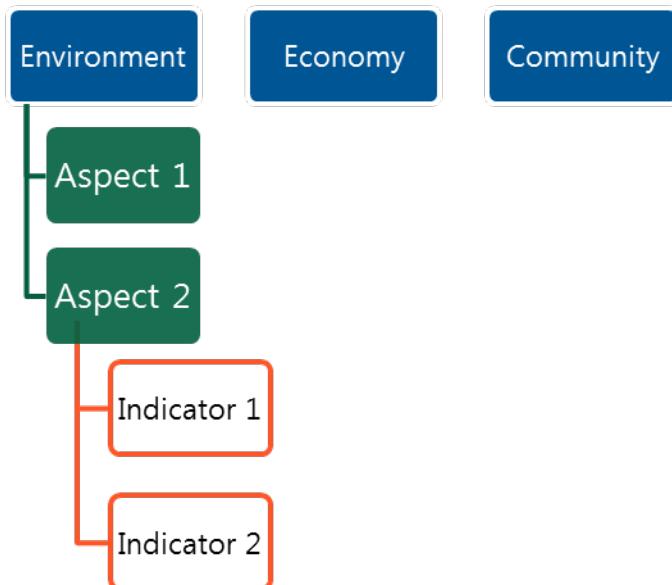


Figure 5: Lake Tahoe Sustainability Indicator Reporting Structure

## Types of Indicators

Two types of indicators are used for sustainability reporting in order to provide an understanding of what is being done to improve the sustainability of Lake Tahoe, and how Lake Tahoe is doing in relation to its sustainability goals. **Action indicators** are used to report on the investments and accomplishments intended to improve the sustainability of the region. These investments and accomplishments include policies, programs, and projects. **Outcome indicators** are used to report progress in relation to the environmental, economic and social goals that define sustainability of Lake Tahoe. Figure 6 illustrates the relationship between aspects, action indicators and outcome indicators.

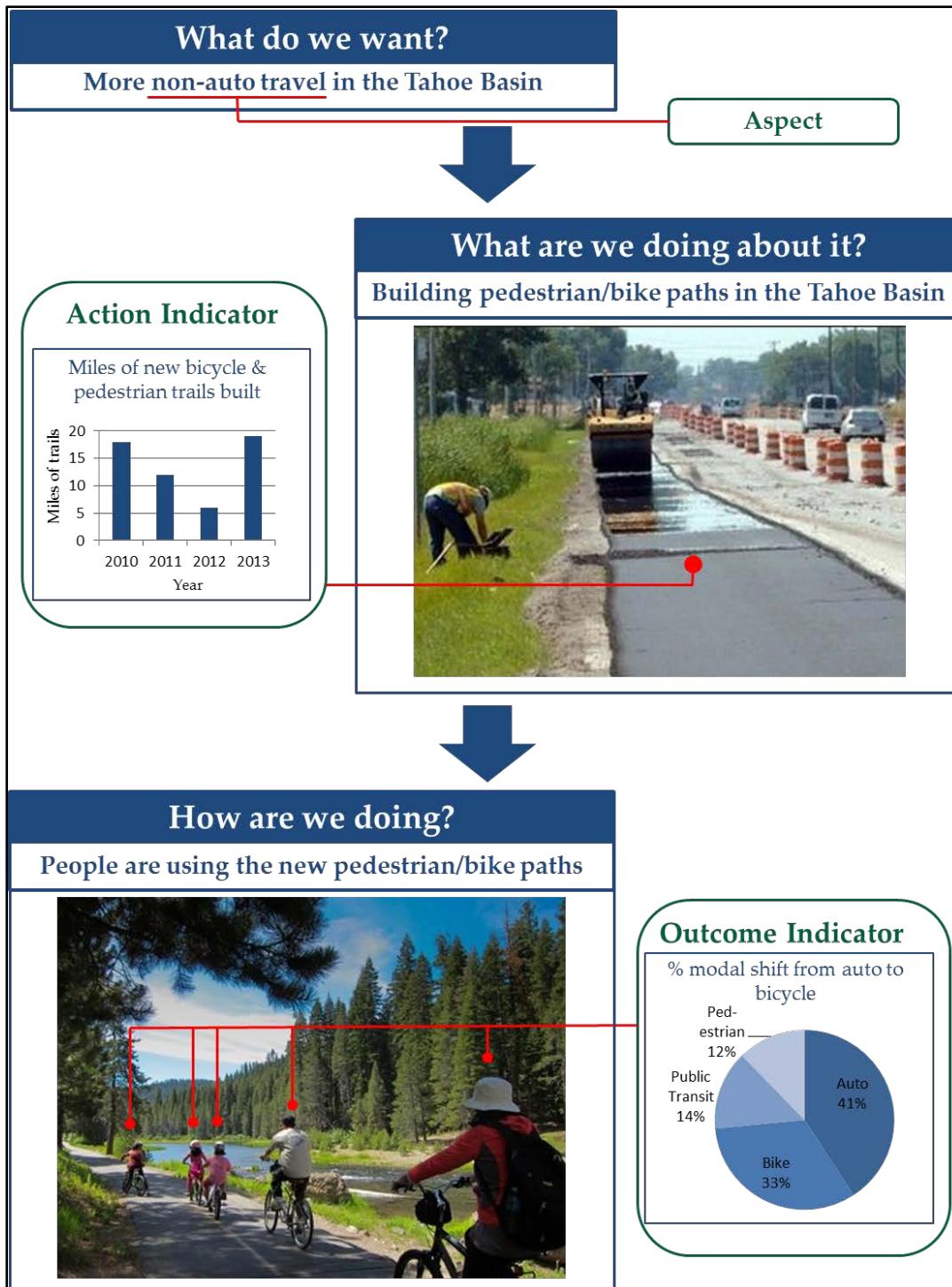


Figure 6: Relationship between aspects, action indicators and outcome indicators

## GUIDING PRINCIPLES

Guiding principles direct sustainability reporting efforts to ensure the presentation of consistent and accurate performance information. The guiding principles<sup>1</sup> guide decisions throughout the sustainability reporting process, ranging from the selection of aspects to the descriptions of indicator results reported.

### Relevance

Sustainability aspects must substantively impact human and natural systems in the Lake Tahoe. Relevance reflects both the importance of stakeholders in the region and the local, state and federal governmental agencies. Existing reporting efforts, diverse and inclusive stakeholder input, and the latest science are used to determine whether an aspect is relevant. Aspects are reviewed regularly to ensure the performance information reported is material at the time of each reporting cycle.

### Completeness

Comprehensive indicator information on the sustainability of Lake Tahoe is reported, which is dependent on dimensions of scope, boundary, and time. Scope refers to range and balance of aspects reported; aspects present a balance of environmental, economic and social topics, and reporting reflects positive and negative sustainability indicators to provide an accurate and unbiased presentation of sustainability. Boundary refers to the range of sectors, organizations and geographical areas included in reporting. Time refers to the appropriateness of the time period used to report a particular indicator.

### Accuracy

Indicator reporting must be sufficiently accurate to be used in decision-making processes and build trust with stakeholders. Quantitative reporting is supported by appropriate and documented methods for data collection, analysis and reporting. Qualitative reporting is clear, balanced and consistent.

### Comparability

Indicators are reported consistently and in a manner that allows changes over time to be easily understood. Performance goals or targets for actions and outcome indicators are defined and reported as needed to understand the status of the indicator in relation to desired end results, and enable incorporation of the results in decision-making processes. Data collection, analysis and reporting methods are documented and accessible to ensure reporting consistency over time, build confidence in stakeholders and minimize reporting costs.

### Timeliness

Indicator information is updated on a regular and consistent schedule. Indicator information is available sufficiently in advance of key decision-making processes to influence sustainability-related decisions.

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<sup>1</sup> Guiding principles are based on the Global Reporting Initiative principles for defining reporting content and ensuring report quality.

## CHAPTER 3: INDICATOR SUMMARY

The indicators reported by this Reporting Plan are presented in this chapter and grouped by the material aspects of sustainability for Lake Tahoe. A summary of the approach used to select aspects and indicators is provided to gain an understanding of how the indicators were selected. In addition, the relevance of each indicator and aspect is described to understand why each indicator is important to report on a regular and consistent basis.

### ASPECT AND INDICATOR SELECTION

The approach used to select the initial set of aspects and indicators is summarized in this section. This approach is also utilized in the annual process for improving sustainability reporting defined in Chapter 4: Reporting & Program Improvement Procedures.

The initial set of indicators reported by this Reporting Plan was selected through a two-step process. First, the most important aspects of sustainability in Lake Tahoe were selected to ensure the indicators selected reflect the sustainability priorities of Lake Tahoe. Second, one to three indicators were selected to reflect how sustainable the region is and what is being done to improve each aspect. Both steps of this process included a rigorous review of existing and relevant planning and reporting initiatives to generate an initial prioritization of aspects and indicators; and facilitated stakeholder feedback to leverage subject matter expertise and select the final aspects and indicators based on current priorities.

A key goal of the indicator selection process was to select a manageable number of indicators to ensure the Lake Tahoe sustainability indicators can be updated and reported regularly over time. Collecting data, conducting analysis and producing reporting content requires significant effort and resources. Further, not only does focusing on a manageable number of aspects reduce long-term reporting costs, it also increases the likelihood that indicator information is used in decision-making processes. Decision-makers and the general public can only digest a limited number of indicators, and the greater number of indicators reported dilutes the importance of each indicator. New York City, a complex municipality, is a valuable benchmark and includes a total of 29 indicators in 2011 PlanNYC.<sup>2</sup> Therefore, the objective was to select approximately 10 aspects for sustainability indicator reporting for Lake Tahoe because it was expected that at least one Outcome indicator and up to two Action indicators would be selected for each aspect, which would mean between 20-30 indicators would be included in this Reporting Plan.

#### Aspect Selection Criteria

The selection of aspects used the following set of criteria to determine the materiality of each aspect to Lake Tahoe:

**Local Concern** – The local concern is determined by the frequency the aspect is identified in local planning and performance information reporting sources in Lake Tahoe. Local plans and indicator development processes are typically led by governmental agencies through robust stakeholder engagement processes, thus the interests of the local community are a key element of what is included in these plans and indicator development processes. Nearly a dozen sources were reviewed which ranged from the Lake Tahoe Watershed Sustainability Measures Report to the Regional Transportation Plan: Mobility 2035.

**National Concern** – The national concern is determined by the frequency the aspect is identified in established sustainability reporting standards and indexes, and sustainability performance reports published by other communities. Nearly a dozen standards and sustainability reports were reviewed that ranged from the STAR Community Index to the Urban Footprint Model.

<sup>2</sup> PlaNYC is accessible at <http://www.nyc.gov/html/planyc2030/html/theplan/the-plan.shtml>

**Agency/Legal Mandate** – The agency/legal mandate is determined by known legally-binding agency mandates that affect Lake Tahoe agency actions. Mandates range from lake clarity standards dictated in the Lake Tahoe TMDL to the greenhouse gas reduction targets in California Assembly Bill 32, the California Global Warming Solutions Act.

Appendix A documents the Aspect selection process, and provides 1) a complete list of sources used in the evaluation, 2) the specific numeric criteria for local and national concern criteria described above, 3) the results of the initial prioritization of aspects, and 4) the stakeholder feedback received and decisions related to incorporating stakeholder feedback by the Tahoe Basin Partnership for Sustainable Communities.

### **Indicator Selection Criteria**

The selection of indicators used the following set of criteria to determine practical indicators that best reflect the sustainability of each material aspect of sustainability for Lake Tahoe:

**Relevance** – The relevance is determined by the degree an outcome indicator represents the condition of the aspect, or the magnitude of influence that an action has on the condition of an aspect.

**Utility** – The utility is determined by the degree an outcome indicator provides value in decision making processes that influence investment in Lake Tahoe, or the degree that actions can be augmented within a single year.

**Feasibility** – The feasibility is determined by the expected level of effort required to report the indicator on an annual basis.

**Reliability** – The reliability is determined by the degree the indicator can be reported consistently and accurately from year to year.

The specific numeric criteria for each criterion described above and the results of the initial prioritization of indicators amended with stakeholder feedback are provided in Appendix B.

## ASPECTS AND INDICATORS

The indicators used to report the condition of and actions taken to improve the material aspects of sustainability in Lake Tahoe are presented in Figure 7. Each aspect and indicator is described in this section along with a summary of the rationale for selection of each aspect and indicator. The aspects are organized by sustainability pillar to demonstrate equitable focus on each pillar.

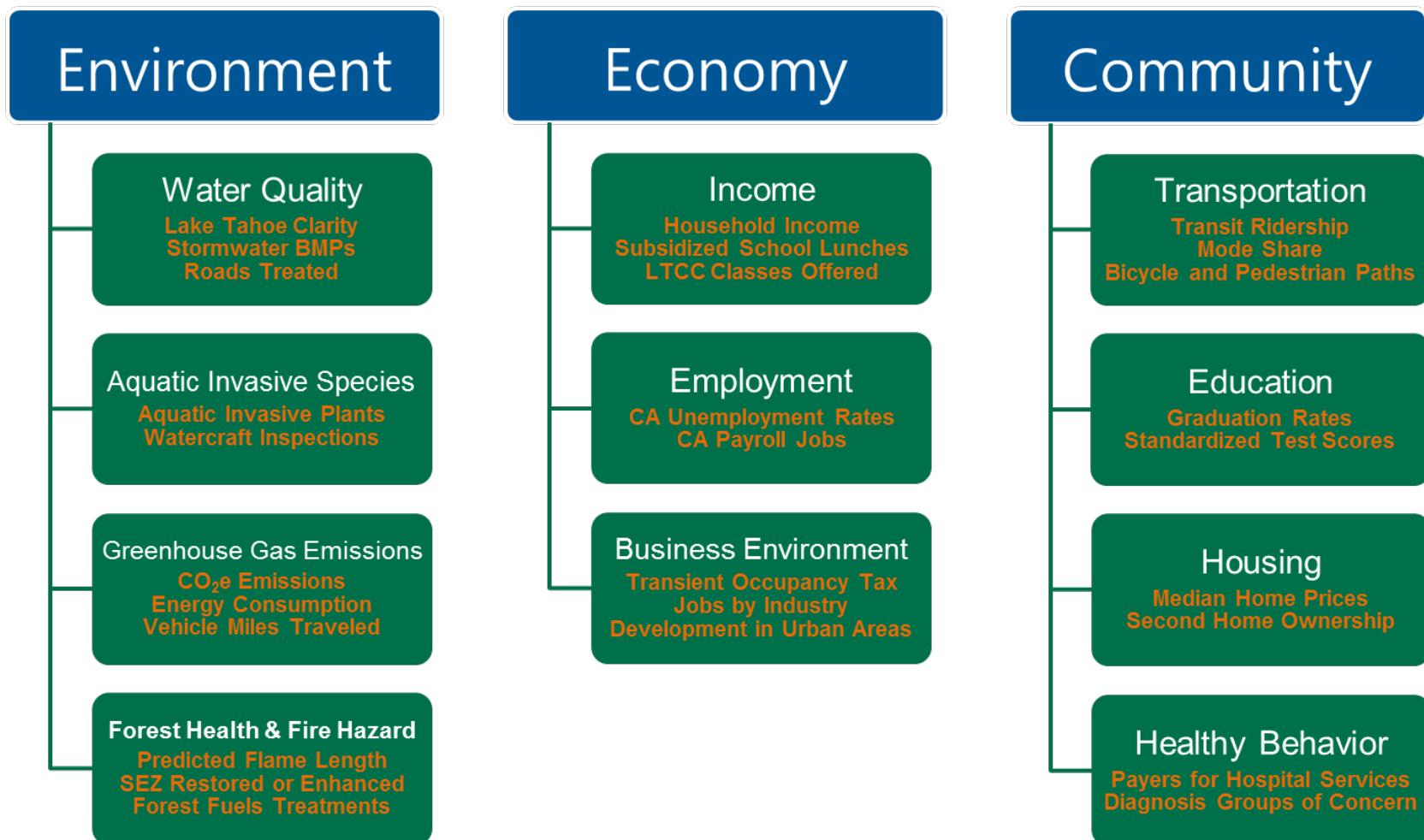


Figure 7: Summary of aspects and indicators by pillar

## PILLAR #1: ENVIRONMENT

### WATER QUALITY

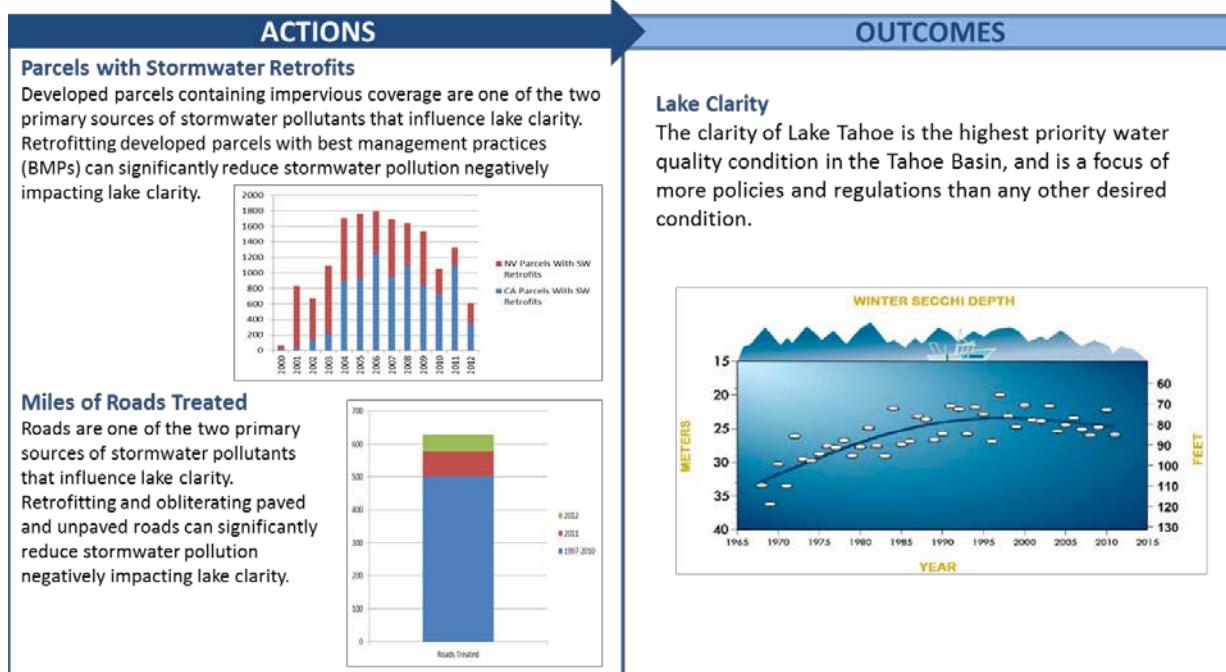
#### *Why is this aspect important?*

Pollution and degradation of water quality can adversely impact aquatic habitats and cause illness for people swimming or recreating in the waters. Clean water is not only a key aspect of environmental and human health, but also is an economic driver of recreation and tourism. Lastly, treating polluted waterbodies can be a significantly greater economic cost than reducing pollutants from entering waterbodies.

#### *Why is this aspect selected to be reported?*

Local concern for water quality is high relative to other sustainability issues in Lake Tahoe, as reflected by appearing in eight of the local sources reviewed. Many indicators are used to gauge watershed health, and water quality is the most widely used in Lake Tahoe. Water quality is also of high concern nationally appearing in three of the sustainability standards and three of the other community plans reviewed. Lastly, there are several mandates directing local agencies to monitor and report on water quality for Lake Tahoe and its tributaries. The Lake Tahoe TMDL pushes forward water quality policies that will direct agencies to plan for, enforce and implement water quality controls over the next 65 years.

#### *What indicators are used to report this aspect and why?*



## AQUATIC INVASIVE SPECIES

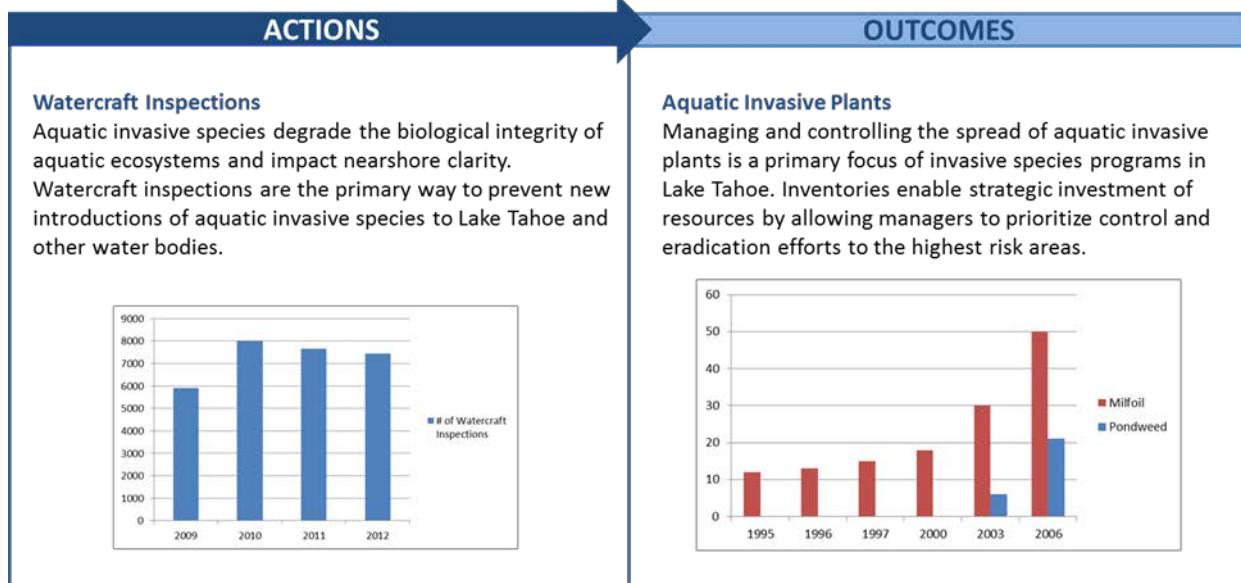
### *Why is this aspect important?*

Aquatic invasive species threaten the diversity and abundance of native species and the ecological stability of infested waters. Aquatic invasive species also can have adverse impacts on commercial and recreational activities, and public services such as drinking water infrastructure that are costly to control. Control of aquatic invasive species and strengthening of native populations is crucial to maintaining healthy aquatic ecosystems and prosperous economy.

### *Why is this aspect selected to be reported?*

Local concern for aquatic invasive species is moderate relative to other sustainability issues in Lake Tahoe appearing in four of the local sources reviewed. Aquatic invasive species are of moderate concern in sustainability planning nationally, appearing in four of the sustainability standards and other community plans reviewed. Aquatic invasive species are of higher concern in communities where water bodies are an important environmental and economic resource. Lastly, the Endangered Species Act requires agency mandates for native species protection, and aquatic invasive species are gaining greater federal and state attention.

### *What indicators are used to report this aspect and why?*



## GREEN HOUSE GAS (GHG) EMISSIONS

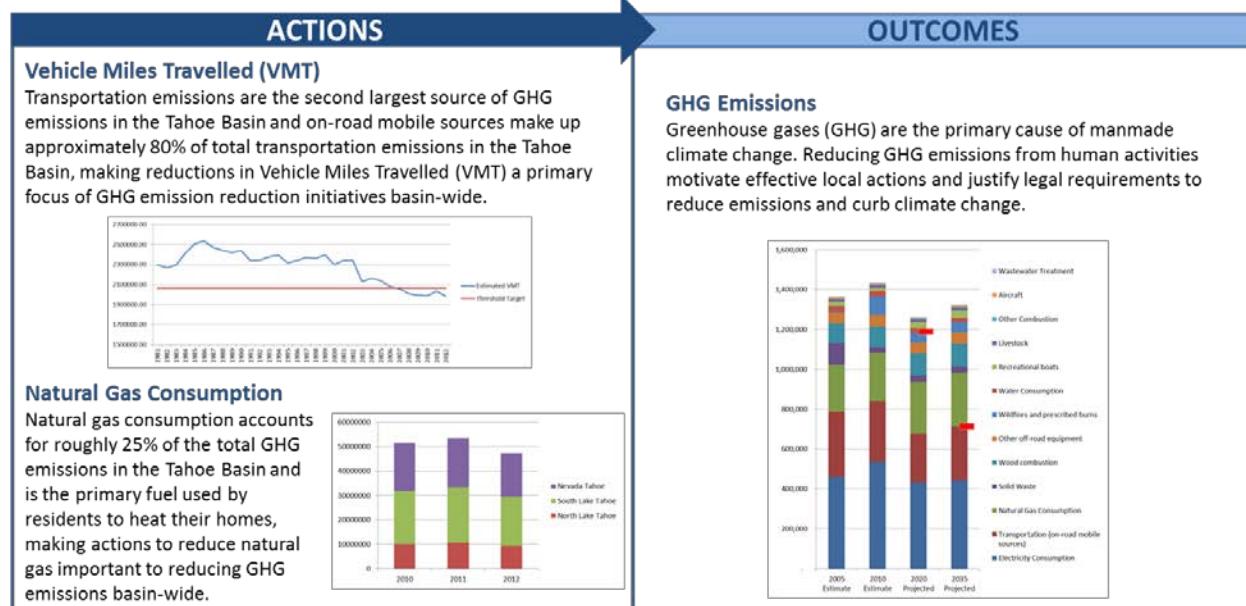
### *Why is this aspect important?*

Increased levels of greenhouse gases (GHG), including the largest contributor, carbon dioxide (CO<sub>2</sub>), are the primary cause<sup>3</sup> of manmade climate change. While some GHGs enter the atmosphere through nature's carbon cycle, the majority come from human activities such as the burning of fossil fuels and deforestation. Climate change causes seasons to shift and storm events to be intensified, and modifies natural temperatures and precipitation levels, which alters the ecosystems that support us and other terrestrial and aquatic species.

### *Why is this aspect selected to be reported?*

Local concern for reducing greenhouse gas emissions is moderate relative to other sustainability issues in Lake Tahoe, as reflected by appearing in three of the local sources reviewed. Greenhouse gas emissions are of high concern in sustainability planning nationally, appearing in five sustainability standards and three other community plans reviewed. Lastly, California currently has several mandates for reducing greenhouse gas emissions, such as California's Global Warming Solutions Act (AB 32) which requires the state to reduce GHG emissions to 1990 levels by 2020.

### *What indicators are used to report this aspect and why?*



<sup>3</sup> Indicators for a Sustainable San Mateo County

## FOREST HEALTH

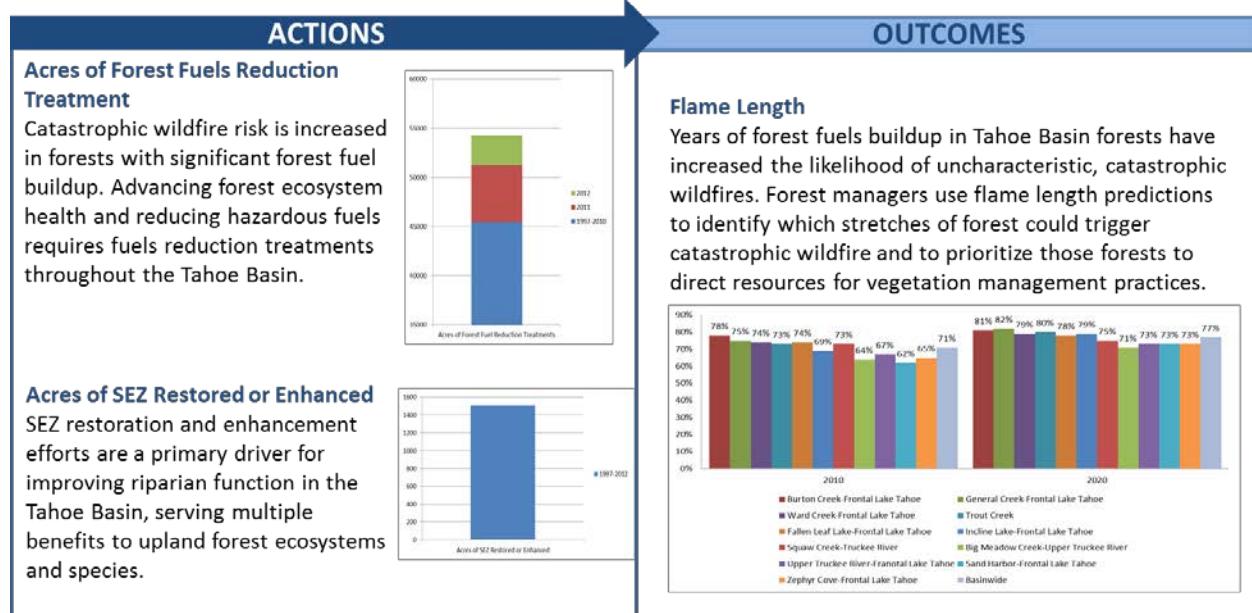
### *Why is this aspect important?*

Healthy forests maintain their unique species and ecological function, as well as the ability to accommodate current and future needs of people. Unique species include both fauna and flora, and ecological function ranges from climate regulation to flood control. Healthy forests also provide directly value to humans through spiritual and recreational use. Forests with accumulated forest fuels reduce vegetative growth on the forest floor and increase the likelihood of catastrophic wildfire which poses a serious threat to terrestrial ecosystems and community infrastructure.

### *Why is this aspect selected to be reported?*

Local concern for forest health is high relative to other sustainability issues in Lake Tahoe, as reflected by appearing in six of the local sources reviewed. With the vast majority of land in Lake Tahoe covered by forest, forest health is a primary focus of several state and federal agency actions. Forest health is also of high concern nationally appearing in three of the sustainability standards and two of the other community plans reviewed. Lastly, there are several mandates directing state and federal agencies to monitor and report on forest health for Lake Tahoe forests.

### *What indicators are used to report this aspect and why?*



## PILLAR #2: ECONOMY

### EMPLOYMENT

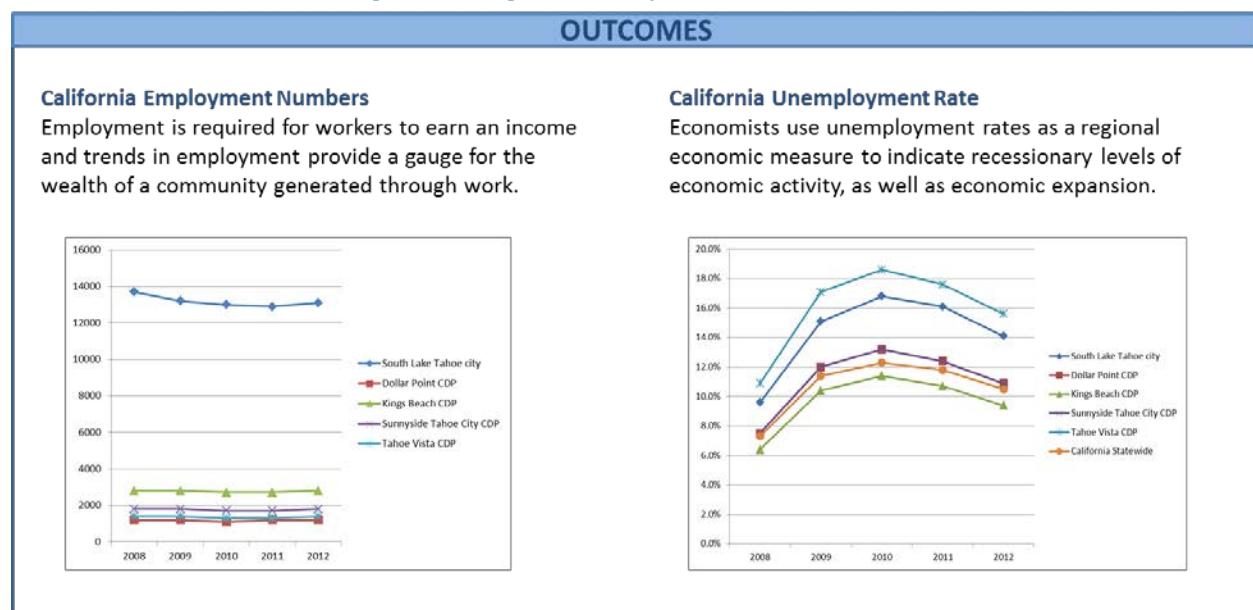
#### *Why is this aspect important?*

Employment provides members of a community the ability to earn a living for their families and meet their financial obligations. Failure to meet financial obligations may lead to lower quality of life, poor health, foreclosure on homes and even homelessness. Further, a decrease in employment levels is a signal that a community is not using its labor resources and can have negative impacts on a community including higher crime rates. Low employment levels also mean workers may be losing their skills and causing a loss of human capital in a community.

#### *Why is this aspect selected to be reported?*

Local concern for employment is moderate relative to other sustainability issues in Lake Tahoe, as reflected by appearing in four of the local sources reviewed. The limited number of economic focused sources reviewed should be noted. Employment is of high concern in sustainability planning nationally, as reflected by appearing in five of the sustainability standards and two of the other community plans reviewed. Lastly, there are no current mandates related to employment that affect local agencies, but unemployment levels are closely monitored by state and federal authorities.

#### *What indicators are used to report this aspect and why?*



## INCOME

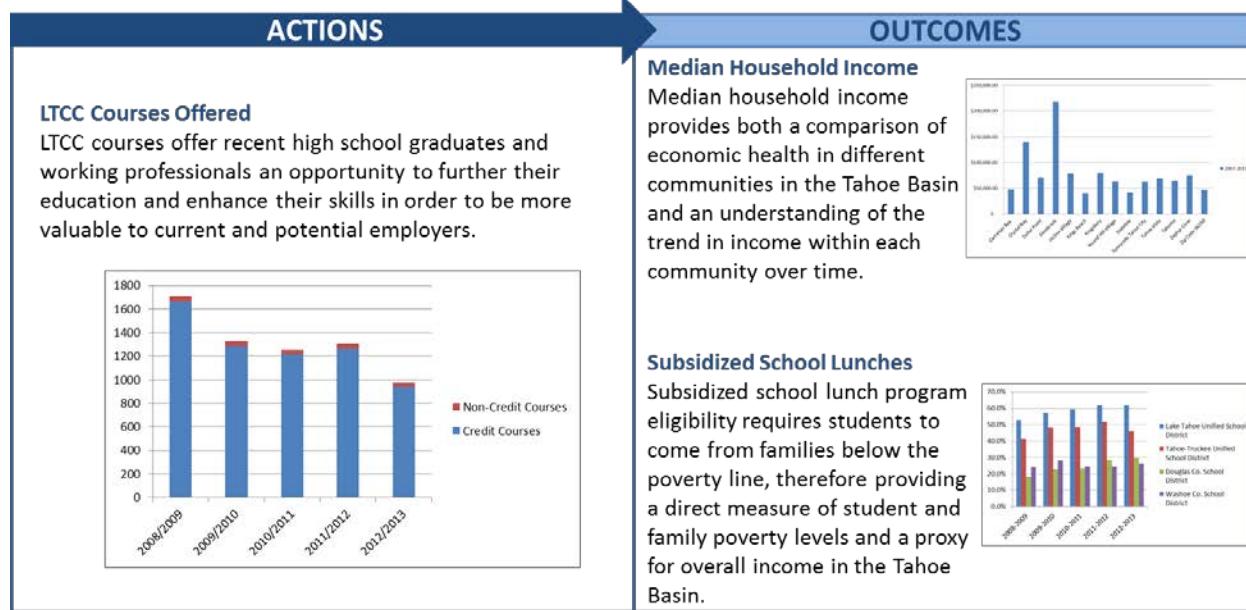
### **Why is this aspect important?**

Income is an important measure of standard of living and wealth distribution. Financial well-being is commonly linked with higher social and community participation, educational attainment, and quality of the natural environment. Households with higher income tend to choose areas with more positive attributes, including environmental and social amenities. A widening gap in the income distribution is associated with other forms of exclusion such as lack of quality education and health care, and may even be associated with reduced economic growth potential.

### **Why is this aspect selected to be reported?**

Local concern for income is moderate relative to other sustainability issues in Lake Tahoe, as reflected by appearing in two of the local sources reviewed. The limited number of economic focused sources reviewed should be noted. Income is of moderate concern for sustainability planning nationally, appearing in three of the sustainability standards and two of the other community plans reviewed. Lastly, there are no current agency mandates directing revenue reporting, and there will likely be no agency mandates in the future.

### **What indicators are used to report this aspect and why?**



## BUSINESS ENVIRONMENT

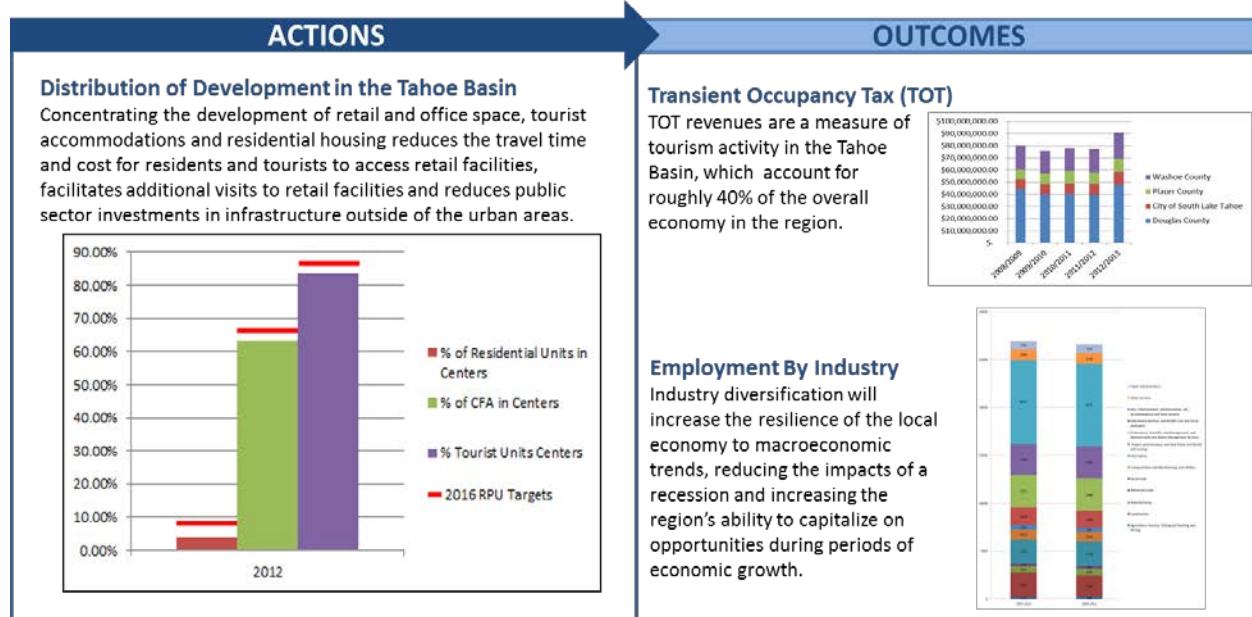
### *Why is this aspect important?*

The business environment within a community influences the financial health and employment opportunities of its residents, as well as the character of the community and the conservation of natural resource. The business environment determines the success of existing businesses, and the ability to attract new businesses. Both of which are important to create employment opportunities for residents and generate tax revenues for investment in sustainable public infrastructure. In addition, the success of businesses facilitates less exploitation and more investment in natural resources that businesses and communities rely on. It is important that the business environment promotes essential industries, like tourism in Lake Tahoe, as well as create diversity in the economy so that the economy is better equipped to withstand macro-economic downturns.

### *Why is this aspect selected to be reported?*

Local concern for tourism is moderate relative to other sustainability issues in Lake Tahoe, as reflected by appearing in three of the local sources reviewed. The limited number of economic focused sources reviewed should be noted. Tourism is of low concern in sustainability planning nationally, as reflected by appearing in only one of the sustainability standards and one of the other community plans reviewed; however the importance of tourism is very community specific. Lastly, there are no current agency mandates directing visitor volume reporting, and it is unlikely that there will be an agency mandate in the future.

### *What indicators are used to report this aspect and why?*



## PILLAR #3: COMMUNITY

## **HOUSING**

### ***Why is this aspect important?***

A lack of affordable housing limits the ability of people to live close to work and can reduce the availability of qualified workers for local businesses. In response to high housing prices, local workers may be forced to choose between living outside the region and facing long commutes or paying more than they can afford for housing. Commuting from outside the basin increases greenhouse gas emissions and impacts quality of life.

### ***Why is this aspect selected to be reported?***

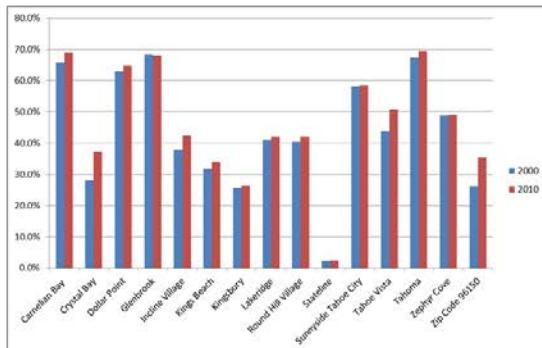
Local concern for housing affordability is high relative to other sustainability issues in Lake Tahoe, as reflected by appearing in five of the local sources reviewed. With a large number of vacation homes and limited full-time housing, local residents have expressed concern about the availability of affordable housing and this has been captured in several local plans. Housing affordability is also a high concern in sustainability planning nationally, as reflected by appearing in six of the sustainability standards and three of the community plans reviewed. Lastly, the California's Senate Bill 375 requires cities and counties to develop plans that link transportation and housing needs within their housing elements.

*What indicators are used to report this aspect and why?*

## OUTCOMES

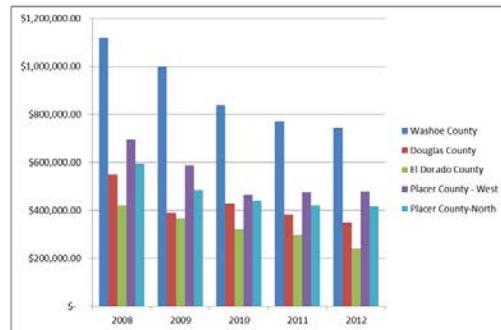
## **Second Home Ownership**

**Second home owners contribute less to the local economy, are less likely to invest resources into community services and facilities and generally increase land values reducing both the availability and affordability of homes in the Tahoe Basin.**



## Median House Prices

Median house prices provide an idea of the price of real estate in a certain area, and determine the affordability of housing for local residents and individuals and families considering moving to Lake Tahoe.



## NON-AUTOMOBILE TRANSPORTATION

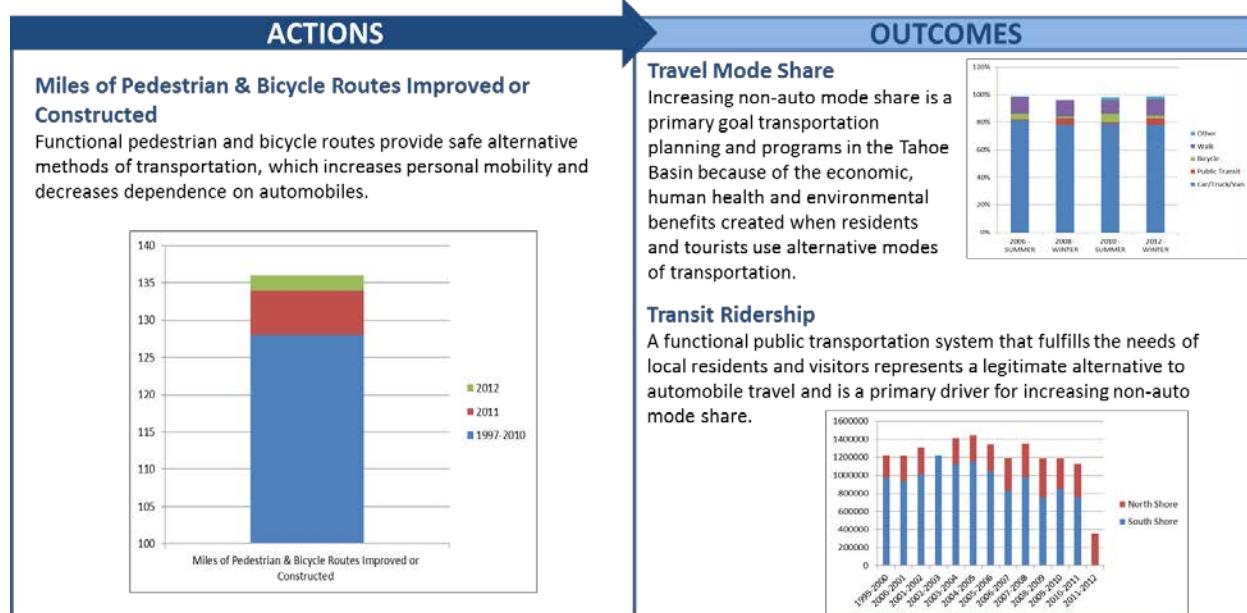
### *Why is this aspect important?*

Motor vehicles are one of the largest sources of air pollution in Lake Tahoe, impacting air quality, water quality and public health. In addition, motor vehicles are the second largest source of greenhouse gas emissions in Lake Tahoe according to the Regional Greenhouse Gas Inventory for the Lake Tahoe Basin, and are a leading cause of injuries. Traffic congestion lengthens commute times, reduces worker productivity, and causes increased air pollution for nearby residents. Alternative transportation such as public transit, carpooling, walking, and biking can improve regional air quality, neighborhood vitality, and public health.

### *Why is this aspect selected to be reported?*

Local concern for increasing non-automobile transportation share is high relative to other sustainability issues in Lake Tahoe, as reflected by appearing in seven of the local sources reviewed. It is also a high concern for sustainability planning nationally, as reflected by appearing in five of the sustainability standards and three of the other community plans reviewed. Lastly, California currently has several greenhouse gas mandates that focus on emission reductions from mobile sources which impact several agencies in the basin.

### *What indicators are used to report this aspect and why?*



## EDUCATION

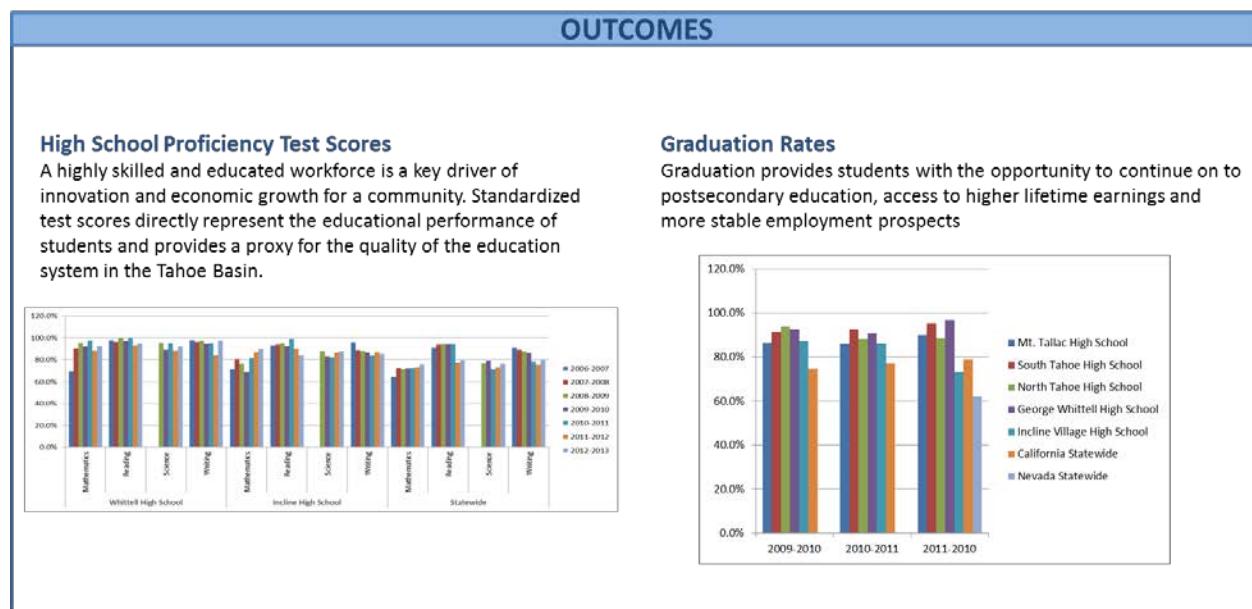
### **Why is this aspect important?**

A highly skilled and educated workforce is a key driver of economic growth and strong community. Attracting educated and qualified workers to the community, as well as educating and retaining the youth of the community will enable economic growth. Education enables the youth of a community to earn a living wage and creates opportunities for upward economic mobility. Education also helps youth become more productive members of society, and increases the human capital of a community.

### **Why is this aspect selected to be reported?**

Local concern for education is moderate relative to other sustainability issues in Lake Tahoe, as reflected by appearing in three of the local sources reviewed. However, it was defined in the Lake Tahoe Watershed Sustainability Measures Project, which is a primary source for economic and social sustainability factors in the Basin. Education is of low concern for sustainability planning nationally, appearing in one of the sustainability standards reviewed and two of the other community plans reviewed. Lastly, there is no current legal or agency mandate directing agencies to focus on education.

### **What indicators are used to report this aspect and why?**



## HEALTHY BEHAVIOR

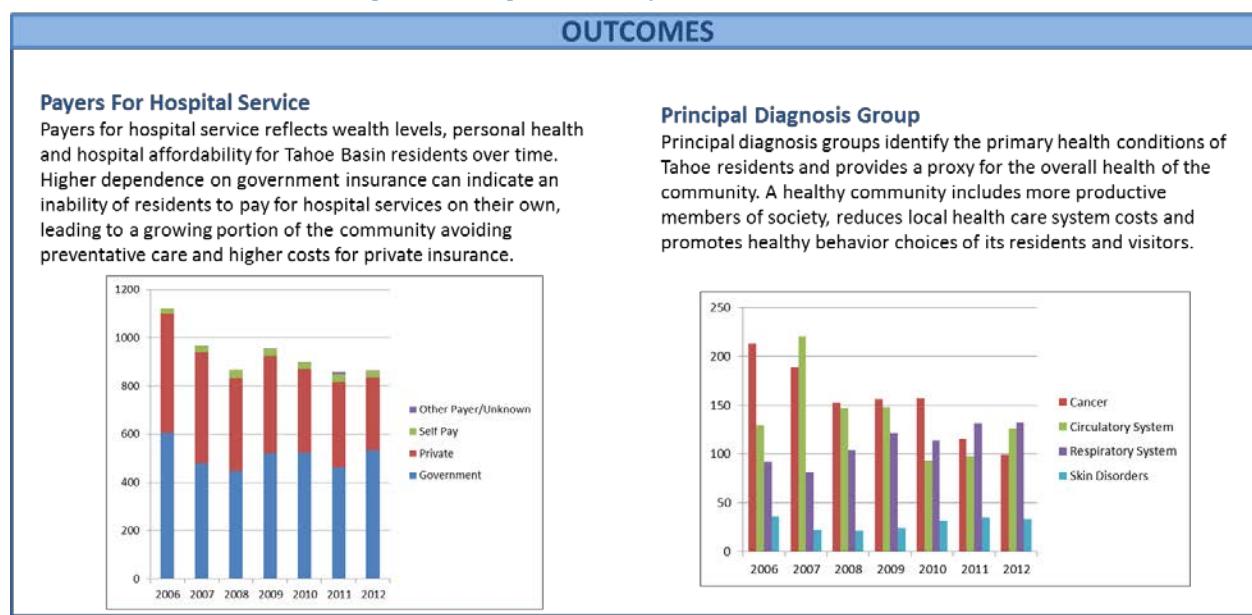
### ***Why is this aspect important?***

Chronic diseases, including cancer, heart disease, diabetes, and chronic respiratory disease, are the leading causes of death and disability in the United States. With the aging of the country's population, chronic diseases will become more prevalent and place a growing burden on the local healthcare system. Lifestyle behaviors including poor nutrition, tobacco use, and lack of physical activity are responsible for increases in chronic disease, increasing cases of premature death and placing a growing burden on local healthcare systems. Healthy behavior, such as regular exercise and healthy food consumption, as well as access to high quality, affordable medical care, reduces the likelihood of chronic disease and lowers mortality rates.

### ***Why is this aspect selected to be reported?***

Local concern for healthy behavior is low relative to other sustainability issues in Lake Tahoe, as reflected by appearing in two of the local sources reviewed. However, it was defined in the Lake Tahoe Watershed Sustainability Measures Project, which is a primary source for economic and community sustainability factors in the Basin. Healthy behavior is of high concern for sustainability planning nationally, appearing in five of the sustainability standards reviewed and three of the other community plans reviewed. Lastly, there is no current legal or agency mandate directing agencies to focus on healthy behavior.

### ***What indicators are used to report this aspect and why?***



## CHAPTER 4: REPORTING & PROGRAM IMPROVEMENT PROCEDURES

This chapter defines the Reporting Plan processes, including the specific procedures and associated tools used to implement the processes. Table 1 summarizes the processes and procedures.

Table 1: Summary of procedures and processes

PROCESS	DESCRIPTION	LEAD ROLE	PROCEDURES	TOOLS	OUTCOME
<b>Report Lake Tahoe Sustainability Indicators</b>	Steps for collecting summary data from existing indicator data sources, generating content to understand and put the indicator results in context, and update the Dashboard.	TRPA Research & Analysis Director	R1. Collect Data	▪ Indicator Protocols	Updated Chart for each indicator in the Lake Tahoe Sustainability Tracking spreadsheet
			R2. Develop Content*	▪ Lake Tahoe Sustainability Tracking spreadsheet ▪ Indicator Protocols	Updated qualitative indicator descriptions
			R3. Update Dashboard*	▪ Dashboard indicator and content update interface	Updated indicator results and qualitative descriptions on the Dashboard
<b>Improve Lake Tahoe Sustainability Reporting</b>	Steps to identify and implement the most valuable indicator improvement recommendations with resources available.	TRPA Research & Analysis Director	I1. Collect Program Improvement Recommendations	▪ Lake Tahoe Sustainability Reporting Program Improvement Form	Compiled list of program improvement recommendations to evaluate
			I2. Summarize Program Improvement Recommendations	▪ Lake Tahoe Sustainability Reporting Program Improvement Memo	Drafted Lake Tahoe Sustainability Reporting Program Improvement Memo
			I3. Select Program Improvements to Implement		Updated Lake Tahoe Sustainability Reporting Program Improvement Memo with decisions
			I4. Implement Program Improvements & Update Reporting Plan	▪ Lake Tahoe Sustainability Reporting Program Improvement Memo	Improvements to the indicators and reporting processes

\* These procedures are not defined as of December 2013 because they will be informed by the content developed for the Dashboard and the interface developed for updating the Dashboard, and the Dashboard has not yet been developed. Recommendations for defining these procedures are provided within the description of these procedures below.

## PROCESS TO REPORT LAKE TAHOE SUSTAINABILITY INDICATORS

This process generates indicator charts and associated qualitative content that enables reporting on the Dashboard and facilitates an understanding of the indicator. The reporting process begins with collecting and analyzing data, and updating the indicator charts. Then new or revised descriptions of indicator data and results are developed and the indicator is ready to be updated on the Dashboard. Figure 8 contains the procedures to Report Lake Tahoe Sustainability Indicators.



Figure 8: Procedures to Report Lake Tahoe Sustainability Indicators

### R1. COLLECT DATA

Quality data and transparent reporting protocols are necessary to make sound assessments of performance and build trust with stakeholders. In addition, clearly defined and straightforward reporting protocols minimize the effort required to report indicators. Protocols for reporting Lake Tahoe Sustainability Indicators are provided in Chapter 5, and must be followed consistently and accurately every year to ensure data integrity, sound assessments of performance and use of indicator data in decision-making processes.

#### *Indicator Protocols*

The protocols in Chapter 5 provide detailed steps for collecting, analyzing and reporting to ensure consistent and accurate reporting. In addition, the protocols contain source contact information as well as important context such as the relevance and description of the indicator, key assumptions and reporting context. The individual responsible for the data collection, analysis and reporting steps should review the entire protocol in order to thoroughly understand what they are collecting and are able to identify potential issues that would jeopardize data integrity.

The time of the year that data becomes available for each indicator is provided in each indicator protocol. In addition, it is included in the indicator protocol summary table in the Chapter 5 introduction so indicators can quickly be prioritized for data collection depending on the availability of data.

#### *Indicator Tracking*

Data collected is recorded in the Lake Tahoe Sustainability Indicator Tracking spreadsheet (Tracking Spreadsheet) in order to store all historical data in a single data source, using a consistent structure to streamline future reporting and increase data integrity. A specific worksheet in the Tracking Spreadsheet is dedicated to each indicator, and are structured to a) efficiently generate aggregated indicator data based on discrete data provided from data sources (if necessary), b) append new data to the historical data collected, and c) generate updated indicator trend charts. Often the data are collected in a different format than that required by the Tracking Spreadsheet. In these cases the data should be converted to the Tracking Spreadsheet format to ensure data integrity and to facilitate trend analysis using the charts already developed.

TOOLS	OUTCOME
▪ Indicator Protocols	Updated Chart for each indicator in the Lake Tahoe Sustainability Tracking spreadsheet

## R2. DEVELOP CONTENT

{This procedure will need to be completed after the Dashboard is developed and the initial content on the Dashboard is developed. The text below provides ideas to consider, but should be refined after the Dashboard is developed. In addition, other considerations are to document clear and concise objectives of the content, the target audience of the Dashboard, and writing style to guide future revisions to the content. This guidance will facilitate effective and consistent content, and efficient content development.}

A description of indicators is necessary for Dashboard visitors to understand how they can use and should interpret the indicator data. In addition, links to other websites related to each indicator on the Dashboard allow visitors to efficiently access additional information related to subjects of interest. Every year, the content and links to other websites related to each indicator should be reviewed in consideration of changes to the organizations, programs and science related to the indicator. For the majority of the indicators, the descriptions will require little or no revision each year. If new indicators are created, then new content will need to be created.

### *Indicator Description*

The amount of narrative necessary for Dashboard visitors to understand what the indicator is representing and how to appropriately interpret indicator data varies by indicator. Elements of a description to consider are why the indicator is important, what the indicator is measuring and what controllable and non-controllable factors primarily influence the indicator.

### *Links to Access Organizations, Programs and Science Supporting the Dashboard*

In addition to a description to help Dashboard visitors better understand each indicator, it may be valuable to provide links to other websites that can help interested visitors access greater detail about an indicator that they would not find on their own. The Dashboard provides high-level indicators covering a broad range of subjects in a single location, and could function as an effective portal for users to access additional information on organizations, programs and science related to each indicator.

TOOLS	OUTCOME
▪ Lake Tahoe Sustainability Tracking spreadsheet	Updated qualitative indicator descriptions
▪ Indicator Protocols	

## R3. UPDATE DASHBOARD

{This procedure will need to be completed after the Dashboard is developed, and in particular after the interface for updating the Dashboard is developed. This procedure will document the step-by-step instructions for updating the charts and content on the Dashboard, which will facilitate efficient and accurate updates to the Dashboard.}

TOOLS	OUTCOME
▪ Dashboard indicator and content update interface	Updated indicator results and qualitative descriptions on the Dashboard

## PROCESS TO IMPROVE LAKE TAHOE SUSTAINABILITY REPORTING

This process identifies and implements improvements to sustainability indicators and reporting processes in order to ensure sustainability reporting remains relevant to the target audience of the Dashboard. Continual improvement begins by collecting improvement recommendations from experts in the aspects of sustainability reported and decision makers that use the indicator data. Improvement recommendations are compiled, evaluated and summarized to inform the selection of improvement recommendations to implement. After improvement recommendations are summarized, they are transparently selected and implemented. The time necessary to implement an improvement can vary significantly, and must be complete before the beginning of the next reporting process to be incorporated. Figure 9 contains the procedures to Improve Lake Tahoe Sustainability Reporting.



Figure 9: Procedures to Improve Lake Tahoe Sustainability Reporting

### I1. COLLECT PROGRAM IMPROVEMENT RECOMMENDATIONS

New indicators and changing priorities must be integrated into sustainability reporting in order to keep reporting relevant and valuable to the target audience of the Dashboard. Every year, program improvement recommendations are collected in order to identify the most valuable recommendations to evaluate and implement. Guidance for soliciting program improvement recommendations are outlined in this section.

#### *Program Improvement Recommendation Solicitation*

Program improvement recommendations are solicited from experts in the aspects of sustainability reported and decision makers who use the indicator data. At a minimum, entities and individuals in the Program Improvement Advisory role (see Figure 3) are asked to submit program improvement recommendations. The Lake Tahoe Sustainability Reporting Program Improvement Form is distributed so that experts and decision makers clearly state, and provide rationale for the implementation of their proposed improvements.

TOOLS	OUTCOME
▪ Lake Tahoe Sustainability Reporting Program Improvement Form	Compiled list of program improvement recommendations to evaluate

### I2. SUMMARIZE PROGRAM IMPROVEMENT RECOMMENDATIONS

The compiled program improvement recommendations need to be evaluated and summarized in a format that facilitates efficient selection of the most important program improvement recommendations that can be implemented with available resources. Program improvements are evaluated using consistent criteria and summarized in a familiar format to facilitate program improvement selection. Guidance for evaluating and summarizing program improvement recommendations is outlined in this section.

#### *Program Improvement Recommendation Evaluation*

The compiled program improvement recommendations are evaluated by the individual in the Reporting and Program Improvement role to determine the program's recommended action for each recommendation. Recommended improvements to aspects and indicators are evaluated using the criteria summarized in Chapter 3 to objectively and efficiently evaluate recommended improvements. Appendix A and B contain a detailed description of the evaluation criteria along with the results of the initial

evaluation of aspects and indicators, which illustrates how to use the criteria. The original evaluations are reviewed to see if any newly suggested aspects or indicators have been considered in the past. Previously documented rationale for including or not including aspects or indicators is helpful in evaluating new recommended changes to aspects and indicators.

#### ***Program Improvement Recommendation Summarization***

Each recommendation compiled is summarized in the Lake Tahoe Sustainability Reporting Program Improvement Memo, which is then used to obtain and document decisions made by the entity or individual in the Reporting and Program Improvement Oversight role. The individual in the Reporting and Program Improvement Implementation role includes recommendations of their own in the Lake Tahoe Sustainability Reporting Program Improvement Memo. The removal of indicators from the Reporting Plan is considered each year to maintain a manageable list of indicators and to keep the indicators relevant over time. A list of potential sustainability reporting improvements defined during the development of the initial version of the Reporting Plan is provided in Appendix C.

<b>TOOLS</b>	<b>OUTCOME</b>
▪ Lake Tahoe Sustainability Reporting Program Improvement Memo	Drafted Lake Tahoe Sustainability Reporting Program Improvement Memo

### **13. SELECT PROGRAM IMPROVEMENTS TO IMPLEMENT**

An informed and transparent selection of program improvement recommendations is necessary to invest limited resources effectively, and maintain trust and support of stakeholders. Each year the Lake Tahoe Sustainability Reporting Program Improvement Memo is distributed to the entity or individual in the Reporting and Program Improvement Oversight role, and they select program improvements to implement. Key stakeholders such as entities and individuals in the Program Improvement Advisory role are encouraged to participate in a meeting to select program improvements to implement.

#### ***Decision Record and Reference***

After program improvements are selected, rationale for the acceptance or dismissal of recommendations is documented in the Lake Tahoe Sustainability Reporting Program Improvement Memo.

<b>TOOLS</b>	<b>OUTCOME</b>
	Updated Lake Tahoe Sustainability Reporting Program Improvement Memo with decisions

### **14. IMPLEMENT PROGRAM IMPROVEMENTS & UPDATE REPORTING PLAN**

Selected program improvement recommendations must be implemented to achieve expected benefits related to the recommendation. Selected recommendations are implemented by the individual in the Reporting and Program Improvement Implementation role, and the Reporting Plan is updated so that the recommendation is incorporated in future reporting cycles. Changes to aspects and indicators may cause changes to Chapter 3: Indicator Summary and Chapter 5: Indicator Reporting Protocols of this Reporting Plan, as well as changes to the Tracking Spreadsheet.

<b>TOOLS</b>	<b>OUTCOME</b>
▪ Lake Tahoe Sustainability Reporting Program Improvement Memo	Improvements to the indicators and reporting processes

## CHAPTER 5: INDICATOR REPORTING PROTOCOLS

Indicators can easily be misinterpreted and reported differently by different project proponents and program staff if easily understandable guidance is not available. Confusion and misreporting of indicators can create significant additional administrative burden, create additional effort, extend timelines, and hurt a program's credibility with stakeholders and funders.

Indicator Protocols define consistent methods and contain contextual information necessary to consistently and accurately report indicators, and reduce administrative burden. Protocols identify data sources, define a unit of performance, and outline procedures for collecting, analyzing and reporting data for each indicator. In addition, protocols contain a relevance description for the selection of the indicator, as well as key reporting context and definitions of important terms.

Indicator Protocols depend on measurements and metrics defined and managed by other monitoring and reporting systems, and do not define, monitor or manage primary data. This is a key difference between this Reporting Plan and a typical monitoring plan.

### **Data Collection and Storage**

Each Indicator Protocol describes procedures for compiling data in the Lake Tahoe Sustainability Tracking spreadsheet. This spreadsheet allows for efficient and consistent data collection and storage to facilitate accurate and regular reporting while minimizing administrative burden. The Lake Tahoe Sustainability Tracking spreadsheet contains a worksheet for each indicator containing a data table populated with historic data, data calculator used for calculating the appropriate metric for Lake Tahoe reporting and a data chart to display results. Procedures for updating the data and associated data charts are provided in each indicator protocol.

To minimize administrative burden, as well as the likelihood of data inconsistencies between datasets, only annual (or as frequent as possible) data is collected and stored unless annual data must be calculated because the existing source(s) does not provide annual data for Lake Tahoe. For example, for Lake Clarity the annual measurement is collected and stored as opposed to the daily measurements since the annual measurement is readily available from the Tahoe. Whereas, high school graduation rates for each school in the Lake Tahoe must be compiled and summed to generate a basin-wide measurement, so data from each school is collected and stored for analysis and future reference.

## INDICATOR PROTOCOL SUMMARY

A summary of an indicator protocol is provided below to assist users with understanding what is included in each section of an indicator protocol to facilitate consistent and accurate reporting.

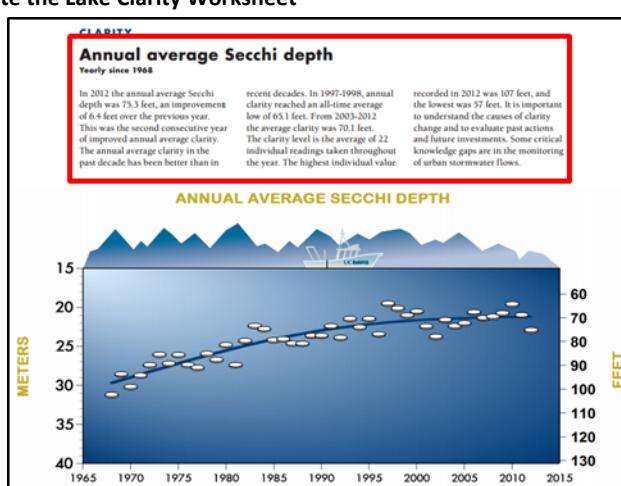
<b>Indicator Title</b>	
<b>Last Revision:</b> Date indicator protocol was last revised	<b>Updated By:</b> Individual who last revised indicator protocol
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
Brief narrative description that articulates the importance of the indicator in respect to the related aspect of sustainability.	
<b>1.2 Description</b>	
Brief summary of what is (and what is not) measured by the indicator.	
<b>1.3 Key Assumptions</b>	
List of assumptions and uncontrollable factors that influence the availability and reliability of indicator data and should be considered when implementing the protocol.	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
List of the sources from which indicator data is collected for indicator reporting. Data sources include internal agency contacts, external partner contacts and external websites.	
<b>2.2 Data Attributes</b>	
List of unique data fields that need to be collected in order to accurately and completely report indicator data.	
<b>2.3 Procedure</b>	
Detailed steps to collect data, including criteria for collecting valid data related to each step. Includes steps to analyze data collected and update the Indicators Tracking spreadsheet.	
<b>3.0 Metric Reporting Methods</b>	
<b>3.1 Targets &amp; Comparable Data Sets</b>	
Description of defined targets or comparable indicators that are used in reporting the indicator to better understand the state of Lake Tahoe in respect to the indicator.	
<b>3.2 Potential Data Charts</b>	
Description and examples of recommended formats for presenting indicator results.	
<b>3.3 Procedure</b>	
Detailed steps to update the charts for reporting the indicator within the Indicators Tracking spreadsheet, including the update of related targets and comparable indicators.	
<b>3.4 Key Reporting Context</b>	
Additional information necessary to understand the performance of the indicator.	
<b>4.0 Terms &amp; References</b>	
<b>4.1 Terms</b>	
Definition of terms used in this indicator protocol to ensure consistent understanding and application for reporting.	
<b>4.2 Additional References</b>	
References supporting content in other sections of the indicator protocol.	

## INDICATOR PROTOCOLS

An indicator protocol for each indicator identified in this Reporting Plan is provided below, along with the indicator type (Action or Outcome) and the month that the indicator is typically available for the previous reporting year.

<b>ENVIRONMENT</b>		
<b>WATER QUALITY</b>		
Tahoe Deep Water Clarity	Outcome	August
Parcels with Stormwater Retrofits	Action	February
Miles of Roads Treated	Action	February
<b>INVASIVE SPECIES</b>		
Extent of Aquatic Invasive Plant Infestation	Outcome	December
Watercraft Inspections	Action	February
<b>GREENHOUSE GAS EMISSIONS</b>		
GHG Emissions	Outcome	Unknown
VMT	Action	December
Natural Gas Consumption	Action	January
<b>FOREST HEALTH</b>		
Flame Length	Outcome	Unknown
Acres of Forest Fuels Treatments	Action	February
Acres of SEZ Restored or Enhanced	Action	February
<b>ECONOMY</b>		
<b>EMPLOYMENT</b>		
California Job Numbers	Outcome	January
California Unemployment Rates	Outcome	January
<b>INCOME</b>		
Median Household Income	Outcome	December
Subsidized School Lunches Eligibility	Outcome	November
LTCC Courses Offered	Action	August
<b>BUSINESS ENVIRONMENT</b>		
Transient Occupancy Tax (TOT)	Outcome	June-Sept.
Employment by Industry	Outcome	December
Distribution of Development	Action	February
<b>COMMUNITY</b>		
<b>HOUSING</b>		
Second Home Ownership	Outcome	December
Median House Prices	Outcome	January
<b>TRANSPORTATION</b>		
Travel Mode Share	Outcome	December
Transit Ridership	Outcome	December
Miles of Pedestrian & Bicycle Routes Improved or Constructed	Action	February
<b>EDUCATION</b>		
High School Proficiency Test Scores	Outcome	June-Aug.
Graduation Rates	Outcome	June-Aug.
<b>PUBLIC HEALTH</b>		
Payers For Hospital Service	Outcome	January
Principal Diagnosis Group	Outcome	January

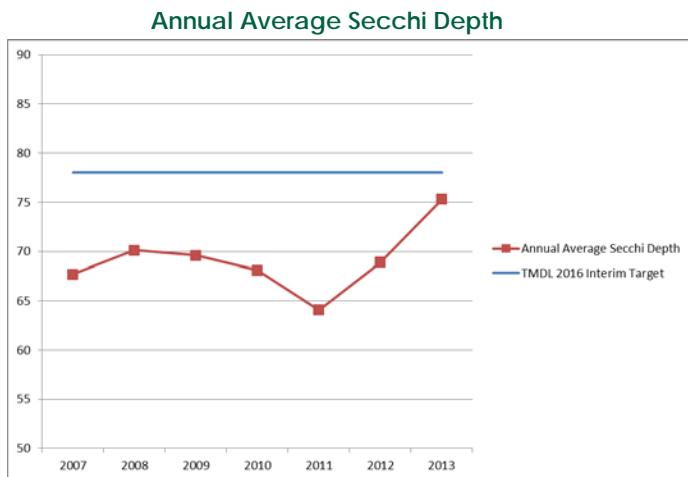
<b>OTHER</b>		
<b>POPULATION</b>		
Tahoe Resident Population	Outcome	December

<h1>Tahoe Deep Water Clarity</h1>																																																																																													
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)																																																																																												
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<b>1.1 Relevance</b>																																																																																													
<p>Lake Tahoe's deep water clarity is the highest priority water quality condition in the Tahoe Basin and is a focus of multiple policies and regulations that impact planning and land management practices throughout the Tahoe Basin. Improvement in water clarity is an important desired outcome that gauges the success of projects, programs and policies aimed at reducing stormwater runoff and pollutant loading to Lake Tahoe. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Water Quality section of Chapter 3 above.</p>																																																																																													
<b>1.2 Description</b>																																																																																													
<p>This indicator measures the annual average secchi disk depth measurement in Lake Tahoe. The secchi disk depth is the standard gauge of Lake Tahoe's Deep Water Clarity and has been used as a consistent measure since the 1960s. The UC Davis Tahoe Environmental Research Center conducts secchi depth measurements throughout the year at mid-lake locations and the Lake Tahoe Index Station. Each annual value is the mean of 20-25 individual measurements taken throughout the year at the Lake Tahoe Index Station and is reported by the UC Davis Tahoe Environmental Research Center in the Tahoe State of the Lake Report. The State of the Lake Report provides data for the year prior to the report year (i.e. the 2013 report has data for 2012). The UC Davis Tahoe Environmental Research Center also reports on the Average Summer and Average Winter Secchi Depths to demonstrate the variation in water clarity between seasons. Separate reporting for summer and winter seasons is not recommended for this indicator, as variations are accounted for in the Annual Average Secchi Depth.</p>																																																																																													
<b>1.3 Key Assumptions</b>																																																																																													
<p>Raw data is collected and results are published using consistent and accurate methods by the <b>UC Davis Tahoe Environmental Research Center, Annual State of the Lake Report</b>.</p>																																																																																													
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<ul style="list-style-type: none"> <li>▪ <b>UC Davis Tahoe Environmental Research Center, Annual State of the Lake Report</b> (<a href="http://terc.ucdavis.edu/stateofthelake/">http://terc.ucdavis.edu/stateofthelake/</a>). Data is published in the annual State of the Lake Report in August.</li> </ul>																																																																																													
<b>2.2 Data Attributes</b>																																																																																													
<p>The following data is needed to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Report Year</b></li> <li>▪ <b>Average Annual Secchi Depth – necessary to report annual indicator data</b></li> </ul>																																																																																													
<b>2.3 Procedure</b>																																																																																													
<ol style="list-style-type: none"> <li>1. <b>Access Lake Tahoe Deep Water Clarity Data in the State of the Lake Report</b> <ol style="list-style-type: none"> <li>a) Go to the UC Davis Tahoe Environmental Research Center, Annual State of the Lake Report webpage using the following menu: UC Davis TERC Homepage &gt;&gt; Publications &gt;&gt; Annual State of the Lake Reports.</li> <li>b) Download the Data File (PDF) for the most recent reporting year, titled "State of the Lake Report Year."</li> </ol> </li>   <li>2. <b>Collect Annual Average Secchi Depth Data and Update the Lake Clarity Worksheet</b> <ol style="list-style-type: none"> <li>a) In the State of the Lake Report, navigate to the "Annual Average Secchi Depth" page in the "Lake Clarity" section and collect annual average secchi depth data from the written text accompanying the Annual Average Secchi Depth chart (see image to the right).</li> <li>b) In the Lake Clarity Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent reporting year in the next empty row at the bottom of the Reporting Year column.</li> <li>c) Paste the average annual secchi depth for the most recent report year into the Watercraft Inspections Annual Average Secchi Depth data column.</li> </ol> </li> </ol>																																																																																													
 <p><b>CLARITY</b> <b>Annual average Secchi depth</b> Yearly since 1968</p> <p>In 2012 the annual average Secchi depth was 75.3 feet, an improvement of 46 feet over the previous year. This was the second best year of all the annual average clarity years. The annual average clarity in the past decade has been better than in recent decades. In 1997-1998, annual clarity reached an all-time average low of 65.1 feet. From 2003-2012 the average clarity was 70.1 feet. The clarity improved to the range of 22 individual readings taken throughout the year. The highest individual value recorded in 2012 was 107 feet, and the lowest was 57 feet. It is important to understand the causes of clarity change and to evaluate past actions and current management to critical knowledge gaps are in the monitoring of urban stormwater flows.</p> <p><b>ANNUAL AVERAGE SECCHI DEPTH</b></p> <p>METERS FEET</p> <table border="1"> <thead> <tr> <th>Reporting Year</th> <th>Avg. Secchi Depth (feet)</th> </tr> </thead> <tbody> <tr><td>1968</td><td>65.1</td></tr> <tr><td>1969</td><td>66.0</td></tr> <tr><td>1970</td><td>67.0</td></tr> <tr><td>1971</td><td>68.0</td></tr> <tr><td>1972</td><td>69.0</td></tr> <tr><td>1973</td><td>70.0</td></tr> <tr><td>1974</td><td>71.0</td></tr> <tr><td>1975</td><td>72.0</td></tr> <tr><td>1976</td><td>73.0</td></tr> <tr><td>1977</td><td>74.0</td></tr> <tr><td>1978</td><td>75.0</td></tr> <tr><td>1979</td><td>76.0</td></tr> <tr><td>1980</td><td>77.0</td></tr> <tr><td>1981</td><td>78.0</td></tr> <tr><td>1982</td><td>79.0</td></tr> <tr><td>1983</td><td>80.0</td></tr> <tr><td>1984</td><td>81.0</td></tr> <tr><td>1985</td><td>82.0</td></tr> <tr><td>1986</td><td>83.0</td></tr> <tr><td>1987</td><td>84.0</td></tr> <tr><td>1988</td><td>85.0</td></tr> <tr><td>1989</td><td>86.0</td></tr> <tr><td>1990</td><td>87.0</td></tr> <tr><td>1991</td><td>88.0</td></tr> <tr><td>1992</td><td>89.0</td></tr> <tr><td>1993</td><td>90.0</td></tr> <tr><td>1994</td><td>91.0</td></tr> <tr><td>1995</td><td>92.0</td></tr> <tr><td>1996</td><td>93.0</td></tr> <tr><td>1997</td><td>94.0</td></tr> <tr><td>1998</td><td>95.0</td></tr> <tr><td>1999</td><td>96.0</td></tr> <tr><td>2000</td><td>97.0</td></tr> <tr><td>2001</td><td>98.0</td></tr> <tr><td>2002</td><td>99.0</td></tr> <tr><td>2003</td><td>100.0</td></tr> <tr><td>2004</td><td>101.0</td></tr> <tr><td>2005</td><td>102.0</td></tr> <tr><td>2006</td><td>103.0</td></tr> <tr><td>2007</td><td>104.0</td></tr> <tr><td>2008</td><td>105.0</td></tr> <tr><td>2009</td><td>106.0</td></tr> <tr><td>2010</td><td>107.0</td></tr> <tr><td>2011</td><td>108.0</td></tr> <tr><td>2012</td><td>109.0</td></tr> </tbody> </table>		Reporting Year	Avg. Secchi Depth (feet)	1968	65.1	1969	66.0	1970	67.0	1971	68.0	1972	69.0	1973	70.0	1974	71.0	1975	72.0	1976	73.0	1977	74.0	1978	75.0	1979	76.0	1980	77.0	1981	78.0	1982	79.0	1983	80.0	1984	81.0	1985	82.0	1986	83.0	1987	84.0	1988	85.0	1989	86.0	1990	87.0	1991	88.0	1992	89.0	1993	90.0	1994	91.0	1995	92.0	1996	93.0	1997	94.0	1998	95.0	1999	96.0	2000	97.0	2001	98.0	2002	99.0	2003	100.0	2004	101.0	2005	102.0	2006	103.0	2007	104.0	2008	105.0	2009	106.0	2010	107.0	2011	108.0	2012	109.0
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<p>An interim target for Tahoe Deep Water Clarity of 78 ft. has been established through the development of the Lake Tahoe TMDL. This interim target has been adopted by the Lahontan Regional Water Quality Control Board, CA Water Resources Control Board, Nevada Division of Environmental Protection, and the US Environmental Protection Agency. Interim targets are</p>																																																																																													

adjusted every 5 years to meet the “Lake Tahoe Clarity Challenge” defined in the TMDL. Modeling completed for the TMDL estimates that the adopted annual average Secchi depth standard (29.7 meters, 97.4 feet) would be achieved around 2076 if prescribed management actions are implemented and maintained. Updated Lake Clarity targets are provided with annual average secchi depth data in the State of the Lake Report. Input new or existing lake clarity target numbers in the Target column of the Lake Clarity worksheet.

### 3.2 Potential Data Charts

The chart below is the recommended display for the Lake Tahoe Deep Water Clarity indicator. The chart enables a comparison of annual lake clarity to an interim target and an understanding of the trend in lake clarity over time.



### 3.3 Procedure

#### 1. Update the Chart in the Lake Clarity Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Annual Average Secchi Depth and Interim Target data column headers, one will include Report Year dates and one will include annual average secchi depth data and interim targets data.
- Click the bottom left corner of the box surrounding the Report Year dates and drag down so it includes the recently added year and the annual average secchi depth data.
- This will automatically update the chart to include data for the most recent report year.

### 3.4 Key Reporting Context

- Average annual secchi depth is determined by averaging 20-25 readings taken throughout the year. There are consistent, dramatic differences between secchi depth readings for winter and summer. Winter and summer average secchi depths are also provided in the State of the Lake Report.

## 4.0 Terms & References

### 4.1 Terms

**Secchi Disk Depth** - Lake Tahoe’s clarity is measured by the depth at which a 10” white disk, called a Secchi disk, remains visible when lowered beneath the water’s surface.

### 4.2 References

Lahontan Regional Water Quality Control Board, Lake Tahoe TMDL

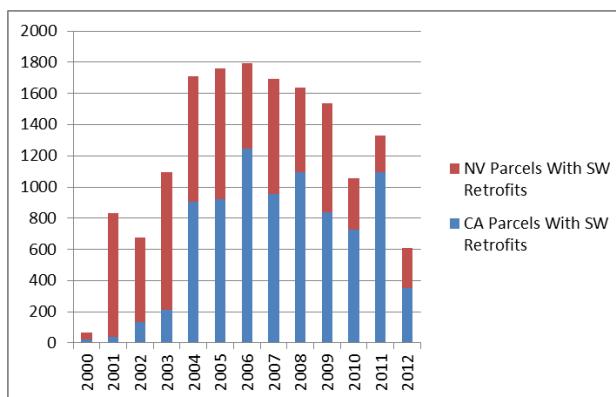
[http://www.waterboards.ca.gov/lahontan/water\\_issues/programs/tmdl/lake\\_tahoe/](http://www.waterboards.ca.gov/lahontan/water_issues/programs/tmdl/lake_tahoe/)

Nevada Division of Environmental Protection, Lake Tahoe TMDL

<http://ndep.nv.gov/bwqp/tahoe3.htm>

<h2 style="text-align: center;">Parcels With Stormwater Retrofits</h2>																																															
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)																																														
<b>1.0 Indicator Overview</b>																																															
<b>1.1 Relevance</b>																																															
<p>Retrofitting public and private parcels with best management practices (BMPs) reduces pollutant concentrations of stormwater runoff from precipitation and reduces the volume of stormwater leaving those parcels. Reduced stormwater volumes result in less demand on public stormwater treatment systems and fewer fine sediment particles and other nutrients being delivered to Lake Tahoe. When fewer nutrients are available in the waters of Lake Tahoe, less algae can grow and clarity loss is reduced. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Water Quality Aspect section of Chapter 3 above. In addition, further detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the Environmental Improvement Program (EIP) Performance Measure (PM) Info Sheet for this indicator.</p>																																															
<b>1.2 Description</b>																																															
<p>This indicator measures the number of developed parcels in the Tahoe Basin that are retrofitted with BMPs that remove fine sediment particles and nutrients. This indicator tracks private parcels and parcels belonging to large, public landowners. Large, public parcels must have appropriate operations and maintenance plans to qualify. While the EIP PM, Parcels With Stormwater Retrofits, includes multiple subcategories to provide greater reporting detail, this indicator provides a single data point that captures only the total number of parcels retrofitted within California and Nevada, and basin-wide. Lake Tahoe EIP staff collect and compile information about road treatments annually for EIP programmatic reporting, and this indicator pulls data directly from these efforts.</p>																																															
<b>1.3 Key Assumptions</b>																																															
<p>Raw data is collected annually using consistent methods and accurate summary measurements are provided when requested by the Lake Tahoe EIP.</p>																																															
<b>2.0 Data Collection &amp; Analysis Methods</b>																																															
<b>2.1 Sources</b>																																															
<p><b>Lake Tahoe EIP Coordinator</b> – As of December 2013, EIP PMs are tracked using spreadsheets only available to EIP staff. However, EIP PMs may be accessible online in 2014 if a planned database is developed. Raw stormwater retrofit data is collected at the end of each calendar year and summary data should be available by February of the following year.</p> <ul style="list-style-type: none"> <li>▪ Lake Tahoe EIP Coordinator (as of December 2013): Karin Edwards, TRPA</li> <li>▪ Email: <a href="mailto:kedwards@trpa.org">kedwards@trpa.org</a></li> <li>▪ Phone: (775) 589-5258</li> </ul>																																															
<b>2.2 Data Attributes</b>																																															
<p>The following data is needed to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>EIP Reporting Year</b></li> <li>▪ <b>State – necessary to report data for each state, and basin-wide</b></li> <li>▪ <b>Parcels With Stormwater Retrofits – necessary to report annual indicator data</b></li> </ul>																																															
<b>2.3 Procedure</b>																																															
<ol style="list-style-type: none"> <li>1. <b>Contact Lake Tahoe EIP Coordinator and Request Parcels With Stormwater Retrofits Data</b> <ol style="list-style-type: none"> <li>a) Email the EIP Coordinator requesting the volume of stormwater retrofits over the most recent calendar year. Include the Summary Table to the right in the email as an example of the data and format you are requesting.</li> </ol> </li>   <li>2. <b>Collect Parcels With Stormwater Retrofits Data and Update the Stormwater Retrofits Worksheet</b> <ol style="list-style-type: none"> <li>a) In the summary table provided by the EIP Coordinator, copy the parcels with stormwater retrofits data for the most recent EIP reporting year (see image to the right).</li> <li>b) In the Stormwater Retrofits Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent EIP reporting year in the next empty row at the bottom of the EIP Reporting Year column.</li> <li>c) Paste parcels with stormwater retrofits data for California and Nevada in their respective data columns for the most recent EIP reporting year.</li> </ol> </li> </ol>																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Year</th><th style="text-align: center;">CA</th><th style="text-align: center;">NV</th></tr> </thead> <tbody> <tr><td style="text-align: center;">2000</td><td style="text-align: center;">25</td><td style="text-align: center;">44</td></tr> <tr><td style="text-align: center;">2001</td><td style="text-align: center;">39</td><td style="text-align: center;">791</td></tr> <tr><td style="text-align: center;">2002</td><td style="text-align: center;">135</td><td style="text-align: center;">539</td></tr> <tr><td style="text-align: center;">2003</td><td style="text-align: center;">210</td><td style="text-align: center;">886</td></tr> <tr><td style="text-align: center;">2004</td><td style="text-align: center;">905</td><td style="text-align: center;">807</td></tr> <tr><td style="text-align: center;">2005</td><td style="text-align: center;">923</td><td style="text-align: center;">840</td></tr> <tr><td style="text-align: center;">2006</td><td style="text-align: center;">1249</td><td style="text-align: center;">544</td></tr> <tr><td style="text-align: center;">2007</td><td style="text-align: center;">953</td><td style="text-align: center;">742</td></tr> <tr><td style="text-align: center;">2008</td><td style="text-align: center;">1096</td><td style="text-align: center;">544</td></tr> <tr><td style="text-align: center;">2009</td><td style="text-align: center;">836</td><td style="text-align: center;">701</td></tr> <tr><td style="text-align: center;">2010</td><td style="text-align: center;">729</td><td style="text-align: center;">328</td></tr> <tr><td style="text-align: center;">2011</td><td style="text-align: center;">1094</td><td style="text-align: center;">236</td></tr> <tr><td style="text-align: center;">2012</td><td style="text-align: center;">353</td><td style="text-align: center;">254</td></tr> <tr> <td colspan="2" style="text-align: right;"><b>8547</b></td><td style="text-align: center;"><b>7256</b></td></tr> </tbody> </table>			Year	CA	NV	2000	25	44	2001	39	791	2002	135	539	2003	210	886	2004	905	807	2005	923	840	2006	1249	544	2007	953	742	2008	1096	544	2009	836	701	2010	729	328	2011	1094	236	2012	353	254	<b>8547</b>		<b>7256</b>
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<p>There are no defined basin-wide targets or relevant comparable regions for the Parcels With Stormwater Retrofits indicator.</p>																																															
<b>3.2 Potential Data Charts</b>																																															
<p>The chart below is the recommended display for the Parcels With Stormwater Retrofits indicator. The chart enables an understanding of the trend in the number of parcels with stormwater retrofits over time.</p>																																															

### Parcels With Stormwater Retrofits



#### 3.3 Procedure

##### 1. Update the Chart in the Stormwater Retrofits Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the CA and NV Parcels With SW Retrofits data column header, one will include EIP Reporting Year dates and one will include CA and NV parcels with SW retrofits data.
- Click the bottom left corner of the box surrounding the EIP Reporting Year dates and drag down so it includes the recently added year and the CA and NV parcels with SW retrofits data
- This will automatically update the chart to include data for the most recent EIP reporting year.

#### 3.4 Key Reporting Context

- Different public and private entities responsible for implementing stormwater retrofits have different methods for tracking Parcels With Stomrwater Retrofits. While the EIP PM designates that reporting should only include the number of parcels impacted, some implementers have larger facilities that would be better tracked using acres of square feet. For example, stormwater retrofit projects on campgrounds owned by the USFS would be better tracked using acres.

### 4.0 Terms & References

#### 4.1 Terms

**Retrofitted with BMPs** – A parcel is considered to be retrofitted with BMPs when it has been awarded a BMP certificate through the TRPA BMP Retrofit Program. Both BMP certificate and source control certificate qualify as completed under this definition.

**Public Facility** – Public facilities include parking lots, campground, and buildings that are on land owned by public agencies, such as the California Tahoe Conservancy (CTC), CA and NV State Parks and the USFS.

**BMP Certificate** – The parcel has been awarded a certificate to prove that BMPs have been installed on the property as recommended during the site evaluation.

**Source Control Certificate** – The parcel has been awarded a certificate to prove that source controls have been installed on the property as recommended during the site evaluation.

#### 4.2 References

TRPA. BMP Database

<http://www.tiims.org/bmptoolkit/>

TRPA, Environmental Improvement Program

<http://www.trpa.org/about-trpa/how-we-operate/environmental-improvement-program/>

TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.

<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

<h2>Miles of Roads Treated</h2>																						
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)																					
<b>1.0 Indicator Overview</b>																						
<b>1.1 Relevance</b>																						
<p>Fine sediment loads entering Lake Tahoe are the primary cause of the Lake's clarity loss, thus efforts to slow clarity loss are focused on fine sediment load reductions. Stormwater runoff from paved and unpaved roads in the Tahoe Basin is responsible for contributing about two thirds of total fine sediment pollution to Lake Tahoe. When roads are removed, taken out of use, or retrofitted with drainage conveyance and treatment facilities or source controls, the volume of stormwater runoff that leaves those roads is reduced, as is the pollutant load carried in the runoff. This, in turn, reduces the amount of these pollutants reaching Lake Tahoe, improving lake clarity. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Water Quality Aspect section of Chapter 3 above. In addition, additional detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the Environmental Improvement Program (EIP) Performance Measure (PM) Info Sheet for this indicator.</p>																						
<b>1.2 Description</b>																						
<p>This indicator measures the miles of city, county, state and US Forest Service (USFS) roads that are retrofitted, decommissioned or obliterated to reduce stormwater pollution through capital improvements. Operations and maintenance activities are not captured by this indicator. While the EIP PM, Miles of Roads Treated, includes multiple subcategories to provide greater reporting detail, this indicator provides a single data point that captures all road types, treatment types, road priority levels and ownership. Lake Tahoe EIP staff collect and compile information about road treatments annually for EIP programmatic reporting, and this indicator pulls data directly from these efforts.</p>																						
<b>1.3 Key Assumptions</b>																						
<p>Raw data is collected annually using consistent methods and accurate summary measurements are provided when requested by the Lake Tahoe EIP.</p>																						
<b>2.0 Data Collection &amp; Analysis Methods</b>																						
<b>2.1 Sources</b>																						
<p><b>Lake Tahoe EIP Coordinator</b> – As of December 2013, EIP PMs are tracked using spreadsheets only available to EIP staff. However, EIP PMs may be accessible online in 2014 if a planned database is developed. Raw road treatment data is collected at the end of each calendar year and summary data should be available by <b>February</b> of the following year.</p> <ul style="list-style-type: none"> <li>▪ Lake Tahoe EIP Coordinator (as of December 2013): Karin Edwards, TRPA</li> <li>▪ Email: <a href="mailto:kedwards@trpa.org">kedwards@trpa.org</a></li> <li>▪ Phone: (775) 589-5258</li> </ul>																						
<b>2.2 Data Attributes</b>																						
<p>The following data is needed to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>EIP Reporting Year</b></li> <li>▪ <b>Miles of Roads Treated – necessary to report annual indicator data</b></li> </ul>																						
<b>2.3 Procedure</b>																						
<ol style="list-style-type: none"> <li>1. <b>Contact Lake Tahoe EIP Coordinator to Request Miles of Roads Treated Data</b> <ol style="list-style-type: none"> <li>a) Email the EIP Coordinator requesting the miles of roads inspected conducted over the most recent EIP reporting year. Include the Summary Table below in the email as an example of the data and format you are requesting.</li> </ol> </li>   <li>2. <b>Collect Miles of Roads Treated Data and Update the Miles of Roads Treated Worksheet</b> <ol style="list-style-type: none"> <li>a) In the summary table provided by the EIP Coordinator, copy the miles of roads treated for the most recent EIP reporting year.</li> </ol> </li> </ol>																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="7" style="text-align: center;">EIP Accomplishments*</th></tr> <tr> <th rowspan="2" style="text-align: center; width: 25%;"> </th> <th style="text-align: center; width: 12.5%;">1997-2010</th> <th style="text-align: center; width: 12.5%;">1997-2011</th> <th style="text-align: center; width: 12.5%;">1997-2012</th> <th style="text-align: center; width: 12.5%;">2010</th> <th style="text-align: center; width: 12.5%;">2011</th> <th style="text-align: center; width: 12.5%;">2012</th> </tr> <tr> <th style="text-align: center;">Miles of Roads Treated</th> <th style="text-align: center;">501</th> <th style="text-align: center;">577</th> <th style="text-align: center;">628</th> <th style="text-align: center;">na</th> <th style="text-align: center;">76</th> <th style="text-align: center;">51</th> </tr> </thead> </table>		EIP Accomplishments*								1997-2010	1997-2011	1997-2012	2010	2011	2012	Miles of Roads Treated	501	577	628	na	76	51
EIP Accomplishments*																						
	1997-2010	1997-2011	1997-2012	2010	2011	2012																
	Miles of Roads Treated	501	577	628	na	76	51															
<ol style="list-style-type: none"> <li>b) In the Miles of Roads Treated Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent EIP reporting year in the next empty row at the bottom of the EIP Reporting Year column.</li> <li>c) Paste the miles of roads treated into the Miles of Roads Treated data column for the most recent EIP reporting year.</li> </ol>																						
<b>3.0 Metric Reporting</b>																						
<b>3.1 Targets &amp; Comparable Data Sets</b>																						
<p>There are no defined basin-wide targets or relevant comparable metrics for the Miles of Roads Treated indicator.</p>																						
<b>3.2 Potential Data Charts</b>																						
<p>The chart below is the recommended display for the Miles of Roads Treated indicator. The chart enables an understanding of</p>																						

the trend in miles of roads treated over time.



### 3.3 Procedure

#### 1. Update the Chart in the Miles of Roads Treated Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Miles of Roads Treated data column header, one will include EIP Reporting Year dates and one will include Miles of Roads Treated data.
- Click the bottom left corner of the box surrounding the EIP Reporting Year dates and drag down so it includes the recently added year and the miles of roads treated data.
- This will automatically update the chart to include data for the most recent EIP reporting year.

### 3.4 Key Reporting Context

- This indicator currently tracks the number of roadway miles treated with capital stormwater improvements each year, regardless of whether those miles of road have previously been treated. Thus, the number of miles treated for this indicator may, over time, exceed the total number of miles in the Tahoe Basin.

## 4.0 Terms & References

### 4.1 Terms

**Roads Treated** – Roads are considered treated when they have been obliterated, decommissioned or retrofitted to reduce stormwater runoff and/or pollution.

**Roads Decommissioned** – Roads are decommissioned when they are removed from use through either temporary or permanent means.

**Roads Obliterated** – Roads are obliterated when they are removed from use permanently and restored such that the road is no longer present.

**Roads Retrofitted (paved road)** – A section of paved road is considered retrofitted to reduce stormwater runoff and pollution if all of its runoff infiltrates, or if drainage conveyance and treatment facilities or source controls are installed to collect and treat its runoff and are maintained such that they are functioning as designed.

**Roads Retrofitted (unpaved road)** – A mile of unpaved road is considered retrofitted if (1) BMPs have been designed and implemented to disconnect road runoff and prevent sediment transport to water bodies, (2) stream crossings can pass the 100-year storm, and (3) hydraulic length of individual road segments has been shortened to increase sustainability of the road surface. BMPs should not require maintenance more frequently than every two years, except for in the case of damage caused by extreme storm events.

### 4.2 References

TRPA, Environmental Improvement Program

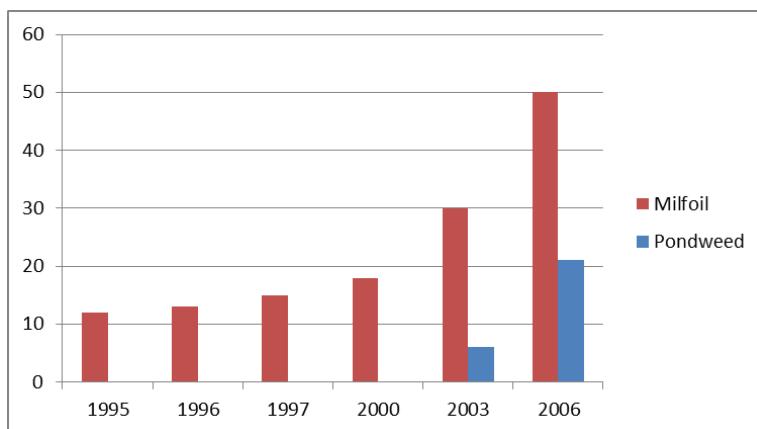
<http://www.trpa.org/about-trpa/how-we-operate/environmental-improvement-program/>

TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.

<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

<h2 style="text-align: center;">Extent of Aquatic Invasive Plant Infestation</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Aquatic invasive species degrade the biological integrity of aquatic ecosystems and impact nearshore clarity by altering the chemical, physical and biological habitat features of waterbodies, outcompeting native species, and increasing algae growth. Aquatic invasive species can also degrade recreational assets and reduce property values which would have significant impacts on the local economy and community. Inventories for the location and extent of invasive species are critical for managing and controlling the spread of those species. Inventories enable strategic investment of resources by allowing managers to prioritize control and eradication efforts to the highest risk areas. Inventorying invasive species also provides the opportunity to detect new locations of infestation before they become large and costly to control, reducing the cost and effort required to control invasives. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Aquatic Invasive Species Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the number of sites infested with Eurasian Water Milfoil and Curly Leaf Pondweed in Lake Tahoe. The TRPA Aquatic Invasive Species (AIS) program commissions monitoring of AIS infestations every 3 years to track the locations and area of invasive species infestations.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected annually using consistent methods and accurate methods as part of the <b>TRPA Invasive Species Program</b>.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p><b>TRPA Aquatic Invasive Species Program Manager</b> – As of December 2013, aquatic invasive species data are tracked by the AIS Program. Data is typically available in December for the previous calendar year.</p> <ul style="list-style-type: none"> <li>▪ TRPA Invasive Species Program Manager (as of December 2013): Patrick Stone, TRPA Senior Wildlife and Fisheries Biologist</li> <li>▪ Email: <a href="mailto:pstone@trpa.org">pstone@trpa.org</a></li> <li>▪ Phone: (775) 589-5213</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data is needed to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Survey Year</b></li> <li>▪ <b>Number of Infested Sites</b> – <i>necessary to report the extent of aquatic invasive plants data.</i></li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Contact the TRPA Invasive Species Program Manager and Request Extent of Aquatic Invasive Plant Infestation Data</b> <ol style="list-style-type: none"> <li>a) Email the TRPA Invasive Species Program Manager requesting the number of sites infested with Eurasian Water Milfoil and Curly Leaf Pondweed in Lake Tahoe, if monitoring was done the previous year.</li> </ol> </li>   <li>2. <b>Collect Extent of Aquatic Invasive Plant Infestation Data And Update the Aquatic Invasive Plants Worksheet</b> <ol style="list-style-type: none"> <li>a) In the Aquatic Invasive Plants Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.</li> <li>b) Paste the number of sites infested with Eurasian Water Milfoil and Curly Leaf Pondweed in Lake Tahoe into the data column in the Data Table for the most recent survey year.</li> </ol> </li> </ol>	
<b>3.0 Metric Reporting</b>	
<b>3.1 Targets &amp; Comparable Data Sets</b>	
<p>There are no defined basin-wide targets or relevant comparable indicators for Extent of Aquatic Invasive Plant Infestation indicator.</p>	
<b>3.2 Potential Data Charts</b>	
<p>The chart below is the recommended display for the Extent of Aquatic Invasive Plant Infestation indicator. The chart enables an understanding of the trend in the extent of aquatic invasive plant infestation over time.</p>	

### Extent of Aquatic Invasive Plant Infestation



#### 3.3 Procedure

##### 1. Update the Chart in the Aquatic Invasive Plants Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Extent of Aquatic Invasive Plant Infestation data column header, one will include survey year dates and one will include extent of aquatic invasive plant infestation data.
- Click the bottom left corner of the box surrounding the survey year dates and drag down so it includes the recently added year and the extent of aquatic invasive plant infestation data.
- This will automatically update the chart to include data for the most recent survey year.

#### 3.4 Key Reporting Context

- Eurasian Water Milfoil and Curly Leaf Pondweed are the only two known aquatic invasive plants currently in Lake Tahoe waterbodies as of 2013. There are other aquatic invasive species including Asian clams and non-native fish; however currently there is very little data on the extent of Asian clam infestation and non-native fish. In addition, non-native fish are perceived as less of a priority than invasive plants by some stakeholders.
- The number of sites infested is reported instead of the area of infestation because the area is not collected as comprehensively, there is significantly less historical data, and the extent can be misleading because only the area covered by the plant is tracked as opposed to the area between plants in a heavily infested area for example.

#### 4.0 Terms & References

##### 4.1 Terms

**Invasive Species Inventory** – To create a catalog by identifying, mapping, surveying, rating and classifying based on threat level, probability of successful control efforts, present distribution and recommended management action. Inventory ratings reflect importance of the pest, the likelihood that eradication and control efforts will be successful, and the present distribution of the invasive species.

**Aquatic Invasive Plants** – Aquatic plant species that establish and reproduce rapidly outside of their native range and may threaten the diversity or abundance of native species through competition for resources, predation, parasitism, hybridization with native populations, introduction of pathogens, or physical or chemical alteration of the invaded habitat. The primary plant species of concern in Lake Tahoe are Eurasian Water Milfoil and Curly Leaf Pondweed.

##### 4.2 References

Tahoe Resource Conservation District. Website. Aquatic Invasive Species.

<http://www.tahoercd.org/index.php/ISP/aquatic>

Tahoe Resource Conservation District. Website. Terrestrial Invasive Species.

<http://www.tahoercd.org/index.php/ISP/terrestrial>.

TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.  
<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

USACE. 2009. Lake Tahoe Region Aquatic Invasive Species Management Plan, California - Nevada.  
<http://www.anstaskforce.gov/State%20Plans/Lake%20Tahoe%20Region%20AIS%20Management%20Plan.pdf>.

US Fish & Wildlife Service. Website. Lake Tahoe Aquatic Invasive Species Program. Nevada Fish & Wildlife Office.  
[http://www.fws.gov/nevada/nv\\_species/invasive\\_species/lta\\_index.htm](http://www.fws.gov/nevada/nv_species/invasive_species/lta_index.htm).

## Watercraft Inspections

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Aquatic invasive species degrade the biological integrity of aquatic ecosystems and impact nearshore clarity by altering the chemical, physical and biological habitat features of waterbodies, outcompeting native species, and increasing algae growth. Aquatic invasive species can also degrade recreational assets and reduce property values which would have significant impacts on the local economy and community. Watercraft inspection is the primary way to prevent new introductions of aquatic invasive species, and this indicator provides an understanding of the effort invested in inspecting watercraft in the Tahoe Basin. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Aquatic Invasive Species Aspect section of Chapter 3 above. In addition, additional detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the EIP PM Info Sheet for this indicator.

#### 1.2 Description

This indicator measures the total annual number of pre-launch watercraft inspections completed to search for aquatic invasive species and prevent their introduction into Lake Tahoe and other basin waterways. This indicator does not measure the total annual number of boat check-ins or decontaminations, which are also tracked for EIP programmatic reporting. Inspections are done at dedicated watercraft inspection sites as well as each boat launch throughout the basin on all watercraft before access is allowed to Lake Tahoe, Fallen Leaf Lake and Echo Lake. Lake Tahoe Environmental Improvement Program (EIP) staff collect and compile information about watercraft inspections for EIP programmatic reporting, and this indicator pulls data directly from these efforts.

#### 1.3 Key Assumptions

Raw data is collected annually using consistent methods and accurate summary measurements are provided when requested by the Lake Tahoe EIP.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

**Lake Tahoe EIP Coordinator** – As of December 2013, EIP PMs are tracked using spreadsheets only available to EIP staff. However, EIP PMs may be accessible online in 2014 if a planned database is developed. Raw watercraft inspection data is collected at the end of each calendar year and summary data should be available by February of the following year.

- Lake Tahoe EIP Coordinator (as of December 2013): Karin Edwards, TRPA
- Email: [kedwards@trpa.org](mailto:kedwards@trpa.org)
- Phone: (775) 589-5258

#### 2.2 Data Attributes

The following data is needed to report the indicator annually:

- **EIP Reporting Year**
- **# of Watercraft Inspected** – necessary to report annual indicator data

#### 2.3 Procedure

##### 1. Contact Lake Tahoe EIP Coordinator to Request Watercraft Inspections Data

- a) Email the EIP Coordinator requesting the volume of inspections conducted over the most recent calendar year. Include the Summary Table below in the email as an example of the data and format you are requesting.

##### 2. Collect Watercraft Inspections Data and Update the Watercraft Inspection Worksheet

- a) In the summary table provided by the EIP Coordinator, copy the number of watercraft inspections (not check-ins or decontaminations) for the most recent EIP reporting year (see image below).

EIP Accomplishments*					
	2009-2012	2009	2010	2011	2012
Watercraft Inspections*	29000	5897	8000	7660	7443
Inspections	29000	5897	8000	7660	7443
Checked In	80000	na	19000	30400	30569
Decons	10000	248	1200	4800	3752

- b) In the Watercraft Inspection worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent EIP reporting year in the next empty row at the bottom of the EIP Reporting Year column.
- c) Paste the number of watercraft inspections into the Watercraft Inspections column for the most recent EIP reporting year.

### 3.0 Metric Reporting

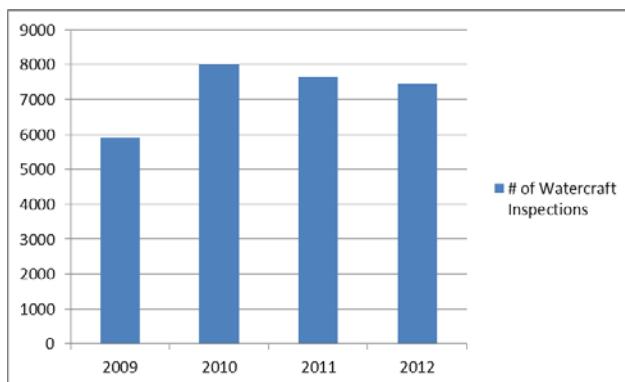
#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable regions for the Watercraft Inspection indicator.

### 3.2 Potential Data Charts

The chart below is the recommended display for the Watercraft Inspection indicator. The chart enables an understanding of the significant investment in aquatic invasive species prevention, and the trend in watercraft inspections over time.

**Number of Watercraft Inspections Completed**



### 3.3 Procedure

#### 1. Update the Chart in the Watercraft Inspection Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Watercraft Inspection Data column header, one will include EIP Reporting Year dates and one will include Watercraft Inspection data.
- Click the bottom left corner of the box surrounding the EIP Reporting Year dates and drag down so it includes the recently added year and the Watercraft Inspection data.
- This will automatically update the chart to include data for the most recent EIP reporting year.

### 3.4 Key Reporting Context

- All boats launched in the Lake Tahoe Basin are required to be inspected. Therefore, this indicator reflects the effort invested in preventing aquatic invasive species from entering waterbodies and the annual number of inspections is primarily dependent on macroeconomic and weather conditions.
- The Aquatic Invasive Species (AIS) Program has two primary functions: prevention and control of aquatic invasive species. Prevention is top priority and watercraft inspections are the primary aquatic invasive species prevention activity. Controlling existing infestations of aquatic invasive species in the Tahoe Basin in order to reduce the impacts of existing infestations is also a priority, and a wide-range of experimental and proven control activities are currently implemented in the Tahoe Basin.

## 4.0 Terms & References

### 4.1 Terms

**Watercraft Inspection** – A search of the entire boat including ballast tanks, bilges, water toys, ropes and trailers for evidence of aquatic invasive species. All watercraft, including canoes and kayaks are subject to inspection. Inspections also include questions about which water bodies the vessel has been in previously and how long ago. If evidence of invasive species is found, or if the watercraft contains standing water, the boat is decontaminated.

### 4.2 References

Tahoe Resource Conservation District. Watercraft Inspections page.

<http://www.tahoebatinspections.org>

Lake Tahoe Environmental Improvement Program

<http://www.trpa.org/about-trpa/how-we-operate/environmental-improvement-program/>

TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.

<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

<h2 style="text-align: center;">Greenhouse Gas Emissions</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Climate change causes seasons to shift and storm events to intensify, and modifies natural temperatures and precipitation levels, which alter the ecosystems that support human life and other terrestrial and aquatic species. Increased levels of greenhouse gases (GHG), including the largest contributor, carbon dioxide (CO<sub>2</sub>), are the primary cause of manmade climate change. While some GHGs enter the atmosphere through nature's carbon cycle, the majority come from human activities such as the burning of fossil fuels and deforestation. Reducing GHG emissions generated by the CA portion of the Tahoe Basin is required by CA state law, and reducing GHG emissions is generally accepted as an important responsibility as a member of the global community. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the GHG Emissions Aspect section of Chapter 3 above. In addition, additional detail on the importance of this indicator, the GHG inventory, projection methods and protocols, and climate change mitigation strategies are documented in A Regional Greenhouse Gas Inventory for the Lake Tahoe Basin and the Tahoe Basin Sustainability Action Plan.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the estimated GHG emissions generated by the human-driven sources in the Tahoe Basin historically, as well as the projected GHG emissions generated in the future based on population and activity assumptions, and legislation and regulations currently in place. The estimated GHG emissions incorporate a defined set of gases that contribute to climate change. Carbon dioxide (CO<sub>2</sub>) is the most prevalent gas that is emitted in the largest quantities; however, there are five other primary GHGs that contribute to climate change: methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). A uniform measurement known as a carbon dioxide equivalent (CO<sub>2</sub>e) is used to translate emissions of each GHG to CO<sub>2</sub> by weighting it by its relative "global warming potential". A metric ton of CO<sub>2</sub>e (MTCO<sub>2</sub>e) is the standard measurement of the amount of GHG emissions produced and released into the atmosphere, and is the unit of measure used by this indicator.</p>	
<p>The GHG emissions reported are from the only comprehensive GHG emissions inventory and projections available for the Tahoe Basin as of December 2013, which was commissioned by the California Tahoe Conservancy (CTC) and released in January 2013. Other GHG emissions inventories exist, such as the California Air Resources Board's California Greenhouse Gas Emission Inventory, however the other inventories do not include the entire basin or material sources. Although there are currently no defined plans to generate another comprehensive GHG emissions inventory for the Tahoe Basin in the future, it is expected that GHG inventories and projections will be produced in the future as part of large planning processes (e.g. Regional Plan Updates). Since the format and methods of future inventories and projections are unknown at this time, this info sheet provides general steps with some specific guidance to assist with reporting this indicator in the future.</p>	
<b>1.3 Key Assumptions</b>	
<ul style="list-style-type: none"> <li>▪ The production of the GHG emissions estimates and projections consistently and appropriately follow international and national standard methods and protocols.</li> <li>▪ The GHG emissions inventory will be updated regularly (e.g. at least every 5 years).</li> </ul>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p><b>A Regional Greenhouse Gas Inventory</b> – This is the only comprehensive GHG emissions inventory available as of December 2013. Future reporting will require updates to the existing inventory and projections, or a new inventory and projections.</p>	
<b>2.2 Data Attributes</b>	
<p>The following data is needed to report the indicator:</p> <ul style="list-style-type: none"> <li>▪ <b>Report Year</b></li> <li>▪ <b>Source Sector</b> – necessary to report emissions by source sector</li> <li>▪ <b>Estimated/Projected Emissions</b> – necessary to report emissions levels, determine progress towards targets and appropriately label emissions data (estimate or projection)</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Determine if Updated GHG Emission Estimates and Projections Are Available and Call the Data Contact</b> <ol style="list-style-type: none"> <li>a) Call TRPA, CTC and other state agencies knowledgeable of Tahoe Basin sustainability and climate change initiatives, and State sustainability and climate change initiatives that influence the Tahoe Basin.</li> <li>b) Identify key staff that will know if updated GHG emissions estimates and projects are available and document their contact information in the section 2.1 Sources above.</li> <li>c) Call the staff identified and determine if updated GHG emissions estimates and projections are available. If estimates and projections are available, then identify the contact that can provide the GHG emissions estimates and projections and collect their contact information.</li> <li>d) Collect the GHG Emissions Estimates and Projections Data and Update the GHG Emissions Worksheet (If Updated GHG Emissions Estimates and Projections Exist).</li> </ol> </li> </ol>	

## 2. Collect GHG Emissions Estimates and Projections Data and Update the GHG Emissions Worksheet

- a) In the GHG Emissions worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent inventory year in the next empty row at the bottom of the Inventory Year column. In the same cell identify if you are adding an estimate or a projection.
- b) Enter the GHG emissions estimates and projections data by source for the most recent inventory year (use same formatting as the initial emissions and projections entry). If new targets are provided for most recent inventory year, add target data to the Reduction Targets data column.
  - Projections are based on a set of assumptions, and typically projections are generated for several scenarios instead of trying to show one exact picture of the future. If projections are generated for several alternative scenarios, then the most supported alternative (if identifiable), or the alternative that reflects the middle of the range alternatives (e.g. alternative 3 of 5) should be used.
  - If new projections are available for the same or different future years, then replace all existing projections data in the GHG Emissions Worksheet. Existing projections are based on different assumptions, such as different emissions factors, and thus are outdated and cannot be compared to new projections.
  - New years of estimates and projections should be added to the existing table if the updated estimates and projections use the same or similar sources and methods. Estimates and projections should be entered so that they are chronologically ascending going left to right. However, if there are material differences in the source list or methods used by future inventories, then the existing estimates and projects may not be comparable and usable, and the old inventory should be replaced by the new inventory.

## 3.0 Metric Reporting

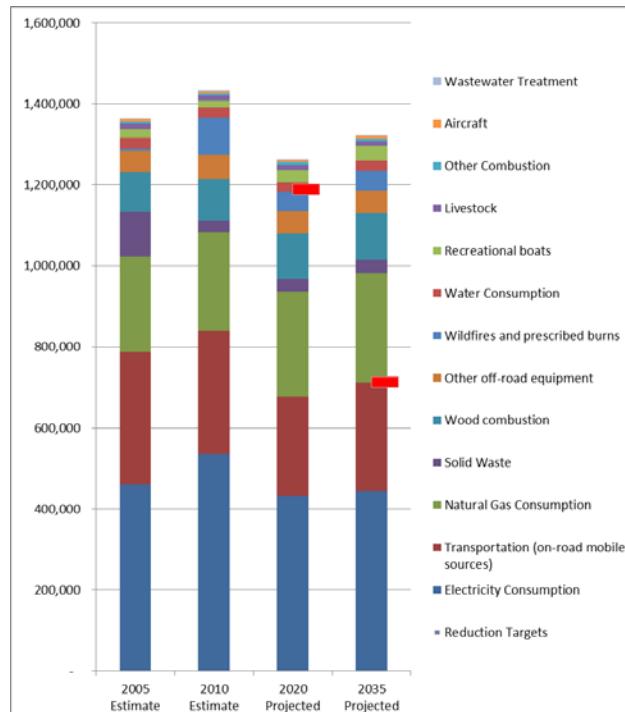
### 3.1 Targets & Comparable Data Sets

The 2013 Lake Tahoe Sustainability Action Plan recommends a 15% reduction in GHG emissions below the region's baseline by 2020. The lake Tahoe Sustainability Action Plan also recommends long-term targets to reduce GHG emissions below 49% of baseline in 2035 and 83% below baseline by 2050. This equates to emission limit targets of 1,188,771 MTCO<sub>2</sub>e/yr in 2020, 713,262 MTCO<sub>2</sub>e/yr in 2035 and 237,754 MTCO<sub>2</sub>e/yr in 2050. GHG emission reduction targets are consistent with statutory direction provided by AB 32 in California to reduce GHG to 1990 levels by 2020 and to 80% below 1990 levels by 2050. The region's baseline was calculated by averaging total GHG emission estimates for 2005 and 2010.

### 3.2 Potential Data Charts

The chart below is the recommended display for the GHG Emissions indicator. The chart enables an understanding of the contribution of each source to the overall GHG emissions of the Tahoe Basin, the trend of historical emissions estimates and future emissions based on the most likely future scenario.

**Greenhouse Gas Emissions Estimates & Projections**



3.3 Procedure
<p><b>1. Update the Chart in the GHG Emissions Worksheet (If Updated GHG Emissions Estimates and Projections Exist)</b></p> <ul style="list-style-type: none"> <li>a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Emission Source headers and the Projection Target header, one will include Inventory Year dates and one will include all emission data.</li> <li>b) Click the bottom left corner of the box surrounding the Inventory Year dates and drag down so it includes the recently added inventory year and the GHG emissions data.</li> <li>c) This will automatically update the chart to include data and targets for the most recent inventory year.</li> </ul>
3.4 Key Reporting Context
<ul style="list-style-type: none"> <li>▪ The primary sources of GHG Emissions (VMT and Energy Consumption), and thus GHG Emissions in the Tahoe Basin are particularly influenced by fluctuations in the permanent local population, and macroeconomic and weather conditions that effect tourism.</li> <li>▪ There were notable differences between the Region's inventories for 2005 and 2010. Certain sectors showed non-linear changes in emissions due to various reasons, such as the economic downturn. Therefore, due to the inherent variation in inventory sectors between these two years, the average of the 2005 and 2010 GHG emissions inventories is used as the baseline reference point in the Sustainability Action Plan in an attempt to smooth out changes attributable to non-linear factors between 2005 and 2010.</li> <li>▪ The 2013 GHG inventory and projections: <ul style="list-style-type: none"> <li>▫ Are based on methods and protocols guiding the use of activity data and emission factors established by the Intergovernmental Panel on Climate Change (2006), the California Climate Action Registry (2009), the U.S. Energy Information Administration (2008), and the U.S. Environmental Protection Agency (2009).</li> <li>▫ Include the material human-driven sources in the Tahoe Basin, therefor although carbon sequestered by natural systems (e.g. plants and trees) is material it is excluded from this indicator.</li> <li>▫ Are based on Alternative 3 used by the Lake Tahoe Regional Plan Update – Low Development, Highly Incentivized Redevelopment.</li> <li>▫ Are based on activity data (e.g. vehicle miles traveled are used to estimate GHG emissions for on-road vehicles) and high-quality activity data for some sources were more readily available for the California side of the Basin than the Nevada side. For example, electricity consumption from Nevada Energy was only available at the regional (multi-county) level. As a result, improved Nevada data should be incorporated into inventory estimates should such data become available in the future.</li> <li>▫ Take into account the effects of current, applicable legislation (renewable electricity standards [both in California and Nevada]); 2014 Title 24 building code standards (California only); and increased vehicle emissions standards ([i.e., Pavley standards; California only] and the transportation and land use strategy of the RTP/SCS, which met the GHG reduction requirements of California's SB 375 [Sustainable Communities and Climate Protection Act of 2008]). Chapter 2 of the Sustainability Action Plan provides detailed descriptions of these legislative actions. Note that potential future state legislation or local actions are not included.</li> <li>▫ Exclude contributions of GHG emissions that occur during the life cycle of goods manufactured elsewhere in the world because doing so would be speculative at the planning level.</li> </ul> </li> <li>▪ Primary conclusions from the 2013 GHG inventory for the Tahoe Basin include: <ul style="list-style-type: none"> <li>▫ Basin-wide CO<sub>2</sub>e emissions total 1,363,734 metric tons in 2005, and these emissions increased by 5% to 1,433,374 metric tons in 2010. GHG emission changes from 2005 to 2020 range from -2% to 3%, and changes from 2005 to 2035 range from 2% to 9% depending on the planning alternative.</li> <li>▫ The energy sector (i.e., electricity usage) and on-road motor vehicles are the largest sources of GHG emissions in the Basin-wide inventories. The energy sector accounts for 36% of total CO<sub>2</sub>e emissions in 2005 and 39% in 2010; while on-road motor vehicles account for 30% of total CO<sub>2</sub>e emissions in 2005 and 27% in 2010.</li> <li>▫ Fire activity in the Basin is highly variable from year-to-year. As a result, consideration should be given to developing a “typical year” baseline inventory that could be used for comparisons to emissions resulting from planned burning projected to occur in future years.</li> </ul> </li> <li>▪ The 2050 emission reduction target was estimated by calculating the emissions level 80 percent below the 2020 target, which is treated as a proxy for 1990 emissions. The 2035 target was interpolated between 2020 and 2050.</li> </ul>
4.0 Terms & References
4.1 Terms
<p><b>Greenhouse Gas</b> – A gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect. The primary greenhouse gases in the Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.</p> <p><b>Greenhouse Gas Inventory</b> – An estimate of greenhouse gas emissions for a defined geographical area that provides an overall estimate as well as by different categories. An inventory assist policy makers in development of strategies and policies for emissions reductions and to track the progress of those policies. And, regulatory agencies and corporations rely on inventories to establish compliance records with allowable emission rates. Businesses, the public, and other interest groups use inventories to better understand the sources and trends in emissions.</p> <p><b>Emission Estimates</b> - An approximate calculation of emissions based on quantifying the intensity of emissions-producing</p>

activities and then applying appropriate emission factors to the activity data. Emission factors represent the amount of a given pollutant emitted per unit of activity, and for CO<sub>2</sub>, emission factors are generally derived from the characteristics of the fuel combusted.

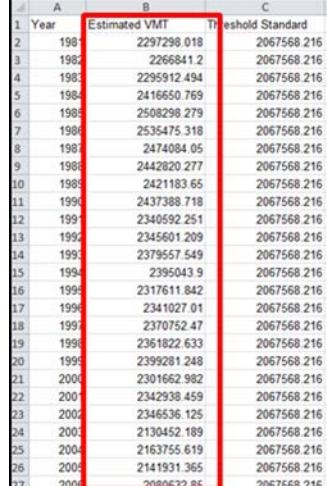
**Emission Projections** – Future-year emission estimates that take socioeconomic and political factors into consideration, such as population growth and energy policy. Emission projections are generally developed for several different scenarios, or alternatives, instead of trying to show one exact picture of the future.

**Emission Source Categories** – Logical groupings of activities that emit GHG emissions. Emission source categories are typically split into two emission types: direct and indirect. Direct emission source categories are emission sources located within the region of interest. In the Tahoe Basin direct emissions source categories includes, on-road mobile sources, off-road vehicles, wood combustion, natural gas combustion, other fuel combustion, wildfires and prescribed burns, livestock, forestry carbon stock and wastewater treatment. Indirect emission source categories are emission sources outside the region of interest but result from activities within the region including, electricity consumption, wastewater treatment (both direct and indirect), aircraft and municipal solid waste.

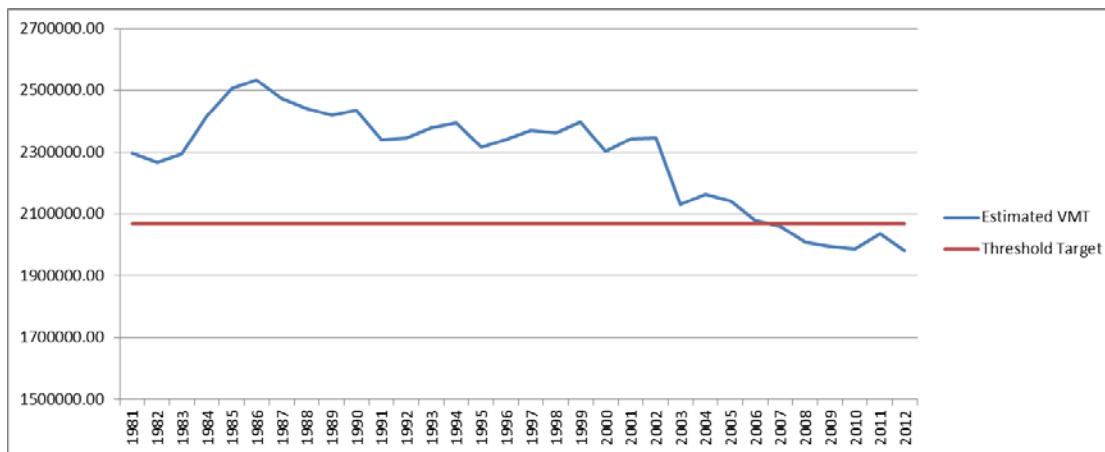
#### 4.2 References

A Regional Greenhouse Gas Inventory for the Lake Tahoe Basin (*Available on request from the California Tahoe Conservancy*)

Lake Tahoe Sustainability Action Plan (*Under development as of December 2013*)

<h2 style="text-align: center;">Vehicle Miles Traveled (VMT)</h2>				
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)			
<b>1.0 Indicator Overview</b>				
<b>1.1 Relevance</b>				
Transportation emissions are the second largest source of GHG emissions in the Tahoe Basin according to the “2013 - A Regional Greenhouse Gas Inventory for the Lake Tahoe Basin” produced by the California Tahoe Conservancy. On-road mobile sources make up approximately 80% of total transportation emissions in the Tahoe Basin, making reductions in Vehicle Miles Traveled (VMT) a primary focus of GHG emission reduction initiatives basin-wide. In addition, strategies to reduce VMT have community benefits, such as walkable commercial areas that generate local economic benefits and pedestrian and bicycle trails to generate human health benefits. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the GHG Emission Aspect section of Chapter 3 above.				
<b>1.2 Description</b>				
This indicator measures the estimated average annual daily Vehicle Miles Traveled (VMT) on Tahoe Basin highways managed by California Department of Transportation (Caltrans) and Nevada Department of Transportation (NDOT), as well as city streets and roads managed by local counties and the City of South Lake Tahoe. Average annual daily VMT is the sum of distances traveled by all motor vehicles on Tahoe Basin highways in a given day, averaged out over the year. VMT data is modeled through a coordinated effort between the Tahoe Metropolitan Planning Organization (TMPO), the Tahoe Regional Planning Agency (TRPA), Caltrans and NDOT, using the TRPA TransCAD Transportation Model and average annual daily vehicle counts from a peak travel day (2nd weekend in August) of each calendar year.				
<b>1.3 Key Assumptions</b>				
Raw data is collected and published using consistent and accurate methods by the <b>TMPO Transportation Monitoring Program</b> .				
<b>2.0 Data Collection &amp; Analysis Methods</b>				
<b>2.1 Sources</b>				
<b>TMPO Annual VMT Estimate Spreadsheet (via TMPO staff)</b> – Spreadsheet is maintained by TMPO staff and updated with the most recent year’s estimates in <b>December</b> of each year.				
<ul style="list-style-type: none"> <li>▪ TMPO Staff Contact (as of December 2013): Keith Norberg, TMPO</li> <li>▪ Email: <a href="mailto:knorberg@trpa.org">knorberg@trpa.org</a></li> <li>▪ Phone: (775) 589-5289</li> </ul>				
<b>2.2 Data Attributes</b>				
The following data must be collected to report the indicator annually:				
<ul style="list-style-type: none"> <li>▪ <b>Calendar Year</b></li> <li>▪ <b>Average Annual Daily VMT – necessary to report annual indicator data</b></li> </ul>				
<b>2.3 Procedure</b>				
<ol style="list-style-type: none"> <li>1. <b>Contact TMPO Staff to Request Average Annual Daily VMT Data</b> <ol style="list-style-type: none"> <li>a) Email the TMPO staff, and request the average annual daily VMT data for the most recent reporting period. Include the image of VMT data to the right as an example of the data and format you are requesting in the email.</li> </ol> </li>   <li>2. <b>Collect Average Annual Daily VMT Data and Update the VMT Worksheet</b> <ol style="list-style-type: none"> <li>a) In the spreadsheet provided by the TMPO staff, copy VMT data in the Estimated VMT column for the most recent calendar year (see image to the right).</li> <li>b) In the VMT worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.</li> <li>c) Paste the average annual daily VMT data for the most recent calendar year in the Estimate VMT column.</li> </ol> </li> </ol>				
				
<b>3.0 Metric Reporting Methods</b>				
<b>3.1 Targets &amp; Comparable Data Sets</b>				
<ul style="list-style-type: none"> <li>▪ A threshold standard of 2,067,568 VMT has been established through the TRPA Threshold Evaluation Program. This program adopted the threshold standard to reduce VMT in the Tahoe Basin by 10% from the 1981 base year values. The Tahoe Basin, as of November 2013 is in attainment with this standard.</li> </ul>				
<b>3.2 Potential Data Charts</b>				
The chart below is the recommended display for the VMT indicator. The chart enables an understanding of the trend in VMT over time and allows a comparison of estimated VMT to the TRPA Threshold Evaluation standard.				

### Average Annual Daily VMT



### 3.3 Procedure

#### 1. Update the Indicator Display in the VMT Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include Data column headers, one will include Calendar Year dates and one will include Estimated VMT data and Threshold Targets data.
- Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added calendar year and the Estimated VMT data and Threshold Targets data.
- This will automatically update the chart to include data for the most recent calendar year.

### 3.4 Key Reporting Context

- Variation in VMT is primarily influenced by changes in the local full-time residential population and macroeconomic conditions (e.g. gas prices, unemployment rates). Increasing access to transit services, access to bicycle and pedestrian facilities, and the relative desirability of alternative modes of transportation in comparison to the use of the personal automobile can also assist in reducing VMT.
- VMT is tracked annually by TMPO and reported every five years through the TRPA Threshold Evaluation. VMT is part of the Air Quality Threshold Category and is reported as part of the Visibility and Nitrate Deposition Threshold Indicator Reporting Category.
- The indicator is based on traffic volume data collected daily at 20 monitoring stations in the Tahoe Basin by Caltrans and NDOT. Then, peak traffic volumes are multiplied by a VMT constant (e.g. 4.77) that represents average number of trips per vehicle per day and average trip length per vehicle to provide an estimate of daily VMT.

## 4.0 Terms & References

### 4.1 Terms

**Vehicle Miles Traveled (VMT)** – The sum of distances traveled by all motor vehicles in a specified system of highways, streets and roads for a given period of time.

**Average Annual Daily Vehicle Miles Traveled** - The sum of distances traveled by all motor vehicles on Tahoe Basin highways, streets and roads in a given day, averaged out over the year.

### 4.2 Additional References

TMPO Mobility 2035: Lake Tahoe Regional Transportation Plan Update

<http://tahoempo.org/Mobility2035/>

TRPA Threshold Evaluation

<http://www.trpa.org/regional-plan/threshold-evaluation/>

Caltrans Traffic Data Branch

<http://traffic-counts.dot.ca.gov/>

## Natural Gas Consumption

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Objective & Description

#### 1.1 Relevance

According to the A Regional Greenhouse Gas Inventory for the Lake Tahoe Basin, natural gas consumption accounts for roughly 25% of the total GHG emissions in the Tahoe Basin, making it the third largest emission source only behind electricity consumption and transportation. Natural gas is the primary fuel used by Tahoe Basin residents to heat their homes. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the GHG Emission Aspect section of Chapter 3 above.

#### 1.2 Description

This indicator measures the total therms of natural gas consumption from residential, commercial and industrial buildings in the Tahoe Basin. Natural gas in the Tahoe Basin is provided by Southwest Gas Corporation, who regularly monitors consumption data. Southwest Gas Corporation separates the Tahoe Basin into three separate districts: South Lake Tahoe, North Shore and Nevada-Tahoe communities. South Lake Tahoe includes all communities in California south of Meeks Bay, North Shore includes all communities in California north of Homewood, and Nevada-Tahoe communities includes all Nevada communities in the Tahoe Basin. The South Lake Tahoe District of Southwest Gas's service area does not include the unincorporated portions of El Dorado County, which includes Meyers and Christmas Valley. The majority of these homes run on on-site propane tanks.

#### 1.3 Key Assumptions

Raw data is collected and published using consistent and accurate methods by the Southwest Gas Corporation.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

**Southwest Gas Demand Planning Department Staff** – Data is available upon request from department staff. Consumption data is tracked throughout the year with annual data compiled in February for the previous calendar year.

- Southwest Gas Staff Contact (as of December 2013): Brooks Congdon, Manager, Pricing & Tariffs Department, Southwest Gas Corp.
- Email: [brooks.congdon@swgas.com](mailto:brooks.congdon@swgas.com)
- Phone: (702) 364-3313

#### 2.2 Data Attributes

The following data must be collected to report the indicator annually:

- **Calendar Year**
- **District Name** – necessary to report consumption data for the entire Tahoe Basin
- **Total Therms** – necessary to report consumption data

#### 2.3 Procedure

1. **Contact Southwest Gas Demand Planning Department Staff and Request Natural Gas Consumption Data for Tahoe Basin Districts**
  - a) Call or email the Southwest Gas Demand Planning Department Staff representative and request natural gas consumption data for the three Tahoe Basin Districts for the most recent calendar year. Data will be provided for the desired calendar year as a pdf attachment in an email.
    - If contact is no longer accessible, find a new staff representative willing to provide the requested data and update section 2.1 Sources above with contact information for the new contact.
2. **Collect Natural Gas Consumption Data and Update the Natural Gas Consumption Worksheet**
  - a) In the pdf document provided by the Southwest Gas Demand Planning Department Staff representative, copy consumption data in the “TOTAL” column in the “DISTRICT NAME” row (see image below).

RATE JURISDICTION: NO NV DIV - NO NV RATE JURIS											DISTRICT: TAHOE DISTRICT	
01/10	02/10	03/10	04/10	05/10	06/10	07/10	08/10	09/10	10/10	11/10	12/10	TOTAL
ACCOUNT 48000001 RESIDENTIAL SALES												
1,747,209	1,490,849	955,347	320,297	SW	261,723	648,502	1,409,992	11,040,281				
1,572,222	1,253,574	755,558	220,803		324,205							
• TOTAL FOR 4800	1,747,209	1,490,849	955,347	320,297	261,723	648,502	1,409,992	11,040,281				
	1,572,222	1,253,574	755,558	220,803	324,205							

- b) In the Natural Gas Consumption Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.
- c) Paste natural gas consumption data in the Consumption data column for the most recent calendar year.

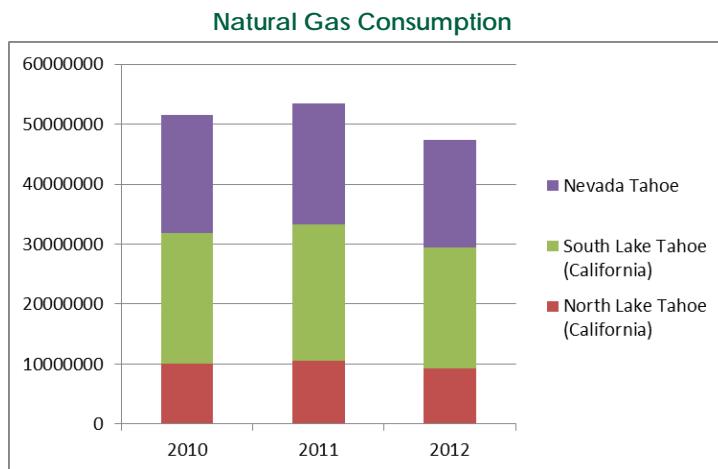
### 3.0 Metric Reporting Methods

#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable regions for the Natural Gas Consumption indicator.

### 3.2 Potential Data Charts

The chart below is the recommended display for the Natural Gas Consumption indicator. The chart enables a comparison of natural gas consumption in different regions in the Tahoe Basin, and an understanding of the trend in natural gas consumption over time.



### 3.3 Procedure

#### 1. Update the Chart in the Natural Gas Consumption Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include the district column headers, one will include Calendar Year dates and one will include natural gas consumption data.
- Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added calendar year and the natural gas consumption data.
- This will automatically update the chart to include data for the most recent calendar year.

### 3.4 Key Reporting Context

## 4.0 Terms & References

### 4.1 Terms

**Therms** – Measurement of natural gas consumption that is equal to 100,000 BTUs (British Thermal Units). Natural gas is weighed in cubic feet, with one therm being the energy equivalent of 100 cubic feet of natural gas. The therm is used by natural gas companies to convert the volume of natural gas used into a number that tracks energy consumption.

### 4.2 Additional References

A Regional Greenhouse Gas Inventory for the Lake Tahoe Basin (*Available on request from the California Tahoe Conservancy*)

Lake Tahoe Sustainability Action Plan (*Under development as of December 2013*)

<b>Flame Length</b>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>The buildup of forest fuels for decades in the Tahoe Basin has increased the likelihood of uncharacteristic, catastrophic wildfires that pose a serious risk to public safety, private property and forest ecosystems. Vegetation management projects have been implemented throughout Tahoe Basin forests to reduce the amount of forest fuels that could lead to large-scale crown fires. The Wildland Urban Interface (WUI) is the zone of transition between the unoccupied land and human development, which is particularly at risk of fire ignition and potential wildfire impacts to human infrastructure is a key concern. Forest managers use flame length estimates and projections to evaluate existing fire protection strategies, assess progress towards fire protection goals and allocate fire protection resources. Wildfire with flame lengths less than 4 feet can typically be suppressed by crews with hand tools and thus is typically the desired condition within the WUI. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in the Forest Health Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the percentage of the WUI in the Tahoe Basin that is estimated and projected to have flame lengths less than 4 feet in length, which also includes non-burnable areas (e.g. large parking lots). The flame length estimates and projections reported are from the only comprehensive flame length assessment available for the Tahoe Basin as of December 2013, which was funded by a SNPLMA Round 11 Grant. The flame length estimates and projections are generated using fire behavior inputs based on high resolution Light Detection and Ranging (LiDAR), multi-spectral imagery, existing GIS layers and fire modeling software, and the method is described in A Conditions Assessment of Fire Hazard and Risk in the WUI and SEZ of the Lake Tahoe Basin.</p> <p>Although there are currently no defined plans to conduct another comprehensive flame length assessment for the Tahoe Basin in the future, it is expected that future flame assessments will be conducted to evaluate fuels reduction strategies, identify areas of high fire risk and assess progress towards fire protection goals. Since the format and methods of future assessments are unknown at this time, this info sheet provides general steps with some specific guidance to assist with reporting this indicator in the future.</p>	
<b>1.3 Key Assumptions</b>	
<ul style="list-style-type: none"> <li>▪ The production of flame length estimates and projections uses consistently and accurately follow scientifically sound and published.</li> <li>▪ A flame length assessment will be conducted in the next 5-10 years.</li> </ul>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p><b>A Condition Assessment of Fire Hazard and Risk in the Wildland Urban Interface (WUI) and Stream Environment Zones (SEZ's) of the Lake Tahoe Basin, USFS LTBMU Fire Hazard Condition Assessment Program (2012)</b> – As of December 2013, USFS LTBMU has only conducted one condition assessment report providing flame length estimates for 2010 and projections for 2020. Future reporting will require updates to the existing estimates and projections, or provide entirely new estimates and projections.</p>	
<b>2.2 Data Attributes</b>	
<p>The following data is needed to report the indicator:</p> <ul style="list-style-type: none"> <li>▪ <b>Estimate/Projection Year</b></li> <li>▪ <b>Estimate or Projection</b> – <i>needed to differentiate results by estimates based on current conditions versus projections based on expected changes to conditions</i></li> <li>▪ <b>HUC-12 Subwatershed</b> – <i>needed to report flame length percentage by subwatershed</i></li> <li>▪ <b>Percent Up to 4" Flame Length in WUI</b>– <i>needed to report flame length percentage of WUI</i></li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Determine if Updated Flame Length Estimates and Projections Are Available</b> <ol style="list-style-type: none"> <li>a) Call the USFS LTBMU, TRPA, CTC and other state agencies knowledgeable of flame length prediction efforts and fire hazard monitoring initiatives.</li> <li>b) Identify key staff that will know if updated flame length predictions are available and document their contact information in section 2.1 Sources above.</li> <li>c) Call the staff identified and request the most recent flame length assessment.</li> </ol> </li>   <li>2. <b>Collect Flame Length Data and Update the Flame Length Worksheet</b> <ol style="list-style-type: none"> <li>a) In the Flame Length worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent reporting year in the next empty row at the bottom of the Reporting Year column.</li> </ol> </li> </ol>	

- b) Enter the estimated and projected percent up to 4" flame length in the WUI for each subwatershed (see image of data presentation in the 2012 USFS LTBMU Fire Hazard Condition Assessment Program to the right) total into the Flame Length worksheet. If a target is provided, add target data to the Targets data column.
- If new projections are available for the same or different future years, then replace all existing projections data in the Flame Length Worksheet. Existing projections are based on different assumptions, such as different emissions factors, and thus are outdated and cannot be compared to new projections.
  - New estimates and projections should be added to the existing table if the updated estimates and projections use the same or similar sources and methods. Estimates and projections should be entered so that they are chronologically ascending going top to bottom. However, if there are material differences in the methods used by future assessments, then the existing estimates and projects may not be comparable and usable, and the old estimates and projections should be replaced by the new estimates and projections.

HUC 12 Watershed	Non-burnable (%)	Up to 4" Flame Length	4"-8" Flame Length	8"-11" Flame Length	Greater than 11" Flame Length
Burton Creek-Frontal Lake Tahoe	3%	75%	8%	4%	11%
General Creek-Frontal Lake Tahoe	2%	73%	7%	4%	13%
Ward Creek-Frontal Lake Tahoe	2%	72%	8%	5%	11%
Trout Creek	2%	71%	8%	5%	15%
Fallen Leaf Lake-Frontal Lake Tahoe	5%	69%	11%	4%	11%
Incline Lake-Frontal Lake Tahoe	3%	66%	11%	5%	13%
Squaw Creek-Truckee River	7%	66%	8%	6%	13%
Big Meadow Creek-Upper Truckee River	1%	63%	14%	6%	17%
Upper Truckee River-Frontal Lake Tahoe	6%	61%	12%	4%	17%
Sand Harbor-Frontal Lake Tahoe	2%	60%	11%	7%	20%
Zephyr Cove-Frontal Lake Tahoe	5%	60%	13%	7%	16%
All Watersheds	3%	68%	10%	5%	14%

### 3.0 Metric Reporting

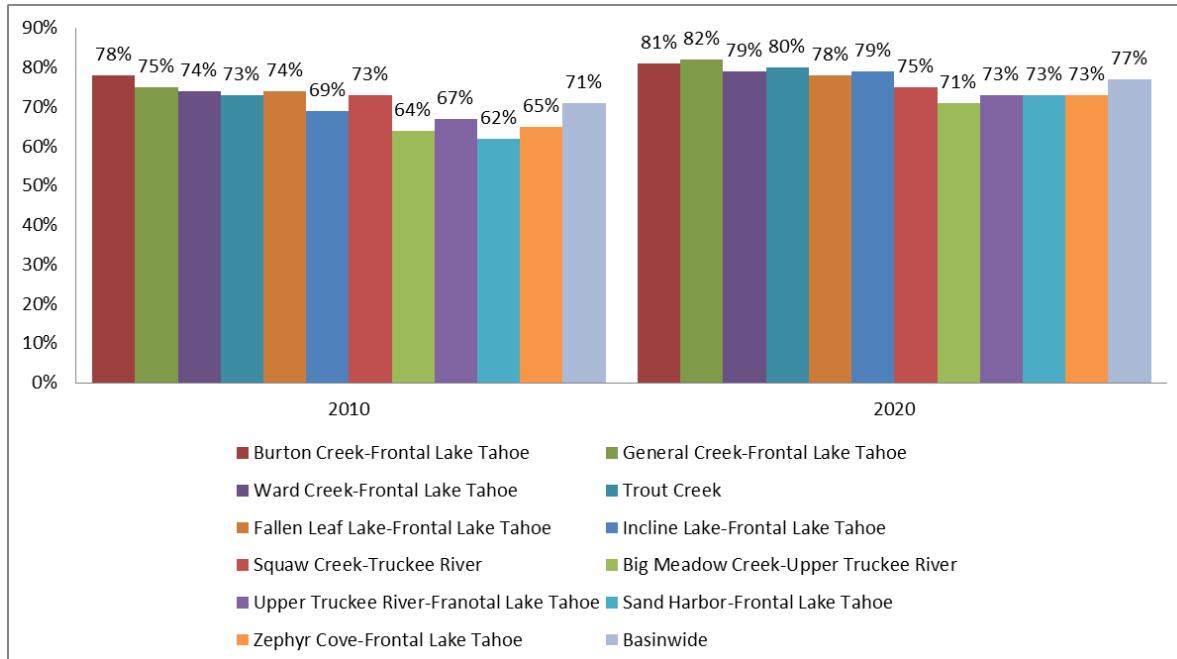
#### 3.1 Targets & Comparable Data Sets

There are no defined targets for the Tahoe Basin or relevant comparable percentages for the Flame Length indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Flame Length indicator. The chart enables a comparison of the percent up to 4" flame length within the WUI for each subwatershed, and enables an understanding of the trend in flame length over time for each subwatershed.

Flame Length in WUI (<4 feet)



#### 3.3 Procedure

##### 1. Update the Chart in the Flame Length Worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Subwatershed headers, one will include Estimate/Projection Year dates and one will include flame

<p>length data.</p> <p>b) Click the bottom left corner of the box surrounding the Year dates and drag down so it includes the recently added prediction year and the flame length data.</p> <p>c) This will automatically update the chart to include data for the most recent year.</p>
<b>3.4 Key Reporting Context</b>
<ul style="list-style-type: none"> <li>▪ Results relevant to flame length assessment from the 2013 Condition Assessment for the Tahoe Basin include: <ul style="list-style-type: none"> <li>▫ Within the defense zone, threat zone, and urban core, areas that had been treated, even those with treatments greater than 15 years old, consistently had a greater percentage of area that was modeled with flame lengths of less than 4 feet in both 2010 and 2020 (Appendix 3-maps; Appendix 5, Tables 12ab).</li> <li>▫ Within treated areas in WUI, an average of 81 % of those treatments had flame lengths less than 4 feet. Within untreated areas, that area having predicted flame lengths of 4 feet or less averaged 44%. Outside of the WUI, untreated areas consistently had greater percentage of area susceptible to flame lengths greater than 4 feet. The trend of treated WUI's having a greater percentage of area susceptible to flame lengths of 4 feet or less was seen when data was summarized at the HUC-12 watershed scale (Appendix 3-maps; Appendix 5, Tables 13ab).</li> <li>▫ The total area of WUI susceptible to flame lengths of 4 feet or less (Appendix 5, Tables 14ab) increases for all watershed between 2010 and 2012 due to planned treatment implementation.</li> </ul> </li> </ul>
<b>4.0 Terms &amp; References</b>
<b>4.1 Terms</b>
<p><b>Flame Length</b> – The estimated or projected average length (feet) of individual flames possible given vegetation and other natural characteristics on the landscape.</p> <p><b>Light Detection and Ranging (LiDAR)</b> – A remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses—combined with other data recorded by the airborne system—generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.</p> <p><b>Wildland Urban Interface</b> – The zone of transition between the unoccupied land and human development, which is particularly at risk of fire ignition and potential wildfire impacts to human infrastructure is a key concern</p>
<b>4.2 References</b>
<p>Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy, 10 Year Plan, USFS LTBMU  <a href="http://resources.ca.gov/tahoefirecommission/downloads/Final_Draft_LTB-FUELS-10_YEAR_PLAN.pdf">http://resources.ca.gov/tahoefirecommission/downloads/Final_Draft_LTB-FUELS-10_YEAR_PLAN.pdf</a></p> <p><i>LiDAR, Nation Ocean Service, National Oceanic and Atmospheric Administration</i>  <a href="http://oceanservice.noaa.gov/facts/lidar.html">http://oceanservice.noaa.gov/facts/lidar.html</a></p> <p><i>California Wildland-Urban Interface Code Information, Cal Fire</i>  <a href="http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_codes.php">http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_codes.php</a></p> <p><i>A Condition Assessment of Fire Hazard and Risk in the Wildland Urban Interface (WUI) and Stream Environment Zones (SEZ's) of the Lake Tahoe Basin, Spatial Informatics Group</i>  <a href="https://cloud.sig-qis.com/public.php?service=files&amp;t=17ed80c816d5ae0ab049cb9eab27c297">https://cloud.sig-qis.com/public.php?service=files&amp;t=17ed80c816d5ae0ab049cb9eab27c297</a></p>

## Acres of Forest Fuels Reduction Treatment

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Advancing forest ecosystem health and reducing hazardous fuels requires fuels reduction treatments in the urban core, defense zone, threat zone and general forest. Treatments are prioritized to reduce fuel conditions that could support high-intensity wildfires in the urban core and community zones. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Forest Health Aspect section of Chapter 3 above. In addition, further detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the Environmental Improvement Program (EIP) Performance Measure (PM) Info Sheet for this indicator.

#### 1.2 Description

This indicator measures the number of acres of treatment performed in the Tahoe Basin to reduce hazardous fuels and to move toward a Fire Regime Condition Class (FRCC) 1 rating. This indicator covers fuels reduction treatments that take place in the general forest, community defense zone, threat zone and on publicly owned urban intermix parcels. Fuels reductions treatments work toward achieving the Hazardous Fuels desired condition, while keeping aligned with the Healthy Forests and Vegetation desired condition. While the EIP PM, Acres of Forest Fuels Reduction Treatment, includes subcategories to provide greater reporting detail, this indicator provides a single data point that captures only the total number of acres treated annually. Lake Tahoe EIP staff collect and compile information about road treatments annually for EIP programmatic reporting, and this indicator pulls data directly from these efforts.

#### 1.3 Key Assumptions

Raw data is collected annually using consistent methods and accurate summary measurements are provided when requested by the Lake Tahoe EIP.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

**Lake Tahoe EIP Coordinator** – As of November 2013, EIP PMs are tracked using spreadsheets only available to EIP staff. However, EIP PMs may be accessible online in 2014 if a planned database is developed. Raw forest fuels reduction treatment data is collected at the end of each calendar year and summary data should be available by **February** of the following year.

- Lake Tahoe EIP Coordinator (as of December 2013): Karin Edwards, TRPA
- Email: [kedwards@trpa.org](mailto:kedwards@trpa.org)
- Phone: (775) 589-5258

#### 2.2 Data Attributes

The following data is needed to report the indicator annually:

- **EIP Reporting Year**
- **Acres of Forest Fuels Reduction Treatment – necessary to report annual indicator data**

#### 2.3 Procedure

##### 1. Contact Lake Tahoe EIP Coordinator and Request Acres of Forest Fuels Reduction Treatment Data

- a) Email the EIP Coordinator requesting the acres of forest fuels reduction treatments conducted over the most recent EIP reporting year. Include the Summary Table below in the email as an example of the data and format you are requesting.

##### 2. Collect Acres of Forest Fuels Reduction Treatment Data and Update the Forest Fuels Reduction Worksheet

- a) In the summary table provided by the EIP Coordinator, copy the acres of forest fuels reduction treatment data for the most recent EIP reporting year (see image below).

EIP Accomplishments*						
	1997-2010	1997-2011	1997-2012	2010	2011	2012
Acres of Forest Fuels Reduction Treatment	45413	51288	54248	na	5875	2960

- b) In the Forest Fuels Reduction Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent EIP reporting year in the next empty row at the bottom of the EIP Reporting Year column.
- c) Paste acres of forest fuels reduction treatment data in the Acres of Forest Fuels Reduction Treatment data column for the most recent EIP reporting year.

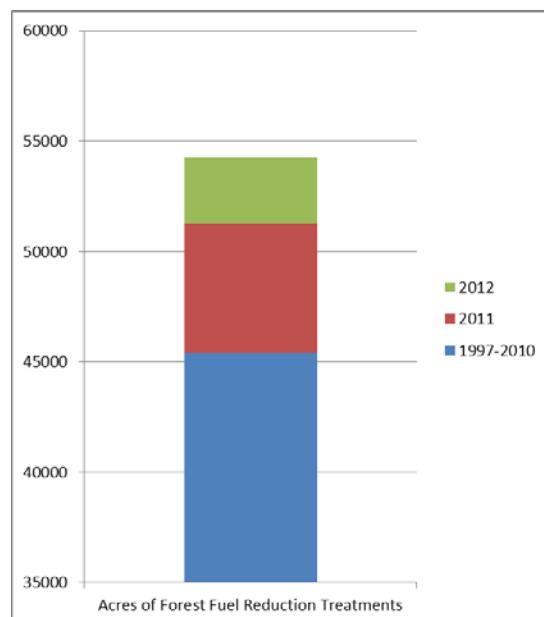
### 3.0 Metric Reporting

#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable regions for the Acres of Forest Fuels Reduction Treatment indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Acres of Forest Fuels Reduction Treatment indicator. The chart enables an understanding of the trend in the acres treated over time.

**Acres of Forest Fuels Reduction Treatments**

### 3.3 Procedure

#### 1. Update the Chart in the Forest Fuels Reduction Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Acres of Forest Fuel Reduction Treatments data column header, one will include EIP Reporting Year dates and one will include acres of forest fuels reduction treatment data.
- Click the bottom left corner of the box surrounding the EIP Reporting Year dates and drag down so it includes the recently added year and the acres of forest fuels reduction treatment data.
- This will automatically update the chart to include data for the most recent EIP reporting year.

### 3.4 Key Reporting Context

- The EIP allows for a single acre to be counted multiple times for different, complementary treatments. Therefore reporting for this indicator may count the same acre multiple times for different treatments.

## 4.0 Terms & References

### 4.1 Terms

**Biomass removal** – Material removed from treatment area to be utilized in the form of chip, mulch, small or large logs. This material may provide some revenue to reduce the net cost of fuels reduction projects.

**Chipping** – Used to reduce ladder and surface fuels. Chippers are used to create chips of material that can either be removed from the site as biomass or spread across the ground.

**Community Defense Zone** – A strip that is generally  $\frac{1}{4}$  mile wide (and sometimes wider) that surrounds the urban core and is in close proximity to communities. This zone represents the TRPA and Community Wildfire Protection Wild-Urban Interface (WUI).

**General Forest Treatment Zone** – All areas of the basin that are beyond the threat zone. The majority of the general forest is under USFS ownership. Generally, treatments here are strategically located to reduce fire potential on a landscape scale.

**Hand thinning** – Reduces the number of trees, which reduces potential for crown fire. Ground-based thinning is generally used for trees with diameter at breast height of less than 16 inches, on steeper slopes and in sensitive areas.

**Mastication** – Used to reduce ladder and surface fuels. Masticators grind up material into irregular-sized chunks which are left on-site.

**Mechanical thinning** – Reduces the number of trees, which reduces potential for crown fire. Mechanical thinning is generally used for removal of larger trees. Ground-based mechanical thinning is used in areas that are sensitive or have slopes of less than 30 percent. Aerial-based mechanical thinning is used to remove trees from steeper slopes.

**Prescribed burning** – Reduces fuels by burning them on-site and restores fire as an essential element within the fire-adapted ecosystem. Pile burning is used primarily in a suite of initial treatments as a means of reducing fuels that have been hand- or machine-piled and where removal is not feasible. Underburning is used generally as a maintenance treatment to reduce fuels and restore fire to the ecosystem. Typically, prescribed burning results in mortality of individual or small clumps of trees that provide wildlife habitat.

**Pruning** – Removes lower branches from trees to increase crown-base height. Generally only used for small areas.

**Threat Zone** – A buffer extending from  $\frac{1}{4}$  mile to 1.5 miles beyond the urban core, beyond the community defense zone. This zone allows for a greater capability of fire suppression, firefighter safety and community protection. The threat zone and the community defense zone together are known as the USFS WUI.

**Urban Core Treatment Zone** – Contains the areas of highest density of residences, commercial structures and critical infrastructure in the Tahoe Basin. Publicly owned parcels in the urban core that are undeveloped receive fuels reduction treatment.

#### 4.2 References

USDA Forest Service et al. 2007. Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy. LTBMU, South Lake Tahoe, CA.

USDA Forest Service. 2004. Sierra Nevada Forest Plan Amendment, Final Supplemental Environmental Impact Statement. Pacific Southwest Region, Vallejo, CA.

Interagency Fire Regime Condition Class (FRCC) Guidebook. Version 1.3.0. June 2008.  
[http://frames.nbii.gov/documents/frcg/documents/FRCC+Guidebook\\_2008.10.30.pdf](http://frames.nbii.gov/documents/frcg/documents/FRCC+Guidebook_2008.10.30.pdf).

TRPA, Environmental Improvement Program

<http://www.trpa.org/about-trpa/how-we-operate/environmental-improvement-program/>

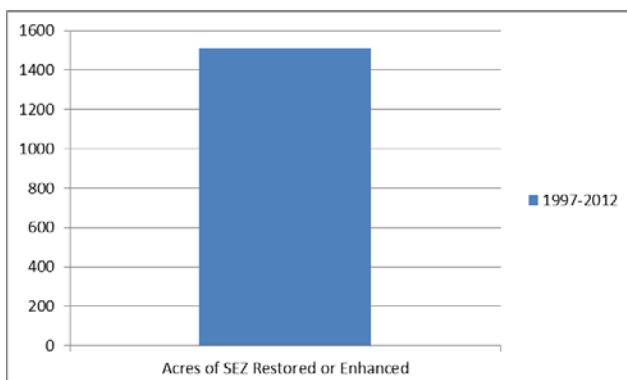
TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.  
<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

<b>Acres of SEZ Restored or Enhanced</b>													
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)												
<b>1.0 Indicator Overview</b>													
<b>1.1 Relevance</b>													
<p>Stream Environment Zone (SEZ) restoration and enhancement efforts are primary drivers for improving riparian function in the Tahoe Basin. These direct riparian benefits lead to greater amounts and types of habitat, and improved habitat quality. Providing more and better habitat improves the biological integrity of terrestrial and aquatic ecosystems by restoring natural processes and driving the sustainability of sensitive species populations. Enhanced SEZs also improve the timing and quality of stream flows by holding water in meadows and treating pollutants in urban runoff, such as sediment and nutrients. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Forest Health Aspect section of Chapter 3 above. In addition, further detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the Environmental Improvement Program (EIP) Performance Measure (PM) Info Sheet for this indicator.</p>													
<b>1.2 Description</b>													
<p>This indicator measures acres of SEZ in the Tahoe Basin that has been restored or enhanced in order to regain natural or historic function and values. Restoration and enhancement actions include 1) adjusting the geometry of the channel to restore historic conditions, 2) protecting banks from excessive erosion, 3) buffering the riparian corridor to reduce disturbance and 4) improving road crossings and dam design to enhance fish passage and flood behavior. While the EIP PM, Acres of SEZ Restored or Enhanced, includes a subcategory for action performed, this indicator provides a single data point that captures only the total acres of SEZ restored or enhanced in the entire Tahoe Basin annually. Lake Tahoe EIP staff collect and compile information about road treatments annually for EIP programmatic reporting, and this indicator pulls data directly from these efforts.</p>													
<b>1.3 Key Assumptions</b>													
<p>Raw data is collected annually using consistent methods and accurate summary measurements are provided when requested by the Lake Tahoe EIP.</p>													
<b>2.0 Data Collection &amp; Analysis Methods</b>													
<b>2.1 Sources</b>													
<p><b>Lake Tahoe EIP Coordinator</b> – As of December 2013, EIP PMs are tracked using spreadsheets only available to EIP staff. However, EIP PMs may be accessible online in 2014 if a planned database is developed. Raw SEZ restoration and enhancement data is collected at the end of each calendar year and summary data should be available by <b>February</b> of the following year.</p> <ul style="list-style-type: none"> <li>▪ Lake Tahoe EIP Coordinator (as of December 2013): Karin Edwards, TRPA</li> <li>▪ Email: <a href="mailto:kedwards@trpa.org">kedwards@trpa.org</a></li> <li>▪ Phone: (775) 589-5258</li> </ul>													
<b>2.2 Data Attributes</b>													
<p>The following data is needed to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>EIP Reporting Year</b></li> <li>▪ <b>Acres of SEZ Restored or Enhanced</b> – <i>necessary to report annual indicator data</i></li> </ul>													
<b>2.3 Procedure</b>													
<ol style="list-style-type: none"> <li>1. <b>Contact Lake Tahoe EIP Coordinator and Request Acres of SEZ Restored or Enhanced Data</b> <ol style="list-style-type: none"> <li>a) Email the EIP Coordinator requesting the acres of SEZ restoration or enhancement conducted over the most recent EIP reporting year. Include the Summary Table to the below in the email as an example of the data and format you are requesting.</li> </ol> </li>   <li>1. <b>Collect Acres of SEZ Restored or Enhanced Data and Update the SEZ Acres Worksheet</b> <ol style="list-style-type: none"> <li>a) In the summary table provided by the EIP Coordinator, copy the acres of SEZ restored or enhanced data for the most recent EIP reporting year (see image below).</li> </ol> </li> </ol>													
<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="4">EIP Accomplishments*</th> </tr> <tr> <th></th> <th>1997-2010</th> <th>1997-2011</th> <th>1997-2012</th> </tr> </thead> <tbody> <tr> <td>Acres of SEZ</td> <td>1509</td> <td>1509</td> <td>1509</td> </tr> </tbody> </table>		EIP Accomplishments*					1997-2010	1997-2011	1997-2012	Acres of SEZ	1509	1509	1509
EIP Accomplishments*													
	1997-2010	1997-2011	1997-2012										
Acres of SEZ	1509	1509	1509										
<ol style="list-style-type: none"> <li>b) In the SEZ Acres Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent EIP reporting year in the next empty row at the bottom of the EIP Reporting Year column.</li> <li>c) Paste acres of SEZ restored or enhanced data in the Acres of SEZ Restored or Enhanced data column for the most recent EIP reporting year.</li> </ol>													
<b>3.0 Metric Reporting</b>													
<b>3.1 Targets &amp; Comparable Data Sets</b>													
<p>There are no defined basin-wide targets or relevant comparable region for Acres of SEZ Restored or Enhanced indicator.</p>													

### 3.2 Potential Data Charts

The chart below is the recommended display for the Acres of SEZ Restored or Enhanced indicator. The chart enables an understanding of the trend in the acres of SEZ impacted by restoration or enhancement efforts over time.

**Acres of SEZ Restored or Enhanced**



### 3.3 Procedure

#### 1. Update the Chart in the SEZ Acres Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Acres of SEZ Restored or Enhanced data column header, one will include EIP Reporting Year dates and one will include acres of SEZ restored or enhanced data.
- Click the bottom left corner of the box surrounding the EIP Reporting Year dates and drag down so it includes the recently added year and SEZ restored or enhanced data.
- This will automatically update the chart to include data for the most recent EIP reporting year.

### 3.4 Key Reporting Context

- While the Acres of SEZ Restored or Enhanced EIP PM includes a subcategory for action performed, this indicator provides a single data point that captures only the total acres of SEZ restored or enhanced in the entire Tahoe Basin annually.

## 4.0 Terms & References

### 4.1 Terms

**Stream Environment Zone (SEZ)** – SEZs are land areas owing their physical and biological characteristics to the presence of surface water or shallow groundwater for a significant duration of the growing season in most years. SEZs typically encompass streams, adjacent wetlands, and many of the transitional areas that exist between the boundaries of these waters and adjacent upland landforms and plant communities.

**SEZ Enhanced** – SEZ is considered enhanced when actions are taken that heighten, intensify or improve one or more SEZ functions for the benefit of special status species, water quality, property protection, recreation or scenic quality. Enhancements result in a net gain in function but not in area of the aquatic resource.

**SEZ Restored** – SEZ is considered restored when actions have been taken that re-establish or rehabilitate an SEZ with the goal of returning natural or historic functions and characteristics to a degraded SEZ. Restoration actions can rebuild a former SEZ and result in a gain in both SEZ area and function.

**Special Status Species** – Any species in the Tahoe Basin that is listed as threatened, endangered, sensitive or petitioned at the federal, state or regional level, or are included in the USFS list of sensitive species, species of concern, or species of interest, or included in TRPA's threshold species list. Species may be listed because of low population or distribution, declining abundance or other factors.

**Project Completion** – An SEZ project is complete when construction, grading and initial revegetation are complete. In many cases, additional work may continue as practitioners irrigate vegetation, monitor results, close financial accounts or permits.

**Annual Reportable Units** - The number of SEZ acres restored or enhanced that was completed during the construction season and will not need any further construction work. SEZ acres should only be reported when personnel are sure that no future construction, grading or substantive new vegetation planting will be necessary in the area. Care should be taken not to double count area in projects spanning multiple years.

### 4.2 References

TRPA, Environmental Improvement Program

<http://www.trpa.org/about-trpa/how-we-operate/environmental-improvement-program/>

TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.

<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

Ohio Wetlands Foundation. Resource Center: Definitions. 2008. Lancaster, OH.  
<http://ohiowetlands.org/resource-center/definitions/>

Pavlik, B. et al. 2002. Conservation Strategy for Tahoe Yellow Cress (*Rorippa subumbellata*). Tahoe Regional Planning Agency.  
[http://www.fws.gov/nevada/es/documents/esa/Final\\_TYC\\_CS.pdf](http://www.fws.gov/nevada/es/documents/esa/Final_TYC_CS.pdf)

TRPA. 2006 Threshold Evaluation Report. September 2007. Chapter 9: Vegetation and Chapter 10: Wildlife and Fisheries.  
<http://www.trpa.org/default.aspx?tabid=174>

TRPA. TRPA Draft Regional Plan Update Alternatives. December 2009. 1.10.7 Stream Environment Zone (SEZ) Subelement.  
[http://trpa.org/documents/rp\\_update/RPU\\_Descriptions/Conservation/1.10.7\\_SEZ\\_Sub.pdf](http://trpa.org/documents/rp_update/RPU_Descriptions/Conservation/1.10.7_SEZ_Sub.pdf)

US EPA. Compensatory Mitigation for Losses of Aquatic Resources. 40 CFR Part 230 Subpart J and 33 CFR Part 332.

US Fish and Wildlife Service. 1995. Recovery Plan for Lahontan Cutthroat Trout. Portland, OR.

## California Employment Numbers

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Employment is required for residents in the Tahoe Basin to earn an income and provide necessary goods and services for their families. Employment numbers can be compared to population, age distribution, and per capita income to indicate how job increases and losses are affecting the region's residents, the economic health of a community and the overall quality of life of community residents. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in the Employment Aspect section of Chapter 3 above.

#### 1.2 Description

This indicator measures the annual average employment numbers for several California communities in the Tahoe Basin. Annual employment numbers are not available for communities in the Nevada portion of the Tahoe Basin or residents in the California portion of the Tahoe Basin who live outside of defined Census Designated Place (CDP). However, the portion of the total population of the Tahoe Basin whom resides within defined CDPs in the California portion of the Tahoe Basin is roughly 70% so this indicator is a good proxy for employment numbers for the entire Tahoe Basin.

Employment numbers measure the total number of persons on establishment payrolls employed full-or part-time who receive pay for their work. Temporary, part-time and intermittent employees are included as a payroll employee. Persons on the payroll of more than one establishment are counted in each establishment. Data excludes proprietors, self-employed, unpaid family or volunteer workers, farm workers, and domestic workers. Employment numbers are calculated monthly by the California Employment Development Department using updated county population numbers and applying a "Census ratio" to determine changes at the CDP level. Annual average employment numbers are calculated in December using these monthly calculations.

#### 1.3 Key Assumptions

Raw data is collected and published using consistent and accurate methods by the **California Employment Development Department, Labor Market Information**.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

- CA Employment Development Department, Labor Market Information, Labor Force and Unemployment Rate for Cities and Census Designated Places ([http://www.labormarketinfo.edd.ca.gov/CES/Labor\\_Force\\_Unemployment\\_Data\\_for\\_Cities\\_and\\_Census\\_Areas.htm](http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.htm)). Contains data for the most populous CDPs on the California side of the Tahoe Basin. Employment numbers are calculated monthly with annual averages calculated and reported in January.

#### 2.2 Data Attributes

The following data must be collected to report this indicator annually:

- **Calendar Year**
- **CDP Name** – necessary to report only data for CDPs within the Tahoe Basin
- **Employment Numbers** – necessary to report annual employment numbers in the Tahoe Basin

#### 2.3 Procedure

##### 1. Access Employment Numbers Data

- a) Go to the CA Employment Development Department – Labor Market Information webpage using the following menus and links: CA Employment Development Department Home >> Labor Market Info >> LMI by Geography >> Labor Force and Unemployment Rate for Cities and Census Designated Places
- b) Select the link for the desired calendar year next to the "Annual Averages" bullet under the "Data for all County Sub Areas" header to download an excel table.

##### 2. Collect Employment Numbers Data and Update the Employment Numbers Worksheet

- a) In the downloaded excel table (see image to the right), navigate to El Dorado County and collect employment numbers data provided in the "Employment" column for all CDPs physically located in the Tahoe Basin. As of December 2013, the following CDPs are physically located in the Tahoe Basin:
  - South Lake Tahoe city
- c) Navigate to Placer County and collect employment numbers data provided in the "Employment" column for all CDPs physically located in the Tahoe Basin.
- d) As of December 2013, the following CDPs are

Monthly Labor Force Data for Cities and Census Designated Places (CDP) Annual Average 2012 - Revised Data Not Seasonally Adjusted					
Area Name	Labor Force	Employment	Unemployment Number	Unemployment Rate	Census Ratios
					Emp Unemp
Alameda County	775,900	705,900	70,000	9.0%	1.000000 1.000000
Alameda city	40,700	38,200	2,500	6.2%	0.054107 0.035933
Albany city	9,200	8,900	400	3.8%	0.012594 0.005057
Ashland CDP	10,500	9,400	1,100	10.4%	0.013363 0.015704
Berkeley city	60,000	54,800	5,100	8.6%	0.077667 0.073463
Castro Valley CDP	31,500	29,800	1,700	5.3%	0.042225 0.023955
Cherryland CDP	6,800	5,900	900	13.1%	0.008396 0.012776
Dublin city	15,700	14,800	900	5.5%	0.021033 0.012244
Emeryville city	4,600	4,300	300	6.4%	0.006130 0.004259
Fairview CDP	5,400	5,100	300	5.6%	0.007161 0.004259
Fremont city	111,900	104,600	7,300	6.5%	0.148188 0.103806
Hayward city	71,700	64,500	7,200	10.1%	0.091365 0.030088
Livermore city	42,000	39,500	2,500	5.9%	0.055952 0.035134
Newark city	22,900	21,000	1,900	8.4%	0.029690 0.027415
Oakland city	206,000	177,800	28,200	13.7%	0.251928 0.402715
Piedmont city	5,600	5,300	300	4.7%	0.007510 0.003726
Pleasanton city	36,100	34,500	1,600	4.5%	0.048805 0.023423
San Leandro city	42,500	38,700	3,800	8.9%	0.054833 0.054032
San Lorenzo CDP	10,900	10,100	700	6.7%	0.014366 0.010381

- physically located in the Tahoe Basin:
- Dollar Point CDP
  - Kings Beach CDP
  - Sunnyside Tahoe City CDP
  - Tahoe Vista CDP
- e) If employment number data is provided for other CDPs physically located in the Tahoe Basin (and thus El Dorado or Placer County), collect data for them as well and add the CDPs to the lists by county in steps 2a and 2b above. For a full list of CDPs used by the U.S. census in the Tahoe Basin refer to the Household Income Indicator Info Sheet.
  - f) In the Employment Numbers worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.
  - g) Paste employment numbers data in the corresponding CDP data column for the most recent calendar year.

### 3.0 Metric Reporting Methods

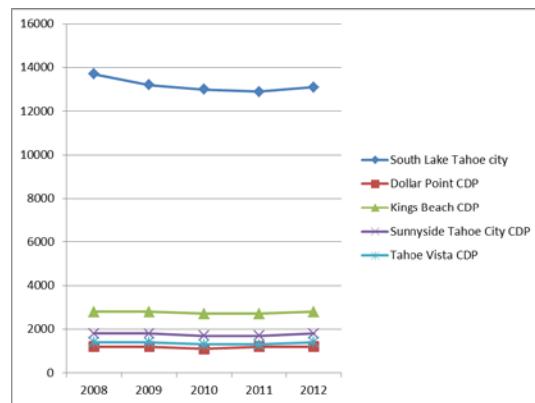
#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable numbers for the Annual Average California Employment Numbers indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Annual Average California Employment Numbers indicator. The chart enables a comparison of employment numbers in different CDPs in the Tahoe Basin, and an understanding of the trend in Employment Numbers for each CDP over time.

**Annual Average California Employment Numbers**



#### 3.3 Procedure

##### 1. Update the Chart in the Employment Numbers worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Tahoe Basin CDPs, one will include Calendar Year dates and one will include Employment Number data.
- b) Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added calendar year and Employment Number data for each CDP.
- c) This will automatically update the chart to include data for the most recent calendar year.

#### 3.4 Key Reporting Context

- The Annual Average California-Tahoe Employment Numbers indicator only includes cities and unincorporated communities on the California side of the Tahoe Basin because data for other portions of the Tahoe Basin are not available on an annual basis. In addition, data for Nevada communities are only available every ten years through the US Census Bureau Decennial Survey. Approximately 70% of the California-Tahoe population is included in the CA CDPs reported by this indicator.
- The South Lake Tahoe city CDP represents the unincorporated parts of the South Lake Tahoe region, including Meyers and Christmas Valley.

### 4.0 Terms & References

#### 4.1 Terms

**Census Designated Place (CDP)** – A concentration of population identified by the US Census Bureau for statistical purposes CDPs are delineated for each decennial census as the statistical counterparts of incorporated places, such as cities, towns and villages CDPs are populated areas that lack separate municipal government, but which otherwise physically resemble incorporated places.

**Employment Numbers** – The total number of persons on establishment payrolls employed full- or part-time who received pay

for any part of the pay period that includes the 12th day of the month. Temporary and intermittent employees are included, as are any employees who are on paid sick leave, on paid holiday, or who work during only part of the specified pay period. A striking employee who only works a small portion of the survey period, and is paid, would be included as employed. Persons on the payroll of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed, unpaid family or volunteer workers, farm workers, and domestic workers. Persons on layoff the entire pay period, on leave without pay, on strike for the entire period, or who have a pending job but have not yet reported for work are not counted as employed. Government employment covers only civilian employees; it excludes uniformed members of the armed services.

**US Census, American Community Survey** – An ongoing statistical survey that samples a small percentage of the population every year.

#### 4.2 Additional References

CA Employment Development Department, Labor Market Info  
<http://www.labormarketinfo.edd.ca.gov/>

Bureau of Labor Statistics, Current Employment Statistics, FAQ  
<http://www.bls.gov/ces/cesfaq.htm#scope2>

US Census Bureau, American Community Survey  
<https://www.census.gov/acs/www/>

US Census Bureau, Decennial Survey  
<http://www.census.gov/prod/www/decennial.html>

<h1>California Unemployment Rate</h1>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Unemployment is the estimated number of people who are not employed, but actively seeking work each week. Economists often use the unemployment rate, which is unemployment divided by the labor force, as a regional economic measure. Rising unemployment may indicate recessionary levels of economic activity in the community. Alternatively, falling unemployment indicates economic expansion. Communities that host many seasonal jobs have high annual unemployment even if levels are low during peak months. In such areas, creating more year-round jobs can reduce annual unemployment rates. The California Unemployment Rate Indicator provides a proxy for overall unemployment in the Tahoe Basin, as it only includes data for roughly 70% of the eligible work force of the California portion of the Tahoe Basin and does not include workers residing in the Nevada portion of the Tahoe Basin. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in Chapter 2 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the annual average unemployment rate for California communities in the Tahoe Basin. Annual unemployment rates are not available for communities in the Nevada portion of the Tahoe Basin or residents in the California portion of the Tahoe Basin who live outside of defined Census Designated Place (CDP). However, the portion of the total population of the Tahoe Basin whom resides within defined CDPs in the California portion of the Tahoe Basin is roughly 70% so this indicator is a good proxy for employment numbers for the entire Tahoe Basin.</p> <p>Unemployment rates measure the percentage of the total labor force in a given area that is unemployed but actively seeking employment and is willing to work. Unemployment rates are calculated monthly by the California Employment Development Department using updated county population numbers and applying a “Census ratio” to determine changes at the Census Designated Place (CDP) level. Annual average unemployment rates are calculated in January using these monthly calculations.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and published using consistent and accurate methods by the <b>California Employment Development Department, Labor Market Information</b>.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p>CA Employment Development Department, Labor Market Information, Labor Force and Unemployment Rate for Cities and Census Designated Places  <a href="http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.html">(http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.html)</a>. Contains data for the most populous CDPs on the California side of the Tahoe Basin. Unemployment rates are calculated monthly with annual averages calculated and reported in <b>January</b>.</p>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report this indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Calendar Year</b></li> <li>▪ <b>CDP Name</b> – necessary to report only data for CDPs within the Tahoe Basin</li> <li>▪ <b>Unemployment Rates</b> – percentages necessary to report annual unemployment rates in the Tahoe Basin</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Access Employment Numbers Data</b> <ol style="list-style-type: none"> <li>a) Go to the CA Employment Development Department – Labor Market Information webpage using the following menus and links: CA Employment Development Department Home &gt;&gt; Labor Market Info &gt;&gt; LMI by Geography &gt;&gt; Labor Force and Unemployment Rate for Cities and Census Designated Places</li> <li>b) Select the link for the desired calendar year next to the “Annual Averages” bullet under the “Data for all County Sub Areas” header to download an excel table.</li> </ol> </li> <li>2. <b>Collect Employment Numbers Data and Update the Unemployment Rates Worksheet</b> <ol style="list-style-type: none"> <li>a) In the downloaded excel table (see image to the right), navigate to El Dorado County and collect employment numbers data provided in the “Unemployment Rate” column for all CDPs physically located in the Tahoe Basin. As of December 2013, the following CDPs are physically located in the Tahoe Basin:           <ul style="list-style-type: none"> <li>▫ South Lake Tahoe city</li> </ul> </li> <li>b) Navigate to Placer County and collect employment numbers data provided in the “Employment” column for all CDPs physically located in the Tahoe Basin.</li> </ol> </li> </ol>	

- c) As of December 2013, the following CDPs are physically located in the Tahoe Basin:
- Dollar Point CDP
  - Kings Beach CDP
  - Sunnyside Tahoe City CDP
  - Tahoe Vista CDP
- d) If unemployment rate data is provided for other CDPs physically located in the Tahoe Basin (and thus El Dorado or Placer County), collect data for them as well and add the CDPs to the lists by county in steps 2a and 2b above. For a full list of CDPs used by the U.S. census in the Tahoe Basin refer to the Household Income Indicator Info Sheet.
- e) In the Unemployment Rates worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.
- f) Paste employment numbers data in the corresponding CDP data column for the most recent calendar year.

Area Name	Monthly Labor Force Data for Cities and Census Designated Places (CDP)					
	Annual Average 2012 - Revised Data Not Seasonally Adjusted					
	Labor Force	Employment	Unemployment Number	Rate	Census Emp	Ratios Unemp
Alameda County	775,900	705,900	70,000	9.0%	1.000000	1.000000
Alameda city	40,700	38,200	2,500	6.2%	0.054107	0.035933
Albany city	9,200	8,900	400	3.8%	0.012594	0.005057
Ashland CDP	10,500	9,400	1,100	10.4%	0.013363	0.015704
Berkeley city	60,000	54,800	5,100	8.6%	0.077667	0.073463
Castro Valley CDP	31,500	29,800	1,700	5.3%	0.042225	0.023955
Cherryland CDP	6,800	5,900	900	13.1%	0.008396	0.012776
Dublin city	15,700	14,800	900	5.5%	0.021033	0.012244
Emeryville city	4,600	4,300	300	6.4%	0.006130	0.004259
Fairview CDP	5,400	5,100	300	5.6%	0.007161	0.004259
Fremont city	111,900	104,600	7,300	6.5%	0.148188	0.103806
Hayward city	71,700	64,500	7,200	10.1%	0.091365	0.103008
Livermore city	42,000	39,500	2,500	5.9%	0.055952	0.035134
Newark city	22,900	21,000	1,900	8.4%	0.029690	0.027415
Oakland city	206,000	177,800	28,200	13.7%	0.251928	0.402715
Piedmont city	5,600	5,300	300	4.7%	0.007510	0.003726
Pleasanton city	36,100	34,500	1,600	4.5%	0.048805	0.023423
San Leandro city	42,500	38,700	3,800	8.5%	0.054833	0.054032
San Lorenzo CDP	10,900	10,100	700	6.7%	0.014366	0.010381

### 3.0 Metric Reporting Methods

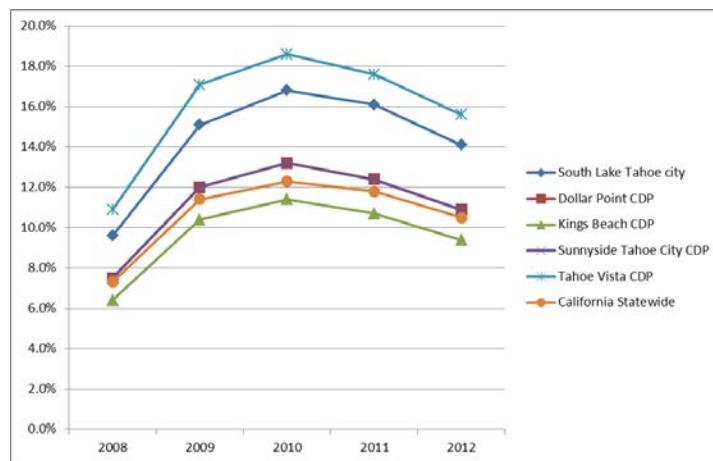
#### 3.1 Targets & Comparable Data Sets

California statewide unemployment rates provide a helpful comparable data set to better understand how unemployment rates in the Tahoe Basin compare to the rest of the state.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the California Unemployment Rates indicator. The chart enables a comparison of unemployment rates in different CDPs in the Tahoe Basin, and an understanding of the trend in Unemployment rates for each CDP over time.

Annual Average CA Unemployment Rates



#### 3.3 Procedure

1. Collect California Statewide Unemployment Rate Data
  - a) Follow procedure steps 2.3.1 and 2.3.2 above.
  - b) On the California Labor Market Information homepage collect California statewide unemployment rate data under the “Top Statistics” header. Paste California statewide unemployment data in the California Statewide data column in the California Unemployment Rate Worksheet.
2. Update the Chart in the Unemployment Rates Worksheet
  - a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Tahoe Basin CDPs, one will include Calendar Year dates and one will include Unemployment Rate data.
  - b) Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added calendar year and Unemployment Rate data for each CDP.
  - c) This will automatically update the chart to include data for the most recent calendar year.

#### 3.4 Key Reporting Context

- The Annual Average California-Tahoe Unemployment Rate indicator only includes cities and unincorporated

<p>communities on the California side of the Tahoe Basin because data for other portions of the Tahoe Basin are not available on an annual basis. Nevada data is only available every ten years through the US Census Bureau Decennial Survey. Approximately 70% of the California-Tahoe population is included in the CA CDPs reported by this indicator.</p> <ul style="list-style-type: none"><li>▪ The South Lake Tahoe city CDP represents the unincorporated parts of the South Lake Tahoe region, including Meyers and Christmas Valley.</li></ul>
<b>4.0 Terms &amp; References</b>
<b>4.1 Terms</b>
<p><b>Census Designated Place (CDP)</b> – A concentration of population identified by the US Census Bureau for statistical purposes</p> <p>CDPs are delineated for each decennial census as the statistical counterparts of incorporated places, such as cities, towns and villages. CDPs are populated areas that lack separate municipal government, but which otherwise physically resemble incorporated places.</p> <p><b>Unemployment Rates</b> – measure the percentage of the total labor force in a given area that is unemployed but actively seeking employment and is willing to work.</p> <p><b>US Census, American Community Survey</b> – An ongoing statistical survey that samples a small percentage of the population every year.</p>
<b>4.2 Additional References</b>
CA Employment Development Department, Labor Market Info <a href="http://www.labormarketinfo.edd.ca.gov/">http://www.labormarketinfo.edd.ca.gov/</a>
Bureau of Labor Statistics, Current Employment Statistics, FAQ <a href="http://www.bls.gov/ces/cesfaq.htm#scope2">http://www.bls.gov/ces/cesfaq.htm#scope2</a>
US Census Bureau, American Community Survey <a href="https://www.census.gov/acs/www/">https://www.census.gov/acs/www/</a>
US Census Bureau, Decennial Survey <a href="http://www.census.gov/prod/www/decennial.html">http://www.census.gov/prod/www/decennial.html</a>

Median Household Income	
<b>Last Revision:</b> December 31, 2013	<b>Updated By:</b> Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Median household income is an important gauge of the standard of living and wealth distribution of communities in the Tahoe Basin. An increase in the median income for a community creates opportunities for its residents, ranging from educational attainment to community participation. While a decrease in median income is typically correlated to increases in crime and substance abuse. Furthermore, increases in median household income are likely to increase environmental stewardship through increased philanthropic spending. Reporting the median household income for Tahoe Basin communities provides both a comparison of economic health in different communities in the Tahoe Basin and an understanding of the trend within each community over time. The median income is used instead of average income to avoid outliers that will skew the average. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Income Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the median household income of each Census Designated Places (CDPs) in the Tahoe Basin annually. Household Income measures the taxable income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not. Median Household Income for the Tahoe Basin is reported by the US Census American Community Survey using 5-year “period” estimates that represent an average of the data collected over a 60-month period (for CDP with populations larger than any in the basin, 3-year and 1-year “period” estimates are available). This is opposed to “point-in-time” estimates, such as the decennial census, that approximate the characteristics of an area on a specific date. Period estimates are available annually based on data collected 5 years prior (e.g. 5-year period estimates are released in 2012 for data collected in 2007 through 2011, and in 2013 for data collected in 2008 through 2012).</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and published using consistent and accurate methods by the US Census Bureau, American Community Survey.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ US Census Bureau, American Community Survey, FactFinder (<a href="http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml">http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml</a>). Data is updated for each CDP in the Tahoe Basin annually in December.</li> <li>▪ US Census Block Maps (<a href="http://www.census.gov/geo/maps-data/maps/block/2010/">http://www.census.gov/geo/maps-data/maps/block/2010/</a>). US Census block maps provide updated CDP listings in the Tahoe Basin. Data is updated in December of each decennial survey year (such as December 2000 and December 2010).</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report this indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>ACS Period</b></li> <li>▪ <b>CDP Name</b> – necessary to report only data for CDPs within the Tahoe Basin</li> <li>▪ <b>Median Household Income</b> – necessary to report median household income in the Tahoe Basin</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm CDPs in the Tahoe Basin and Update the List of CDPs if necessary</b> <ol style="list-style-type: none"> <li>a) Navigate to the US Census Block Maps website using the following menu and links: US Census homepage&gt;&gt;Geography&gt;&gt;Maps &amp; Data&gt;&gt;Reference&gt;&gt;Census Reference Maps&gt;&gt;Census Block Maps: year.</li> <li>b) Confirm all CDPs listed in Step 2.b still exist and have the same names, and check for new CDPs by downloading County Subdivision (CCD) maps using the following menu (download the first map listed for each CCD, number 000): <ul style="list-style-type: none"> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;Placer&gt;&gt;Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;El Dorado&gt;&gt;South Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Washoe&gt;&gt;Incline Village CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Carson City&gt;&gt;Carson City CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Douglas&gt;&gt;Zephyr Cove CCD</li> </ul> </li> <li>c) Scan the downloaded maps for each CDP listed in Step 2.b. <ul style="list-style-type: none"> <li>▫ In the unlikely case that the name of a CDP is changed, a new CDP is added or CDP boundaries are redrawn, update the CDP listed in step 2.b, as well as the CDPs listed in the data columns of the Median Household Income Worksheet.</li> </ul> </li> </ol> </li> <li>2. <b>Collect Median Household Income for each CDP in the Tahoe Basin and Update Household Income Worksheet</b> <ol style="list-style-type: none"> <li>a) Go to the US Census Bureau, American Community Survey, FactFinder website.</li> <li>b) Access census data for all CDPs in the Tahoe Basin by entering the name of each CDP listed below into the Community Facts search box on the FactFinder homepage.</li> </ol> </li> </ol>	

- Carnelian Bay CDP
  - Crystal Bay CDP
  - Dollar Point CDP
  - Glenbrook CDP
  - Incline Village CDP
  - Kings Beach CDP
  - Kingsbury CDP
  - Lakeridge CDP
  - Round Hill Village CDP
  - Stateline (south) CDP
  - Sunnyside Tahoe City CDP
  - Tahoe Vista CDP
  - Tahoma CDP
  - Zephyr Cove CDP
  - Zip Code 96150 (includes City of South Lake Tahoe and unincorporated El Dorado County including Meyers and Fallen Leaf Lake)
- c) Once you have searched for your desired CDP, you will be directed to a community facts summary display. Select Income on the left side of the display and copy the Median Household Income prominently displayed at the top of the page (see image below). Check to make sure that the data provided is for the correct ACS reporting period and that the data is based the ACS 5-Year Estimates.

The screenshot shows a web-based data explorer for the U.S. Census. On the left, there is a sidebar with various demographic categories: Population (2010 Census), Population (Latest Estimate), Age, Business and Industry, Education, Housing, Income (which is selected and highlighted in dark grey), Origins and Language, Poverty, and Veterans. The main content area is titled "Tahoma CDP, California". It displays the "Median Household Income" as \$64,948, with a note that it is from the "Source: 2007-2011 American Community Survey 5-Year Estimates". Below this, there is a section titled "Popular tables for this geography:" which lists links to 2010 Census data, American Community Survey data, Population Estimates Program data, Economic Census data, and other resources like Guided Search and Advanced Search.

- d) In the Household Income worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent ACS reporting period in the next empty row at the bottom of the ACS Reporting Period column.
- e) Paste median household income data in the corresponding data column for the selected CDP for the most recent ACS reporting period.
- f) Repeat steps 2.c through 2.f for all CDPs listed in step 2.b above.

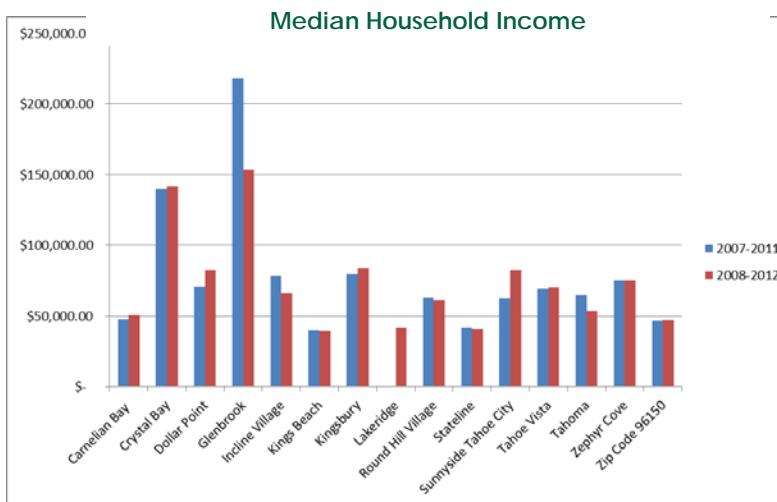
### 3.0 Metric Reporting Methods

#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable numbers for the Median Household Income indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Median Household Income indicator. The chart enables both a comparison of Median Household Income of different CDPs in the Tahoe Basin and an understanding of the trend in Median Household Income for each CDP over time.



### 3.2 Procedure

#### 1. Update the Chart in the Household Income Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Tahoe Basin CDPs, one will include ACS Reporting Period dates and one will include median household income data.
- Click the bottom left corner of the box surrounding the ACS Reporting Period dates and drag down so it includes the recently added calendar year and median household income data for each CDP.
- This will automatically update the chart to include data for the most recent calendar year.

### 3.4 Key Reporting Context

- Median Household Income numbers can be skewed in a resort location like the Tahoe Basin because residents may telecommute for jobs outside of the basin and that income is not captured, and residents may earn income and spend a significant portion of their time outside of the basin but make Nevada their permanent resident for tax purposes and that income is inappropriately captured.
- ACS estimates are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a Margin Of Error (MOE). The MOE used with ACS estimates can be interpreted as providing a 90 percent probability that the interval defined by the estimate plus the MOE and the estimate minus the MOE (the upper and lower confidence bounds) contains the full population value of the estimate.
- This indicator only collects data for CDPs in the Tahoe Basin. While CDPs incorporate the most populous communities throughout the Tahoe Basin there are small residential communities that may not be accounted for in these counts. As of December 2013 it is estimated that 90% of the total resident population in the Tahoe Basin lives in one of the CDPs reported by this indicator.

### 4.0 Terms & References

#### 4.1 Terms

**Median Household Income** – The total income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not. The median divides the income distribution into two equal parts: one-half of the cases falling below the median income and one-half above the median. The median income is based on the distribution of the total number of households, including those with no income.

#### 4.2 Additional References

US Census Bureau, American Community Survey

<https://www.census.gov/acs/www/>

A Compass for Understanding and Using American Community Survey Data

<http://www.census.gov/acs/www/Downloads/handbooks/ACSGeneralHandbook.pdf>

US Census Bureau, American Community Survey, Median Household Income

[http://quickfacts.census.gov/qfd/meta/long\\_INC110211.htm](http://quickfacts.census.gov/qfd/meta/long_INC110211.htm)

US Census Block Maps

<http://www.census.gov/geo/maps-data/maps/block/2010/>

<h2 style="text-align: center;">Subsidized School Lunch Eligibility</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Free and Reduced Priced Meals (FRPM) are provided to low-income children before school, during school, after school and over the summer through the National School Lunch Program. Participation in this federally subsidized school lunch program requires children to come from low-income families. Therefore, the percent of students eligible for the subsidized school lunch program is a direct measure of student and family poverty levels in the Tahoe Basin. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Income Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the percentage of students eligible for free and reduced priced meals through the National School Lunch Program in Tahoe Basin public schools (K-12 grade). Students must come from families with incomes at or below 130 percent of the poverty level to be eligible. Data for the National School Lunch Program is tracked annually for individual schools participating in the program. Percent eligibility is calculated by dividing the number of students eligible for both free and reduced priced meals by total student enrollment.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is compiled and school-specific results are published using consistent and accurate methods by the</p> <ul style="list-style-type: none"> <li>▪ California Department of Education, Student Health and Support Services Program</li> <li>▪ Nevada Department of Agriculture, Child Nutrition Program</li> </ul>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>California Department of Education, Student Health &amp; Support Services</b> (<a href="http://www.cde.ca.gov/ds/sh/cw/">http://www.cde.ca.gov/ds/sh/cw/</a>). Data for California schools is reported annually for the previous school year, generally in <b>November</b>.</li> <li>▪ <b>Nevada Department of Agriculture, Child Nutrition Program</b> (<a href="http://nutrition.nv.gov/Data_Reports/Free_and_Reduced_Lunch_Data/">http://nutrition.nv.gov/Data_Reports/Free_and_Reduced_Lunch_Data/</a>). Data is reported annually for the previous school year, in <b>December</b>.</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>School Year</b></li> <li>▪ <b>District Name</b> – necessary to report data at a district scale for the Tahoe Basin</li> <li>▪ <b>School Name</b> – necessary to report only data for schools within the Tahoe Basin</li> <li>▪ <b>Student Enrollment Numbers</b> – necessary to report the annual percent of the total student body eligible for FRPM</li> <li>▪ <b>Number of Students Eligible for FRPM</b> - necessary to report the annual percent of the total student body eligible for FRPM</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm and Update School Districts and Schools in the Tahoe Basin</b> <ol style="list-style-type: none"> <li>a) Check school district websites (or contact individuals familiar with the public schools in the Tahoe Basin) to confirm all school districts and schools in the Tahoe Basin are listed in procedure steps 3.b, 3.c, 5.a and 5.b. <ul style="list-style-type: none"> <li>▫ If there are changes to the school districts or schools in the Tahoe Basin, update procedure steps 3.b, 3.c, 5.a and 5.b, add/remove/update a row for the school in its district's Percent Eligibility Calculator in the Subsidized School Lunch Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet and then proceed with procedures below.</li> </ul> </li> </ol> </li>   <li>2. <b>Access Subsidized School Lunch Eligibility Data for California Schools</b> <ol style="list-style-type: none"> <li>a) Go to the CA Dept. of Education – Free and Reduce Price Meal Data webpage using the following menu: CA Dept. of Education Home &gt;&gt; Data &amp; Statistics &gt;&gt; Student Health &amp; Support &gt;&gt; Free &amp; Reduced Price Meal Eligibility Data &gt;&gt; Student Poverty - FRPM Data</li> <li>b) Download the Data File (Excel spreadsheet) for the most recent school year.</li> </ol> </li>   <li>3. <b>Collect Data for California Schools and Update the Subsidized School Lunch Worksheet</b> <ol style="list-style-type: none"> <li>a) In the downloaded data file, go to the “October Year FRPM Data” tab.</li> <li>b) Select all column headers and press CTRL+SHIFT+L. to enable column filtering.</li> <li>c) Use the LEA Name column filter to view only data for the Lake Tahoe Unified School District.</li> <li>d) Collect data for schools in the Lake Tahoe Unified School District. Student enrollment numbers are available for each school in the “CALPADS October Year Enrollment (Ages 5 through 17)” column. And FRPM eligibility numbers are available for each school in the “October Year Total FRPM” column. See data columns highlighted in image below.</li> </ol> </li> </ol>	

Type	LEA Name	School Name	Low Grade	High Grade	October 2011 Enrollment (Ages 5 through 17)	October 2011 Free Meals (Ages 5 through 17)	2011 Reduced Price Meal (Ages 5 through 17)	October 2011 Total FRPM	October 2011 Percent FRPM
Lake Tahoe Unified	Lake Tahoe Environmental Science Magnet	KK	05	12	36	65	73	19.84%	
Lake Tahoe Unified	Mt. Tallac High	09	12	8	40	19	55	64.71%	
Lake Tahoe Unified	Transitional Learning Center (Continuation)	09	12	5	38	14	42	80.77%	
Lake Tahoe Unified	South Tahoe High	09	12	102	445	101	552	53.64%	
Lake Tahoe Unified	Bijou Community	KK	05	50	380	48	422	83.90%	
Lake Tahoe Unified	South Tahoe Middle	06	08	82	440	81	523	63.78%	
Lake Tahoe Unified	Tahoe Valley Elementary	KK	05	44	291	5	342	77.20%	
Lake Tahoe Unified	Sierra House Elementary	KK	05	45	276	4	317	69.21%	
Tahoe-Truckee Joint Unified	Alder Creek Middle	06	08	53	230	1	241	44.96%	
Tahoe-Truckee Joint Unified	North Tahoe High	09	12	30	152	1	161	52.27%	
Tahoe-Truckee Joint Unified	Sierra High (Continuation)	09	12	3	17	1	17	47.22%	
Tahoe-Truckee Joint Unified	Cold Stream Alternative	KK	12	2	6	6	6	26.09%	
Tahoe-Truckee Joint Unified	Tahoe Truckee High	09	12	60	178	1	191	31.78%	
Tahoe-Truckee Joint Unified	Donner Trail Elementary	KK	05	6	5	5	5	7.35%	
Tahoe-Truckee Joint Unified	Kings Beach Elementary	KK	04	25	110	1	116	45.85%	
Tahoe-Truckee Joint Unified	Tahoe Lake Elementary	KK	04	24	128	1	131	53.69%	
Tahoe-Truckee Joint Unified	Truckee Elementary	KK	05	55	291	2	315	57.27%	
Tahoe-Truckee Joint Unified	North Tahoe	05	08	51	250	3	280	54.58%	

- As of December 2013, the following schools are in the Lake Tahoe Unified School District and physically located in the Tahoe Basin:
  - Lake Tahoe Environmental Science Magnet School
  - Mt. Tallac High School
  - Transitional Learning Center
  - South Tahoe High School
  - Bijou Community School
  - South Tahoe Middle School
  - Tahoe Valley Elementary School
  - Sierra House Elementary School
- e) Use the LEA Name column filter to view only data for the Tahoe-Truckee Unified School District.
- f) Collect data for all schools in the Tahoe-Truckee Unified School District that are located in the Tahoe Basin. Student enrollment numbers are available for each school in the “CALPADS October Year Enrollment (Ages 5 through 17)” column. FRPM eligibility numbers are available for each school in the “October Year Total FRPM” column.
  - As of December 2013, the following schools are in the Tahoe-Truckee Unified School District and physically located in the Tahoe Basin:
    - North Tahoe High School
    - Cold Stream Alternative School
    - Kings Beach Elementary School
    - Tahoe Lake Elementary School
    - North Tahoe Middle School
- h) In the Subsidized School Lunch worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter school enrollment data in the School Enrollment column and FRPM eligibility data in the FRPM Total Count column for each school district’s respective Percent Eligibility Calculator. A total percent eligibility for the school district will automatically be calculated in the PERCENT ELIGIBLE row.
- i) In the Data Table on the Subsidized School Lunch worksheet, enter the most recent school year in the next empty row at the bottom of the School Year column.
- j) Paste the calculated total percent eligibility in the corresponding school district data column for the most recent school year.

#### 4. Download Subsidized School Lunch Eligibility Data for Nevada Schools

- a) Go to the Nevada Department of Agriculture – Child Nutrition Program webpage using the following menus: NV Dept. of Agriculture, Food & Nutrition >> Child Nutrition Program >> Data/Reports >> Free and Reduced Lunch Reports.
- b) Download the data file (PDF) for the most recent school year.

#### 5. Collect Data for Nevada Schools and Update the Subsidized School Lunch Worksheet

- a) In the downloaded data file, find the table with Douglas in the District column.
- b) Collect data for schools in the Douglas County School District that are also located in the Tahoe Basin. Student enrollment numbers are available in the “Total” column. And FRPM eligibility numbers are available for each school in the “Total Free and Reduced” column. See data columns highlighted in image below.

Nevada Schools: Number of Free and Reduced Price Eligible Students by School Building 2012-2013 School Year								
District	District School Code	School Name	Grade Span	Total	Number of Free Eligible	Number of Reduced	Total Free and Reduced	% of Free and Reduced
Clark cont'd	002-935	Variety School ES	SPECIAL	12	9	2	11	91.67%
	002-955	Desert Rose ALT	9-12	358	116	5	121	33.80%
		All Schools		312,578	143,023	23,322	177,113	56.66%
Douglas	003-201	Gardnerville ES	K-6	531	166	36	202	38.04%
	003-202	Zephyr Cove ES	K-4	189	50	17	67	35.45%
	003-205	Meneley ES	PK-6	557	241	52	293	52.60%
	003-206	Jacks Valley ES	K-6	475	229	40	269	56.63%
	003-207	Scarselli ES	K-6	543	199	31	230	42.36%
	003-209	Pinon Hills ES	K-6	488	48	15	63	12.91%
	003-210	Minden ES	K-6	404	120	20	140	34.65%
	003-301	Carson Valley MS	7-9	748	182	54	236	31.55%
	003-302	Pau Wa Lu MS	7-9	613	201	40	241	39.31%
	003-501	Douglas HS	10-12	1,306	329	83	412	31.55%
	003-502	Whittell HS	9-12	232	48	10	58	25.00%
		All Schools		6,086	1,813	398	2,211	36.33%

- As of December 2013, the following schools are in the Douglas County School District and physically located in the Tahoe Basin:
  - George Whittell High School
  - Zephyr Cove Elementary School
- c) Access the Washoe County School District data by locating the table with Washoe in the District column.
- d) Collect data for schools in the Washoe County School District that are also located in the Tahoe Basin. Student enrollment numbers are available in the “Total” column and FRPM eligibility numbers are available in the “Total Free and Reduced” column.
  - As of December 2013 data is reported for the following Tahoe Basin Schools:
    - Incline Village Elementary School
    - Incline Village Middle School
    - Incline Village High School
- e) In the Subsidized School Lunch worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter school enrollment data in the School Enrollment column and FRPM eligibility data in the FRPM Total Count column for each school district’s respective Percent Eligibility Calculator. A total percent eligibility for the school district will automatically be calculated in the PERCENT ELIGIBLE row.
- f) Paste the calculated total percent eligibility in the corresponding school district data column for the most recent school year.

### 3.0 Metric Reporting Methods

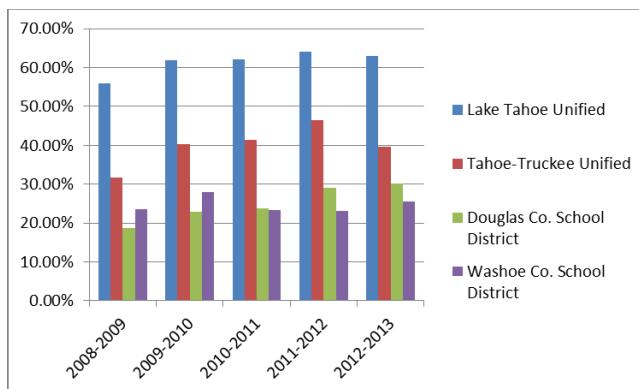
#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable percentages for the Subsidized School Lunch Eligibility indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Subsidized School Lunch Eligibility indicator. The chart enables a comparison of eligibility in different school districts in the Tahoe Basin and an understanding of the trend in eligibility for each school district over time.

Annual Percent of Students Eligible for Subsidized School Lunch Program



#### 3.3 Procedure

##### 1. Update the Chart in the Subsidized School Lunch Worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include School District Names, one will include Calendar Year dates and one will include subsidized school

<p>lunch data.</p> <p>b) Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added calendar year and subsidized school lunch data for each school district.</p> <p>c) This will automatically update the chart to include data for the most recent calendar year.</p>
<b>3.4 Key Reporting Context</b>
<ul style="list-style-type: none"><li>Subsidized school lunches are only provided for public schools. There are five private schools in the Tahoe Basin that are not captured in this data set. Private schools in the Tahoe basin are small and contain a small percentage of the overall student enrollment for the Tahoe Basin.</li></ul>
<b>4.0 Terms &amp; References</b>
<b>4.1 Terms</b>
<p><b>Free Meals</b> - Students are entitled to free lunches if their families' incomes are below 130 percent of the annual income poverty level guideline established by the U.S. Department of Health and Human Services and updated annually by the Census Bureau (\$21,756 for a family of four as of 2013). Children who are members of households receiving food stamp benefits or cash assistance through the Temporary Assistance for Needy Families block grant, as well as homeless, runaway, and migrant children, also qualify for free meals.</p> <p><b>National School Lunch Program</b> - Supports student nutrition in over 101,000 schools and residential facilities. It provides free and reduced priced meals to low-income children before school, during school, after school, and over the summer. School nutrition programs are one of the largest federal funding streams to schools.</p> <p><b>Reduced Meals</b> - Students with family incomes below 185 percent of poverty are eligible for a reduced price lunch. Schools cannot charge children who receive reduced price lunches more than 40 cents per meal, but each school food authority sets the exact student contribution level independently.</p>
<b>4.2 Additional References</b>
CA Department of Education, Free and Reduced Price Meal Eligibility Data <a href="http://www.cde.ca.gov/ds/sh/cw/">http://www.cde.ca.gov/ds/sh/cw/</a>
NV Department of Agriculture, Free and Reduced Lunch Reports <a href="http://nutrition.nv.gov/Data_Reports/Free_and_Reduced_Lunch_Reports/">http://nutrition.nv.gov/Data_Reports/Free_and_Reduced_Lunch_Reports/</a>

## LTCC Courses Offered

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Lake Tahoe Community College (LTCC) is the primary provider of affordable continuing education courses in the Tahoe Basin. LTCC courses offer recent high school graduates and working professionals an opportunity to further their education and enhance their skills in order to be more valuable to current and potential employers. The number of courses offered at LTCC provides a gauge for the opportunity the most recent and future workforce has to enhance their capabilities. A more skilled workforce improves worker efficiency and quality, which increases workforce income potential and makes the Tahoe Basin a more attractive place for businesses to operate. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Income Aspect section of Chapter 3 above.

#### 1.2 Description

This indicator measures the annual total number of credit and non-credit courses offered at LTCC. Credit courses are courses offered at LTCC that have an associated credit amount that can be used to advance towards a degree or can be transferred as credits to another college or university. Non-credit courses are courses offered by LTCC that have no credit associated with it. Students who enroll in non-credit courses do not receive any type of college credit for these courses, nor do they receive official grades. The number of credit and non-credit courses offered by LTCC are calculated every quarter and reported to the California Community College Chancellor's Office.

#### 1.3 Key Assumptions

Raw data is collected and published using consistent and accurate methods by the CA Community Colleges Chancellor's Office, Management Information Systems Data Mart

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

##### **CA Community Colleges Chancellor's Office, Management Information Systems Data Mart**

(<http://datamart.cccco.edu/Courses/Default.aspx>). Data is provided at the end of every quarter in December (Fall quarter), March (Winter quarter), June (Spring quarter) and August (Summer quarter). Annual (school year) data is available at the end of the Summer Quarter in **August**.

#### 2.2 Data Attributes

The following data must be collected for each reporting period to report the indicator annually:

- **School Year**
- **Reporting School Term** – necessary to report a complete data set for the entire school year
- **Credit Section Count** – necessary to report all courses offered at LTCC
- **Non-Credit Section Count** – necessary to report all courses offered at LTCC

#### 2.3 Procedure

1. **Access indicator data on the CA Community Colleges Chancellor's Office Website**

- a) Go to the CA Community Colleges Chancellor's Office, Management Information Systems Data Mart, Courses webpage using the following menus and links: *CA Community Colleges Chancellor's Office homepage >> Datamart >> Queries >> Courses*

2. **Collect Credit Courses Offered Data for LTCC and Update LTCC Courses Offered Worksheet**

- a) On the Courses webpage, click the link titled “Credit Courses/Sections.”
- b) In the “Select State-District-College” dropdown menu, select “Collegewide Search.”
- c) In the “Select District-College” dropdown menu, select “Lake Tahoe.”
- d) In the “Select Term” dropdown menu, select Fall and Winter and Spring and Summer terms for the desired school year (fall through summer).
- e) Click the “View Report” button. This will populate a report table titled “Credit Course Sections Summary Report – Data & Format Area” at the bottom of the page (see image below).

Credit Course Sections Summary Report - Data & Format Area												
	Credit Course Sections Summary											
	Fall 2012			Winter 2013			Spring 2013			Summer 2013		
	Credit Sections Count	Credit Sections FTES	Enrollment Count	Credit Sections Count	Credit Sections FTES	Enrollment Count	Credit Sections Count	Credit Sections FTES	Enrollment Count	Credit Sections Count	Credit Sections FTES	Enrollment Count
Lake Tahoe	312	514.77	5,816	313	514.51	5,387	313	456.02	5,161	133	301.37	2,302

- f) Collect credit courses offered data by copying the number in the “Credit Sections Count” column for all four terms (displayed horizontally).
- g) In the LTCC Courses Offered worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet,

- h) paste data for each term in the Total Courses Count Calculator, which is to the left of the Data Table.
- i) In the Data Table, enter the most recent school year in the next empty row at the bottom of the School Year column.
- i) Paste the total number of credit courses offered, calculated in the Total Section Count Calculator, into the Credit Courses data column for the most recent school year.

### 3. Collect Non-Credit Courses Offered Data for LTCC and Update LTCC Courses Offered Worksheet

- a) Go back to the CA Community Colleges Chancellor's Office, Management Information Systems Data Mart, Courses webpage and select the link titled "*Non-Credit Courses/Sections*."
- b) Follow steps 2b through 2g, but copy the number in the "Non-Credit Sections Count" column when calculating the annual total number of courses.
- c) Paste the total number of non-credit courses offered, calculated in the Total Courses Count Calculator, into the Non-Credit Courses data column for the most recent school year.

## 3.0 Metric Reporting Methods

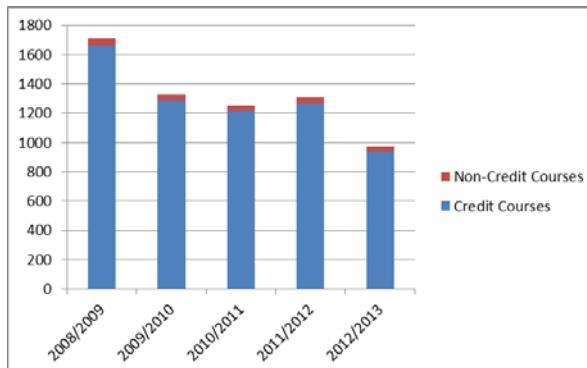
### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable numbers for the Number of LTCC Courses Offered indicator. If the LTCC defines a target though it's planning processes in the future, then it should be included.

### 3.2 Potential Data Charts

The chart below is the recommended display for the Number of LTCC Courses Offered indicator. The chart enables a comparison between the different types of courses offered, and an understanding of the trend in the number of each type of and total courses offered over time.

**Number of Courses Offered  
(Credit and Non-Credit Courses)**



### 3.3 Procedure

#### 1. Update the Chart in the LTCC Courses Offered worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include data headers, one will include School Year dates and one will include Credit and Non-Credit Courses data.
- b) Click the bottom left corner of the box surrounding the School Year dates and drag down so it includes the recently added school year and the Credit and Non-Credit Courses data.
- c) This will automatically update the chart to include data for the most recent school year.

### 3.4 Key Reporting Context

- Credit and non-credit courses offered at LTCC include online courses offered through the college.
- Non-credit courses range from fitness and culinary arts courses to English and writing courses. These courses are offered every quarter to all full-time and part-time students through the same registration process required of credit courses.
- Sierra Nevada College is the other significant provider of continuing education courses. However, the courses offered data is not readily available, and the tuition is significantly more expensive and the school primarily targets recent high-school graduates including students from outside of the Tahoe Basin who are less likely to stay in the region so the courses are less relevant for increasing local resident job skills.

## 4.0 Terms & References

### 4.1 Terms

**Credit Course** - Course that has an associated credit amount that can be used to advance towards a degree or can be transferred as credits to another college or university.

**Non-Credit Course** - Course offered that has no credit associated with it. Students who enroll in noncredit courses do not receive any type of college credit for these courses, nor do they receive official grades.

**4.2 Additional References**

Lake Tahoe Community College, Factbook

<http://www.ltcc.edu/web/lxcc/welcome>

CA Community College Chancellor's Office

<http://www.cccco.edu/>

## Transient Occupancy Tax (TOT)

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Tourism is the primary economic driver in Lake Tahoe, roughly 40% of the overall economy in the region. Transient Occupancy Tax (TOT) revenue generated from tourist accommodations are a significant income stream to local jurisdictions. Transient Occupancy Tax (TOT) revenues are also a measure of tourism activity in the Tahoe Basin, as such, measuring visitor activity is critical to monitoring the economic health of the area. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Business Environment Aspect section of Chapter 3 above.

#### 1.2 Description

This indicator measures the total annual TOT revenues collected from overnight lodging facilities in the Tahoe Basin. TOT rates range from 8% to 13% in the Tahoe Basin and apply to all transient lodging units that are occupied for less than 30 days. TOT revenues are collected by each county and city for all lodging facilities located within their jurisdiction. This indicator does not include data for the unincorporated portion of El Dorado County which includes Meyers and Christmas Valley.

#### 1.3 Key Assumptions

Raw data is collected and published using consistent methods by each county and city that produce accurate counts of TOT revenue collected.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

- **Lake Tahoe Visitor Authority, Lodging Douglas County** ([http://ltva.org/resources/statistics\\_and\\_research/](http://ltva.org/resources/statistics_and_research/)) contains data for Douglas County. Data is tracked monthly with a published report for the fiscal year (July-June) provided in June.
- **City of South Lake Tahoe, Revenue Services Division** (<http://www.cityofslt.us/index.aspx?NID=588>) contains data for the City of South Lake Tahoe. Data is tracked monthly with a published report for the fiscal year (October-September) provided in September.
- **Placer County Revenue Services Division Staff** will provide data for Placer County. Data is tracked monthly with a published report for the fiscal year (July-June) provided in June.
  - Placer County Staff Contact (as of December 2013): Virginia Meyers, Placer County Revenue Services Division
  - Email: [VMeyers@placer.ca.gov](mailto:VMeyers@placer.ca.gov)
  - Phone: (916)543-3925
- **Reno-Sparks Convention and Visitors Authority, Finance and Accounting Department** (<http://www.visitreno tahoe.com/about-us/finance-accounting>) contains data for Washoe County. Data is tracked monthly with a published report for the fiscal year (July-June) provided in June.

#### 2.2 Data Attributes

The following data must be collected to report the indicator annually:

- **Fiscal Year**
- **County Name – necessary to report data for all jurisdictions in the Tahoe Basin**
- **TOT Collected – necessary to report annual TOT revenues**

#### 2.3 Procedure

##### 1. Collect TOT Data for Douglas County and Update the TOT Worksheet

- a) Go to the Lake Tahoe Visitor Authority, Lodging Douglas County website using the following menu: Lake Tahoe Visitor Authority Home >> Resources >> Statistics and Research.
- b) Click the PDF link next to the “Lodging Douglas County” header to download a TOT report for the most recent fiscal year.
- c) In the downloaded report, collect TOT data from the “Total Room Revenue” summary table in the “Current Year” column and “Total” row (see image to the right).
- d) In the TOT worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent fiscal year in the next empty row at the bottom of the Fiscal Year column.
- e) Paste TOT data for Douglas County into the Douglas County Data column for the most recent fiscal year.

Total Room Revenue		
	prior yr	current yr
Jul	\$ 6,576,793	\$ 6,506,600
Aug	\$ 5,429,156	\$ 5,886,771
Sep	\$ 4,664,145	\$ 4,628,851
Oct	\$ 2,209,224	\$ 2,367,998
Nov	\$ 1,776,750	\$ 1,888,081
Dec	\$ 4,721,410	\$ 5,579,265
Jan	\$ 2,987,163	\$ 3,872,582
Feb	\$ 3,412,374	\$ 4,022,312
Mar	\$ 3,782,756	\$ 4,071,555
Apr	\$ 2,063,566	\$ 2,087,227
May	\$ 2,160,447	\$ 2,449,572
June	\$ 4,310,986	\$ 4,632,768
mo	\$ 44,094,770	\$ 47,993,582
Total		9%

##### 2. Collect TOT Data for the City of South Lake Tahoe and Update the TOT worksheet

- a) Go to the City of South Lake Tahoe, Revenue Services Division website using the following menu: City of South Lake Tahoe Home >> City Services >> Finance >> Revenue Services Division >> Transient Occupancy Tax >> TOT Reports.

- b) On the TOT Reports webpage, navigate to the header for the most recent fiscal year and click the link for September of that year to download the TOT report.
- c) In the downloaded report, collect TOT data from the “Fiscal Year-to-Date” summary table in the “year” column and “Total to Date” row (see image below).
- d) In the TOT worksheet, paste TOT data for the City of South Lake Tahoe into the City of South Lake Tahoe data column for the most recent fiscal year.

Fiscal Year-to-Date:			2013 to 2012 Variance	% Change
	2013	2012		
Motels	\$1,695,278.16	\$1,302,457.70	\$392,820.46	30.16%
Delinquent Motel Payments	\$8,025.15	\$10,338.96	(\$2,313.81)	-22.38%
Property Management VHR	\$1,213,129.37	\$1,096,610.77	\$116,518.60	10.63%
Individual Property Owners	\$587,817.11	\$407,435.56	\$150,381.55	36.91%
Campground	\$16,835.01	\$16,458.22	\$367.79	
Promotion 2%	\$1,163,694.95	\$944,433.78	\$219,261.17	23.22%
TOT Totals	\$4,654,779.75	\$3,777,734.99	\$877,044.76	23.22%
Total General Fund TOT	\$4,654,779.75	\$3,777,734.99	\$877,044.76	23.22%
City Redevelopment TOT	\$1,163,694.95	\$944,433.78	\$219,261.17	23.22%
Redevelopment Area TOT	\$4,402,213.90	\$4,085,666.34	\$316,547.56	7.75%
Total to Date Collections	\$10,220,688.60	\$8,807,835.11	\$1,412,853.49	16.04%

### 3. Collect TOT Data for Placer County and Update the TOT worksheet

- a) Email the Placer County Revenue Services Division staff contact and request TOT revenue data for the most recent fiscal year. Data will be provided for the desired fiscal year as a PDF attachment in an email.
  - If contact is no longer accessible, find a new Placer County Revenue Services Division staff contact willing to provide the requested data and update section 2.1 Sources above with contact information for the new contact.
- b) In the report provided by the Placer County Revenue Services Division staff contact, collect TOT data from the “Cumulative Total” column in the row for the 12<sup>th</sup> month of the fiscal year (see image below).
- c) In the TOT worksheet, paste TOT data for Placer County into the Placer County data column for the most recent fiscal year.

East Slope TOT Collections by Percentage					
Fiscal Year 2012/13					
Month	ReportPeriod	60%	40%	Mthly Total	Cumulative Total
01	Jul-12	322,731	215,154	537,885	537,885
02	Aug-12	397,754	265,169	662,923	1,200,807
03	Sep-12	179,640	119,760	299,399	1,500,206
04	Oct-12	1,405,308	936,872	2,342,180	3,842,387
05	Nov-12	561,822	374,548	936,370	4,778,757
06	Dec-12	186,917	124,611	311,528	5,090,284
07	Jan-13	587,651	391,767	979,419	6,069,703
08	Feb-13	663,088	442,059	1,105,147	7,174,850
09	Mar-13	473,180	315,453	788,633	7,963,483
10	Apr-13	1,105,684	737,122	1,842,806	9,806,289
11	May-13	725,691	483,794	1,209,485	11,015,774
12	Jun-13	73,542	49,028	122,570	11,138,344

### 4. Collect TOT Data for Washoe County and Update the TOT worksheet

- a) Go to the Reno-Sparks Convention and Visitors Authority, Finance and Accounting Department website using the following menu: Reno-Sparks Convention and Visitors Authority Home >> About the RSCVA >> Finance & Accounting.
- b) On the Finance & Accounting webpage, navigate to the “Transient Lodging Tax Information, Forms and Reports” header and click the link titled “Room Tax and Occupancy Statistics” for October of the most recent fiscal year to download the TOT report.
- c) In the downloaded report, collect TOT data from the “Taxable Revenue by District” page in the “Year To Date Actual” column and “Washoe B” row (see image to the right).
- d) In the TOT worksheet, paste TOT data for Washoe County into the Washoe County data column for the most recent fiscal year.

Reno-Sparks Convention and Visitors Authority Taxable Revenue by District October 2013					
Tax District	Current Month Actual October 2013		Last Year Actual October 2012		Year To Date Actual July - October 2013
	Amount	Increase (Decrease) Amount	Amount	% Percent	
Reno B	\$9,384,973	\$9,919,995	(\$535,023)	-5.4%	\$50,592,097
Reno D	\$5,600,412	\$5,024,282	\$576,131	11.5%	\$28,607,616
Reno E	\$57,962	\$54,644	\$3,319	6.1%	\$297,499
Total Reno	\$15,043,346	\$14,998,920	\$44,427	0.3%	\$79,497,212
Washoe A	\$23,955	\$23,253	\$702	3.0%	\$112,243
Washoe B	\$1,687,261	\$1,761,383	(\$74,122)	-4.2%	\$16,857,948
Total Washoe Co.	\$1,711,216	\$1,784,636	(\$73,420)	-4.1%	\$16,970,191

## 3.0 Metric Reporting Methods

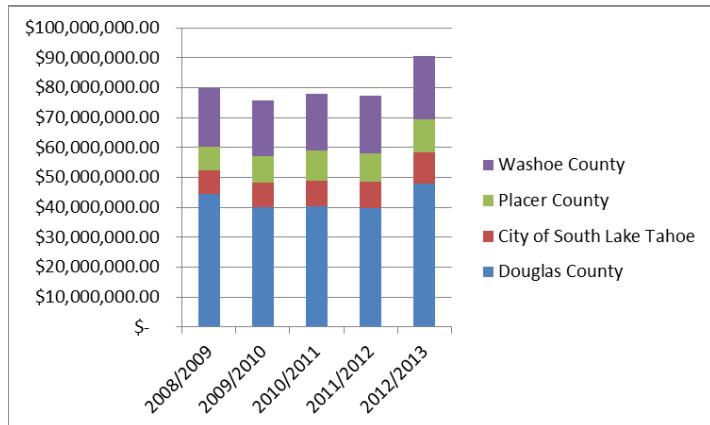
### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable data for the TOT indicator.

### 3.2 Potential Data Charts

The chart below is the recommended display for the TOT indicator. The chart enables a comparison of TOT revenue in different jurisdictions in the Tahoe Basin, and an understanding of the trend in TOT revenue over time for each jurisdiction and the entire Basin.

**TOT Revenue**



### 3.3 Procedure

#### 1. Update the Chart in the TOT Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Jurisdiction Name column headers, one will include Fiscal Year dates and one will include TOT data.
- Click the bottom left corner of the box surrounding the Fiscal Year dates and drag down so it includes the recently added fiscal year and the TOT data.
- This will automatically update the chart to include data for the most recent fiscal year.

### 3.4 Key Reporting Context

- As of December 2013, the TOT rate is 8% for Placer County, 13% in Washoe County, 10% in Douglas County and 10% in the City of South Lake Tahoe. Towns and cities have the ability to set their own tax rate separate from that of the county.
- The City of South Lake Tahoe administers a separate TOT rate than the rest of El Dorado County. The unincorporated portions of El Dorado Count in the Tahoe Basin are not included in this indicator because the county does not separate TOT revenue collected in the Tahoe basin from revenue collected in other parts of the county.

## 4.0 Terms & References

### 4.1 Terms

**Lodging Facility** - Any structure, or any portion of any structure, which is occupied or intended or designed for occupancy by transients for dwelling, lodging or sleeping purposes, and includes, but is not limited to hotels, motels, inns, guest houses, bed & breakfast facilities, vacation homes and campgrounds.

**Transient Occupancy Tax (TOT)** – A lodging tax paid by short-term renters/lodgers, collected by property owners (hotels, vacation rentals, etc.) and remitted to the county or city Tax Collectors Office. Every operator of a lodging facility in the Tahoe Basin for stays of less than thirty-one (31) continuous nights collect the tax on the amount of rent from the occupant. Each transient, or lodger is subject to the tax in the amount of the rate set by the jurisdiction of the rent charged by the operator (hotel, owner of property). It is the operator's duty to pay the tax to the county or city Tax Collectors Office.

### 4.2 Additional References

Final Report of Sustainability Measures Lake Tahoe Watershed, Nevada & California

<http://www.tahoemls.com/>

The Lake Tahoe Prosperity Plan

<http://www.tahoechamber.org/files/553.pdf>

Reno-Sparks Convention & Visitors Authority Transient Lodging Tax Regulations

[http://www.visitrenotahoe.com/docs/Rules\\_Regulations - FINAL-Adopted\\_6232011.pdf](http://www.visitrenotahoe.com/docs/Rules_Regulations - FINAL-Adopted_6232011.pdf)

Town of Truckee, Transient Occupancy Tax

<http://www.townoftruckee.com/index.aspx?page=1412>

<h2 style="text-align: center;">Employment By Industry</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Objective &amp; Description</b>	
<b>1.1 Relevance</b>	
<p>Increasing industry diversification will increase the resilience of the local economy to macroeconomic trends, reducing the impacts of a recession and increasing the region's ability to capitalize on a range of opportunities during periods of economic growth. Employment numbers by industry show the diversification and health of each sector of the economy, identifying which industries are hiring more workers and which industries are laying more workers off. This creates an understanding of which industries in the Tahoe Basin are consolidating and expanding, and how policies and investments aimed at supporting specific industries are performing. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Business Environment Aspect section in Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the number of employees per industry in the Tahoe Basin. Employment information is collected through the US Census American Community Survey (ACS) and industry classification is determined using the North American Industry Classification System (NAICS), which applies uniform industry classifications for all economic data collected through the US Census. Employment numbers include any full and part-time paid employee who are on a business' payroll at some point during the ACS reporting period. Employment by Industry for the Tahoe Basin is reported by the US Census American Community Survey using 5-year "period" estimates that represent an average of the data collected over a 60-month period (for CDP with populations larger than any in the basin, 3-year and 1-year "period" estimates are available). This is opposed to "point-in-time" estimates, such as the decennial census, that approximate the characteristics of an area on a specific date. Period estimates are available annually based on data collected 5 years prior (e.g. 5-year period estimates are released in 2012 for data collected in 2007 through 2011, and in 2013 for data collected in 2008 through 2012).</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and published using consistent and accurate methods by the US Census Bureau, American Community Survey, 5-Year Estimates.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>US Census Bureau, American Community Survey, FactFinder</b> (<a href="http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml">http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml</a>). Data is updated and reported annually in December.</li> <li>▪ <b>US Census Block Maps</b> (<a href="http://www.census.gov/geo/maps-data/maps/block/2010/">http://www.census.gov/geo/maps-data/maps/block/2010/</a>). The US Census Block Maps provide updated CDP information for the Tahoe Basin. Data is updated in December of each decennial survey year (such as December 2000 and December 2010).</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>ACS Reporting Period</b></li> <li>▪ <b>CDP Name – necessary to report only data for CDPs within the Tahoe Basin</b></li> <li>▪ <b>Industry Category – necessary to report on all industries tracked by the US Census</b></li> <li>▪ <b># of Employees per Industry - necessary to report total number of employees per industry in the Tahoe Basin.</b></li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm CDPs in the Tahoe Basin and Update the List of CDPs If Necessary</b> <ol style="list-style-type: none"> <li>a) Navigate to the US Census Block Maps website using the following menu and links: US Census homepage&gt;&gt;Geography&gt;&gt;Maps &amp; Data&gt;&gt;Reference&gt;&gt;Census Reference Maps&gt;&gt;Census Block Maps: year.</li> <li>b) Confirm all CDPs listed in Step 2.b still exist and have the same names, and check for new CDPs by downloading County Subdivision (CCD) maps using the following menu (download the first map listed for each CCD, number 000):           <ul style="list-style-type: none"> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;Placer&gt;&gt;Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;El Dorado&gt;&gt;South Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Washoe&gt;&gt;Incline Village CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Carson City&gt;&gt;Carson City CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Douglas&gt;&gt;Zephyr Cove CCD</li> </ul> </li> <li>c) Scan the downloaded maps for each CDP listed in Step 2.b.           <ul style="list-style-type: none"> <li>▫ In the unlikely case that the name of a CDP is changed, a new CDP is added or CDP boundaries are redrawn, update the CDP listed in step 2.b, as well as the CDPs listed in the data columns of the Employment by Industry Worksheet.</li> </ul> </li> </ol> </li> <li>2. <b>Collect Employment by Industry Data and Update Employment by Industry Worksheet</b> <ol style="list-style-type: none"> <li>a) Go to the US Census Bureau, American Community Survey, FactFinder website.</li> <li>b) Access census data for all CDPs physically located in the Tahoe Basin by entering the name of each CDP listed below into the Community Facts search box on the FactFinder homepage.</li> </ol> </li> </ol>	

- Carnelian Bay CDP
  - Crystal Bay CDP
  - Dollar Point CDP
  - Glenbrook CDP
  - Incline Village CDP
  - Kings Beach CDP
  - Kingsbury CDP
  - Lakeridge CDP
  - Round Hill Village CDP
  - Stateline (south) CDP
  - Sunnyside Tahoe City CDP
  - Tahoe Vista CDP
  - Tahoma CDP
  - Zephyr Cove CDP
  - Zip Code 96150 (includes City of South Lake Tahoe and unincorporated El Dorado County such as Meyers & Fallen Leaf Lake)
- c) Once you have searched for your desired CDP, you will be directed to a community facts summary display. In the display, click the link titled “Income, Employment, Occupation, Commuting to Work...” under the “American Community Survey” header.
- d) Collect data displayed in the “Estimate” column for each industry listed under the “Industry” header (see image below).

Subject	Tahoe Vista CDP, California			
	Estimate	Margin of Error	Percent	Percent Margin of Error
Production, transportation, and material moving occupations	8	+/-13	1.0%	+/-1.5
INDUSTRY				
Civilian employed population 16 years and over				
Agriculture, forestry, fishing and hunting, and mining	0	+/-95	0.0%	+/-4.4
Construction	131	+/-75	15.7%	+/-8.8
Manufacturing	20	+/-20	2.4%	+/-2.3
Wholesale trade	18	+/-20	2.2%	+/-2.5
Retail trade	54	+/-43	6.5%	+/-5.1
Transportation and warehousing, and utilities	9	+/-11	1.1%	+/-1.4
Information	0	+/-95	0.0%	+/-4.4
Finance and insurance, and real estate and rental and leasing	25	+/-23	3.0%	+/-2.7
Professional, scientific, and management, and administrative and waste management services	222	+/-125	26.5%	+/-10.5
Educational services, and health care and social assistance	62	+/-50	7.4%	+/-5.6
Arts, entertainment, and recreation, and accommodation and food services	264	+/-136	31.5%	+/-12.0
Other services, except public administration	32	+/-35	3.8%	+/-4.2
Public administration	0	+/-95	0.0%	+/-4.4

- e) In the Employment by Industry Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next row at the bottom of the Calendar Year column.
- f) Paste number of employees by industry for all CDPs physically located in the Tahoe Basin in the basin-wide Employment by Industry Calculator, which will calculate a Basinwide total for each industry type. Paste the basin-wide total for each industry category in the corresponding data column in the Data Table for the most recent ACS survey period.

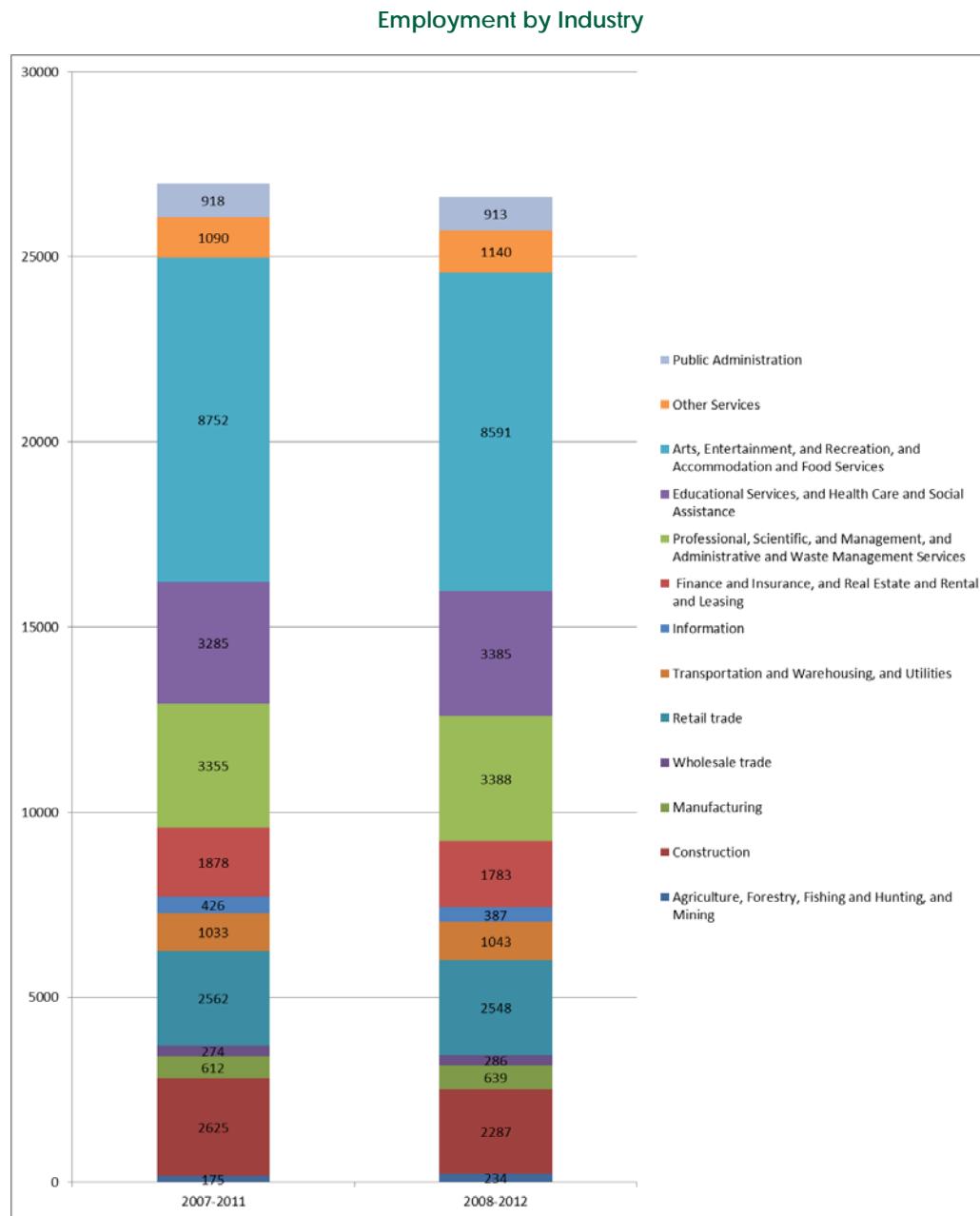
### 3.0 Metric Reporting Methods

#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable data for the Employment by Industry indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Employment by Industry indicator. The chart enables a comparison of different industry types and an understanding of the trend in basin-wide employment by industry over time.



### 3.3 Procedure

#### 1. Update the Chart in the Employment by Industry Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the industry type column headers, one will include ACS Reporting Period dates and one will include industry-specific employment numbers by industry.
- Click the bottom left corner of the box surrounding the ACS Reporting Period dates and drag down so it includes the recently added year and the employment by industry data.
- This will automatically update the chart to include data for the most recent ACS reporting period.

### 3.4 Key Reporting Context

- ACS estimates are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate due to sampling variability is represented by the Margin Of Error (MOE). The MOE related to ACS estimates suggests there is a 90 percent probability that the interval defined by the estimate plus the MOE and the estimate minus the MOE (the upper and lower confidence bounds) contains the full population value of the estimate. As of December 2013, the MOE for CDPs in the Tahoe Basin ranged from +/- 64 in lower population CDPs (Tahoma, Crystal Bay, etc.) to +/- 678 in high population CDPs (South Lake Tahoe).

- Industry classification is determined using the North American Industry Classification System 2007. Industry categories used by the ACS are aggregated and grouped based on guidelines issued in Clarification Memorandum No. 2, "NAICS Alternate Aggregation Structure for Use By U.S. Statistical Agencies," issued by the Office of Management and Budget.
- This indicator only collects data for CDPs in the Tahoe Basin. While CDPs incorporate the most populous communities throughout the Tahoe Basin there are residents that are not accounted for in these counts. As of December 2013 it is estimated that 90% of the total resident population in the Tahoe Basin lives in one of the CDPs reported by this indicator.

#### **4.0 Terms & References**

##### **4.1 Terms**

**Census Designated Place (CDP)** – A Census Designated Place is a concentration of population identified by the US Census Bureau for statistical purposes CDPs are delineated for each decennial census as the statistical counterparts of incorporated places, such as cities, towns and villages (note that the South Lake Tahoe city CDP represents the unincorporated parts of the South Lake Tahoe region). CDPs are populated areas that lack separate municipal government, but which otherwise physically resemble incorporated places.

**The North American Industry Classification System (NAICS)** - The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

##### **Industry Descriptions**

**Accommodation and Food Services Industry** - This industry comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

**Administrative and Support and Waste Management and Remediation Services Industry** - This industry comprises establishments performing routine support activities for the day-to-day operations of other organizations, including office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

**Agriculture, Forestry, Fishing And Hunting Industry** – This industry comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.

**Arts, Entertainment, and Recreation Industry** – This industry comprises a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons. This industry comprises (1) establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and (3) establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

**Construction Industry** - This industry comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this industry.

**Educational Services Industry** - This industry comprises establishments that provide instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit, or they may be publicly owned and operated. They may also offer food and/or accommodation services to their students.

**Finance And Insurance Industry** - This industry comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.

**Health Care and Social Assistance Industry** - This industry comprises establishments providing health care and social assistance for individuals. Many of the industries in the industry are defined based on the educational degree held by the practitioners included in the industry.

**Information Industry** - This industry comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data.

**Management of Companies and Enterprises Industry** - This industry comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise.

**Manufacturing Industry** - This industry comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.

**Mining Industry** - This industry comprises establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas.

**Other Services (except Public Administration) Industry** - This industry comprises establishments engaged in providing

services not specifically provided for elsewhere in the classification system. Establishments in this industry are primarily engaged in activities such as equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, and providing drycleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

**Professional, Scientific, and Technical Services Industry** - This industry comprises establishments that specialize in performing professional, scientific, and technical activities for others including, legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services.

**Public Administration Industry** - This industry consists of establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area.

**Real Estate and Rental and Leasing Industry** - This industry comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services.

**Retail Trade Industry** - This industry comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

**Transportation And Warehousing Industry** - This industry comprises businesses providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation.

**Utilities Industry** - This industry comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal.

**Wholesale Trade Industry** - This industry comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

#### 4.2 Additional References

US Census Bureau, American Community Survey

<https://www.census.gov/acs/www/>

A Compass for Understanding and Using American Community Survey Data

<http://www.census.gov/acs/www/Downloads/handbooks/ACSGeneralHandbook.pdf>

US Census Bureau, County Business Patterns

<http://www.census.gov/econ/cbp/definitions.htm>

*North American Industry Classification System, Code Search*

<http://www.census.gov/eos/www/naics/index.html>

Clarification Memorandum No. 2, "NAICS Alternate Aggregation Structure for Use By U.S. Statistical Agencies

<http://www.census.gov/epcd/www/naimemo2.htm>

US Census Block Maps

<http://www.census.gov/geo/maps-data/maps/block/2010/>

US Zip Code Maps

<http://www.unitedstateszipcodes.org/>

## Distribution of Development

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Concentrating the development of retail and office space, tourist accommodations and residential housing reduces the travel time and cost for residents and tourists to access retail facilities, facilitates additional visits to retail facilities and reduces public sector investments in infrastructure outside of the urban areas. These changes cause the concentrated areas of development to become economic hubs that generate higher private sector revenues, become community gathering areas and cause the public sector to increase infrastructure investments (e.g. walking paths, parks) in concentrated development areas. In addition, many of the Tahoe Basin's environmental problems are due to past and existing development. Existing development, in particular commercial development without best management practices and development in sensitive areas, is a primary source of sediments and other contaminants that continue to enter lake Tahoe. Due to this issue, the 2012 TRPA Regional Plan Update established incentives to redevelop commercial areas and remove development in sensitive areas to address this issue. This indicator will measure progress towards the goal of concentrating development in urban areas and the effectiveness of these incentives. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Business Environment Aspect section of Chapter 3 above. In addition, further detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the TRPA Regional Plan Update (RPU) Performance Measure (PM) Info Sheet for this indicator.

#### 1.2 Description

This indicator measures the annual percentage of residential units, tourist accommodation units (TAU) and commercial floor area (CFA) located within defined Centers (Residential, Tourist and Commercial Centers) in the Tahoe Basin. The TRPA Regional Plan defines specific boundaries for these existing Centers, generally including all concentrated areas of development and properties within ¼ mile of existing commercial and public services land uses. Data for this indicator is collected quarterly by TRPA for internal use and is made available annually for external use as part of the 2012 TRPA Regional Plan Update (RPU) Performance Measures. Data is calculated for Tahoe Basin communities using TRPA's GIS layers and county assessor data.

#### 1.3 Key Assumptions

Raw data is collected and published annually using consistent and accurate methods as part of the TRPA Regional Plan Update programmatic reporting efforts.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

**TRPA Staff** – As of December 2013, TRPA Regional Plan Update PMs are calculated, tracked and reported by TRPA staff annually. TRPA staff calculate and analyze data at the end of the calendar year and summary data should be available by February of the following year.

- TRPA Staff Contact (as of December 2013): Adam Lewandowski, TRPA Long Range Planning Manager
- Email: [alewandowski@trpa.org](mailto:alewandowski@trpa.org)
- Phone: 775-589-5233

#### 2.2 Data Attributes

The following data is needed to report the indicator annually:

- **RPU Reporting Year**
- **Land Use Type** – necessary to report development distribution between residential, commercial and tourist land uses
- **% of Development in Centers** – necessary to report to ratio of land use development in defined centers

#### 2.3 Procedure

##### 1. Contact TRPA Staff and Request Development in Centers Data

- a) Email TRPA staff requesting the Percentage of Development in Centers data for the most recent calendar year. Include the table below in the email as an example of the data and format you are requesting.

Land Use	Units	CFA	Percent of Total
<b>Commercial</b>		5,551,693 Total	
Centers		3,504,995	63.13%
neutral		585,708	10.55%
outside		1,460,990	26.32%
<b>Residential</b>	<b>47,391 Total</b>		
Centers	1,821		3.84%
neutral	13,505		28.50%
outside	32,065		67.66%
<b>Tourist</b>	<b>11,947 Total</b>		
Centers	9,960		83.37%
neutral	740		6.19%
outside	1,247		10.44%

##### 2. Collect Percentage of Development in Centers Data and Update the Development Distribution Worksheet

- a) In the table provided by TRPA Staff, copy the percentage of development in Centers ("Percent of Total"

column) for the Commercial, Residential and Tourist land uses (see red boxes in image below).

<u>Land Use</u>	<u>Units</u>	<u>CFA</u>	<u>Percent of Total</u>
<b>Commercial</b>		<b>5,551,693 Total</b>	
Centers		3,504,995	<b>63.13%</b>
neutral		585,708	<b>10.55%</b>
outside		1,460,990	<b>26.32%</b>
<b>Residential</b>	<b>47,391 Total</b>		
Centers	1,821		<b>3.84%</b>
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<b>Tourist</b>	<b>11,947 Total</b>		
Centers	9,960		<b>83.37%</b>
neutral	740		<b>6.19%</b>
outside	1,247		<b>10.44%</b>

- b) In the Development Distribution Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.
- c) Paste percentage of development in Centers for each Land Use into the corresponding data column data for the most recent calendar year.

### 3.0 Metric Reporting

#### 3.1 Targets & Comparable Data Sets

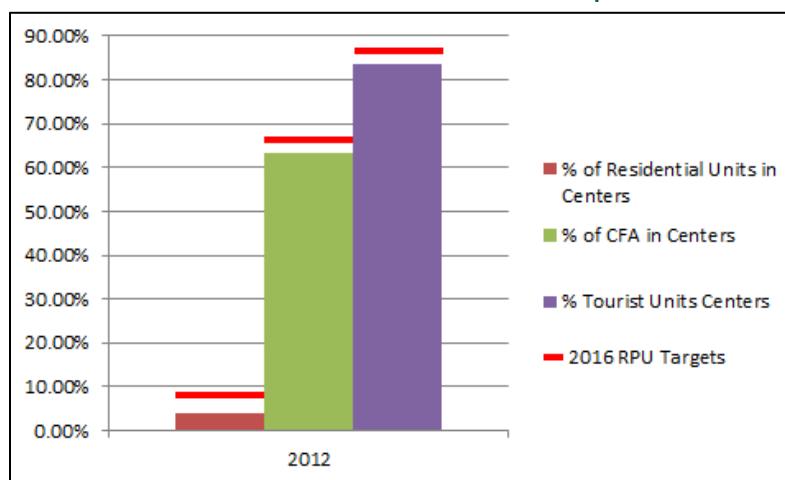
The TRPA RPU defines Performance Measure Benchmarks, which are quantifiable targets that define planning goals for each Performance Measure. Performance Measure Benchmarks are further defined as Level-1 Benchmark Goals and Level-2 Benchmark Goals; Level-1 Benchmark Goals define the desired direction of change, and Level-2 Benchmark Goals define a quantitative target which is a goal and not a requirement due to the influence of factors outside of the control of TRPA. The Level-2 Benchmark Goal is to increase residential development in centers by 4%, increase commercial development in centers by 1% and increase tourist development in centers by 1%. The targets for this indicator are based on the baseline development percentage numbers and the Level-2 Benchmark Goals. These targets are for December 31, 2016 which is the end of the 4-year RPU performance measure reporting period:

- Commercial – 64.13% or 5,607,210 CFA units
- Residential – 7.4% or 49,287 units
- Tourist – 84.37% or 12,066 units

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Distribution of Development indicator. This chart enables a comparison between different land uses and enables an understanding of the trend in development distribution over time.

**% of Residential, Commercial and Tourist Development in Centers**



#### 3.3 Procedure

##### 1. Update the Chart in the Development Distribution Worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Percentage of Development in Centers data column headers, one will include Calendar Year dates and one will include percentage of development in centers data.

- |  |
|--|
| b) Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added year and the development distribution data.<br>c) This will automatically update the chart to include data for the most recent calendar year. |
|--|

### 3.4 Key Reporting Context

- The data used to generate the 2012 baseline came from several sources with varying degrees of accuracy. In addition, some of the data used for the 2012 baseline is from 2010. TRPA's review of the data are ongoing and baseline data refinements may be made to reflect the most accurate available information. The baseline numbers used by this reporting plan should be updated with these refinements to the baseline if they become available. In the future, TRPA will track unit of use information in the Commodities Tracking System expected to be released in January 2014, which ensure high integrity unit of use data moving forward.

## 4.0 Terms & References

### 4.1 Terms

**Commercial Center (a.k.a. Town Center)** – Existing concentration of development that contain most of the Tahoe Basin's non-residential services are targeted for redevelopment in a manner that improves environmental conditions, creates a more sustainable and less auto-dependent development pattern and provides economic opportunities in the Tahoe Basin.

**Commercial Floor Area (CFA)** – Square footage occupied by a building dedicated to the retail or wholesale sale or rental of any article, substance, commodity or service.

**Residential Center** – Existing concentrations of development having potential to provide housing for the residents of the Tahoe Basin.

**Residential Unit** – One or more rooms containing one or more bedrooms, with not more than one kitchen, designed to be occupied permanently as an independent housekeeping unit by one family or one collective household with facilities for living, cooking, sleeping and eating.

**Tourist Center** – Existing concentrations of development that have the potential to provide intensive tourist accommodations and services or intensive recreation.

**Tourist Unit** – Uses, facilities, and activities primarily pertaining to the occupation of buildings for eating, sleeping, and living on a temporary basis by persons whose permanent residence is elsewhere.

**TRPA 2012 Regional Plan Update** – The TRPA 2012 Regional Plan Update is the most recent update of the Lake Tahoe Regional Plan, originally adopted in 1987, and aims to accelerate attainment of environmental goals in part by using incentives to encourage the migration of development to concentrated areas and restore development in sensitive areas.

### 4.2 References

TRPA 2012 Regional Plan Update

<http://www.trpa.org/regional-plan/regional-plan-eis/>

<h2 style="text-align: center;">Second Home Ownership</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Between 2000 and 2008 more than 9,500 residents – fifteen percent of the population - left the Tahoe Basin. This drastic decline in population was primarily due to job loss from the economic recession and significant increases in housing prices primarily driven by second home demand. According to the Lake Tahoe Basin Prosperity Plan, in 2010 most teachers, nurses, firefighters, and police officers lacked the purchasing power to qualify for home ownership in the Tahoe Basin. Entry level workers were “locked out” of the market and even experienced workers could not purchase housing in certain communities round the lake especially the Incline Village area. The decline in permanent residents diminishes the sense of community and decreases revenues to support vital community services and quality of life. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Housing Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the percentage of housing units in the Tahoe Basin that are in seasonal, recreational or occupational use, as opposed to in permanent occupancy by owners or renters. The US Census Bureau defines these units as vacant units used or intended for use only in certain seasons or for weekends or other occasional use throughout the year. Seasonal units include those used for summer or winter sports or recreation, such as beach cottages and hunting cabins. Interval ownership units, sometimes called shared-ownership or time-sharing condominiums, also are included. The US Census Bureau collects data on housing stocks and conditions every 10 years through the decennial survey, and the data is reported as a “point-in-time” estimate that approximates the characteristics of an area on a specific date. Housing units in seasonal, recreational or occupational use is provided as a percentage of total housing units in each Census Designated Place (CDP) in the Tahoe Basin. The US Census also provides decennial survey data by Census County Division (CCD) and there is a single CCD that contains the area within the basin for each county; however this indicator is more relevant at the community level as opposed to the portion of each county in the basin for the target audience so this indicator reports on CDPs.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and published using consistent and accurate methods by the US Census Bureau, Decennial Survey.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>US Census Bureau, Decennial Survey, FactFinder</b> (<a href="http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml">http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml</a>). Data is updated in December each decennial survey year (such as December 2000 and December 2010).</li> <li>▪ <b>US Census Block Maps</b> (<a href="http://www.census.gov/geo/maps-data/maps/block/2010/">http://www.census.gov/geo/maps-data/maps/block/2010/</a>). The US Census Block Maps provide updated CDP information in the Tahoe Basin. Data is updated in December of each decennial survey year (such as December 2000 and December 2010).</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator:</p> <ul style="list-style-type: none"> <li>▪ <b>Survey Year</b></li> <li>▪ <b>CDP Name</b> – necessary to report only data for CDPs within the Tahoe Basin</li> <li>▪ <b>Percent of Housing Units in Seasonal, Recreational, or Occasional Use</b> – necessary to report annual indicator data</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm CDPs in the Tahoe Basin and Update the List of CDPs If Necessary</b> <ol style="list-style-type: none"> <li>a) Navigate to the US Census Block Maps website using the following menu and links: US Census homepage&gt;&gt;Geography&gt;&gt;Maps &amp; Data&gt;&gt;Reference&gt;&gt;Census Reference Maps&gt;&gt;Census Block Maps: year.</li> <li>b) Confirm all CDPs listed in Step 2.b still exist and have the same names, and check for new CDPs by downloading County Subdivision (CCD) maps using the following menu (download the first map listed for each CCD, number 000):           <ul style="list-style-type: none"> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;Placer&gt;&gt;Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;El Dorado&gt;&gt;South Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Washoe&gt;&gt;Incline Village CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Carson City&gt;&gt;Carson City CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Douglas&gt;&gt;Zephyr Cove CCD</li> </ul> </li> <li>c) Scan the downloaded maps for each CDP listed in Step 2.b.           <ul style="list-style-type: none"> <li>▫ In the unlikely case that the name of a CDP is changed, a new CDP is added or CDP boundaries are redrawn, update the CDP listed in step 2.b, as well as the CDPs listed in the data columns of the Second Home Ownership Worksheet.</li> </ul> </li> </ol> </li> <li>2. <b>Collect Percent of Housing Units in Seasonal, Recreational, or Occasional Use Data and Update the Second Home Ownership Worksheet</b> <ol style="list-style-type: none"> <li>a) Go to the US Census Bureau, FactFinder website.</li> <li>b) Access census data for all CDPs physically located in the Tahoe Basin by entering the name of each CDP</li> </ol> </li> </ol>	

listed below into the Community Facts search box on the FactFinder homepage.

- Carnelian Bay CDP
  - Crystal Bay CDP
  - Dollar Point CDP
  - Glenbrook CDP
  - Incline Village CDP
  - Kings Beach CDP
  - Kingsbury CDP
  - Lakeridge CDP
  - Round Hill Village CDP
  - Stateline (south) CDP
  - Sunnyside Tahoe City CDP
  - Tahoe Vista CDP
  - Tahoma CDP
  - Zephyr Cove CDP
  - Zip Code 96150 (includes City of South Lake Tahoe and unincorporated El Dorado County including Meyers & Fallen Leaf Lake)
- c) Once you have searched for your desired CDP, you will be directed to a community facts summary display. In the display, click the link titled “Population, Age, Sex, Race, Households and Housing...” under the “year Census” header and collect data displayed in the “Percent” column in the “Percent of Housing Units in Seasonal, Recreational, or Occasional Use” row (See image below).

Subject	Number	Percent
Occupied housing units	553	26.9
Vacant housing units	1,505	73.1
For rent	28	1.4
Rented, not occupied	0	0.0
For sale only	23	1.1
Sold, not occupied	3	0.1
For seasonal, recreational, or occasional use	1,428	69.4
All other vacants	23	1.1

- d) In the Second Home Ownership worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent decennial survey year in the next empty row at the bottom of the Decennial Survey Year column.
- e) Paste percent of housing units in seasonal, recreational, or occasional use data in the corresponding data column for the selected CDP for the most recent survey year.

### 3.0 Metric Reporting Methods

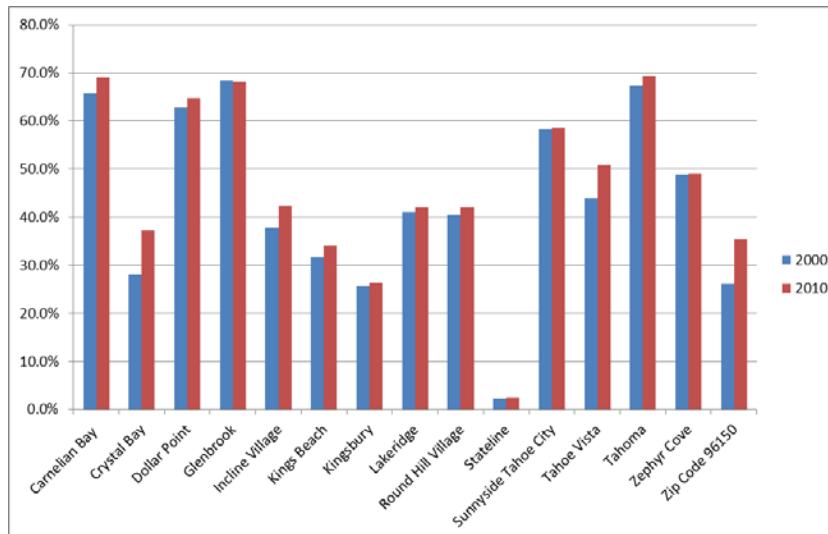
#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable data for the Percent of Housing Units in Seasonal, Recreational, or Occasional Use indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Percent of Housing Units in Seasonal, Recreational, or Occasional Use indicator. The chart enables a comparison of housing units in different CDPs in the Tahoe Basin and an understanding of the trend in housing units for each CDP over time.

### Percent of Housing Units in Seasonal, Recreational, or Occasional Use



#### 3.3 Procedure

##### 1. Update the Chart in the Payers for Housing Units Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the CDP data column headers, one will include Survey Year dates and one will include housing unit data.
- Click the bottom left corner of the box surrounding the Survey Year dates and drag down so it includes the recently added year and the housing unit data.
- This will automatically update the chart to include data for the most recent survey year.

#### 3.4 Key Reporting Context

- The status of second home ownership in the Tahoe Basin does not change on a frequent basis. The number of annual house sales is a small relative to the total number of house unit, and the portion of new sales that are second homes diverges little from past trends, and new development is limited. Ten year surveys of housing stocks are therefore sufficient to represent the state of second home ownership.
- This indicator only collects data for CDPs in the Tahoe Basin. While CDPs incorporate the most populous communities throughout the Tahoe Basin there are small residential communities that may not be accounted for in these counts. As of December 2013 it is estimated that 90% of the total resident population in the Tahoe Basin lives in one of the CDPs reported by this indicator.

#### 4.0 Terms & References

##### 4.1 Terms

**Housing Unit** - A single-family house, townhouse, mobile home or trailer, apartment, group of rooms, or single room that is occupied as a separate living quarters or, if vacant, is intended for occupancy as a separate living quarters.

**Seasonal, Recreational or Occasional Housing Unit** - Vacant units used or intended for use only in certain seasons or for weekends or other occasional use throughout the year. Seasonal units include those used for summer or winter sports or recreation, such as beach cottages and hunting cabins. Interval ownership units, sometimes called shared-ownership or time-sharing condominiums, also are included.

##### 4.2 Additional References

US Census Bureau, Decennial Survey

[http://www.census.gov/history/www/programs/demographic/decennial\\_census.html](http://www.census.gov/history/www/programs/demographic/decennial_census.html)

A Compass for Understanding and Using American Community Survey Data

<http://www.census.gov/acs/www/Downloads/handbooks/ACSGeneralHandbook.pdf>

US Census Bureau, Decennial Management Division Glossary

<http://www.census.gov/dmd/www/glossary.html>

US Census Block Maps

<http://www.census.gov/geo/maps-data/maps/block/2010/>

<b>Median House Prices</b>	
<b>Last Revision:</b> December 31, 2013	<b>Updated By:</b> Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Median house prices provide an idea of the price of real estate in a certain area, and how prices have changed over time. Median house prices are used by real estate agents, buyers and sellers to inform home pricing and buying decisions, including potential buyers weighing the trade-offs of living outside of and commuting to jobs in the Tahoe Basin. The median is used instead of average to avoid outliers that will skew the average. This is particularly important in Lake Tahoe where the volume of sales is not significant and there is a small subset of homes that sell for very high prices (e.g. \$10-\$20 million). The few very high priced sales push the average sale to an inflated value, not showing the true market characteristics. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Housing Aspect section in Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the annual median house price of houses sold in the Tahoe Basin. This indicator takes into account all single family homes sold in the Tahoe Basin within the desired reporting year. Median house price is the middle price in a series of sales, where half of the sales are of lower value and half are of higher value. Median house prices are provided by real estate agents operating in the Tahoe Basin with access to the Multiple Listing Service (MLS), a national database that tracks home sales throughout the country. Median house prices for Tahoe Basin communities are aggregated to the county level (Placer County is split into two regions, north shore and west shore).</p>	
<b>1.3 Key Assumptions</b>	
<p>Each source follows guidance consistently and accurately when collecting raw data from the MLS. MLS database query fields and rules do not change over time without any notification.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>South Tahoe Association of Realtors, Market Reports</b> (<a href="http://www.staor.org/category/market-reports/">http://www.staor.org/category/market-reports/</a>) contains data for El Dorado County - South Shore. Market Reports are released monthly, with the <b>January</b> report providing a summary for the entire year.</li> <li>▪ <b>Tahoe Sierra Board of Realtors, Statistical Information</b> (<a href="http://www.tahoemls.com/statistical-information/">http://www.tahoemls.com/statistical-information/</a>) contains data for Placer County - North and West Shores. Market Reports are released monthly, with the <b>January</b> report providing a summary for the entire year.</li> <li>▪ <b>Independent Real Estate Agent</b> will need to provide data for Washoe County communities. <ul style="list-style-type: none"> <li>▫ Washoe County Contact: Don Kanare, RE/MAX Premier Properties</li> <li>▫ Email: <a href="mailto:Don@InsideIncline.com">Don@InsideIncline.com</a></li> <li>▫ Phone: (775) 828-3380</li> </ul> </li> <li>▪ <b>Independent Real Estate Agent</b> will need to provide data for Douglas County communities. <ul style="list-style-type: none"> <li>▫ Douglas County Contact (as of December 2013): Richard Bolen, RealAnalogs, Inc.</li> <li>▫ Email: <a href="mailto:richard@thelistingcompany.com">richard@thelistingcompany.com</a></li> <li>▫ Phone: (775) 588-9099</li> </ul> </li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Calendar Year</b></li> <li>▪ <b>County – necessary to report data for all communities in the Tahoe Basin</b></li> <li>▪ <b>Median House Prices – necessary to report indicator data</b></li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Collect data for Washoe County and Update Median House Prices worksheet</b> <ol style="list-style-type: none"> <li>a) Call or email the Washoe County contact request median house price data for all home sales over the reporting year for the Tahoe Basin portion of Washoe County. Data will be provided for the desired reporting year in an email. <ul style="list-style-type: none"> <li>▫ If contact is no longer accessible, find a new real estate agent willing to provide the requested data and update section 2.1 Sources with contact information for the new agent.</li> </ul> </li> <li>b) In the Median House Price worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.</li> <li>c) Enter Washoe County median house price data into the Washoe County Data column.</li> </ol> </li> <li>2. <b>Collect data for Douglas County and Update Median House Prices worksheet</b> <ol style="list-style-type: none"> <li>a) Call Douglas County contact and request median house price data for Tahoe Basin communities in Douglas County. Tahoe Basin communities in Douglas County include all communities from Stateline to Glenbrook. Data will be provided for the desired reporting year in an email. <ul style="list-style-type: none"> <li>▫ If contact is no longer accessible, find a new real estate agent willing to provide the requested data and</li> </ul> </li> </ol> </li> </ol>	

update section 2.1 Sources above with contact information for the new agent.

- b) In the Median House Price worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter median house price data for Douglas County in the Douglas County Data column.

### 3. Collect data for El Dorado County and Update Median House Prices worksheet

- a) Go to the South Tahoe Association of Realtors, Market Reports webpage.
- b) Click the “Read More” link under the header titled “STAR MLS Statistics for January, year” for the December report for the most recent reporting year.
- c) Click the link for Single Family Market Analysis to download the most recent market report for El Dorado County (see image to the right).
- d) Collect median house price data for January of the most recent reporting year provided in the Median House Price column of the Single Family Market Analysis.
- e) In the Median House Price worksheet of the Tahoe Basin Sustainability Indicator Tracking Sheet, enter median house price data for El Dorado County in the El Dorado County Data column.

MONTH / YEAR	MEDIAN SALES PRICE	THIS MONTH LAST YEAR	PERCENT INCREASE/ DECREASE
Sep-06	\$474,500.00	\$455,000.00	4%
Oct-06	\$465,000.00	\$465,000.00	0%
Nov-06	\$474,500.00	\$475,000.00	-0.1%
Dec-06	\$476,000.00	\$475,000.00	0.2%
Jan-07	\$474,500.00	\$482,000.00	-1.6%
Feb-07	\$474,250.00	\$485,000.00	-2.2%
Mar-07	\$475,000.00	\$489,000.00	-2.9%
Apr-07	\$465,150.00	\$489,000.00	-4.9%
May-07	\$465,300.00	\$485,000.00	-4.1%
Jun-07	\$465,000.00	\$485,000.00	-4.1%
Jul-07	\$463,000.00	\$485,000.00	-4.5%
Aug-07	\$464,000.00	\$475,000.00	-2.3%
Sep-07	\$450,000.00	\$474,500.00	-5.2%
Oct-07	\$450,000.00	\$465,000.00	-3.2%
Nov-07	\$445,000.00	\$474,500.00	-6.2%
Dec-07	\$449,900.00	\$476,000.00	-5.5%
Jan-08	\$449,900.00	\$474,500.00	-5.2%
Feb-08	\$435,750.00	\$474,250.00	-8.1%
Mar-08	\$425,000.00	\$475,000.00	-10.5%
Apr-08	\$428,000.00	\$465,150.00	-8.0%
May-08	\$425,000.00	\$465,300.00	-8.7%
Jun-08	\$415,000.00	\$465,000.00	-10.8%
Jul-08	\$409,000.00	\$463,000.00	-11.7%
Aug-08	\$407,000.00	\$464,000.00	-12.3%
Sep-08	\$415,000.00	\$450,000.00	-7.8%
Oct-08	\$415,000.00	\$450,000.00	-7.8%
Nov-08	\$412,500.00	\$445,000.00	-7.3%

### 4. Collect data for Placer County and Update Median House Prices worksheet

- a) Go to the Tahoe Sierra Board of Realtors-Statistical Information webpage using the following menus and links: Tahoe Sierra Board of Realtors Home >> Market Reports >> Statistical Information.
- b) Click the “Year Sold Analysis” link for the desired reporting year under the header titled “Year Annual Statistics” to download the most recent housing market report for Placer County (see image below).

Resid.Sold Analysis	N Shore	W Shore	Alpine/ Squaw	Northstar	Truckee	Tahoe Donner	Lahontan	Out of Area
No. of Listings	216	148	40	33	318	273	11	83
Dollar Volume	\$159,228,061	\$162,442,231	\$29,119,500	\$27,574,509	\$155,507,120	\$143,441,485	\$17,042,500	\$28,994,250
Average Price	\$737,166	\$1,097,582	\$727,987	\$835,591	\$489,016	\$525,426	\$1,549,318	\$349,328
Median Price	\$417,000	\$479,500	\$67,500	\$600,000	\$350,000	\$485,000	\$1,575,000	\$260,000
Average DOM	134	115	180	197	99	93	245	83

- c) Collect median house price data for “W Shore” and “N Shore” provided in the Median Price row for the most recent reporting year.
- d) In the Median House Price worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter median house price data for Placer County in the Placer County-West and Placer County-North columns.

## 3.0 Metric Reporting Methods

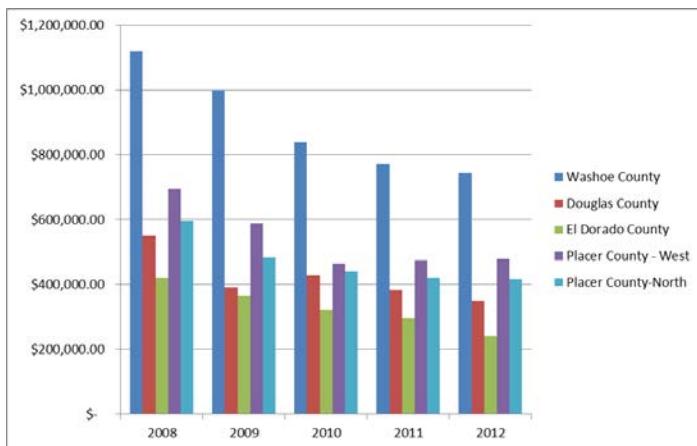
### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable data for the Median House Price indicator.

### 3.2 Potential Data Charts

The chart below is the recommended display for the Median House Price indicator. The chart enables a comparison of median house prices in different regions in the Tahoe Basin, and an understanding of the trend in median house prices over time for each region and the entire basin.

### Median House Prices in the Tahoe Basin



#### 3.3 Procedure

##### 1. Update the Chart in the Median House Price worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include County Names, one will include Calendar Year dates and one will include Median House Price data.
- Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added calendar year and the Median House Price data.
- This will automatically update the chart to include data for the most recent calendar year.

#### 3.4 Key Reporting Context

- Movements in median house prices should not be interpreted as only changes in the cost of a standard home. Median prices can be influenced by changes in cost, as well as changes in the characteristics and size of homes sold. Although in the Tahoe Basin, the general characteristics and size of homes sold changes more slowly than regions with more growth. In addition, due to the low sales volume in rural areas, median price changes may exhibit unusual fluctuation based on a few specific sales.
- Median prices are used rather than average prices because median prices are unaffected by a few unusually high or low prices, making them more accurate of general conditions and trends over time.
- Data for El Dorado County includes the City of South Lake Tahoe and all unincorporated communities in the Tahoe Basin including Meyers and Christmas Valley. Median house price data provided in the January housing market report from the South Tahoe Association of Realtors incorporates monthly data reported throughout the previous calendar year.

#### 4.0 Terms & References

##### 4.1 Terms

**Median House Price** – The midway point of all the houses sold over a set period (monthly, yearly, quarterly, etc.). That is, if there were 101 houses sold during the month, the median house price would be the house price in the middle i.e., that has 50 house prices above it and 50 house prices below it.

**Multiple Listing Service (MLS)** – A suite of services accessible to only real estate brokers that includes the dissemination of listing information to better serve broker's clients, customers and the public.

**North Shore Communities** – Tahoe communities between the northern stateline with Nevada to Tahoe City-Sunnyside.

**Single-Family Home** - A building occupied by just one household or family, and consists of just one dwelling unit or suite.

**West Shore Communities** – Tahoe communities between Tahoe City-Sunnyside and Emerald Bay.

##### 4.2 Additional References

South Tahoe Association of Realtors

<http://www.staor.org/>

Tahoe Sierra Board of Realtors

<http://www.tahoemls.com/>

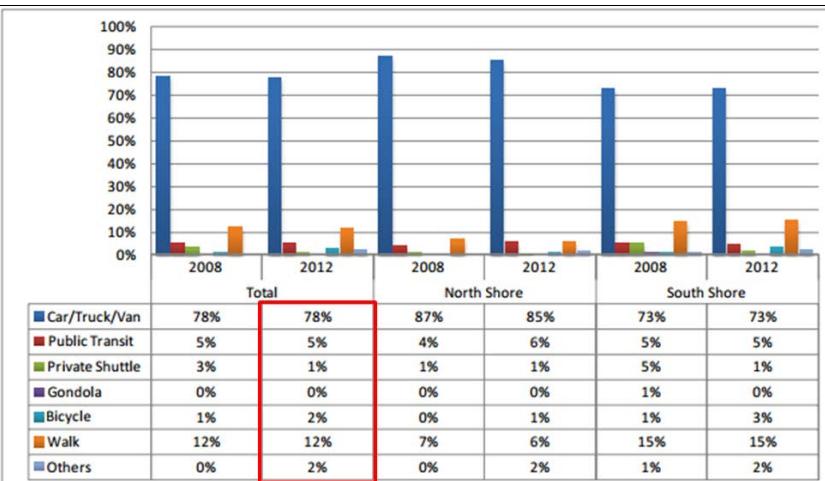
Trulia Advice, Market Conditions in Incline Village

[http://www.trulia.com/voices/qa/Incline\\_Village-Market\\_Conditions-35-19242](http://www.trulia.com/voices/qa/Incline_Village-Market_Conditions-35-19242)

Insight Property, Median House Prices

<http://www.insightproperty.com.au/tag/median-house-price-definition>

<h2 style="text-align: center;">Travel Mode Share</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Neighborhoods and commercial centers that are designed for transit, walking, and biking provide community benefits such as easy access to goods and services, savings in transportation costs, and improved health and wellbeing. These multi-modal transportation systems also enhance the Lake Tahoe Region's appeal as a travel destination and provide the related economic benefits by providing easy access to recreation, shopping, and other entertainment. Lastly, reducing automobile transportation reduces pollutants in the form of oil and particulates that contribute to the Lake Tahoe clarity, and air pollution.</p> <p>Increasing non-auto mode share is a primary goal transportation planning and programs in the Tahoe Basin because of the economic, human health and environmental benefits created when residents and tourists use alternative modes of transportation. Transportation policies and programs in the Tahoe Basin aim to provide a successful multi-modal transportation system that appeals to users, supports mobility needs and decreases dependency on the private automobile. Mode share measures the degree to which land-use patterns and policy and funding decisions at Lake Tahoe influence residents and visitors to use non-auto modes for travel. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Transportation Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the percentage of travelers in the Tahoe Basin that drive in a car/truck/van, use public transit, ride a bike, walk or use another form of transportation. This indicator is based on surveys conducted by the Tahoe Metropolitan Planning Organization (TMPO) in winter and summer seasons every two years. TMPO conducts surveys in alternating seasons every two years (winter surveys are executed and reported every 4 years). Surveys are conducted at various locations throughout the Tahoe Basin and results are based on responses to a questionnaire, documenting the travel mode used to get to the survey site. TMPO staff collect and synthesize survey information for reporting in the Travel Mode Share Survey report.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected using surveys and aggregated using consistent methods and accurate methods by the TMPO Transportation Monitoring Program.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p><b>TMPO Transportation Monitoring, Travel Mode Share Survey Reports</b>  <a href="http://www.tahoempo.org/monitoring.aspx?SelectedIndex=5">(<a href="http://www.tahoempo.org/monitoring.aspx?SelectedIndex=5">http://www.tahoempo.org/monitoring.aspx?SelectedIndex=5</a>)</a>. Data is provided in a report in alternating winter and summer seasons every 2 years in December.</p>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator every two years:</p> <ul style="list-style-type: none"> <li>▪ <b>Survey Year and Season</b> – necessary to report differences in travel mode in winter and summer seasons</li> <li>▪ <b>Travel Mode Percentages</b> – necessary to report travel mode share</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Access Travel Mode Share Data from the TMPO Website</b> <ol style="list-style-type: none"> <li>a) Go to the TMPO Transportation Monitoring webpage.</li> <li>b) Click the “Download Report” link below the most recent Travel Mode Share Survey report (PDF).</li> </ol> </li>   <li>2. <b>Collect Travel Mode Share Data and Update Travel Mode Share Worksheet</b> <ol style="list-style-type: none"> <li>a) In the downloaded Travel Mode Share Survey report, navigate to the “Mode Share Results” section in the “Data Results” chapter of the report.</li> <li>b) In the table titled “Mode to Location by Total and Shore Surveyed,” copy the percentage data from the most recent year Total column for each travel mode listed below (see image below).           <ul style="list-style-type: none"> <li>▫ Car/Truck/Van Share</li> <li>▫ Public Transit Share</li> <li>▫ Bicycle Share</li> <li>▫ Walk Share</li> <li>▫ Other Share</li> </ul> </li> </ol> </li> </ol>	



- c) In the Travel Mode Share worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent survey year and season in the first empty row at the bottom of the Survey Year & Season column. If you are collecting data from a winter survey (see title of survey report), add the word "Winter" next to the survey year. If you are collecting data from a summer survey (see title of survey report), add the word "Summer" next to the reporting year.
- d) Paste data for each travel mode type for the most recent survey year in the Data columns.

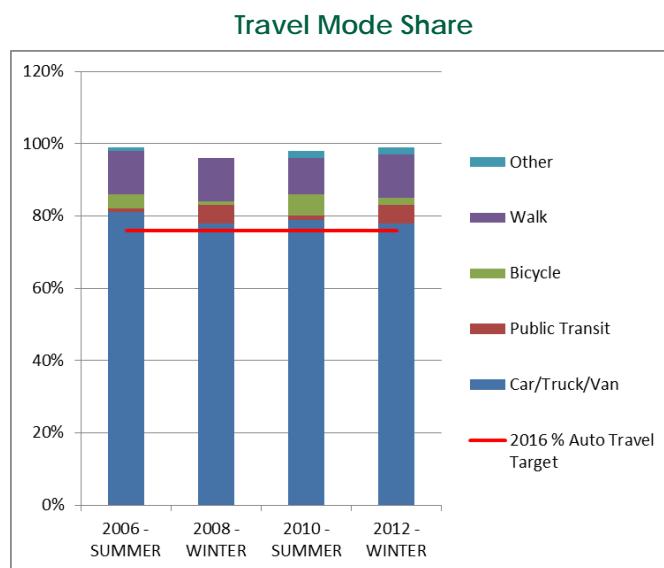
### 3.0 Metric Reporting

#### 3.1 Targets & Comparable Data Sets

The Travel Mode Share target associated to the 2012 Regional Plan Update is to "increase non-automobile mode share (average of summer and winter) by 0.25% compared to current conditions (2012)." The baseline non-auto mode share defined by the RPU is 21.0%, therefore the 2016 target is 21.25%. It is assumed that new targets will be set during each 4-year update of the Regional Plan, and therefore the new targets should be used as they become available.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Travel Mode Share indicator. The chart enables a comparison of travel modes and an understanding of the trend in each travel mode share by season and over time.

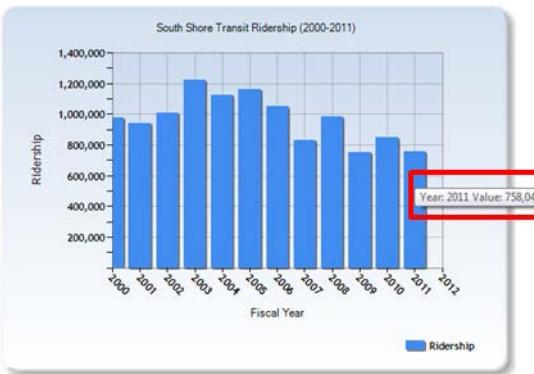


#### 3.3 Procedure

##### 1. Update the Indicator Display in the Travel Mode Share Worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Data column headers, one will include Survey Year & Season dates and one will include Travel Mode Share data.
- b) Click the bottom left corner of the box surrounding the Survey Year & Season dates and drag down so it includes the recently added calendar year and the Travel Mode Share data.
- c) This will automatically update the chart to include data for the most recent survey year.

<b>3.4 Key Reporting Context</b>
<ul style="list-style-type: none"><li>Survey data is also collected for gondola rides and private shuttle transportation. This data is often less than 1% of the overall travel mode share and is rarely used by TMPO for reporting on travel mode share. Therefore this data is not in the data set for this indicator. This may cause data sets in some years to equal less than 100%.</li></ul>
<b>4.0 Terms &amp; References</b>
<b>4.1 Terms</b>
<p><b>Transportation Monitoring Program</b> – TMPO and TRPA conduct on-going monitoring to inform transportation policy and programs. The TRPA and TMPO, in cooperation with other state and local agencies, monitor a number of performance indicators and also maintain data sets on demographic information in the Lake Tahoe Region. Data for transportation performance indicators are collected through a variety of methods including surveys.</p>
<b>4.2 References</b>
<p>TMPO Transportation Monitoring Program <a href="http://www.tahoempo.org/monitoring.aspx?SelectedIndex=5">http://www.tahoempo.org/monitoring.aspx?SelectedIndex=5</a></p>
<p>TMPO Mobility 2035 Program <a href="http://tahoempo.org/Mobility2035/">http://tahoempo.org/Mobility2035/</a></p>

Transit Ridership																													
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)																												
<b>1.0 Objective &amp; Description</b>																													
<b>1.1 Objective</b>																													
<p>A well-functioning public transit system is one of the primary tools for changing travel mode share in the Tahoe Basin to be less dependent on automobile travel. Affordable public transportation that fulfills the needs of local residents and visitors represents a legitimate alternative to automobile travel. Transit ridership is regularly monitored in the Tahoe Basin because it allows transportation planners the ability to assess how and to what extent public transportation systems are being utilized and enables prioritization for the allocation of transportation resources. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Transportation Aspect section of Chapter 3 above.</p>																													
<b>1.2 Description</b>																													
<p>This indicator measures the total annual transit riders for the two most utilized public transportation systems serving Tahoe Basin communities. The first is the Tahoe Area Regional Transit (TART) system, which primarily serves North Lake Tahoe communities, and connects north Lake Tahoe users with the Truckee Train and Intermodal Depot. The second is Blue Go, which primarily serves Tahoe South Shore communities, and connects South Shore residents with Carson City and the Carson Valley in Douglas County. Transit Ridership is the number of users of the transit system, including paid and complementary users, whether they are on a fixed route or demand-response. Data for both South Shore (BlueGo) and North Shore (TART) is collected, analyzed and reported by the Tahoe Metropolitan Planning Organization (TMPO) annually.</p>																													
<b>1.3 Key Assumptions</b>																													
<p>Raw data for Transit Ridership is collected and published using consistent and accurate methods by TMPO Transportation Monitoring Program.</p>																													
<b>2.0 Data Collection &amp; Analysis Methods</b>																													
<b>2.1 Sources</b>																													
<ul style="list-style-type: none"> <li>▪ <b>TMPO Transportation Monitoring Program Website –</b> (<a href="http://www.tahoempo.org/Monitoring/default.aspx?SelectedIndex=5">http://www.tahoempo.org/Monitoring/default.aspx?SelectedIndex=5</a>). Data is tracked and updated annually in December.</li> </ul>																													
<b>2.2 Data Attributes</b>																													
<p>The following data must be collected for each reporting period to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Fiscal Year</b></li> <li>▪ <b>Tahoe Basin Shore Location - needed to report data for the entire Tahoe Basin</b></li> <li>▪ <b>Transit Ridership Numbers – needed to report annual number of passengers for the entire Tahoe Basin</b></li> </ul>																													
<b>2.3 Procedure</b>																													
<ol style="list-style-type: none"> <li>1. <b>Access Transit Ridership Data on the TMPO Transportation Monitoring Program Website</b> <ol style="list-style-type: none"> <li>a) Go to the Public Transit report on the TMPO Transportation Monitoring website using the following menus and links: TMPO Homepage &gt;&gt; Transportation Monitoring&gt;&gt; Access &gt;&gt; Share Of Dwelling Units With Access To Transit, Bike, And Pedestrian Facilities Link &gt;&gt; Access Monitoring Data webpage.</li> </ol> </li>   <li>2. <b>Collect Annual South Shore (BlueGo) Transit Ridership Data and Add to the Transit Ridership Worksheet</b> <ol style="list-style-type: none"> <li>a) Under “Public Transit” section of Access Monitoring Data webpage, click the link titled “South Shore Transit Ridership Chart.” The chart should expand and provide annual ridership results (see image to the right).</li> <li>b) Hover your mouse over the bar graph for the most recent reporting year and the year and specific transit ridership value for that year will be displayed (see image below).</li> <li>c) In the Transit Ridership worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent fiscal year in the next empty row at the bottom of the Fiscal Year column. Enter the South Shore Transit Ridership value for the most recent reporting year to the South Shore Data column.</li> </ol> </li>   <li>3. <b>Collect Annual North Shore (TART) Transit Ridership Data and Add to the Transit Ridership Worksheet</b> <ol style="list-style-type: none"> <li>a) Under “Public Transit” section of Access monitoring data webpage, click the link titled “North Shore Transit Ridership Chart.”</li> <li>b) Hover your mouse over the bar graph for the most recent reporting year and the year and specific transit ridership value for that year will be displayed.</li> </ol> </li> </ol>																													
 <table border="1"> <caption>South Shore Transit Ridership (2000-2011)</caption> <thead> <tr> <th>Fiscal Year</th> <th>Ridership</th> </tr> </thead> <tbody> <tr><td>2000</td><td>1,000,000</td></tr> <tr><td>2001</td><td>1,050,000</td></tr> <tr><td>2002</td><td>1,100,000</td></tr> <tr><td>2003</td><td>1,250,000</td></tr> <tr><td>2004</td><td>1,150,000</td></tr> <tr><td>2005</td><td>1,180,000</td></tr> <tr><td>2006</td><td>1,050,000</td></tr> <tr><td>2007</td><td>850,000</td></tr> <tr><td>2008</td><td>950,000</td></tr> <tr><td>2009</td><td>750,000</td></tr> <tr><td>2010</td><td>850,000</td></tr> <tr><td>2011</td><td>758,048</td></tr> <tr><td>2012</td><td>700,000</td></tr> </tbody> </table>		Fiscal Year	Ridership	2000	1,000,000	2001	1,050,000	2002	1,100,000	2003	1,250,000	2004	1,150,000	2005	1,180,000	2006	1,050,000	2007	850,000	2008	950,000	2009	750,000	2010	850,000	2011	758,048	2012	700,000
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2010	850,000																												
2011	758,048																												
2012	700,000																												

- c) In the Transit Ridership worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the North Shore Transit Ridership value for the most recent reporting year to the North Shore Data column.

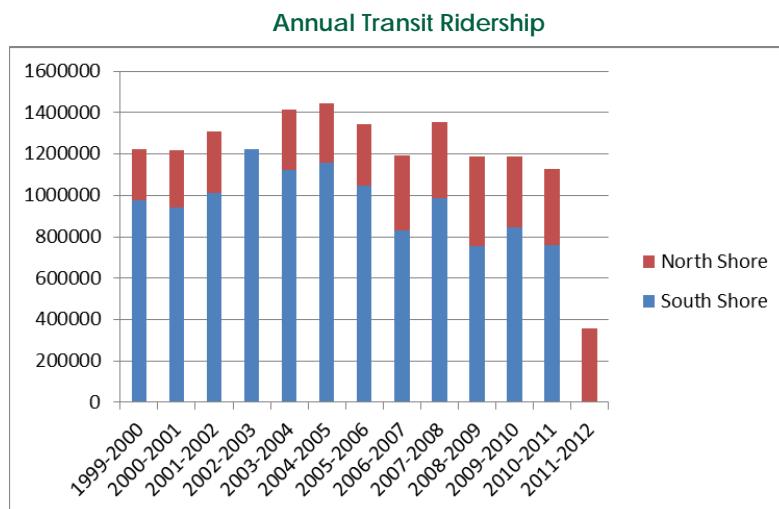
### 3.0 Metric Reporting Methods

#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable data for the Transit Ridership indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Transit Ridership indicator. The chart enables a comparison between ridership in South Shore and North Shore transit systems and enables an understanding of the trend in transit ridership by transit system and basin-wide over time.



#### 3.3 Procedure

##### 1. Update the Indicator Display in the Transit Ridership Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Data column headers, one will include Fiscal Year dates and one will include Transit Ridership data.
- Click the bottom left corner of the box surrounding the Fiscal Year dates and drag down so it includes the recently added fiscal year and the Transit Ridership data.
- This will automatically update the chart to include data for the most recent fiscal year.

#### 3.4 Key Reporting Context

- Public transit operations in the Tahoe Basin other than TART and BlueGo are not tracked by this indicator because transit ridership data from these operators is not published and is not made readily available for reporting. Other transit operators in the Tahoe Basin include the Truckee-North Tahoe Transportation Association, Heavenly ski shuttles and other small private contractors.
- Factors such as scheduling convenience, frequency, speed, and the ability to go exactly where the traveler wants, greatly affect the number of individuals who regularly use public transit.
- Funding for transit operations comes primarily from Federal Transit Administration grant programs, the California Department of Transportation, local governments' general fund, rental car and air quality mitigation funds, private businesses and transient occupancy tax.
- Both TART and BlueGo transit systems serve communities that are not in the Tahoe Basin. Therefore, transit Ridership numbers may include transit system users that do not reside in or travel to/from the Tahoe Basin.

### 5.0 Terms & References

#### 5.1 Terms

**Transit Ridership** – Transit ridership is the number of users of the system, including paid and complementary users, whether they are on a fixed route or demand-response.

#### 5.2 Additional References

TMPO Public Transit Operations Program

<http://tahoempo.org/publictransit.aspx?SelectedIndex=4>

TTD Transit Monitoring Program

<http://www.tahoetransportation.org/transit/transit-monitoring>

TMPO Mobility 2035: Lake Tahoe Regional Transportation Plan Update

<http://tahoempo.org/Mobility2035/>

## Miles of Pedestrian & Bicycle Routes Improved or Constructed

Last Revision: December 31, 2013

Updated By: Brian Strachan (EI)

### 1.0 Indicator Overview

#### 1.1 Relevance

Functional pedestrian and bicycle routes provide safe alternative methods of transportation for recreational and every day use, which increases personal mobility and decreases dependence on automobiles. This works to reduce air pollution, increases community health and cultivates additional economic activity. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Transportation Aspect section of Chapter 3 above. In addition, further detail on the importance and detailed raw data collection, analysis and reporting protocols are documented in the Environmental Improvement Program (EIP) Performance Measure (PM) Info Sheet for this indicator.

#### 1.2 Description

This indicator measures the miles of bicycle paths, sidewalks and other transit routes improved or constructed in the Tahoe Basin each year. This indicator provides a single data point that captures the total miles of pedestrian and bicycle routes that are improved and constructed in the entire Tahoe Basin annually. Lake Tahoe EIP staff collect and compile information about road treatments annually for EIP programmatic reporting, and this indicator pulls data directly from these efforts.

#### 1.3 Key Assumptions

Raw data is collected annually using consistent methods and accurate summary measurements are provided when requested from the Lake Tahoe EIP.

### 2.0 Data Collection & Analysis Methods

#### 2.1 Sources

**Lake Tahoe EIP Coordinator** – As of December 2013, EIP PMs are tracked using spreadsheets only available to EIP staff. However, EIP PMs may be accessible online in 2014 if a planned database is developed. Raw pedestrian and bicycle trail improvement and construction data is collected at the end of each calendar year and summary data should be available by February of the following year.

- Lake Tahoe EIP Coordinator (as of December 2013): Karin Edwards, TRPA
- Email: [kedwards@trpa.org](mailto:kedwards@trpa.org)
- Phone: (775) 589-5258

#### 2.2 Data Attributes

The following data is needed to report indicator annually:

- **EIP Reporting Year**
- **Miles of Pedestrian & Bicycle Routes Improved or Constructed** – *necessary to report annual indicator data*

#### 2.3 Procedure

1. **Contact Lake Tahoe EIP Coordinator and Request Miles of Pedestrian & Bicycle Routes Improved or Constructed Data**
  - a) Email the EIP Coordinator requesting the miles of routes improved or constructed over the most recent EIP reporting year. Include the Summary Table below in the email as an example of the data and format you are requesting.

EIP Accomplishments*						
	1997-2010	1997-2011	1997-2012	2010	2011	2012
Miles of Bike & Ped Trails	128	134	136	na	6	2

2. **Collect Miles of Pedestrian & Bicycle Routes Improved or Constructed Data And Update the Pedestrian & Bicycle Routes Worksheet**
  - a) In the summary table provided by the EIP Coordinator, copy the miles of pedestrian & bicycle routes improved or constructed data for the most recent EIP reporting year.
  - b) In the Pedestrian & Bicycle Routes Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent EIP reporting year in the next empty row at the bottom of the EIP Reporting Year column.
  - c) Paste miles of pedestrian & bicycle routes improved or constructed data in the Miles of Pedestrian & Bicycle Routes Improved or Constructed data column for the most recent calendar year.

### 3.0 Metric Reporting

#### 3.1 Targets & Comparable Data Sets

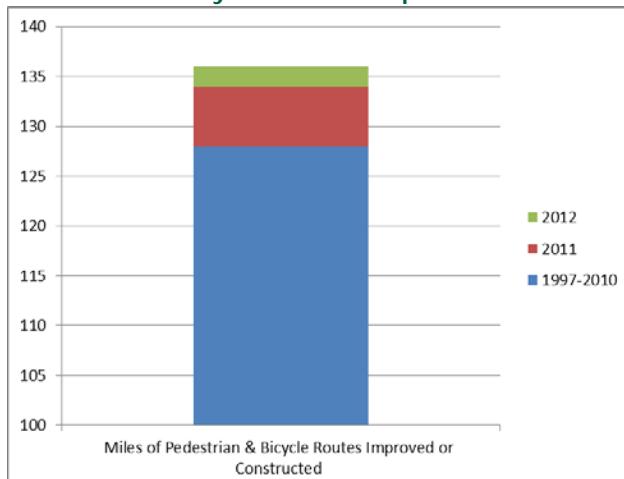
There are no defined basin-wide targets or relevant comparable numbers for the Miles of Pedestrian & Bicycle Routes Improved or Constructed indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Miles of Pedestrian & Bicycle Routes Improved or Constructed indicator.

The chart enables an understanding of the trend in miles of pedestrian & bicycle routes improved or constructed over time.

**Miles of Pedestrian & Bicycle Routes Improved or Constructed**



### 3.3 Procedure

#### 1. Update the Chart in the Pedestrian & Bicycle Routes Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Data column header, one will include EIP Reporting Year dates and one will include miles of pedestrian & bicycle routes improved or constructed data.
- Click the bottom left corner of the box surrounding the EIP Reporting Year dates and drag down so it includes the recently added year and the miles of pedestrian & bicycle routes improved or constructed data.
- This will automatically update the chart to include data for the most recent EIP reporting year.

### 3.4 Key Reporting Context

- Development of pedestrian and bicycle trails is very expensive in the Tahoe Basin due to extensive environmental review and regulations related to impervious coverage and sensitive lands. Therefore, the development of pedestrian and bicycle is highly dependent on funding availability.
- Weather can greatly impact the access and use of pedestrian and bicycle trails, especially during the winter when snow covers bike paths and sidewalks.

## 4.0 Terms & References

### 4.1 Terms

**Constructed** – Bicycle and pedestrian routes are constructed when a new route is built on a previously unoccupied site.

**Designated** – Bicycle and pedestrian routes are designated when an unofficial route is officially assigned status as a ‘bicycle or pedestrian routes’ and is assigned a name.

**Improved** – Bicycle and pedestrian routes are considered improved when an action is taken to enhance an existing route for the benefit of public transit.

**Pedestrian & Bicycle Route** – An established path, track or other route intended to provide transportation between local neighborhoods and communities. This includes shared use paths, bike lanes, signed shared roadways and sidewalks.

**Transit** – The carrying of people, goods or materials from one place to another. Transit paths are constructed to facilitate transit between neighborhoods and communities in the Tahoe Basin.

### 4.2 References

Regional Transportation Plan – Mobility 2030. Retrieved 4 January 2012. Available online:  
[http://www.trpa.org/documents/docdwnlds/rtp\\_final.pdf](http://www.trpa.org/documents/docdwnlds/rtp_final.pdf)

Lake Tahoe Region Bicycle & Pedestrian Plan. Retrieved 4 January 2012. Available online:  
<http://www.tahoempo.org/documents/bpp/Chapters/2010bpp.pdf>

TRPA, Environmental Improvement Program  
<http://www.trpa.org/about-trpa/how-we-operate/environmental-improvement-program/>

TRPA, CTC and Bureau of Reclamation. January 2010. Restoration in Progress: Environmental Improvement Program Update.  
<http://www.trpa.org/default.aspx?tabindex=12&tabid=227>.

<h2 style="text-align: center;">High School Proficiency Test Scores</h2>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>A good education empowers children to fulfill their dreams and become productive members of society. Those with a Bachelor's degree or higher are more likely to be employed, earn higher incomes, and have better health outcomes than those with only a high school diploma or less. In addition, a highly skilled and educated workforce is a key driver of innovation and economic growth for a community. Standardized test scores represent the educational performance of students and provide a proxy for the quality of the education system in the Tahoe Basin. The California High School Exit Examination (CAHSEE) and Nevada High School Proficiency Exam (HSPE) are based on state-specific educational standards, initially administered in 10<sup>th</sup> grade and additional chances are provided if students do not pass the test, and students in both states must pass the exams to graduate from high school. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Education Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the annual percentage of students in Tahoe Basin public high schools that pass the high school proficiency test. High School proficiency tests are scored differently in California and Nevada and therefore data for each state is displayed separately. In California, the CAHSEE is broken into two sections, Mathematics and English-Language Arts. Separate scoring is done for each test section, ranging from 275-450. A score of 350 or higher is necessary to pass each part of the CAHSEE. In Nevada, the HSPE is broken into four sections: Mathematics, Reading, Science and Writing. Separate scoring is done for each test section, ranging from 100-500 for Math, Reading and Science and 0-12 for Writing. A score of 300 or higher is necessary to pass the Math, Reading and Science sections and 7 or higher to pass the Writing section. Scores are provided for the previous school year for both California and Nevada schools (reporting year 2012-2013 provides scores for the 2011-2012 school year).</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and school-specific results are published using consistent and accurate methods by these state programs:</p> <ul style="list-style-type: none"> <li>▪ CA Department of Education, Data Reporting Office, DataQuest Program</li> <li>▪ NV Department of Education, Nevada Report Card Program</li> </ul>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>California Department of Education, DataQuest Program</b> (<a href="http://dq.cde.ca.gov/dataquest/">http://dq.cde.ca.gov/dataquest/</a>) contains data for public schools in California. Data is reported annually for the previous school year, generally in <b>June-August</b>.</li> <li>▪ <b>Nevada Department of Education, Nevada Report Card Program</b> (<a href="http://www.nevadareportcard.com/di/">http://www.nevadareportcard.com/di/</a>) contains data for public schools in Nevada. Data is reported annually for the previous school year, generally in <b>June-August</b>.</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>School Year</b></li> <li>▪ <b>School Name</b> – necessary to report only data for schools within the Tahoe Basin</li> <li>▪ <b>Test Subject</b> – necessary to report percentage of students passing each subject in the High School Proficiency Exams for California and Nevada</li> <li>▪ <b>% of Students Passing</b> - necessary to report percentage of students passing each subject in the High School Proficiency Exams for California and Nevada</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm and Update Public High Schools in the Tahoe Basin</b> <ol style="list-style-type: none"> <li>a) Check school district websites provided in the Reference section of this protocol and contact individuals familiar with the public schools in the Tahoe Basin to confirm the public high schools listed in Procedure Step 2.c and Step 4.e are correct.           <ul style="list-style-type: none"> <li>▫ If there are changes to the public high schools in the Tahoe Basin, update the Procedure Step 2.c and Step 4.e, add a column for the school in Data Table in the Test Scores Worksheet and collect data for the newly added school.</li> </ul> </li> </ol> </li>   <li>2. <b>Access High School Proficiency Test Score Data for California High Schools</b> <ol style="list-style-type: none"> <li>a) Go to the CA Dept. of Education – DataQuest Program webpage using the following menu: CA Dept. of Education Home &gt;&gt; Data &amp; Statistics &gt;&gt; DataQuest</li> <li>b) On the DataQuest webpage select “School” in the “Level” dropdown menu. In the “Subject” dropdown menu select “High School Exit Exam (CAHSEE).” Then select “Submit.”</li> <li>c) On the “Select Criteria” webpage select the most recent school year and enter the name of each high school physically located in the California portion of the basin and listed below, and then select “Submit.” As of December 2013 data is reported for the following Tahoe Basin public high schools in California:           <ul style="list-style-type: none"> <li>▫ South Tahoe High School</li> </ul> </li> </ol> </li> </ol>	

- North Tahoe High School
- d) On the Select Report webpage, click the box next to “Demographic Summary Report,” select “Combined” from the “Specify Administration” dropdown menu, select “10” from the “Specify Grade Level” and click the box next to “English-Language Arts (ELA)” in the “Select Test” data field.
- e) Perform step 2d again, but select “mathematics” in the “Select Test” data field instead of “English-Language Arts (ELA)” to collect Mathematics test score data.

**3. Collect High School Proficiency Test Score Data for California High Schools and Update the Test Scores Worksheet**

- a) On the Report Results webpage navigate to the table titled All Students Tested and collect data from the “Percent Passed” column (see image below).

All Students Tested							
Category	Number Tested	Number Passed	Percent Passed	Number Not Passed	Percent Not Passed	Mean Scaled Score	% Proficient & Above**
All Students Tested	248	211	85%	37	15%	383	57%

- b) In the Test Scores worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent school year in the next empty row at the bottom of the School Year column.
- c) Paste data for each test section and California high school into the data columns for the most recent school year.

**4. Access Standardized Test Scores Data for Nevada Schools**

- a) Go to the Nevada Department of Education – Nevada Report Card Program webpage and click the “State Assessment Results” link under the “Assessment and Accountability” header to access the “Data Interaction for Nevada Report Card” webpage.
- b) On the Data Interaction webpage:
  - Under the “Select Report” header click the box next to Group Summary Report.
  - Under the “Exam” header click the box next to HSPE (High School Proficiency Exam).
  - Under the “Year” header click the box next to the desired school year.
  - Under the “Grade” header click the box next to Grade 11 (this should be the only option under this header).
  - In the “Select” dropdown menu select Schools.
  - In the “Available” list, select all high schools physically located in the Nevada portion of the basin and listed below, and click the arrow pointing to the Selected Table so each is added to the “Selected” box. As of December 2013 data is reported for the following Tahoe Basin public high schools in Nevada:
    - George Whittell High School (Douglas County)
    - Incline Village High School (Washoe County)
  - Check to make sure all desired schools are listed in the Selected table and click Get Report.

**5. Collect High School Proficiency Test Score Data for Nevada High Schools and Update the Test Scores Worksheet**

- a) On the generated Group Summary Report, collect data from the “% Proficient” column for each test section (Mathematics, Reading, Science and Writing) (see image below for Mathematics section).

Group Summary Report									
HSPE, Year 2012-2013, Grade 11									
			Mathematics						
Group	Year	Grade	Number Enrolled	Number Tested	Mean Scale Score	% Proficient	% Above AMO	% in ED	% in AS
State	2012-2013	11	31096	30540	273.6	75.9	-2.1	1.0	23.0
George Whittell High School	2012-2013	11	40	40	292.3	92.5	14.5	0.0	7.5

- b) In the Test Scores worksheet, paste data for each test section and Nevada high school into the data columns for the most recent school year.

**3.0 Metric Reporting Methods**

**3.1 Targets & Comparable Data Sets**

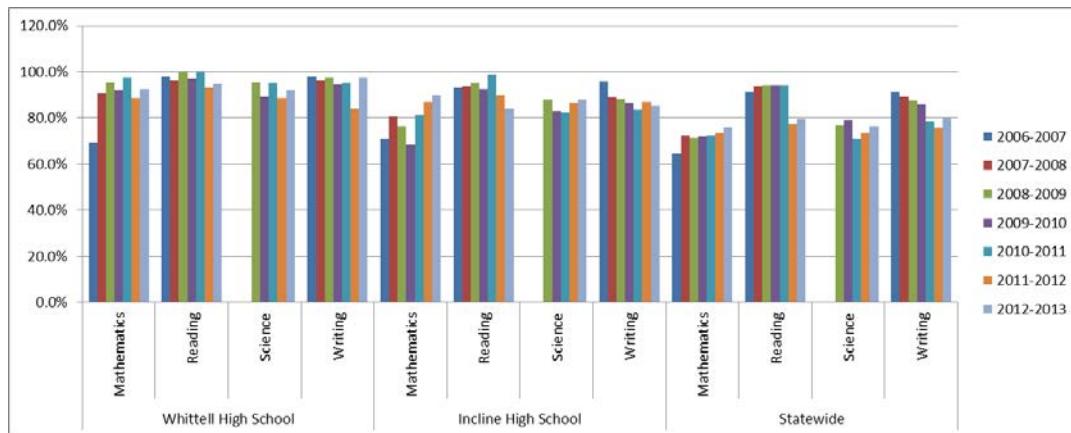
Statewide data sets are available for both California and Nevada and provide helpful context for Tahoe Basin data.

**3.2 Potential Data Displays**

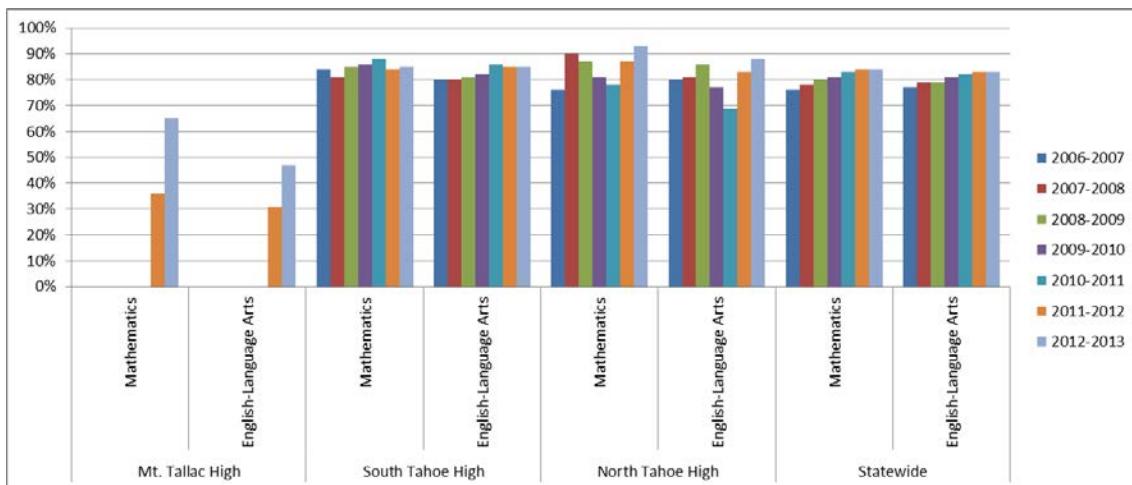
The charts below are the recommended displays for the High School Proficiency Test Scores indicator. The chart enables a comparison of scores for each public high school in the Tahoe Basin, an understanding of the trend by each school over time

and a comparison to statewide scoring averages. Note that separate displays for Nevada and California are needed because high school proficiency exams include different subjects for each state.

**Passing Percentage – (CAHSEE)**



**Passing Percentage – Nevada High School Exit Exam**



### 3.3 Procedure

1. **Collect Statewide Data for California and Nevada**
  - a) To collect statewide data for California follow Data Collection Procedure Step 2. Instead of accessing school-specific test data, select State in the Level dropdown menu.
  - b) To collect statewide data for Nevada follow Data Collection Procedure Step 4. Statewide data is provided in the Nevada Report Card for specific schools.
  - c) Input statewide data for Nevada and California in the Test Scores worksheet in the columns titled Statewide for both Nevada Schools and California Schools data sets.
2. **Update the Chart in the Graduation Rates Worksheet**
  - a) Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Data column headers, one will include School Year dates and one will include percent passing data.
  - b) Click the bottom left corner of the box surrounding the School Year dates and drag down so it includes the recently added school year and the percentage passing data.
  - c) This will automatically update the chart to include data for the most recent school year.

### 3.4 Key Reporting Context

- Requirements for standardized high school proficiency exams are likely to change in the future. It is likely that California and Nevada will not use the same standardized tests in the future due to flexibility afforded under the No Child Left Behind Act.
- Scores for the writing section of the NHSPE are not provided because they are on a different scoring scale than other sections on the test.
- High School Proficiency Exams are taken by students in the 10<sup>th</sup> grade. Students have several (up to 5) opportunities

- to pass the exam, but this indicator only measures the percentage of students who pass their exam on their first try.
- Mt. Tallac High School is a continuation high school and the number of students enrolled is low compared to other high schools in the basin, so comparing scores to the other high schools is not appropriate without additional understanding of the school and the school is excluded from this indicator.

#### 4.0 Terms & References

##### 4.1 Terms

**California High School Exit Exam (CAHSEE)** – The California High School Exit Exam was created to ensure that students graduate from high school with grade level skills in reading, writing, and math. The CAHSEE has two parts: English-language arts (ELA) and mathematics. Both sections are scored separately with scores ranging from 275 to 450. Students must score 350 or higher to pass each section of the test. Students must pass the CAHSEE to graduate from high school and are given five opportunities to take the test if needed to pass.

**Nevada High School Proficiency Exam (NHSPE)** – The Nevada High School Exit Exam was established to raise student writing standards for all high school graduates. The test was expanded to include reading and mathematics sections, and a science section was added in 2008. Each section of the NHSPE is scored separately with scores ranging from 100 to 500 (the writing section ranges from 0 to 12). Students must score 300 to pass the Science, Mathematics and Reading sections, and a 7 to pass the Writing section. Students must pass the NHSPE to graduate from high school and are given five opportunities to take the test if needed to pass.

##### 4.2 Additional References

CA Department of Education, DataQuest Program

<http://dq.cde.ca.gov/dataquest/>

NV Department of Agriculture, Nevada Report Card Program

<http://www.nevadareportcard.com/di/>

CA Department of Education, Guide to CAHSEE

<http://www.cde.ca.gov/tg/hs/cahsee13isr.asp>

Washoe County School District, Graduation Requirements

[http://www.washoe.k12.nv.us/mcqueen/doku.php?id=academics:graduation\\_requirements](http://www.washoe.k12.nv.us/mcqueen/doku.php?id=academics:graduation_requirements)

Lake Tahoe Unified School District

<http://www.ltusd.org/>

Tahoe Truckee Unified School District

<http://www.ttusd.org/>

Douglas County School District

<http://www.dcsd.k12.nv.us/>

Washoe County School District

<http://www.washoe.k12.nv.us/>

<b>Graduation Rates</b>	
<b>Last Revision:</b> December 31, 2013	<b>Updated By:</b> Brian Strachan (EI)
<b>1.0 Indicator Overview</b>	
<b>1.1 Relevance</b>	
<p>Graduation provides students with the opportunity to continue on to postsecondary education, access to higher lifetime earnings and more stable employment prospects. Communities with a higher number of employers requiring a diploma for most well-paying jobs are likely to see higher graduation rates. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in the Education Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the annual cohort graduation rate of students from Tahoe Basin public high schools. Cohort graduation rates are regularly used by the California and Nevada Departments of Education to track graduation rates from public high schools to better understand education attainment. Cohort graduation rates measure the percentage of students who enter high school and graduate within four years.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and school-specific results are published using consistent and accurate methods by these state programs:</p> <ul style="list-style-type: none"> <li>▪ CA Department of Education, Data Reporting Office, DataQuest Program</li> <li>▪ NV Department of Education, Nevada Report Card Program</li> </ul>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>California Department of Education, DataQuest Program</b> (<a href="http://dq.cde.ca.gov/dataquest/">http://dq.cde.ca.gov/dataquest/</a>) contains data for public schools in California. Data is reported annually for the previous school year, generally in <b>June-August</b>.</li> <li>▪ <b>Nevada Department of Education, Nevada Report Card Program</b> (<a href="http://www.nevadareportcard.com/di/">http://www.nevadareportcard.com/di/</a>) contains data for public schools in Nevada. Data is reported annually for the previous school year, generally in <b>June-August</b>.</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>School Year</b></li> <li>▪ <b>School Name</b> – necessary to report only data for schools within the Tahoe Basin</li> <li>▪ <b>Cohort Graduation Rate</b> – necessary to report annual graduation rate for Tahoe Basin schools</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li><b>1. Confirm and Update Public High Schools in the Tahoe Basin</b> <ol style="list-style-type: none"> <li>a) Check school district websites and contact individuals familiar with the public schools in the Tahoe Basin to confirm the public high schools listed in Procedure Step 2.c and Step 4.e are correct.           <ul style="list-style-type: none"> <li>▫ If there are changes to the public high schools in the Tahoe Basin, update the Procedure Step 2.c and Step 4.e, add a column for the school in Data Table in the Graduation Rate Worksheet and collect data for the newly added school.</li> </ul> </li> </ol> </li>   <li><b>2. Access Cohort Graduation Data for California High Schools</b> <ol style="list-style-type: none"> <li>a) Go to the CA Dept. of Education – DataQuest Program webpage using the following menu: CA Dept. of Education Home &gt;&gt; Data &amp; Statistics &gt;&gt; DataQuest</li> <li>b) On the DataQuest webpage select “School” in the “Level” dropdown menu. In the “Subject” dropdown menu select “Graduates”. Then select “Submit.”</li> <li>c) On the “Select Year of Data and Enter a Portion of the School Name” webpage enter the most recent school year and enter the name of the California high schools in the Tahoe Unified and Tahoe-Truckee Unified School Districts, and then select Submit. As of December 2013 data is reported for the following Tahoe Basin public high schools in California:           <ul style="list-style-type: none"> <li>▫ South Tahoe High School</li> <li>▫ North Tahoe High School</li> </ul> </li> <li>d) On the “Graduation Rate” webpage select “Cohort Outcome Data by Program” in the “Select a Report” data field and then select “Submit.”</li> </ol> </li>   <li><b>3. Collect Cohort Graduation Rate Data for California Schools and Update the Graduation Rate Worksheet</b> <ol style="list-style-type: none"> <li>a) On the “Cohort Outcome Data for Class of School Year” webpage, collect data from the “School Results for School Name table” (see image below) provided for All Students in the “Cohort Graduation Rate” column.</li> </ol> </li> </ol>	

Cohort Outcome Data for the Class of 2011-12											
School Results for North Tahoe High 31-66944-3130010											
Program Name	Cohort Students	Cohort Graduates	Cohort Graduation Rate	Cohort Dropouts	Cohort Dropouts Rate	Cohort Special Ed Completers	Cohort Special Ed Completers Rate	Cohort Still Enrolled	Cohort Still Enrolled Rate	Cohort GED Completer	Cohort GED Completer Rate
English Learners	15	*	66	*	0.0	*	26.7	*	6.7	*	0.0
Migrant Education	*	*	100	*	0.0	*	0.0	*	0.0	*	0.0
Special Education	*	*	85	*	0.0	*	14.3	*	0.0	*	0.0
Socioeconomically Disadvantaged	40	33	82	*	5.0	*	10.0	*	2.5	*	0.0
All Students	62	55	88	*	3.2	*	6.5	*	1.6	*	0.0

- b) In the Graduation Rates worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent school year in the next empty row at the bottom of the School Year column.
- c) Paste cohort graduation rate data for each California high school in the data columns for the most recent school year.

#### 4. Access Cohort Graduation Data for Nevada High Schools

- a) Go to the Nevada Department of Education – Nevada Report Card Program webpage.
- b) On the Nevada Report Card webpage click the Cohort Graduation Rate link under the Assessment and Accountability header. This will take you to an interactive database called Data Interaction for Nevada Report Card.
- c) On the Data Interaction webpage check the box next to the desired school year.
- d) In the “Select” dropdown menu select “school.”
- e) In the “Available” list select Nevada high schools in Douglas and Washoe County school districts. To select a school, click on the desired school and click the arrow pointing to the Selected Table. Then click “Get Report.” As of December 2013 data is reported for the following Tahoe Basin public high schools in Nevada:
  - George Whittell High School
  - Incline Village High School

#### 5. Collect Cohort Graduation Rate Data for Nevada Schools and Update the Graduation Rate Worksheet

- a) On the generated report, collect cohort graduation rate data for each high school in the “Graduation Rate” column (see image below).

Cohort Graduation Rates (Reported For Prior School Year)			
Year 2012-2013			
Cohort Graduation Rates (Reported for Prior School Year)			
Years	Cohort Graduation Rates (Reported for Prior School Year)	Search	Other
		<a href="#">Go to Selections</a>	<a href="#">Download</a>
Name	Year	Total	Graduation Rate
State	2012-2013	40,645	63.08%
George Whittell High School	2012-2013	74	82.98%
Incline HS	2012-2013	117	76.09%

- b) In the Graduation Rates worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet paste cohort graduation rate data for each Nevada high school in the data columns for the most recent school year.

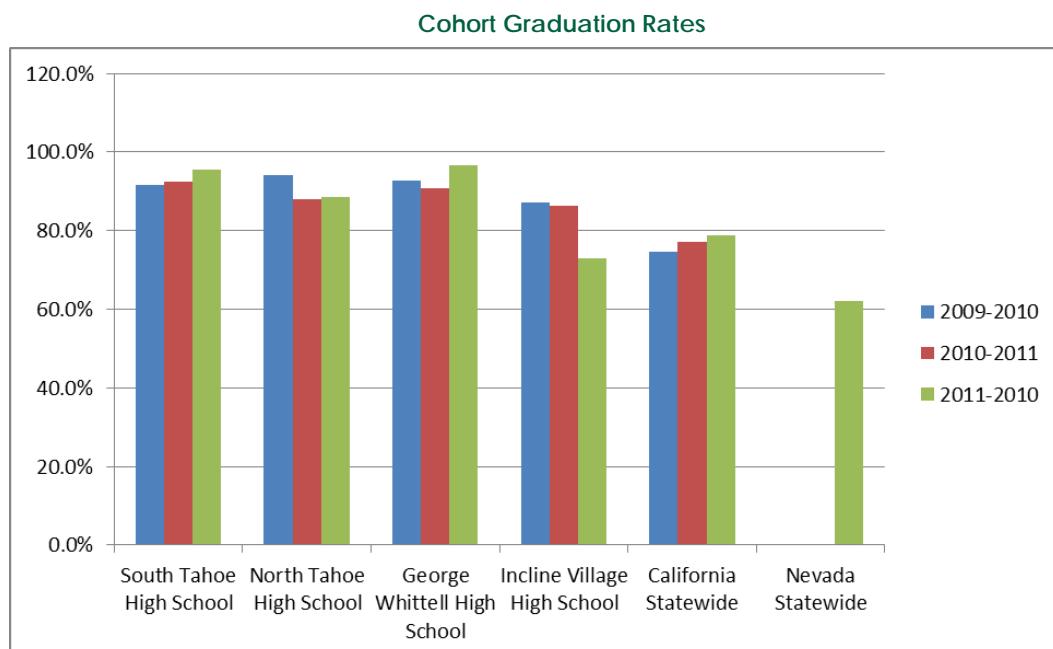
### 3.0 Metric Reporting Methods

#### 3.1 Targets & Comparable Data Sets

Statewide data sets are available for both California and Nevada and provide helpful context for Tahoe Basin data.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Graduation Rate indicator. The chart enables a comparison of graduation rates for different public high schools in the Tahoe Basin and an understanding of the trend in graduation rates for each school over time.



### 3.3 Procedure

#### 1. Collect Statewide Data for California and Nevada

- To collect statewide data for California follow Data Collection Procedure Step 2. Instead of looking for school specific information, select State in the Level dropdown menu.
- To collect statewide data for Nevada follow Data Collection Procedure Step 4. Statewide data is provided with all reports generated from Nevada Report Card.
- Input statewide data for California and Nevada in the Graduation Rates worksheet in the columns titled California Statewide and Nevada Statewide.

#### 2. Update the Chart in the Graduation Rates Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the data table. One box will include Data column headers, one will include School Year dates and one will include graduation rate data.
- Click the bottom left corner of the box surrounding the School Year dates and drag down so it includes the recently added school year and the graduation data.
- This will automatically update the chart to include data for the most recent school year.

### 3.4 Key Reporting Context

- Mt. Tallac High School is a continuation high school and the number of students enrolled is low compared to other high schools in the basin, so comparing graduation rates to the other high schools is not appropriate without additional understanding of the school and the school is excluded from this indicator.

## 4.0 Terms & References

### 4.1 Terms

**Cohort Graduation Rates** - Measures the percentage of students who enter high school and graduate within four years. Students who do not graduate within four years or drop out of school reduce the Cohort graduation rate percentage. Students who transfer into or out of the school district are not included in this calculation.

### 4.2 Additional References

CA Department of Education, DataQuest Program

<http://dq.cde.ca.gov/dataquest/>

NV Department of Agriculture, Nevada Report Card Program

<http://www.nevadareportcard.com/di/>

<b>Payers For Hospital Service</b>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Objective &amp; Description</b>	
<b>1.1 Relevance</b>	
<p>The distribution of payers for hospital services is a helpful measure of the wealth levels, personal health and hospital affordability for Tahoe Basin residents over time. Higher dependence on government insurance can indicate an inability of residents to pay for hospital services on their own, and thus reflect a growing portion of the community likely to avoid preventative care due to the inability to pay for such services. Higher dependence on government insurance can also reflect an aging community. This indicator also reflects the affordability and accessibility of hospitals in the region for local residents; affordability and accessibility are impacted by the dependence on government insurance because below market rates for government insurers are offset by above market rates for private insurers and self-payers. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in the Healthy Behavior Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the annual total count of Tahoe Basin residents discharged from hospitals in California serving Tahoe Basin residents by expected source of payment. Expected sources of payment for hospital services, includes Government Insurance (Medicare, Medi-Cal, Other Government, Private Insurance (Private Coverage, Worker's Compensation), Self-Paid and Other/Unknown, as defined by the California Office of Statewide Health Planning and Development (OSHPD). This indicator only includes data for hospital inpatient, emergency department and ambulatory care facilities in the Tahoe Basin, all of which are in California and only includes patients who are residents of the Tahoe Basin (billing address in the Tahoe Basin).</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected, analyzed and made available upon request using consistent and accurate methods by the California Office of Statewide Health Planning and Development (OSHPD), Healthcare Information Division.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p><b>OSHPD Staff</b> - As of December 2013, data specific to Tahoe Basin residents for California hospital facilities is only available upon request from OSHPD staff. Requests can be made at any time during the year, but a complete data set for the previous calendar year in full becomes available in <b>January</b>.</p> <ul style="list-style-type: none"> <li>▪ HSHPD Staff Contact (as of December 2013): Hugo von Bernath, Research Program Specialist I, CA Office of Statewide Health Planning &amp; Development Staff</li> <li>▪ Email: <a href="mailto:hugo.vonbernath@oshpd.ca.gov">hugo.vonbernath@oshpd.ca.gov</a></li> <li>▪ Phone: (916) 326-3821</li> </ul>	
<b>OSHPD, Automated Licensing Information and Report Tracking System Advanced Search Webpage</b>	
<p>(<a href="https://www.alirts.oshpd.ca.gov/AdvSearch.aspx">https://www.alirts.oshpd.ca.gov/AdvSearch.aspx</a>). Provides a list of Hospitals in California and is updated as new facilities are built and operational.</p>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected for each reporting period to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Calendar Year</b></li> <li>▪ <b>Expected Source of Payment</b> – necessary to report all types of expected sources of payment</li> <li>▪ <b>Total Discharge Counts by Expected Source of Payment</b> – necessary to report annual hospital payers data</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm and Update List of Hospital Facilities in the California Serving Tahoe Basin Residents</b> <ol style="list-style-type: none"> <li>a) Go to the OSHPD, Automated Licensing Information and Report Tracking System Advanced Search webpage.</li> <li>b) In the “Enter the Facility search criteria” section, type in El Dorado and Placer into the County field, and then click the Search button.</li> <li>c) In the generated search results, review the address in the Facility Name column for each facility listed and identify any facilities that have addresses in the Tahoe Basin. As of November 2013, the following hospital facilities are located in the Tahoe Basin:           <ul style="list-style-type: none"> <li>▫ Barton Memorial Hospital (General Acute Care Hospital)</li> <li>▫ Tahoe Forest Hospital</li> </ul> </li> <li>d) If new facilities are identified or existing facilities are changed, update the list in Steps 1.c and 2.a.5, and add columns for Hospital Inpatient and Hospital Outpatient in the Total Patient Count Calculator to include the facility in the Payers for Hospital Services worksheet.</li> </ol> </li> <li>2. <b>Request Payers for Hospital Services Data for Hospital Facilities in California from OSHPD Staff (request includes data for the Principal Diagnosis Group Indicator)</b> <ol style="list-style-type: none"> <li>a) Email OSHPD staff requesting payer data for hospitals in California serving Lake Tahoe residents. The following information is required by OSHPD staff, and also includes the request for the data required for reporting the Principle Diagnosis Group indicator.           <ul style="list-style-type: none"> <li>▫ Include the following information about the contact requesting the data at the top of the email: <i>Your name</i></li> </ul> </li> </ol> </li> </ol>	

*Your organization*

*Your address*

*Your phone number*

*Your email*

- Copy/paste the following information into the body of the email to ensure the correct data is provided:

1. Report Year (calendar year *for which you are requesting data*)
2. Records Requested:

- A. Total counts by Calendar Year for specific Patient Zip Code and for specific California Licensed Facilities and Principal Diagnosis Group
  - Provide counts for the following conditions using ICD-9CM codes (or Principal Diagnosis Groups):
    - Cancer, ICD-9CM Group: 140.xx - 239.xx
    - Circulatory System, ICD-9CM Group: 390.xx - 459.xx
    - Digestive System, ICD-9CM Group: 520.xx - 579.xx
    - Respiratory System, ICD-9CM Group: 460.xx - 519.xx
    - Nervous System, ICD-9CM Group: 320.xx - 389.xx
    - Skin Disorders, ICD-9CM Group: 680.xx - 709.xx

- B. Total counts by Calendar Year for specific Patient Zip Code and for specific California Licensed Facilities and Expected Source of Payment – Payer Category
  - Provide counts for all types of payers using Expected Source of Payment (e.g. Medicare, Medi-Cal, Private Coverage, etc.)

3. Provide counts for the following hospitals:

- BARTON MEMORIAL HOSPITAL (General Acute Care Hospital)

2170 SOUTH AVENUE

SOUTH LAKE TAHOE, CA 96150

Licensee: BARTON HEALTHCARE SYSTEM

OSHPD-ID: 106090793

- TAHOE FOREST HOSPITAL

10121 PINE AVE

TRUCKEE, CA 96161

Licensee: TAHOE FOREST HOSPITAL DISTRICT

OSHPD-ID: 106291053

4. Provide counts for only the following patient zip codes:

- 96150

- 96142

- 96141

- 96145

- 96140

- 96148

- 96143

- 89402

- 89450

- 89451

- 89452

- 89413

- 89448

- 89449

- b) Upon receipt of the data request the OSHPD will provide an Agreement of Terms (AT) that specifies the information requested from OSHPD. Check to make sure all requested data fields are included, sign the Agreement of Terms and email back to OSHPD contact.

### 3. Collect Payers For Hospital Service Data and Update the Payers for Hospital Services Worksheet

- a) Collect data from the “Total Counts by Calendar Year for Specific Patient Zip Codes and Expected Source of Payment - Payer category” summary table in the Hospital Inpatient (PDD) tab and the Hospital Outpatient (AS) tab of the excel spreadsheet provided by OSHPD staff (see image below).
  - To collect the total patient count data for each payer category, highlight the data cells for each zip code in the desired calendar year. Highlighted data will automatically be summed and the total count will be provided in the status bar at the bottom spreadsheet next to the word “Sum”.

Expected Source of payment - Payer category	Summary Tables #2 Total Counts by Calendar Year for Specific Patient Zip Codes and Expected Source of Payment - Payer category.						Calendar Year 2007						
	Patient Zip Code						Patient Zip Code						
	89413	89448	89449	96142	96143	96150	89413	89448	89449	89451	96141	96142	96143
MEDICARE	.	18	24	.	.	127	2	20	30	1	.	.	.
MEDI-CAL	.	1	12	1	.	64	.	1	3	.	.	1	.
PRIVATE_COVERAGE	1	24	31	1	.	75	2	23	19	.	.	.	1
WORKERS_COMPENSATION	.	.	1	.	.	1	.	.	.	.	.	.	.
OTHER_GOVERNMENT	.	.	1	.	.	2	.	3	4	.	.	.	.
SELF_PAY	.	1	6	.	1	8	.	3	2	.	1	.	.
OTHER_PAYER	.	.	.	.	.	.	.	.	.	.	.	.	.

- b) In the Payers for Hospital Services Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet, enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.
- c) Paste hospital inpatient and hospital outpatient data into the Total Patient Count Calculator which will calculate a total count for each payer category. Paste the total patient count for each payer category in the corresponding data column in the Data Table for the most recent calendar year.

### 3.0 Metric Reporting Methods

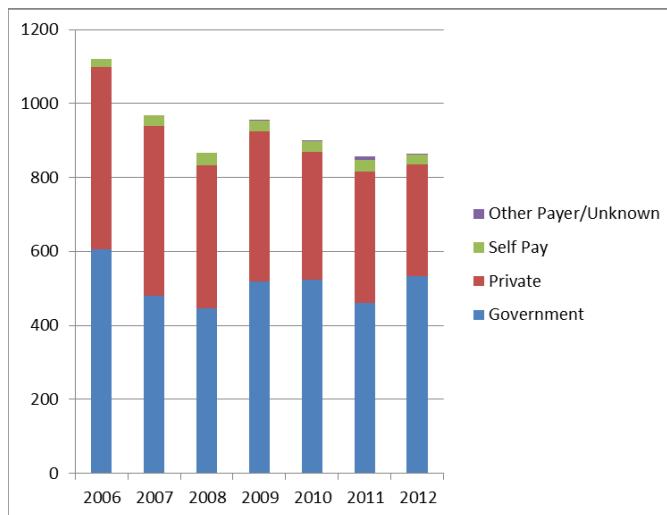
#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable numbers for the Payers for Hospital Services indicator.

#### 3.2 Potential Data Charts

The charts below are the recommended displays for the Payers for Hospital Services indicator. The chart enables a comparison of payer categories, and an understanding of the trend for each payer category over time.

Total Patient Discharge by Payer Category



#### 3.3 Procedure

##### 1. Update the Chart in the Payers for Hospital Services Worksheet

- a) Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Data column headers, one will include Calendar Year dates and one will include payer category data.
- b) Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added year and the payer category data.
- c) This will automatically update the chart to include data for the most recent calendar year.

#### 3.4 Key Reporting Context

- This indicator reports payer information for residents of Lake Tahoe who use services of the hospitals physically located in the Tahoe Basin and Truckee: Tahoe Forest Hospital, which has facilities in Truckee and Incline Village, and Barton Memorial Hospital, which has facilities in Stateline (south shore) and South Lake Tahoe. It is expected that a material portion of the residents of Lake Tahoe use services of hospitals in the Reno and Carson City area; however data from those facilities is not currently available.
- Some hospital facilities in the Tahoe Basin including Barton Memorial Hospital HHA and Hospice, Barton Family

Medicine and Placer Medical Clinic – Tahoe are not considered General acute care hospitals or freestanding facilities, but are classified as home health and community clinics. As such, these facilities are not required to report patient level data to the OSHPD, and therefore are not included in the data for this indicator.
<b>4.0 Terms &amp; References</b>
<b>4.1 Terms</b>
<b>Ambulatory Care</b> - All types of health services provided to patients who are not confined to a hospital bed as an inpatient during the time services are rendered. Ambulatory services are often referred to as outpatient services.
<b>Inpatient Facility</b> – a facility that formally admits patients with the expectation of remaining overnight or longer.
<b>Emergency Department</b> – a health facility or a distinct part of a hospital or in which emergency medical services are Provided.
<b>Payer Categories</b>
<b>Medi-Cal</b> - A federally-aided, state operated and administered program which provides medical benefits for certain low-income persons. This is California's version of the federal Medicaid program.
<b>Medicare</b> – a nationwide health insurance program for persons aged 65 and older, for persons who have been eligible for social security disability payments for more than two years, and for certain workers and their dependents who need kidney transplantation or dialysis, authorized by Title XVIII of the Social Security Act.
<b>Other Government</b> - Any form of payment from government agencies, whether local, state, federal, or foreign. Includes funds received through the California Children Services (CCS), the Civilian Health and Medical Program of the Uniformed Services (TRICARE), and the Veterans Administration.
<b>Private Coverage</b> – Payment covered by private, non-profit, or commercial health plans, whether insurance or other coverage, or organizations. Included are payments by local or organized charities, such as the Cerebral Palsy Foundation, Easter Seals, March of Dimes, or Shriners.
<b>Self Pay</b> – Payment directly by the patient, personal guarantor, relatives, or friends. The greatest share of the patient's bill is not expected to be paid by any form of insurance or other health plan.
<b>Workers Compensation</b> - Payment from workers' compensation insurance, government or privately sponsored.
<b>4.2 Additional References</b>
California Office of Statewide Health Planning and Development, IP Data Reporting Manual <a href="http://oshpd.ca.gov/HID/MIRCal/IPManual.html">http://oshpd.ca.gov/HID/MIRCal/IPManual.html</a>
California Office of Statewide Health Planning and Development, Glossary of Terms and Abbreviations <a href="http://oshpd.ca.gov/HID/MIRCal/Text_pdfs/ManualsGuides/IPManual/AppdxA.pdf">http://oshpd.ca.gov/HID/MIRCal/Text_pdfs/ManualsGuides/IPManual/AppdxA.pdf</a>

<b>Principal Diagnosis Group</b>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Objective &amp; Description</b>	
<b>1.1 Relevance</b>	
<p>A healthy community contains more productive members of society, reduces local health care system costs and promotes healthy behavior choices of its residents and visitors. Understanding the health of a community and the primary ailments of concern helps decision makers allocate resources for specific prevention programs and enables planners to design communities that promote more healthy behaviors. Understanding the principal diagnosis groups are important when determining whether or not hospitals in the region are meeting the needs of local citizens. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in the Healthy Behavior Aspect section of Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the annual total count of patients discharged from Tahoe Basin hospitals by principal diagnosis group. The California Office of Statewide Health Planning and Development (OSHPD) tracks 19 principal diagnosis group, but this indicator only reports on cancer, circulatory system, respiratory system, and skin disorder diagnosis groups. These groups were selected because they consistently have the highest total patient counts and/or they are the most relevant health conditions experienced by Tahoe Basin residents. This indicator only includes data for hospital inpatient, emergency department and ambulatory care facilities in the Tahoe Basin, all of which are in California and only includes patients who are residents of the Tahoe Basin (billing address in the Tahoe Basin).</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected, analyzed and made available upon request using consistent and accurate methods by the California Office of Statewide Health Planning and Development (OSHPD), Healthcare Information Division.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<p><b>OSHPD Staff</b> - As of December 2013, data specific to Tahoe Basin residents for California hospital facilities is only available upon request from OSHPD staff. Requests can be made at any time during the year, but a complete data set for the previous calendar year in full becomes available in <b>January</b>.</p> <ul style="list-style-type: none"> <li>▪ HSHPD Staff Contact (as of December 2013): Hugo von Bernath, Research Program Specialist I, CA Office of Statewide Health Planning &amp; Development Staff</li> <li>▪ Email: <a href="mailto:hugo.vonbernath@oshpd.ca.gov">hugo.vonbernath@oshpd.ca.gov</a></li> <li>▪ Phone: (916) 326-3821</li> </ul>	
<b>OSHPD, Automated Licensing Information and Report Tracking System Advanced Search Webpage</b>	
<p>(<a href="https://www.alirts.oshpd.ca.gov/AdvSearch.aspx">https://www.alirts.oshpd.ca.gov/AdvSearch.aspx</a>). Provides a list of Hospitals in California and is updated as new facilities are built and operational.</p>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected for each reporting period to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Calendar Year</b></li> <li>▪ <b>Total Patient Count by Principal Diagnosis Group – necessary to report annual hospital payers data</b></li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm and Update List of Hospital Facilities in the California Serving Tahoe Basin Residents</b> <ol style="list-style-type: none"> <li>a) Go to the OSHPD, Automated Licensing Information and Report Tracking System Advanced Search webpage.</li> <li>b) In the “Enter the Facility search criteria” section, type in El Dorado and Placer into the County field, and then click the Search button.</li> <li>c) In the generated search results, review the address in the Facility Name column for each facility listed and identify any facilities that have addresses in the Tahoe Basin. As of November 2013, the following hospital facilities are located in the Tahoe Basin:           <ul style="list-style-type: none"> <li>▫ Barton Memorial Hospital (General Acute Care Hospital)</li> <li>▫ Tahoe Forest Hospital</li> </ul> </li> <li>d) If new facilities are identified or existing facilities are changed, update the list in Steps 1.c and 2.a.5, and add columns for Hospital Inpatient and Hospital Outpatient in the Total Patient Count Calculator to include the facility in the Payers for Hospital Services worksheet.</li> </ol> </li> <li>2. <b>Request Payers for Hospital Services Data for Hospital Facilities in California from OSHPD Staff (request includes data for the Principal Diagnosis Group Indicator)</b> <ol style="list-style-type: none"> <li>a) Email OSHPD staff requesting payer data for hospitals in California serving Lake Tahoe residents. The following information is required by OSHPD staff, and also includes the request for the data required for reporting the Principle Diagnosis Group indicator.           <ul style="list-style-type: none"> <li>▫ Include the following information about the contact requesting the data at the top of the email: <i>Your name</i></li> </ul> </li> </ol> </li> </ol>	

*Your organization*

*Your address*

*Your phone number*

*Your email*

- Copy/paste the following information into the body of the email to ensure the correct data is provided:

1. Report Year (calendar year *for which you are requesting data*)
2. Records Requested:

- A. Total counts by Calendar Year for specific Patient Zip Code and for specific California Licensed Facilities and Principal Diagnosis Group

- Provide counts for the following conditions using ICD-9CM codes (or Principal Diagnosis Groups):
  - Cancer, ICD-9CM Group: 140.xx - 239.xx
  - Circulatory System, ICD-9CM Group: 390.xx - 459.xx
  - Digestive System, ICD-9CM Group: 520.xx - 579.xx
  - Respiratory System, ICD-9CM Group: 460.xx - 519.xx
  - Nervous System, ICD-9CM Group: 320.xx - 389.xx
  - Skin Disorders, ICD-9CM Group: 680.xx - 709.xx

- B. Total counts by Calendar Year for specific Patient Zip Code and for specific California Licensed Facilities and Expected Source of Payment – Payer Category

- Provide counts for all types of payers using Expected Source of Payment (e.g. Medicare, Medi-Cal, Private Coverage, etc.)

3. Provide counts for the following hospitals:

- BARTON MEMORIAL HOSPITAL (General Acute Care Hospital)

2170 SOUTH AVENUE

SOUTH LAKE TAHOE, CA 96150

Licensee: BARTON HEALTHCARE SYSTEM

OSHPD-ID: 106090793

- TAHOE FOREST HOSPITAL

10121 PINE AVE

TRUCKEE, CA 96161

Licensee: TAHOE FOREST HOSPITAL DISTRICT

OSHPD-ID: 106291053

4. Provide counts for only the following patient zip codes:

- 96150

- 96142

- 96141

- 96145

- 96140

- 96148

- 96143

- 89402

- 89450

- 89451

- 89452

- 89413

- 89448

- 89449

- b) Upon receipt of the data request the OSHPD will provide an Agreement of Terms (AT) that specifies the information requested from OSHPD. Check to make sure all requested data fields are included, sign the Agreement of Terms and email back to OSHPD contact.

### 3. Collect Principal Diagnosis Group Data and Update the Principal Diagnosis Group Worksheet

- a) Collect the total patient count data for each principal diagnosis group in the “Facility Name” column in the summary table titled “Total Counts by Calendar Year for Specific CA Licensed Facilities and Principal Diagnosis Group” in both the Hospital Inpatient (PDD) tab and the Hospital Outpatient (AS) tab (see image below).
- b) In the Principal Diagnosis Group Worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent calendar year in the next empty row at the bottom of the Calendar Year column.

- c) Paste hospital inpatient and hospital outpatient data into the Principal Diagnosis Group Total Patient Count Calculator which will calculate a total count for each principal diagnosis group. Paste the total patient count for each principal diagnosis group in the corresponding data column in the Data Table for the most recent calendar year.

Summary Tables #1 Total Counts by Calendar Year for Specific CA Licensed Facilities and Principal Diagnosis Group.		
Calendar Year	Condition Types	Hospital ID: 106090793 <b>FACILITY NAME: BARTON MEMORIAL HOSPITAL</b>
2006	Cancer	26
	Circulatory System	93
	Digestive System	158
	Respiratory System	83
	Nervous System	14
	Skin Disorders	26
2007	Cancer	33
	Circulatory System	121
	Digestive System	170
	Respiratory System	80
	Nervous System	14
	Skin Disorders	15
2008	Cancer	31
	Circulatory System	109
	Digestive System	140
	Respiratory System	65

### 3.0 Metric Reporting Methods

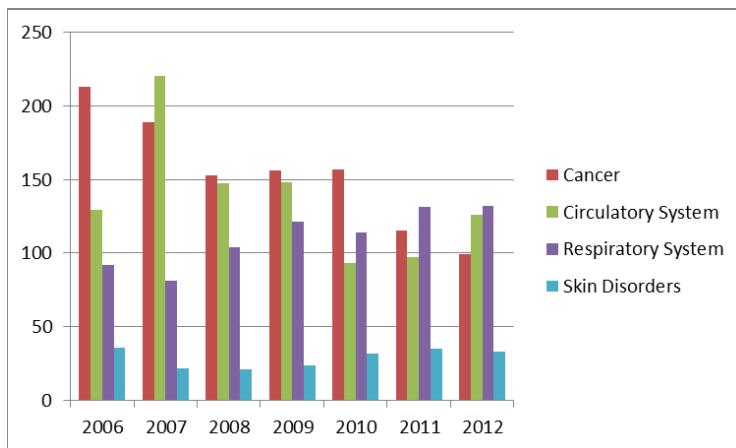
#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable metrics for the Principal Diagnosis Group indicator.

#### 3.2 Potential Data Charts

The charts below are the recommended displays for the Principal Diagnosis Group indicator. The chart enables a comparison of different diagnosis groups, and an understanding of the trend for each diagnosis group over time.

Total Patient Discharge by Principal Diagnosis Group



#### 3.3 Procedure

##### 1. Update the Chart in the Principal Diagnosis Group Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the Principal Diagnosis Group data column headers, one will include Calendar Year dates and one will include principal diagnosis group data.
- Click the bottom left corner of the box surrounding the Calendar Year dates and drag down so it includes the recently added year and the principal diagnosis group data.
- This will automatically update the chart to include data for the most recent calendar year.

#### 3.4 Key Reporting Context

### 4.0 Terms & References

#### 4.1 Terms

**Ambulatory Care** - All types of health services provided to patients who are not confined to a hospital bed as an inpatient during the time services are rendered. Ambulatory services are often referred to as outpatient services.

**Cancer** – Any diagnosis that involved treatment or testing for malignant or benign forms of cancer, as well as non-cancerous growths.

**Circulatory System** – Any diagnosis that involved treatment or testing related to the circulatory system including hypertension, Cerebral infarction/stroke/cerebrovascular accident, Postoperative cerebrovascular accident, Late Effects of Cerebrovascular Disease and Acute myocardial infarction.

**Emergency Department** – a health facility or a distinct part of a hospital or in which emergency medical services are Provided.

**Inpatient Facility** – a facility that formally admits patients with the expectation of remaining overnight or longer.

**Principal Diagnosis** – The condition established, after study, to be the chief cause of the admission of the patient to the facility for care.

**Respiratory System** – Any diagnosis that involved treatment or testing related to the respiratory system including Chronic Obstructive Pulmonary Disease, Asthma, Chronic Obstructive Pulmonary Disease, Bronchitis, Acute Respiratory Failure and Influenza.

**Skin Disorder** – Any diagnosis that involved treatment or testing related to a skin disorder including ulcers.

#### 4.2 Additional References

California Office of Statewide Health Planning and Development, IP Data Reporting Manual  
<http://oshpd.ca.gov/HID/MIRCal/IPManual.html>

California Office of Statewide Health Planning and Development, Glossary of Terms and Abbreviations  
[http://oshpd.ca.gov/HID/MIRCal/Text\\_pdfs/ManualsGuides/IPManual/AppdxA.pdf](http://oshpd.ca.gov/HID/MIRCal/Text_pdfs/ManualsGuides/IPManual/AppdxA.pdf)

<b>Total Resident Population</b>	
Last Revision: December 31, 2013	Updated By: Brian Strachan (EI)
<b>1.0 Objective &amp; Description</b>	
<b>1.1 Relevance</b>	
<p>Population growth indicates a prospering economy, appealing community, or healthy environment that people are eager to join. Population growth can be challenging to integrate without degrading the aspects of the community valued by existing residents and newcomers, and may also affect surrounding natural resources and infrastructure. Population decline indicates a faltering economy, community or environment and may lead to negligence of buildings or infrastructure, impacting both communities and the environment. Communities with sustainable population growth are able to minimize the neglect of facilities and impact to natural resources while encouraging implementation of more efficient retrofits and technologies. The importance and relevance of this indicator to the sustainability of the Tahoe Basin is discussed in more detail in Chapter 3 above.</p>	
<b>1.2 Description</b>	
<p>This indicator measures the total full-time resident population of the Tahoe Basin every 10 years. Total resident population is a count of people at their “usual residence” which is defined as the place where the person lives and sleeps most of the time. This place is not necessarily the same as the person's voting residence or legal residence. Total resident population for the Tahoe Basin is calculated every 10 years through the US Census Decennial Survey.</p>	
<b>1.3 Key Assumptions</b>	
<p>Raw data is collected and published using consistent and accurate methods by the US Census Bureau, Decennial Survey.</p>	
<b>2.0 Data Collection &amp; Analysis Methods</b>	
<b>2.1 Sources</b>	
<ul style="list-style-type: none"> <li>▪ <b>US Census Bureau, American Community Survey, FactFinder</b> (<a href="http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml">http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml</a>). Data is updated in December each decennial survey year (such as December 2000 and December 2010).</li> <li>▪ <b>US Census Block Maps</b> (<a href="http://www.census.gov/geo/maps-data/maps/block/2010/">http://www.census.gov/geo/maps-data/maps/block/2010/</a>). The US Census Block Maps provide updated CDP listings in the Tahoe Basin. Data is updated in December of each decennial survey year (such as December 2000 and December 2010).</li> </ul>	
<b>2.2 Data Attributes</b>	
<p>The following data must be collected for each reporting period to report the indicator annually:</p> <ul style="list-style-type: none"> <li>▪ <b>Survey Year</b></li> <li>▪ <b>CDP Name</b> – necessary to report only data for CDPs within the Tahoe Basin</li> <li>▪ <b>Total Population</b> – necessary to report total population in the Tahoe Basin</li> </ul>	
<b>2.3 Procedure</b>	
<ol style="list-style-type: none"> <li>1. <b>Confirm CDPs in the Tahoe Basin and Update the List of CDPs If Necessary</b> <ol style="list-style-type: none"> <li>a) Navigate to the US Census Block Maps website using the following menu and links: US Census homepage&gt;&gt;Geography&gt;&gt;Maps &amp; Data&gt;&gt;Reference&gt;&gt;Census Reference Maps&gt;&gt;Census Block Maps: year.</li> <li>b) Confirm all CDPs listed in Step 2.b still exist and have the same names, and check for new CDPs by downloading County Subdivision (CCD) maps using the following menu (download the first map listed for each CCD, numbered 000): <ul style="list-style-type: none"> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;Placer&gt;&gt;Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;California&gt;&gt;El Dorado&gt;&gt;South Lake Tahoe CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Washoe&gt;&gt;Incline Village CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Carson City&gt;&gt;Carson City CCD</li> <li>▫ County Subdivision&gt;&gt;Nevada&gt;&gt;Douglas&gt;&gt;Zephyr Cove CCD</li> </ul> </li> <li>c) Scan the downloaded maps for each CDP listed in Step 2.b. <ul style="list-style-type: none"> <li>▫ In the unlikely case that the name of a CDP is changed, a new CDP is added or CDP boundaries are redrawn, update the CDP listed in step 2.b, as well as the CDPs listed in the data columns of the Total Population Worksheet.</li> </ul> </li> </ol> </li> <li>2. <b>Collect Total Population Data and Update the Population Worksheet</b> <ol style="list-style-type: none"> <li>a) Go to the US Census Bureau, American Community Survey, FactFinder website.</li> <li>b) Access census data for all CDPs in the Tahoe Basin by entering the name of each CDP listed below into the Community Facts search box on the FactFinder homepage. <ul style="list-style-type: none"> <li>▫ Cornelian Bay CDP</li> <li>▫ Crystal Bay CDP</li> <li>▫ Dollar Point CDP</li> <li>▫ Glenbrook CDP</li> <li>▫ Incline Village CDP</li> <li>▫ Kings Beach CDP</li> </ul> </li> </ol> </li> </ol>	

- Kingsbury CDP
  - Lakeridge CDP
  - Round Hill Village CDP
  - Stateline CDP
  - Sunnyside Tahoe City CDP
  - Tahoe Vista CDP
  - Tahoma CDP
  - Zephyr Cove CDP
  - Zip Code 96150 (includes City of South Lake Tahoe and unincorporated El Dorado County)
- c) Once you have searched for your desired CDP, you will be directed to a community facts summary display. On the left side of this display there is a list of data topics with downward arrows next to their names. Click the arrow next to Population (year Census) and Total Population data will be prominently displayed at the top of the summary table (see image below).

- d) In the Population worksheet of the Tahoe Basin Sustainability Indicator Tracking spreadsheet enter the most recent decennial survey year in the next empty row at the bottom of the Decennial Survey Year column.
- e) Paste total population data in the corresponding data column for the selected CDP for the most recent survey year.

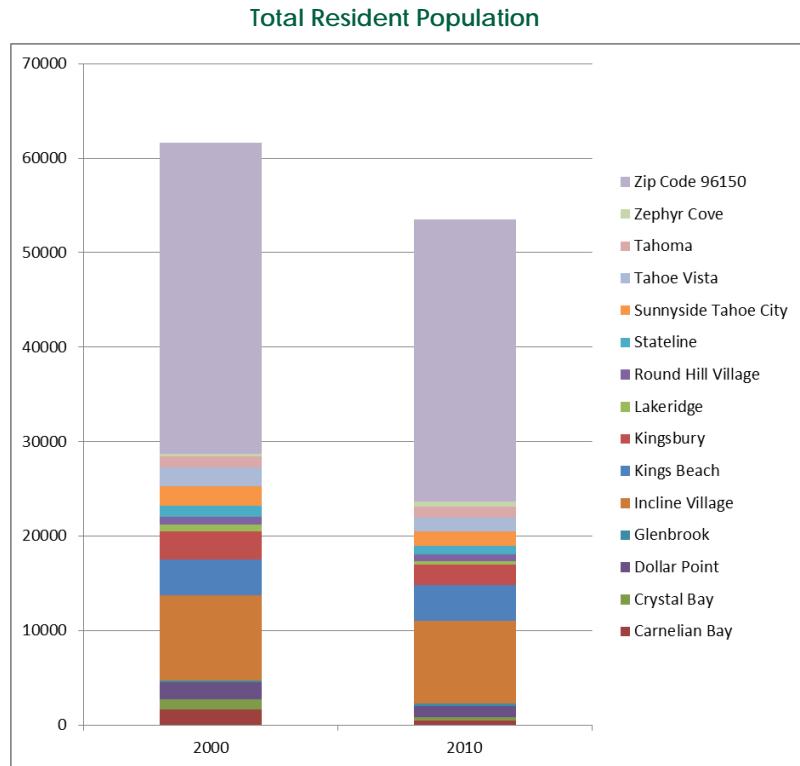
### 3.0 Metric Reporting Methods

#### 3.1 Targets & Comparable Data Sets

There are no defined basin-wide targets or relevant comparable metrics for the Total Resident Population indicator.

#### 3.2 Potential Data Charts

The chart below is the recommended display for the Total Resident Population indicator. The chart enables a comparison of population in different Tahoe Basin CDPs and an understanding of the trend in Tahoe Basin population over time.



### 3.3 Procedure

#### 1. Update the Chart in the Population Worksheet

- Click the existing indicator chart. Doing so will place three boxes around cells in the Data Table. One box will include the CDP data column headers, one will include Survey Year dates and one will include population data.
- Click the bottom left corner of the box surrounding the Survey Year dates and drag down so it includes the recently added survey year and the population data.
- This will automatically update the chart to include data for the most recent survey year.

### 3.4 Key Reporting Context

- Population estimates for the Tahoe Basin have low confidence and are misleading because of the significant number of visitors to the basin each year relative to the number of residents, the high percentage of second home owners and the significant number of seasonal residents. Millions of tourists visit the Tahoe Basin each year whom are not included in population estimates but do effect aspects of sustainability in the Tahoe Basin. Further, a material portion of the second homeowners spend a significant amount of their time outside of the basin but report their home in the Tahoe Basin as their residence for tax purposes, and another portion spend a significant portion of their time in the basin but report their home outside of the Tahoe Basin as their residence.
- This indicator only collects data for CDPs in the Tahoe Basin. While CDPs incorporate the most populous communities throughout the Tahoe Basin there are small residential communities that may not be accounted for in these counts. As of December 2013 it is estimated that 90% of the total resident population in the Tahoe Basin lives in one of the CDPs reported by this indicator.

## 4.0 Terms & References

### 4.1 Terms

**Census Designated Place (CDP)** – A concentration of population identified by the US Census Bureau for statistical purposes. CDPs are delineated for each decennial census as the statistical counterparts of incorporated places, such as cities, towns and villages (note that the South Lake Tahoe city CDP represents the unincorporated parts of the South Lake Tahoe region). CDPs are populated areas that lack separate municipal government, but which otherwise physically resemble incorporated places.

**Total Resident Population** – A count of people who report their “usual residence” within a geographical area. Usual residence is the place where the person lives and sleeps most of the time. This place is not necessarily the same as the person's voting residence or legal residence. Noncitizens who are living in the United States are included, regardless of their immigration status. Persons temporarily away from their usual residence, such as on vacation or on a business trip on Census Day, were counted at their usual residence. People who live at more than one residence during the week, month, or year were counted at the place where they live most of the year. People without a usual residence, however, were counted where they were staying on Census Day.

**4.2 Additional References**

US Census Bureau, State & County QuickFacts

[http://quickfacts.census.gov/qfd/meta/long\\_POP010210.htm](http://quickfacts.census.gov/qfd/meta/long_POP010210.htm)

US Census Bureau, Decennial Census

[http://www.census.gov/history/www/programs/demographic/decennial\\_census.html](http://www.census.gov/history/www/programs/demographic/decennial_census.html)

US Census Block Maps

<http://www.census.gov/geo/maps-data/maps/block/2010/>

Final Report of Sustainability Measures Lake Tahoe Watershed, Nevada & California, Tahoe Prosperity Center

## APPENDIX A – ORIGINAL ASPECT SELECTION PROCESS DETAILS

### ASPECT AND INDICATOR SOURCES

#### Lake Tahoe Sustainability Programs

The sustainability and regional planning programs in the table below were reviewed to build a list of existing aspects and indicators currently being used in Lake Tahoe. The level of implementation of each program varies with some reports simply identifying material aspects and others actively monitoring and reporting aspects on a regular basis. The level of implementation is described in more detail below and is highlighted in the table.

**Regular Monitoring & Reporting** - Program aspects are defined, monitored and reported on a regular basis (annually or semi-annually)

**Reported** - Program aspects are defined and have been reported on at least once in a published report; however not on a regular basis.

**Identified** - Program aspects have been identified as a priority through a multi-stakeholder engagement process; however have never been reported.

PROGRAM NAME	PROGRAM AUTHOR	LEVEL OF IMPLEMENTATION
<a href="#">Lake Tahoe Basin Prosperity Plan</a>	Western Nevada Development District	Reported
<a href="#">Lake Tahoe Watershed Sustainability Measures Project</a>	Tahoe Prosperity Center	Reported
<a href="#">Regional Transportation Plan: Mobility 2035</a>	Tahoe Metropolitan Planning Organization	Reported
<a href="#">Environmental Improvement Program Performance Measures</a>	Tahoe Regional Planning Agency	Regular Monitoring & Reporting
<a href="#">2011 Tahoe Threshold Evaluation</a>	Tahoe Regional Planning Agency	Reported
<a href="#">LTSC Working Group Objectives</a>	Lake Tahoe Sustainability Collaborative	Identified
<a href="#">TRPA Regional Plan Mitigation Measures</a>	Tahoe Regional Planning Agency	Reported
<a href="#">TRPA Regional Plan Update Proposed Indicators</a>	Tahoe Regional Planning Agency	Identified
<a href="#">Mobility 2030 Transportation Monitoring Plan</a>	Tahoe Metropolitan Planning Organization	Reported
<a href="#">Draft Tahoe Livable Community Health, Impact, and Livability Assessment</a>	Tahoe Partners for Sustainable Communities/AECOM	Identified
<a href="#">Lake Tahoe TMDL</a>	Lahontan Regional Water Quality Control Board/NV Division of Environmental Protection	Regular Monitoring & Reporting

## Non-Tahoe Sustainability Reporting Standards and Performance Reports

Sustainability reporting standards aim to provide public agencies and private businesses a list of sustainability indicators to inform their performance reporting systems. Some standards include processes for developing indicators as well. While more than a dozen sustainability standards were identified and reviewed, only ten are presented in this memo based on their relevance to Lake Tahoe, comprehensiveness of subjects and status of implementation.

PROGRAM NAME	RESPONSIBLE ORGANIZATION	CATEGORY FOCUS
<a href="#">CA Strategic Growth Council Sustainability Planning</a>	CalTrans; CA Strategic Growth Council	All
Tahoe Basin proposal for CA SGC Round 1 Grant	Tahoe Basin Partnership for Sustainable Communities	All
<a href="#">Green Communities</a>	EPA	All
<a href="#">STAR Community Index</a>	ICLEI Local Governments for Sustainability	All
<a href="#">2012 Environmental Performance Index</a>	Yale University	Environment
Supporting Sustainable Rural Communities	US Dept. of Agriculture	All
<a href="#">Neighborhood Sustainability Indicators Guidebook</a>	Urban Ecology Coalition	Environmental
<a href="#">Guidance on Performance Measurement/Flagship Sustainability Indicators</a>	US Dept. of Housing and Urban Development	Economic/Social
<a href="#">Urban Footprint Model</a>	CA Strategic Growth Council	All
<a href="#">EcoDistricts Toolkit</a>	Portland Sustainability Institute	All

The following sustainability standards were reviewed and informed the Reporting Plan, but were not included in the materiality criteria directly:

- Global Reporting Initiative (Public Agency Supplement)
- UN Department of Economic and Social Affairs: Division for Sustainable Development
- Sustainable Development Indicators
- Sustainable Sites Initiative
- Smart Growth Project Scorecard
- BREEAM Communities
- Sustainable Community Rating

Performance reports published by other communities were reviewed to understand what aspects were prioritized and indicators were used to report on the sustainability of other communities. These plans were reviewed based on their level of implementation, focusing only on reports that are updated regularly. Only three plans were selected for use in the materiality criteria and are presented below.

PROGRAM NAME	PROGRAM AUTHOR	CATEGORY FOCUS
<a href="#"><u>Indicators for a Sustainable San Mateo County</u></a>	Sustainable San Mateo	All
<a href="#"><u>Whistler 2020</u></a>	City of Whistler	All
<a href="#"><u>City of Minneapolis Sustainability Report</u></a>	City of Minneapolis	All

## ASPECT EVALUATION CRITERIA

Local and national concern was determined by the frequency each aspect appeared in the documents reviewed. Due to the limited number of economic and social program documents in Tahoe, numeric criteria was weighted differently for each pillar of sustainability.

Numeric Criteria							
Tahoe Public Concern						National Public Concern	
Economic		Environmental		Social		All	
High Concern	4+ plans	High Concern	5+ plans	High Concern	4+ plans	High Concern	5+ plans
Moderate Concern	2-4 plans	Moderate Concern	4-5 plans	Moderate Concern	2-4 plans	Moderate Concern	4-5 plans
Low Concern	0-1 plans	Low Concern	0-3 plans	Low Concern	0-1 plans	Low Concern	0-3 plans

## ASPECT EVALUATION TABLE

All aspects identified in Lake Tahoe Sustainability Programs and Non-Tahoe Sustainability Standards and Programs were compiled and organized by aspect similarities in the Sustainability Aspect Evaluation Table. This table, presented below, allowed for a comprehensive view of the number and type of documents each aspect was identified in.

		Tahoe Plans													Sustainability Standards					Other Community Plans		
		Subcategories		Aspects																		
				Lake Tahoe Basin Property Plan Lake Tahoe Watershed Sustainability Plan Regional Transportation Plan: Mobility EIP Performance Measures 2011 Tahoe Threshold Evaluation LTSC/WC Objectives TRPA Regional Plan Mitigation Measure TRPA RPU Indicators Mobility 2030 Transportation Monitor Draft Livability Assessment Lake Tahoe TMDL CA SGC Sustainability Planning SGC Funding Program Proposal STAR Communities 2012 Environmental Performance Index Supporting Sustainable Rural Communities Urban Footprint Model HUB OSHC Guidance on PMS EcoDistrict Toolkit (Portland, OR) City of Minneapolis Sustain' White																		
Economic	Employment	Income	X	X												X	X	X	X	X	X	
		Employment	X	X												X	X	X	X	X	X	
		Industry Sectors														X	X	X	X	X	X	
	Land Use	Redevelopment Capital Investments																				
		Green Building																				
		Land Use Density		X																		
		Scenic Resource			X	X																
	Businesses	Open Space				X	X															
		Recreational Access					X															
		Local Business						X														
Environmental	Tourism	Tourism	X	X																		
		Green Business						X														
	Water	Revenue	X	X																		
		Energy Consumption														X	X	X	X	X	X	
		Alternative Energy						X									X	X	X	X	X	
		Solid Waste														X	X	X	X	X	X	
		Recycling														X	X	X	X	X	X	
		Water Quality	X	X	X	X	X	X	X	X						X	X	X	X	X	X	
		Water Use						X								X	X	X	X	X	X	
		Vegetation							X	X	X					X	X	X	X	X	X	
Wildlife & Habitat	Forest Health	Wildfire							X													
		Habitat								X	X	X	X	X	X		X	X	X	X	X	
	Invasive Species	Invasive Species	X	X	X	X	X	X	X							X	X	X	X	X	X	
		Special Status Species				X	X	X									X	X	X	X	X	
	Visibility	Visibility							X												X	
		Ozone								X											X	
	Air Quality	Carbon Monoxide								X											X	
		Particulate Matter									X							X			X	
	Green House Gases (GHG)	Nitrate Oxide									X								X		X	
		Cumulative Noise Events									X	X	X			X	X	X	X	X	X	
Social	Housing	Housing	X	X							X	X	X	X	X	X	X	X	X	X	X	
		Public Transit			X	X					X	X	X	X	X	X	X	X	X	X	X	
	Transportation	Modal Share			X	X					X	X	X	X	X	X	X	X	X	X	X	
		Traffic				X					X	X	X	X	X	X	X	X	X	X	X	
	Community Development	Commuting				X					X	X	X	X	X	X	X	X	X	X	X	
		Accidents					X															
	Demographics	Registered Voters					X	X	X	X						X	X	X	X	X	X	
		Gathering Locations						X	X	X												
	Education	Age							X													
		Race								X												
	Public Safety	Education	X													X	X	X	X	X	X	
		Crime																	X	X	X	
	Food	Healthy Options									X								X	X	X	
		Availability/Storage										X								X	X	X
		Farmers Market											X								X	X
	Health Care	Community Gardens																				
		Access																				
		Health																				
		Life Expectancy																				

## ASPECT SELECTION STAKEHOLDER ENGAGEMENT PROCESS

A draft version of the Reporting Plan containing recommended aspects of sustainability for the Tahoe Basin based on the analytical evaluation process was shared with stakeholders to collect feedback on the initial recommendations. The Tahoe Basin Partnership for Sustainable Communities considered the feedback received and approved the aspects based on the consistency and efficacy of the stakeholder feedback.

The following table contains the stakeholders engaged, each engagement method, aspect-specific and general feedback received, and the revisions to the initially recommended aspects decided on by the Tahoe Basin Partnership for Sustainable Communities.

Aspect Feedback	Stakeholder Group	Engagement Method & Date	Participating Individuals	Environmental	Economic	Feedback	Community
	Tahoe Basin Sustainability Indicators Reporting Plan Project Manager	Verbal & electronic feedback on internal draft received 5/28/13	Karin Edwards, John Hester & Morgan Beryl				<ul style="list-style-type: none"> <li>- Change title of "modal share" aspect to "transportation" or something that will resonate with a broader audience</li> <li>- Add "community health" as an aspect, and it can range from access to healthy food to obesity and alcoholism</li> </ul>
	Sustainability Action Plan Contractor (Ascent Environmental)	Electronic feedback on version 0.1 received 6/12/13	Heather Phillips, Honey Walters & Poonam Boparai	<ul style="list-style-type: none"> <li>- Expand "invasive species" to "biological resources" to incorporate other forest health indicators</li> <li>- Support energy consumption and VMT indicators as part of the "GHG emissions" aspect</li> </ul>			
	Lake Tahoe Sustainability Collaborative	Voluntary on version 0.1 received 6/12/13, 6/13/13 and 6/14/13 during pillar-focused conference calls; and individual electronic feedback received throughout June 2013	Gavin Feiger, David Welch, David Long, Garry Bowen, Jacquie Chandler, Nicholas Martin, Brian Hoffman, Rick Lynn & Steve Teshara	<ul style="list-style-type: none"> <li>- Make "energy consumption" its own aspect...but then agreed with incorporating it with the GHG emissions aspect after gaining understanding of action and outcome indicator framework</li> <li>- Add "air quality" as an aspect...but then agreed that it was not as high of a priority as the recommended aspects</li> <li>- Add "forest health" or some aspect that includes native species diversity/habitat conditions/habitat connectivity</li> <li>- Add "forest health" as an aspect and suggested incorporating indicators related to fire risk and fuels reduction, such as acres treated, acres to be treated with subcategories (initial vs. maintenance, and mechanical treatments vs. hand thinning), and defensible space evaluations.</li> </ul>	<ul style="list-style-type: none"> <li>- Support "employment" aspect, and suggest "seasonal" as subcategory for employment indicators. Suggest indicators related to creating and expanding programs that create employment opportunities.</li> <li>- Support "tourism" aspect because it determines the basin's prosperity and survival, or sustainability. It is a critical revenue source for the local jurisdictions and the evaluation framework under estimates the local concern of this aspect.</li> <li>- Support "income" aspect</li> </ul>	<ul style="list-style-type: none"> <li>- Support "education" aspect, and suggest indicators related to certificate courses focused on local industries</li> <li>- Add "public health" as an aspect</li> </ul>	

			- Change "tourism" to "business environment" to incorporate the need to attract new and more diversified businesses; however, tourism is a critical and should be included in the same aspect - Support "income" and "employment" aspects - Alternative titles for aspects were suggested, including "near-term resilience" instead of "business environment", "ownership to stewardship" for "income, and "future resilience" for employment", however none were not agreed on by the group - Substantial indicator specific feedback, including suggested indicators such as business retention rate, payroll job numbers, diversification of total jobs by sector or cluster, number of subsidized school lunches, new building permit rates, building permitting costs, and business startup costs
Aspect Changes Approved	Tahoe Basin Partnership for Sustainable Communities	Verbal feedback on version 0.1 received 6/12/13, electronic feedback received 6/19/13, and approval at monthly partnership meeting	Crystal Jacobsen, Karin Edwards, Gavin Feiger, John Hester, Hilary Roverud, Jennifer Merchant, Joan Clayburgh, Morgan Beryl, Nick Haven, Norma Santiago, Patrick Wright, Peter Maurer, Pierre Rivas, Ron Treabass, Sandy Evans-Hall & Tricia York  - Add "forest health" as an aspect  - Replace "tourism" aspect with "business environment"  - Use "non-automobile transportation" as the title instead of "modal-share" - Add "public health as an aspect"

## APPENDIX B: ORIGINAL INDICATOR SELECTION PROCESS DETAIL AND RESULTS

### INDICATOR EVALUATION CRITERIA

Indicators were evaluated using a set of four criteria to assess the relevance, utility, feasibility and reliability of each indicator. Each evaluation criteria was applied using a numeric 1-5 scale to measure the degree to which each indicator met the definition of each criteria. Action and outcome indicators were evaluated based on different definitions of each of the four criteria. Criteria definitions and an explanation of the 1-5 rating for each are presented below for both action and outcome indicators.

OUTCOME INDICATOR CRITERIA DESCRIPTIONS		ACTION INDICATOR CRITERIA DESCRIPTIONS
Relevance		
<b>Degree to which the indicator represents the condition of the aspect</b>		<b>Degree to which the indicator represents actions that influence the condition of the aspect</b>
<b>5</b>	Indicator directly represents the condition of the aspect as documented in legitimate literature. Indicator represents a concept that is understandable by a broad audience.	Indicator represents an action that influences the primary driver of the condition of the aspect as documented in legitimate literature, and if implemented to the fullest extent practical would likely result in a significant improvement in the condition of the aspect.
<b>3</b>	Indicator indirectly represents or is a proxy for the condition of the aspect as documented in legitimate literature. Indicator represents a concept that is understandable by a broad audience, with some additional context needed.	Indicator represents an action that influences one of the top 3 drivers of condition of the aspect, and if implemented to the fullest extent practical would likely result in moderate improvement in the condition of the aspect.
<b>1</b>	Indicator indirectly represents the condition of the aspect but is not documented in legitimate literature. Indicator represents a concept that is not understandable by a broad audience.	Indicator represents an action that does not influence a top 3 driver, and if implemented would not lead to a measurable improvement in the condition of the aspect.
Utility		
<b>Degree to which the indicator provides value to decision making processes inside or outside of the basin that influence investment in the basin</b>		<b>Degree to which the indicator represents actions that can be augmented</b>
<b>5</b>	Indicator is currently used in decision making processes that influence the allocation of significant resources in the Tahoe Basin.	Indicator represents actions that can be augmented by +/- >50% within one year
<b>3</b>	Indicator is likely to be used in decision making processes that influence the allocation of resources in the Tahoe Basin.	Indicator represents actions that can be augmented by +/- 20-40% within one year
<b>1</b>	Indicator is unlikely to be used significant decision making processes that influence the allocation of resources in the Tahoe Basin.	Indicator represents actions that can be augmented by +/- <10% within one year
Feasibility		
<b>Level of effort required to report the indicator on an annual basis</b>		
<b>5</b>	Indicator will require <10 hours of effort annually to report. Typically the indicator is currently reported for the basin as a whole on an annual basis through a single existing effort and does not require any manipulation, and the indicator value only needs to be gathered from the existing source, input into the tracking spreadsheet and included in existing trend analysis charts.	
<b>3</b>	Indicator will require 25-50 hours of effort annually to report. Typically the indicator is currently reported for the entire basin; however the data must be gathered from multiple sources and/or requires minimal manipulation such as filtering raw data to select basin data only.	
<b>1</b>	Indicator will require 100+ hours of effort annually to report. Typically the indicator is not reported for the entire basin currently, or the underlying data cannot easily be differentiated for in-basin only.	
Reliability		
<b>Degree to which the indicator can be reported consistently and accurately</b>		
<b>5</b>	Indicator will be reported accurately each year because the primary data is monitored using documented quality assurance and there is minimal room for human error during the compiling and analyzing of the data.	
<b>3</b>	Indicator is likely to be reported accurately each year because there is minimal room for human error within the monitoring, data collection and data analysis process.	
<b>1</b>	Indicator is likely to be reported inaccurately because there is significant room for human error throughout the monitoring and analysis processes.	

## INDICATOR EVALUATION TABLE

The selection of sustainability indicators for the Tahoe Basin included a rigorous review of existing and relevant planning and reporting initiatives to generate an initial prioritization of the indicators; and facilitated stakeholder feedback to leverage subject matter expertise and select the final aspects and indicators based on current priorities. Indicators were compiled and evaluated in the Tahoe Sustainability Indicators Evaluation Table. A snapshot of this table is provided below, with a full copy of the excel spreadsheet available upon request from TRPA.

SGC Tahoe Sustainable Communities Project Tahoe Basin Sustainability Indicators Reporting Plan Updated: 9/13/13									
Pillar	Recommended Aspect	Action/ Outcome Indicator	Indicator	Indicator Criteria					
				Relevance	Utility	Feasibility	Reliability		
The three pillars of sustainability for the Tahoe Basin	The most important elements of sustainability which differentiates investments from end results	The investment, accomplishment, end result or condition measured and reported		Outcome: Degree to which the indicator represents the condition of the aspect.  Action: Degree to which the indicator represents actions that influence the condition of the aspect.	Outcome: Degree to which the indicator provides value to decision making processes that influence investment.  Action: Degree to which the indicator represents actions that can be augmented.	Level of effort required to report the indicator on an annual basis	Degree to which the indicator can be reported consistently and accurately		
				Indicator directly represents the condition of total employment in the Basin as documented in legitimate literature. Unemployment rates was selected as a measure of the economic subsystem in the Lake Tahoe Watershed Sustainability Measures Project which included the application of evaluation criteria and through stakeholder engagement process. Unemployment rates are a strong indicator of local employment trends, and are used by all other similar communities. Indicator is documented as "easy to understand" by Lake Tahoe Watershed Sustainability Measures Project.	Indicator is likely to be used in decision making processes that influence the allocation of resources in the Tahoe Basin. There are several entities in Tahoe that analyze and use unemployment data to determine funding needs and solicit funds for economic improvement programs, or to solicit unemployment benefit programs. It is unlikely that resource allocations from these entities will be significant at this time.	Indicator will likely require >10 hours of effort annually to report. Unemployment rate data for CA is compiled, packaged and reported monthly for Tahoe-specific communities (only 70% of the population in CA-Tahoe communities is reported). Data is not collected by the CA Employment Development Department. Historical data available for CA. The NV department of employment training and rehabilitation does not report data at the subcounty, city, or CDP level (only county level). NV data is only provided for Tahoe communities every 10 years through the US Census, decennial survey.	Indicator is likely to be reported accurately on an annual basis because there is minimal room for human error. Information is readily available for reporting for specific regions (CDP, GID and cities) in Tahoe, but only includes 70% of the CA-Tahoe population. Data only needs to be compiled and aggregated for reporting. While data for NV is only available every 10 years, it is provided through the US Census which is consistent and accurate.		
				Indicator directly represents the condition of total employment in the Basin as documented in legitimate literature. Furthermore, employment rates was selected as a measure of the economic subsystem in the Lake Tahoe Watershed Sustainability Measures Project which included the application of evaluation criteria and through stakeholder engagement process. This project that employment rates are a "strong" indicator of local employment trends, and are used by all other similar communities. Indicator is documented as "easy to understand" by Lake Tahoe Watershed Sustainability Measures Project. Note that employment numbers do not take population into consideration.	Indicator is likely to be used in decision making processes that influence the allocation of resources in the Tahoe Basin. There are several entities in Tahoe that analyze and use employment data to determine funding needs and solicit funds for economic improvement programs. It is unlikely that resource allocations from these entities will be significant at this time.	Indicator will likely require >10 hours of effort annually to report. Unemployment rate data for CA is compiled, packaged and reported monthly for Tahoe-specific communities (only 70% of the population in CA-Tahoe communities is reported). Data is not collected by the CA Employment Development Department. Historical data available for CA. The NV department of employment training and rehabilitation does not report data at the subcounty, city, or CDP level (only county level). NV data is only provided for Tahoe communities every 10 years through the US Census, decennial survey.	Indicator is likely to be reported accurately on an annual basis because there is minimal room for human error. Information is readily available for reporting for specific regions (CDP, GID and cities) in Tahoe, but only includes 70% of the CA-Tahoe population. Data only needs to be compiled and aggregated for reporting. While data for NV is only available every 10 years, it is provided through the US Census which is consistent and accurate.		
				Indicator directly represents the condition of total employment in the Basin as documented in legitimate literature. Furthermore, employment rates was selected as a measure of the economic subsystem in the Lake Tahoe Watershed Sustainability Measures Project which included the application of evaluation criteria and through stakeholder engagement process. This project that employment rates are a "strong" indicator of local employment trends, and are used by all other similar communities. Indicator is documented as "easy to understand" by Lake Tahoe Watershed Sustainability Measures Project. Note that employment numbers do not take population into consideration.	Green job numbers are not currently used as an indicator in the socio/economic reports for the Tahoe Basin to gauge the health of the Tahoe economy. There are several Tahoe-specific green jobs entities who are involved in investment projects that would use green job numbers data to inform investments or resource allocations. SGC uses green numbers as an important indicator in allocating funds to communities.	Indicator will likely require 100+ hours of effort annually to report. There is an inconsistent definition of Green jobs by federal and state agencies that collect and report job numbers. Specific businesses would need to be contacted to gather data.	Indicator data is anticipated to be simple and limited so opportunity for inaccurate reporting is limited; however, Green jobs can be assessed differently by each community, leaving the opportunity for different standards and assumptions to be used on an annual basis.		
				Indicator is a proxy for the condition of employment in the Basin. Available jobs indicates that there is opportunity to increase employment and decrease unemployment. Important to distinguish between part-time/seasonal employment and full-time employment.	Indicator is likely to be used in decision making processes that influence the allocation of resources in the Tahoe Basin. There are several entities in Tahoe that analyze and use available jobs data to determine funding needs and solicit funds for economic improvement programs. It is unlikely that resource allocations from these entities will be significant at this time.	Indicator will likely require 25-50 hours of effort annually to report. The indicator is not currently reported for the Basin, but data can easily be collected. It is likely that multiple entities will need to be contacted for the data. Data can increase as participation in the indicator value only needs to be gathered from the existing source, input into the tracking spreadsheet and included in existing trend analysis charts.	Indicator is likely to be reported inaccurately each year because it is likely that data will need to be collected from several third-party aggregation websites.		
				While job fairs are an important resource for job seekers and provides a valuable linkage between work force and employer, it does not directly produce more jobs in the community. Attendance cannot be directly correlated to increases in employment. Job fairs often include seasonally which are less desirable for economic sustainability in Tahoe.	Indicator represents actions that can be augmented by +/->50% within one year. Private companies, schools and public entities offer job fairs. Workforce entities providing this service the opportunity for augmentation is significant. Decision makers cannot make a huge impact on job fair participation.	Indicator will require 10-25 hours of effort annually to report. The indicator is not currently reported for the Basin, but data can easily be collected. It is likely that multiple entities will need to be contacted for the data. Data can increase as participation in the indicator value only needs to be gathered from the existing source, input into the tracking spreadsheet and included in existing trend analysis charts.	Indicator is likely to be reported inaccurately each year because there is no consistent documented process for gathering job fair numbers. The accuracy of participation counts could vary annually and can be conducted differently by each entity hosting the fair. Multiple entities are responsible for reporting data, so information may be inconsistent.		
				Numerous national level economic and jobs actions plans identify public works projects as large sources of new jobs. Furthermore, public works projects are often initiated by public agencies who have direct control over resources. Furthermore, public work projects provide additional benefits to the community by improving infrastructure, attracting new businesses, and improving the environment. Note that many public works projects may only provide temporary jobs.	Indicator represents actions that can be augmented by +/->50% within one year. Public funds available for public works projects is highly variable on an annual basis.	Indicator will require 25-50 hours of effort annually to report. While the information is not actively reported as an indicator in the Tahoe Basin, it is readily available from public agencies who track and report public expenditures on an annual basis.	Indicator is likely to be reported accurately, but inconsistently each year. Public agencies have methods for collecting, analyzing and reporting the data. However, with so many public agencies operating in Tahoe, it is likely that they have different methods for accounting for public fund expenditures.		

## INDICATOR SELECTION STAKEHOLDER ENGAGEMENT PROCESS

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Draft indicators for each aspect based on the analytical evaluation process were reviewed with subject matter experts through small meetings, and revisions were made to the recommended indicators based on their input. The subject matter experts engaged, along with their area of expertise include:

- Adam Lewandowski (TRPA) - Land Use Planning
- "B" Gorman (Lake Tahoe South Shore Chamber of Commerce) - Economic Development
- Dennis Zabaglo (TRPA) - Aquatic Invasive Species
- Heather Phillips (Ascent Environmental) - Greenhouse Gas Emissions
- Honey Walters (Ascent Environmental) - Greenhouse Gas Emissions
- Jesse Walker (Economic & Planning Systems) - Economic Development
- John Hester (TRPA) - Economic Development & Land Use Planning
- Keith Norberg (TMPO) - Transportation
- Nick Haven (TMPO) - Transportation
- Patrick Stone (TRPA) - Aquatic Invasive Species
- Shane Romsos (TRPA) - Forest Health & Fire Hazard
- Steve Teshara (Sustainability Advocates) - Economic Development

The Tahoe Basin Partnership for Sustainable Communities reviewed the revised indicators and approved the indicators at their monthly meeting on September 11, 2013.

## APPENDIX C: PROGRAM IMPROVEMENT RECOMMENDATIONS FOR FUTURE CONSIDERATION

Several program improvement recommendations were defined during the development of this Reporting Plan which should be evaluated in the future to improve sustainability indicator reporting in the Tahoe Basin. These recommendations could be implemented by this program; however, since the Reporting Program is intended to do summary reporting it is most effective if subordinate programs that need the information for their operations to be effective implement them instead.

### IMPROVE INDICATORS

- **Develop Tahoe Basin Census Zone** – Work with the U.S. Department of Commerce to develop a reporting unit for the entire Tahoe Basin. U.S. census data is currently collected in the Tahoe Basin; however the data are reported by Community Designated Place (CDP) and County, and roughly 70% of the basin population resides in a CDP and Counties include populations outside of the Tahoe Basin.
- **Develop indexes** – Develop indexes for aspects for which a single indicator, or even two, does reflect the aspect comprehensively. For example, there is no single indicator that comprehensively reflect forest health, and one could be created that takes into account existing vegetation and wildlife indicators.
- **Develop surveys** – Develop surveys to capture the opinion of residents and visitors on aspects of sustainability. For example, surveys could be used to capture consumer confidence and visitor experiences to provide an understanding of how the local economy is performing. Sometimes public opinion can differ from quantitative data related to topics such as unemployment.
- **Define targets** – Define targets for indicators without targets so that indicator data can be better understood and stakeholders are inspired to achieve targets. A summary of targets identified for indicators included in the original version of the Reporting Plan and recommendations for future development are provided in Table 2 below.
- **Incorporate Data from Hospitals in Nevada in Healthy Behavior Indicators** – Work with the UNLV Center for Health Information Analysis, or directly with Carson-Tahoe Health to collect data that can be aggregated with the existing California Office of Statewide Health and Planning Department to include a greater portion of Tahoe Basin residents in reporting of the Payers for Hospital Services and Principal Diagnosis Group. Collecting data from UNLV Center for Health Information Analysis would enable data collection from hospitals other than Carson-Tahoe Medical Center in Nevada. However, UNLV Center for Health Information Analysis charges a fee for this data that may not be feasible, so collecting data directly from Carson-Tahoe Health may be limit the data but be more feasible.

### REDUCE SUMMARY REPORTING EFFORT

- **Develop subordinate indicator reporting** – Work with organizations that focus on unique aspects of sustainability in the Tahoe Basin to publish indicators regularly. These organizations and their constituencies need the indicators to inform their resource allocation decisions, and are often already collecting and using the data; however because it is not published regularly, duplicative effort is invested to execute this Reporting Plan. For example, an organization like The Prosperity Center could report basin-wide income and employment indicators.
- **Define indicator champions** – Work with subordinate indicator reporting programs to define a specific individual responsible for tracking and reporting each indicator. Often there is already an individual that is intimate with and already tracks each indicator, and reporting the indicator on a regular basis using a consistent method would not require significantly more effort on their part but would save the significant effort for those responsible for implementing this Reporting Plan.

## IMPROVE INFORMATION ACCESS

- **Develop subordinate information** – Work with subordinate indicator reporting programs to publish information, or restructure already published information, so that someone interested in an indicator can easily access additional information, such as supporting research, science, monitoring, related indicators, etc. The Dashboard is intended to provide a high-level understanding of sustainability in the Tahoe Basin; however some visitors may be interested in additional detail related to a specific indicator and it would be valuable if the Dashboard could serve as a portal to additional detail. In order to serve as a portal to additional detail, the Dashboard needs to be able to use links to well-structured detail information. For example, if someone is interested in aquatic invasive species, it would be valuable if the Dashboard could link to a website managed by TRPA's aquatic species program that includes a landing page with an overview of aquatic invasive species and additional webpages with detailed information such as indicators on the status and control activities related to various aquatic invasive plants and warm water fish.

Table 2: Indicator Targets Identified

PILLAR	ASPECT	INDICATOR	EXISTING TARGETS & SOURCE (MOST RECENT)	RECOMMENDATION
Environment	Water Quality	Miles of Roads Treated	A) 300 miles total by 2018 implicit from report title (EIP 2010 Update Body); B) 300 is sum of road type specific targets and by 2018 implicit target from report title (EIP 2010 Update Appendix)	Define a target
		Parcels with Stormwater Retrofits	A) 43,470 residential, commercial and industrial parcels, or all parcels in the basin, is used as context, not as an explicit target (EIP 2010 Update Body); B) 30,000 parcels target by 2018 implicit target from report title (EIP 2010 Update Appendix); C) 25% increase in annual rate of BMP certification rate in conjunction with property improvement	Use RPU target
	Aquatic Invasive Species	Tahoe Deep Water Clarity (Annual Average)	78.7 feet (23.8 meter) interim target by 2030, and 97.4 feet (29.7 meter) target with no date (Lake Tahoe TMDL)	Use TMDL targets
		Watercraft Inspections	n/a	No target
	Forest Health & Fire Hazard	Extent & Distribution of Aquatic Plants	n/a	No target
		Acres of Forest Fuels Treatments	89,293 acres by 2018 (EIP 2010 Update Body)	Use EIP target
		Acres of SEZ Restored or Enhanced in Urban Areas	1,100 acres Threshold Standard (2011 Threshold Evaluation)	Define an interim target and use Threshold Standard as long-term target
Greenhouse Gas Emissions		% of WUI with Predicted Flame Length < 8 Ft.	n/a	Define a target
		VMT	2,067,600 annual daily VMT Threshold Standard (2011 Threshold Evaluation)	Use Threshold Standard
		Natural Gas Consumption	n/a	No target
		CO <sub>2</sub> e Emissions	A) 7 percent per capita reduction by 2020, and 5 percent per capita reduction by 2035 for CA mobile sources (2012 RTP) B) 15% below average of 2005 and 2010 by 2020 (2013 SAP)	Use 2013 SAP target

PILLAR	ASPECT	INDICATOR	EXISTING TARGETS & SOURCE (MOST RECENT)	RECOMMENDATION
Economic	Income	<b>LTCC Courses Offered</b>	n/a	No target
		<b>Household (taxable) Income</b>	n/a	Use comparable
	Employment	<b>Subsidized School Lunches</b>	n/a	Use comparable
		<b>CA Payroll Job Numbers</b>	n/a	No target
	Business Environment	<b>CA Unemployment Rate</b>	n/a	Use comparable
		<b>% of Development in Urban Areas</b>	Within Centers, increase as follows: 4% Residential, 1% CFA and 1% TAU (2013 RPU PMs)	Use RPU target
		<b>Transient Occupancy Tax (TOT)</b>	n/a	No target
		<b>Jobs by Industry</b>	n/a	No target
		<b>Miles of Bicycle and Pedestrian Paths</b>	170 miles by 2018 (EIP 2010 Update)	Use EIP target
Community	Non-Automobile Transportation	<b>Mode Share within the Region</b>	A) Increase nonautomobile mode share by 0.25% compared to current conditions (2013 RPU PMs)	
			B) To meet greenhouse gas emissions reduction targets, the region should increase non-auto mode share between three and five percent by 2035 implicitly by Mobility 2035 plan (2012 RTP)	Use RPU target
	Education	<b>Transit Ridership</b>	n/a	No target
		<b>Graduation Rates</b>	n/a	No target
	Housing	<b>Standardized Test Scores</b>	n/a	No target
		<b>Affordable Housing Units</b>	n/a	No target
	Healthy Behavior	<b>Second Home Ownership (seasonal use)</b>	n/a	No target
		<b>Median House Prices</b>	n/a	No target
		<b>Tahoe Resident Diagnosis Groups of Concern</b>	n/a	No target
		<b>Tahoe Resident Payers for Hospital Services</b>	n/a	No target