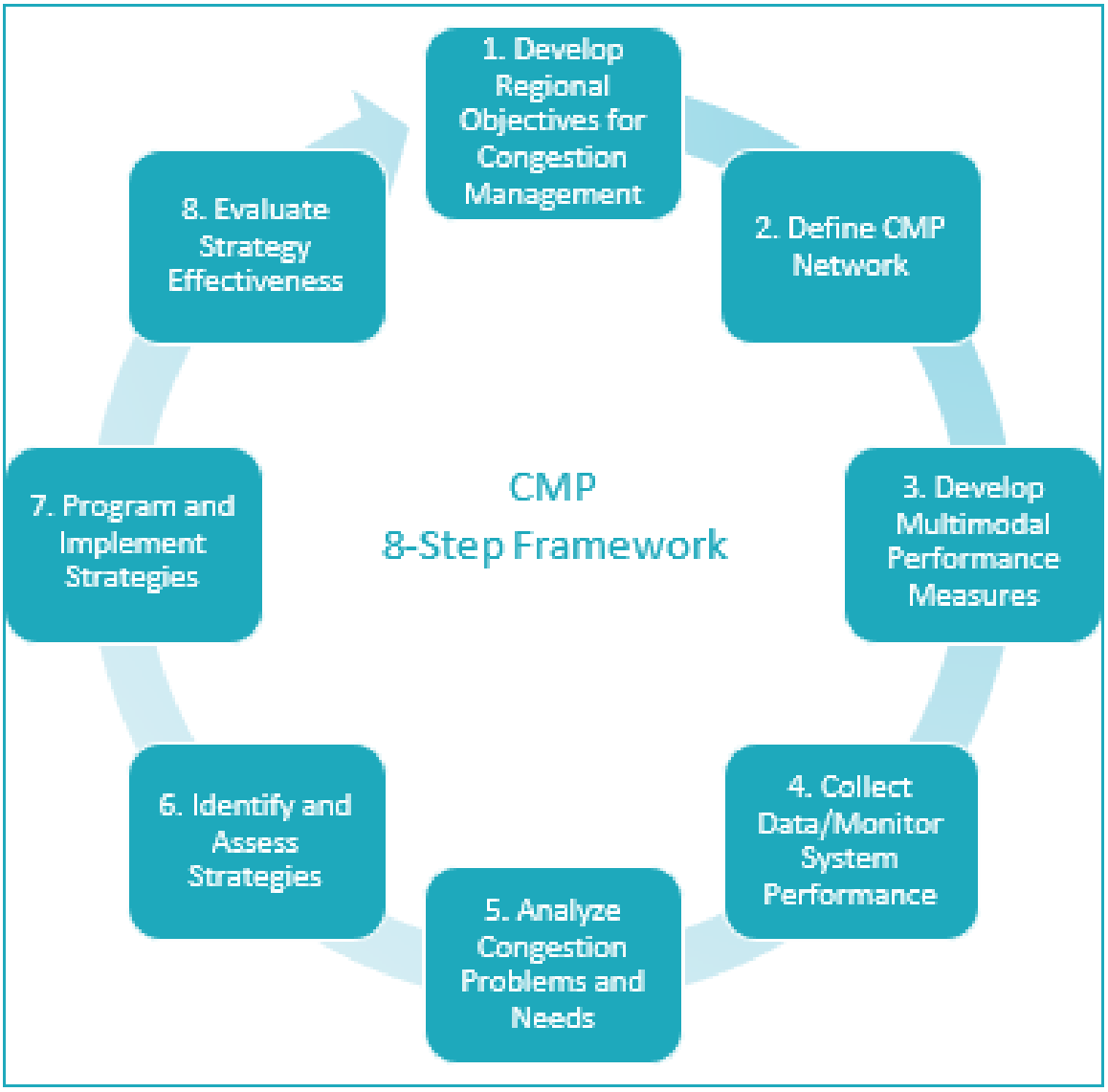
Background

All MPOs with a population over 200,000 are federally required (23 CFR 450.320) to develop, establish, and implement a formal congestion management process (CMP).

The CMP is a systematic way of measuring and monitoring current and forecasted future congestion on the region's multimodal transportation system; monitoring and evaluating performance measures related to congestion; and requiring strategies to address current and future regional congestion.

Figure 126: Congestion Management Process 8-Step Framework



Federal regulations are not prescriptive regarding the methods and strategies of a CMP. This flexibility allows MPOs to design appropriately for their individual needs. The CMP must, at minimum, be updated often enough to provide relevant and timely information for the region's transportation plan update. For efficiency, many metropolitan planning organizations synch updates to their RTP, CMP, and TIP cycles.

Flexible approaches are needed because congestion in Tahoe does not occur during the typical weekday commutes. Rather, congestion occurs in Tahoe from a high volume of visitors to the region and its

popular recreation destinations on roadways that have a fixed capacity. In Tahoe, the road network will not be expanded; rather congestion will be addressed by improving mobility for all users, including pedestrians, bicyclists, transit riders, and automobile drivers. In a recreation destination like Tahoe, there may be times that congestion is accepted, for example on a winter Sunday when skiers are returning to neighboring regions. Instead of addressing these discrete periods of congestion, the plan and this CMP provide multimodal benefits, such as bikeable and walkable destinations that are connected by frequent transit.

Federal Requirements and 8-Step Framework

The Federal Highway Administration's (FHWA), Congestion Management Process: A Guidebook (2011), outlines an 8-step framework for the development of a CMP. A review of the required steps and current development approach is provided below.

Step 1: Develop Regional Objectives for Congestion Management

The Regional Transportation Plan goals and policies represent the guidance of the TRPA Bi-State Compact, federal and state (California) transportation planning requirements, and serve as the Regional Objectives for Congestion Management for the plan's CMP. The goals of the Regional plan and the RTP are consistent with CMP objectives.

Step 2: Define the CMP Network

The defined CMP network includes roadways, transit and trails that serve pedestrians and cyclists. The transit, bike/ped maps that follow include highlighted priority communities from the Environmental Justice analysis which include high populations of elderly, low income, and minorities. Keeping these communities in mind when analyzing congestion is important to ensure that no community is being affected more than an another.

The Tahoe Roadway Network includes all local, county, and state-maintained roadways within the Lake Tahoe Basin. The network is controlled by six entry and exit points that include SR 28/US50 Spooner Summit, SR 89 Alpine Meadows, SR 89 Luther Pass, Highway 50 Echo Summit, SR 431 Mount Rose, SR 267 Brockway Summit, and SR 207 Kingsbury Grade within the Tahoe basin.

The transit network includes all existing transit service within the Region and those transit lines that carry off of the map connect to inter-regional routes to and from Truckee and Reno to the north, Carson City to the east, Minden Gardnerville to the southeast and Sacramento to the south.

The bicycle and pedestrian network include shared-use paths (Class I), bike lanes (Class II), bike routes (Class III), sidewalks, marked crosswalks, and enhanced pedestrian crossings.

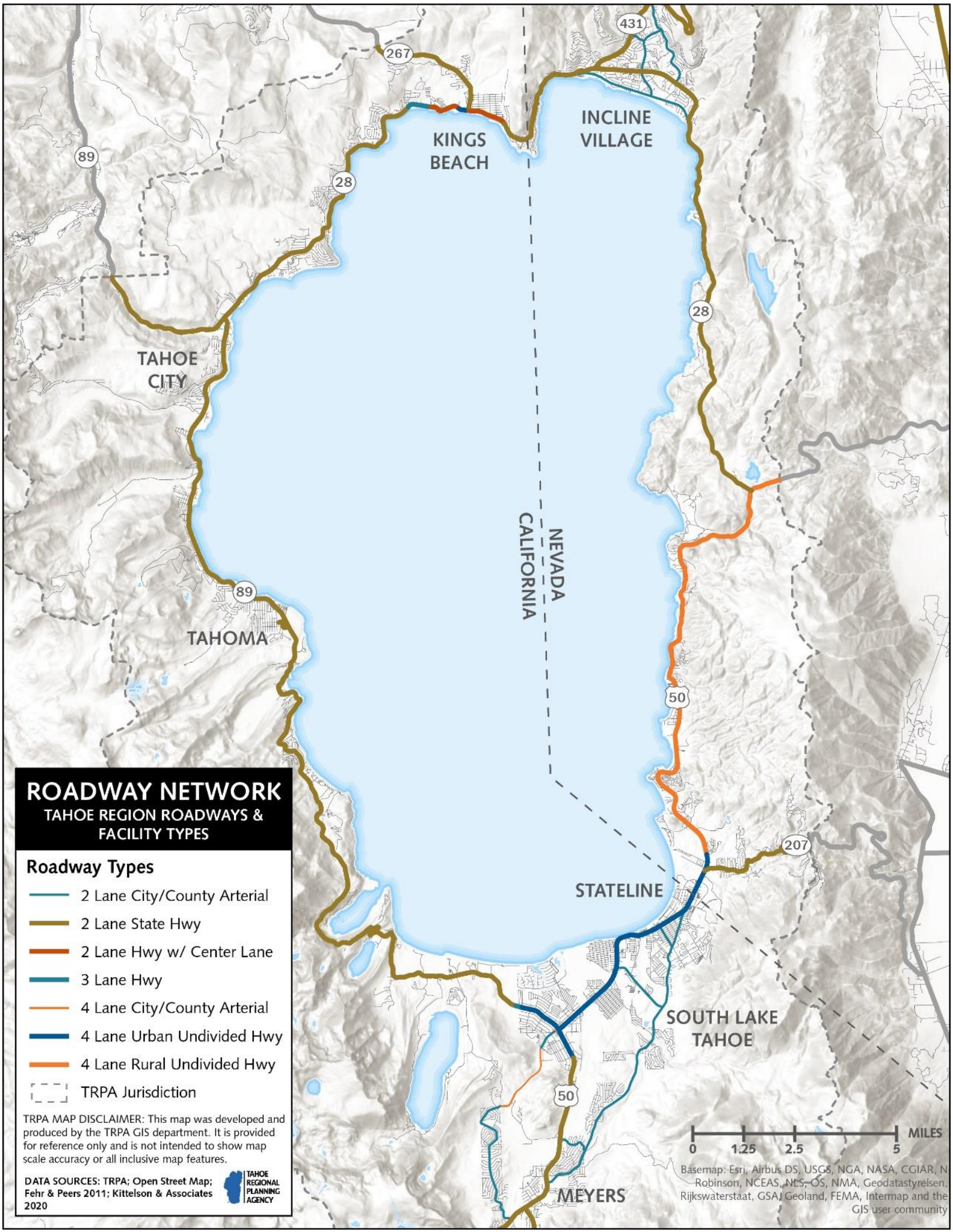
Step 3: Develop Multimodal Performance Measures

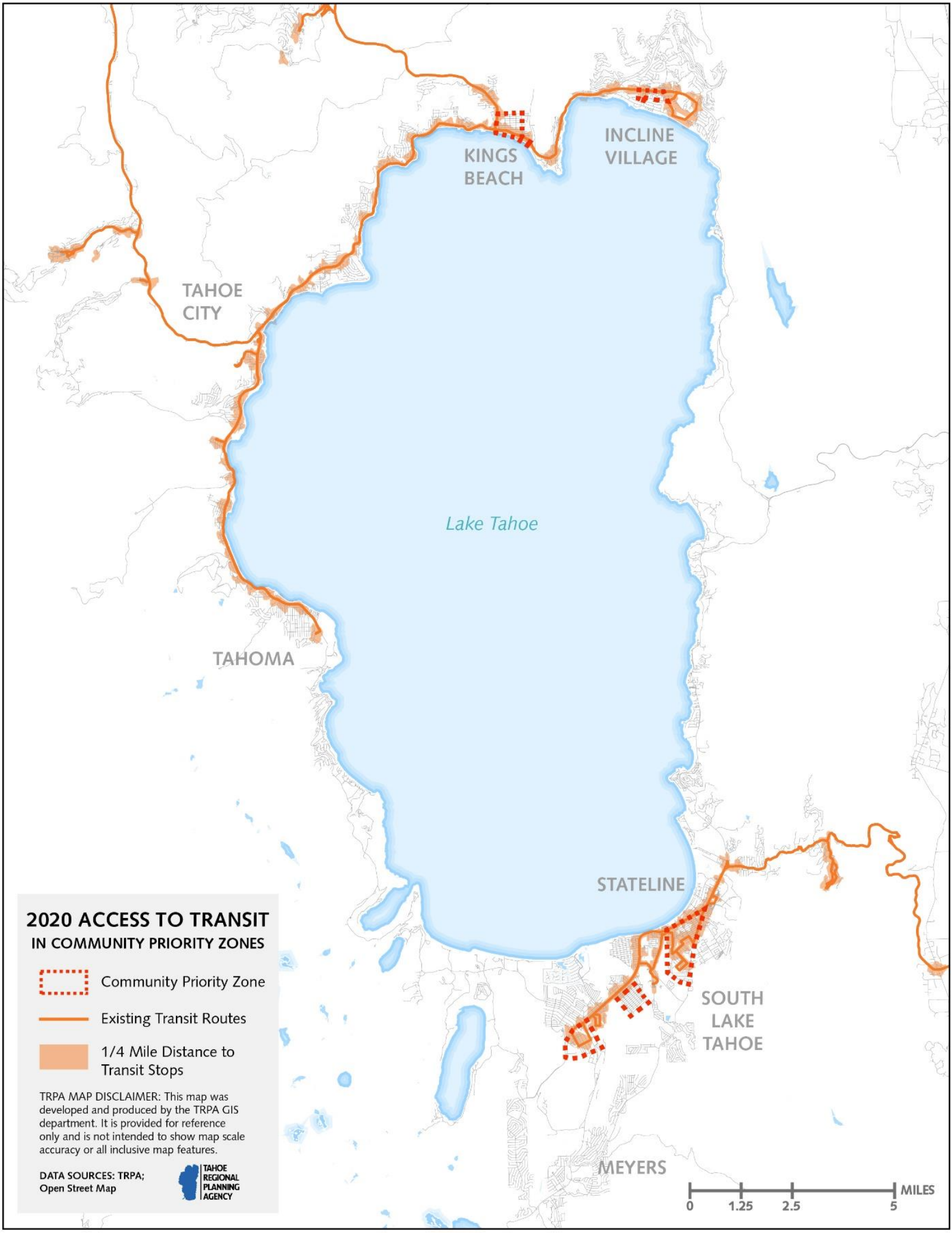
Performance measures are used in the CMP to measure progress toward meeting regional objectives, such as congestion mitigation, and to communicate performance to public officials, private sector stakeholders, and the general public. The following CMP performance measures are discussed in more detail in the Measuring and Managing for Success chapter and Appendix I: Performance Measures.

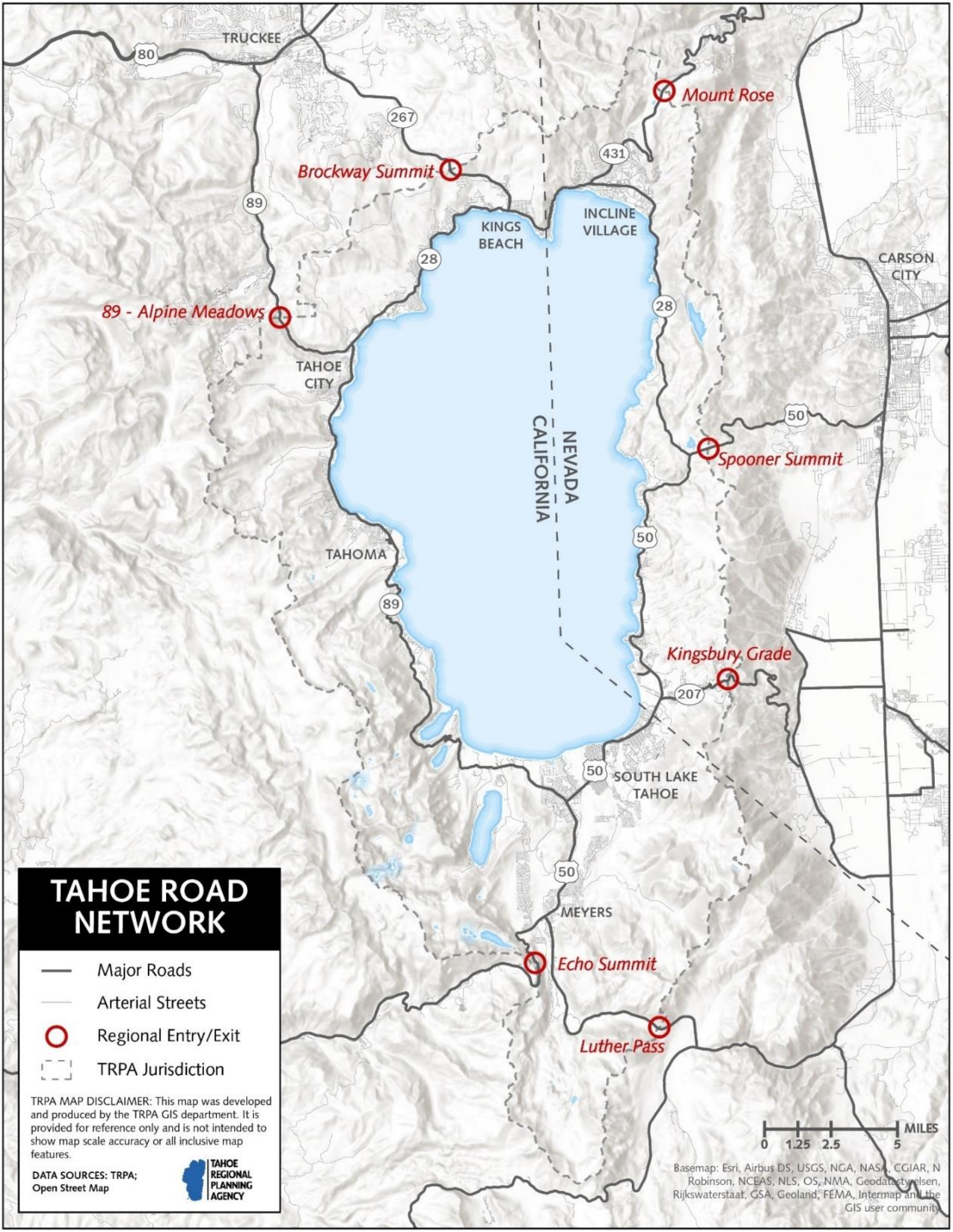
TRPA tracks # people walking, biking, and using transit. Federal and state performance measures require tracking of key safety measures, such as the number and severity of crashes; transit performance measures, to make sure buses are running on time and transit service is efficient; and roadway infrastructure performance measures, including pavement and bridge condition, to make sure routine maintenance is completed. These along with vehicle miles traveled per capita helps us ensure that the transportation system is a well-balanced, efficient multimodal system.

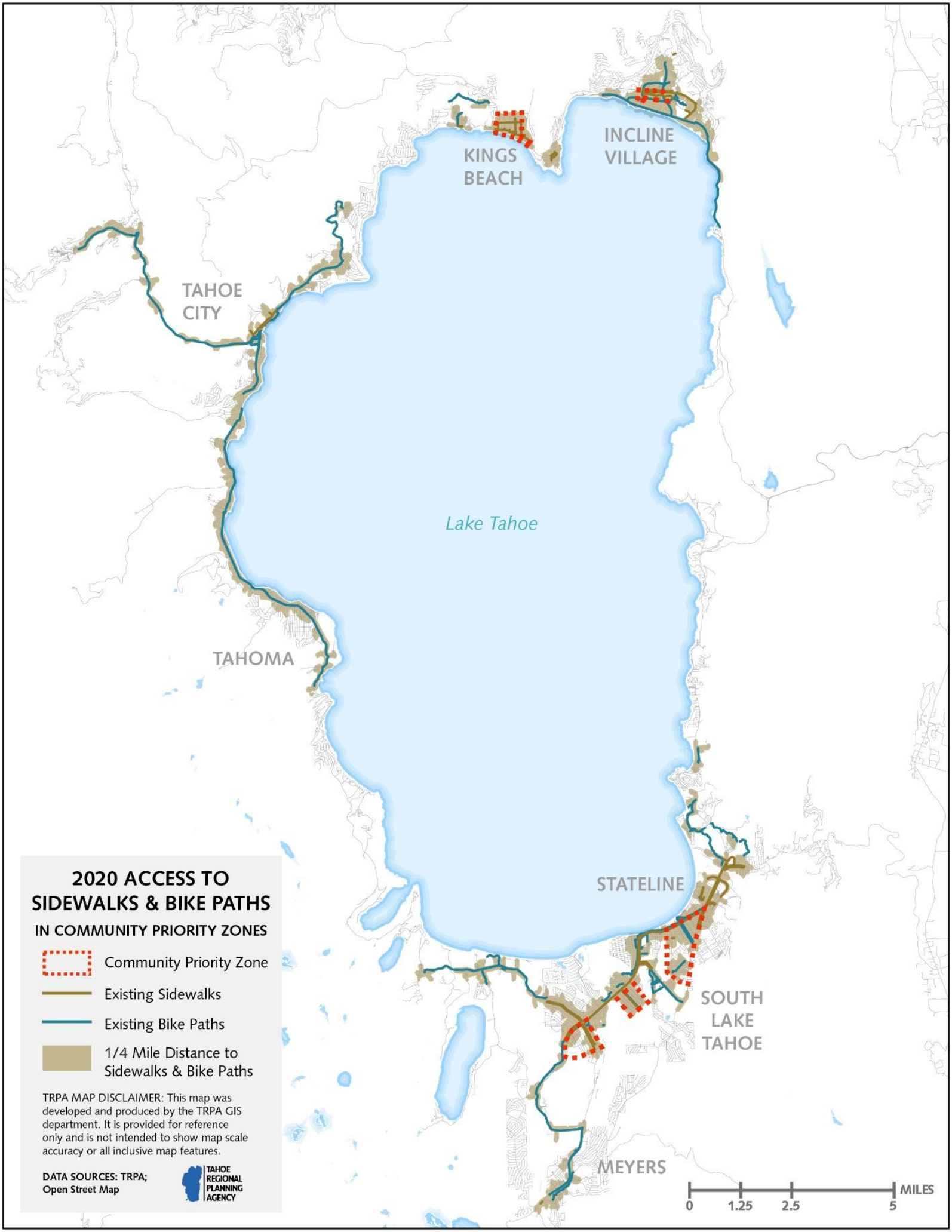
Step 4: Collect Data/Monitor System Performance

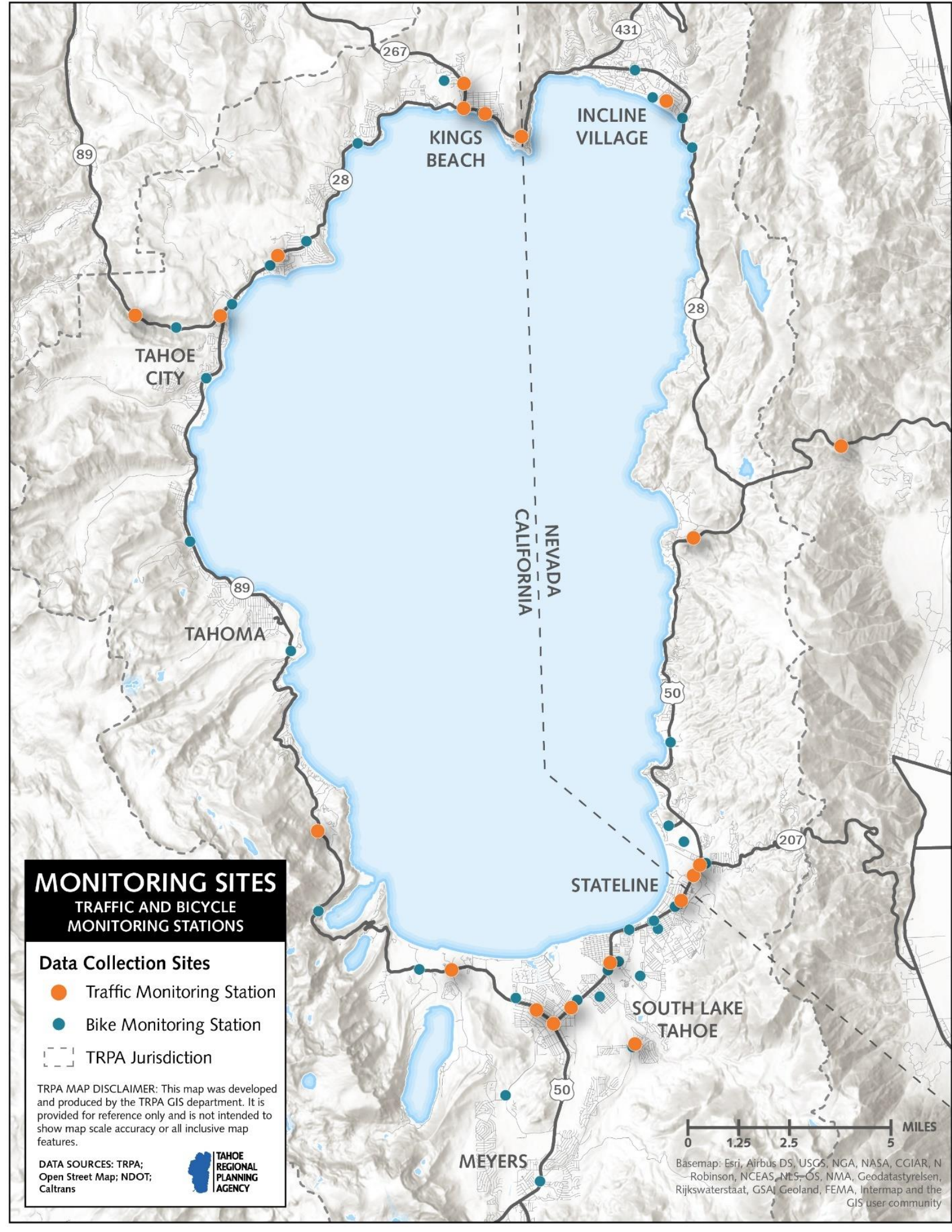
TRPA conducts ongoing data collection and monitoring of system performance through its monitoring program. The monitoring map includes bicycle and traffic monitoring sites for the Region. TRPA maintains an activity-based travel model for estimating daily activity of persons, households, and traveler groups on our transportation system; and has access to vehicle probe data (INRIX) which can be utilized to monitor real-time speed and travel times on the Region's roadways. TRPA also coordinates with each state's department of transportation to collect and monitor roadway volumes and collects real time bike and ped volumes from partner jurisdictions and through intercept surveys.


ROADWAY NETWORK
TAHOE REGION ROADWAYS & FACILITY TYPES
Roadway Types
2 Lane City/County Arterial
2 Lane State Hwy
2 Lane Hwy w/ Center Lane
3 Lane Hwy
4 Lane City/County Arterial
4 Lane Urban Undivided Hwy
4 Lane Rural Undivided Hwy
TRPA Jurisdiction
TRPA MAP DISCLAIMER: This map was developed and produced by the TRPA GIS department. It is provided for reference only and is not intended to show map scale accuracy or all inclusive map features.
DATA SOURCES: TRPA; Open Street Map; Fehr & Peers 2011; Kittelson & Associates 2020
TAHOE REGIONAL PLANNING AGENCY
KINGS BEACH
INCLINE VILLAGE
TAHOE CITY
TAHOMA
STATELINE
SOUTH LAKE TAHOE
MEYERS
NEVADA
CALIFORNIA
267
431
89
28
50
207
0
1.25
2.5
5
MILES
Basemap: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

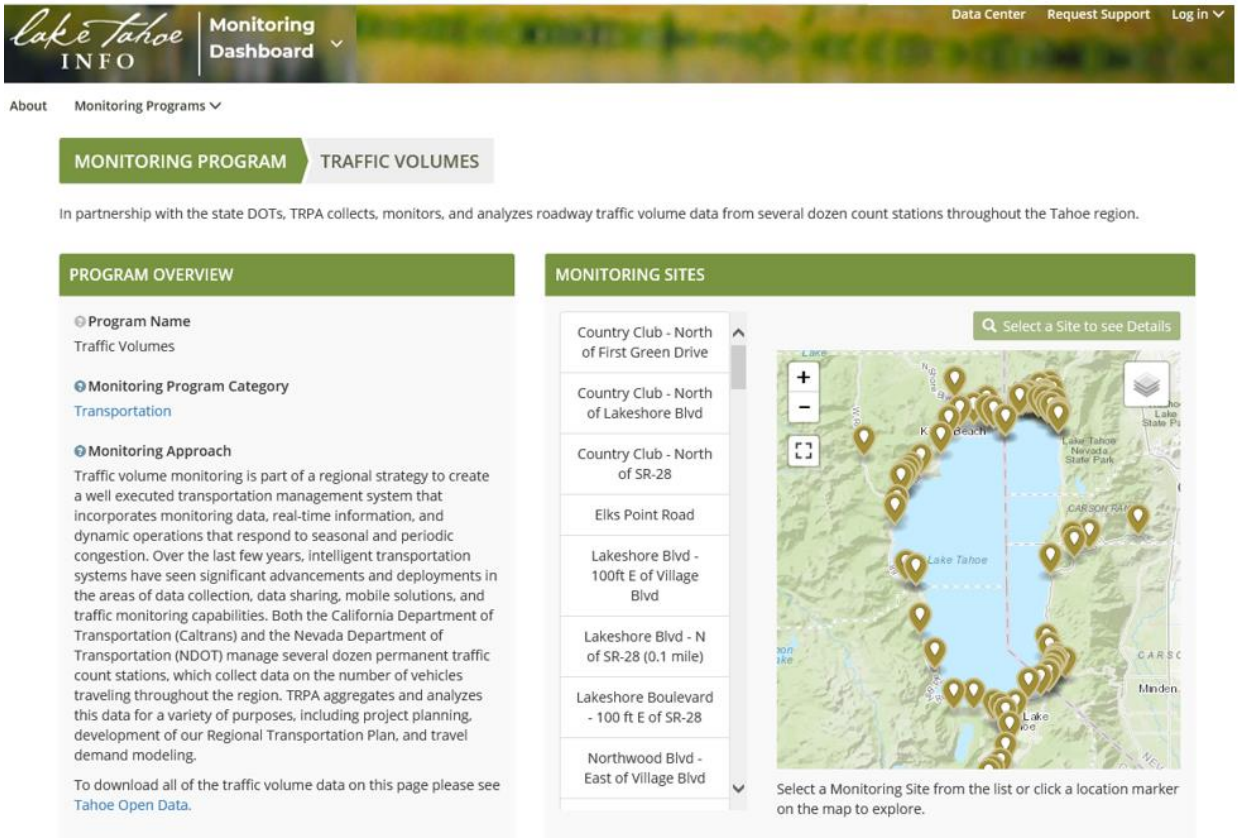

KINGS BEACH
INCLINE VILLAGE
TAHOE CITY
Lake Tahoe
TAHOMA
STATELINE
SOUTH LAKE TAHOE
MEYERS
2020 ACCESS TO TRANSIT
IN COMMUNITY PRIORITY ZONES
Community Priority Zone
Existing Transit Routes
1/4 Mile Distance to Transit Stops
TRPA MAP DISCLAIMER: This map was developed and produced by the TRPA GIS department. It is provided for reference only and is not intended to show map scale accuracy or all inclusive map features.
DATA SOURCES: TRPA; Open Street Map
TAHOE REGIONAL PLANNING AGENCY
0
1.25
2.5
5
MILES


TAHOE ROAD NETWORK
Major Roads
Arterial Streets
Regional Entry/Exit
TRPA Jurisdiction
TRPA MAP DISCLAIMER: This map was developed and produced by the TRPA GIS department. It is provided for reference only and is not intended to show map scale accuracy or all inclusive map features.
DATA SOURCES: TRPA; Open Street Map
TAHOE REGIONAL PLANNING AGENCY
TRUCKEE
80
267
431
Mount Rose
Brockway Summit
89
KINGS BEACH
INCLINE VILLAGE
28
CARSON CITY
89 - Alpine Meadows
TAHOE CITY
NEVADA
CALIFORNIA
50
Spooner Summit
TAHOMA
Kingsbury Grade
207
SOUTH LAKE TAHOE
MEYERS
Echo Summit
Luther Pass
0 1.25 2.5 5 MILES
Basemap: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community


KINGS BEACH
INCLINE VILLAGE
TAHOE CITY
Lake Tahoe
TAHOMA
STATELINE
SOUTH LAKE TAHOE
MEYERS
2020 ACCESS TO SIDEWALKS & BIKE PATHS
IN COMMUNITY PRIORITY ZONES
Community Priority Zone
Existing Sidewalks
Existing Bike Paths
1/4 Mile Distance to Sidewalks & Bike Paths
TRPA MAP DISCLAIMER: This map was developed and produced by the TRPA GIS department. It is provided for reference only and is not intended to show map scale accuracy or all inclusive map features.
DATA SOURCES: TRPA; Open Street Map
TAHOE REGIONAL PLANNING AGENCY
0
1.25
2.5
5
MILES


MONITORING SITES
TRAFFIC AND BICYCLE MONITORING STATIONS
Data Collection Sites
Traffic Monitoring Station
Bike Monitoring Station
TRPA Jurisdiction
TRPA MAP DISCLAIMER: This map was developed and produced by the TRPA GIS department. It is provided for reference only and is not intended to show map scale accuracy or all inclusive map features.
DATA SOURCES: TRPA; Open Street Map; NDOT; Caltrans
TAHOE REGIONAL PLANNING AGENCY
KINGS BEACH
INCLINE VILLAGE
TAHOE CITY
TAHOMA
STATELINE
SOUTH LAKE TAHOE
MEYERS
NEVADA
CALIFORNIA
267
431
89
28
50
207
MILES
0
1.25
2.5
5
Basemap: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS-OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSAI Geoland, FEMA, Intermap and the GIS user community

Regional data trends are reported every four years with RTP updates and the Lake Tahoe Info webpage Monitoring Dashboard (www.laketahoeinfo.org). Improvements to Tahoe's model and monitoring data will be implemented into Future CMP's.



Step 5: Analyze Congestion Problems and Needs

TRPA staff analyzes collected data on a biennial basis. Once collected, raw data is analyzed and translated into meaningful measures of performance that identify and document progress toward meeting the Region's goals. The Regional Transportation Plan sets the performance measurement framework including monitoring and managing. The CMP will be implemented in such a way as to identify the underlying causes of recurring and non-recurring congestion.

Step 6: Identify and Assess Strategies

The RTP goals and policies provide a "toolbox" for addressing local and regional congestion needs, such as supporting mixed-use, transit-oriented development, and community revitalization projects that encourages walking, bicycling, and easy access to existing and planned transit stops, and to collaborate with jurisdictions and state departments of transportation to develop adaptive traffic management strategies.

Development of the RTP project list includes evaluation of strategies identified to implement CMP related goals and policies at the local and regional level. For example, regional CMP strategies will support carpooling and vanpooling, inter-regional

transit service, and expanded park-and-ride lots.

Step 7: Implement Strategies and Evaluate Effectiveness

The RTP lays out multimodal strategies that address congestion. The projects and programs to be implemented in the future as identified in the RTP are focused on transit improvements, trail connections, capitalizing on technology and building complete streets. The plan provides forceable revenue to carry out the implementation.

Data collection and analysis post-implementation of the 2020 RTP's projects and programs will evaluate the effectiveness of each strategy. The RTP policies support data collection and analysis for the congestion management process and identify in the plan a performance management framework.

2020 RTP Policy 4.12: Maintain monitoring programs for all modes that assess the effectiveness of the long-term implementation of local and regional mobility strategies on a publicly accessible reporting platform (e.g., www.laketahoeinfo.org website).

Policy Highlight

Policy 4.2: Collaborate with jurisdictions and state departments of transportation to develop adaptive management strategies.

The MPO also plays another role in the congestion management process with its regional grant program. Proposed transportation projects selected to receive MPO programmed funding are scored based on their ability to meet the regional transportation plan goals. This allows the MPO to manage priorities based on effectiveness of the strategies, making needed adjustments based on performance.

The outcome of this analysis will inform future RTP financially constrained project lists and biennial updates of the FTIP. The CMP is built into the Regional Transportation Plan and will examine the effectiveness of regional strategies by continuously and iteratively applying performance management framework adopted as part of the RTP and this planning process.

Step 8: CMP Review and Update Process

The CMP review and update process commit to:

- Regional Plan and RTP goals and policies will be reflected in the CMP with revisions occurring no less often than the RTP update
- Changes to federal rules and associated requirements will be reflected in the CMP no less often than the RTP update
- Congestion management objectives will be reviewed and revised as necessary, in coordination with updates to the RTP
- Transportation metrics such as bike trail use, transit ridership will be made available on the Lake Tahoe Info monitoring dashboard – found here https://monitoring.laketahoeinfo.org/.
- Observed traffic volumes will be incorporated into the CMP database as they are made available by Caltrans and NDOT
- Regional system performance will be analyzed on a cycle consistent with, and no less often then, the RTP
- Regional system performance will be factored into the MPO Regional Grant Program project selection

Other elements of the CMP may be reviewed and updated on a case-by-case basis as requested by federal and state partners.

Conclusion

The CMP includes a systematic process for determining acceptable mobility levels in the

Region, measuring the effectiveness of transportation strategies on the transportation system, and prioritizing changes to strategies and project development standards as needed. TRPA will continue to establish and implement the most relevant and feasible CMP performance measures and congestion management strategies, which should be considered and refined iteratively in conjunction with other transportation planning processes.