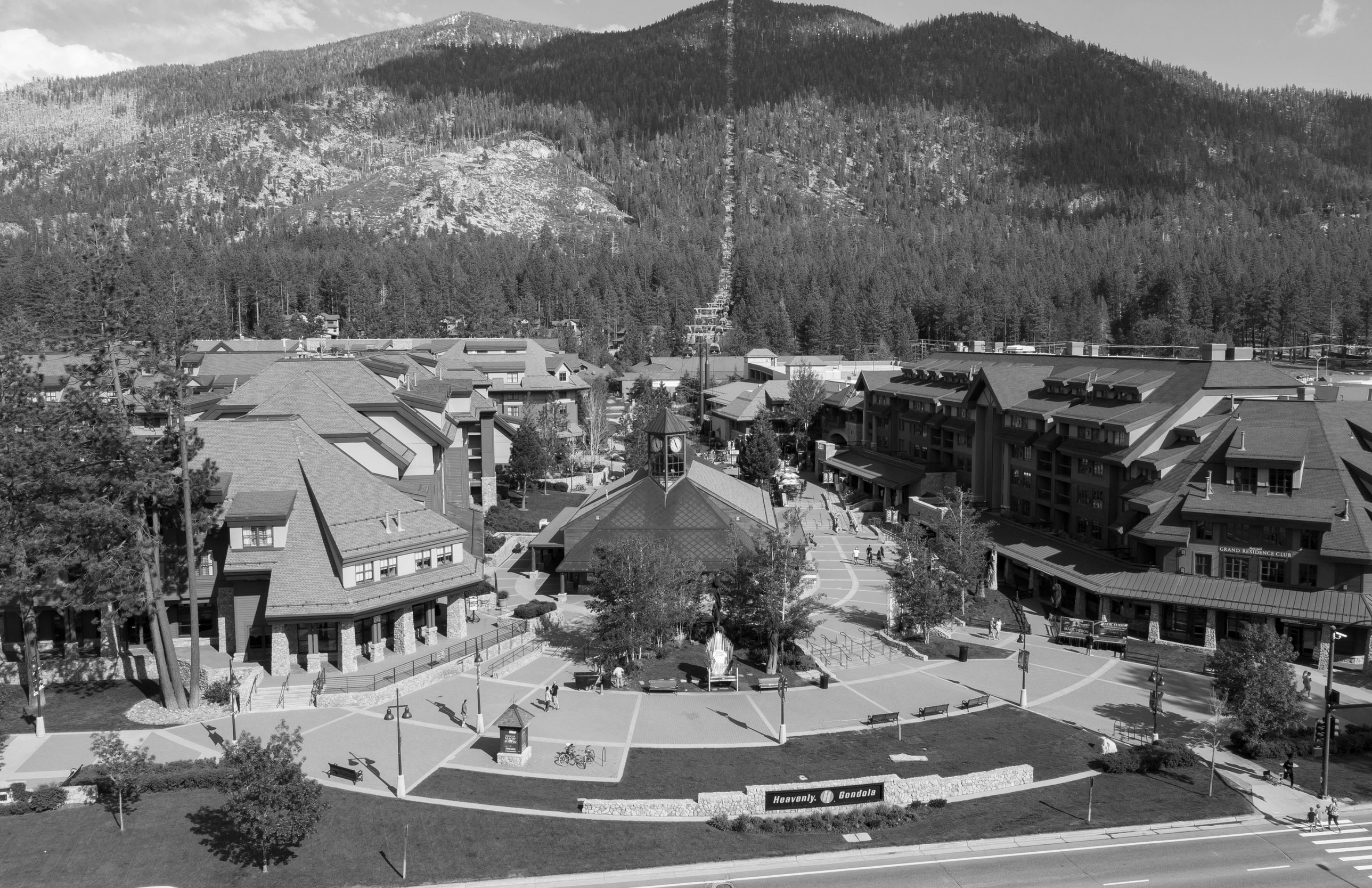
Heavenly. Gondola
GRAND RESIDENCE CLUB

CHAPTER FIVE

Monitoring, Performance Standards, & Refinement

OVERVIEW

Permit Condition Requirements

This section will include:

- The purpose of the Main Street project monitoring;
- Monitoring methods and documentation;
- Performance standards against which the monitoring data will be evaluated;
- Reporting protocols and; adjustment mechanisms
- Performance metrics and standards will be consistent with the goals identified in this document and should include VMT generated within the project area; travel times by mode to key destinations; queue lengths at major intersections and at entrances to key destinations; auto, bicycle, and scooter parking availability; and collisions by mode

Metrics Overview

Metrics are a discovery-oriented tool to shape a collective point of view about a project's aspirations. They help to develop more thorough design solutions by setting goals, integrating strategies from the four DW Legacy Design® principles and measuring outcomes. Metrics help clients understand how DW Legacy Design® will positively impact their project.

At the outset of the design process the team established SMART goals to guide design efforts and ensure that this final product optimizes benefits for the environment, economics, transportation, and community of South Lake Tahoe which are highlighted on the following pages. With a new design that prioritizes different uses, the community and responsible parties must set new goals to meet the new demands.

Measuring the performance of Main Street and any individual projects will require a multi-scaled approach and methodology so that the many benefits of the Plan may be captured. While the movement of vehicles has traditionally been the measure of a street's success, the corridor's emphasis on multi-modal design may require measuring the safety and movement of all users. Beyond movement and access, projects should also be evaluated to understand whether investments and improvements are supporting community goals.

5.1 Streetscape User Needs, Credit: NACTO

People crave activity and variety at street level. Streets with active storefronts, foot traffic design, and human scale design contribute toward an active and economically vibrant community. While activity is of paramount importance to the pedestrian realm, public safety, sidewalk width adequately spaced and apportioned, protection from rain, and shade from the sun together make the difference between a successful street and a barren one.

Bicycle facilities should be direct, safe, intuitive, and cohesive. Bicyclists desire a high degree of connectivity and a system that functions well for cyclists of all skill levels, with minimal detour or delay

Bicyclists benefit from feeling safe and protected from moving traffic. Bikeways that create an effective division from traffic and are well coordinated with the signal timing and intersection design of the traffic network form the basis of a accessible bicycle network.

Transit service may be measured by its speed, convenience, reliability, and frequency of service. Trains and buses should permit easy loading and unloading, and be comfortable and not overcrowded. The overall level of access and scope of a transit network should be aligned to actual demand, meeting service needs without sacrificing service quality.

Motorists want to get to their destination as quickly and safely as possible with limited friction, interruption, or delay. Vehicles typically benefit from limited access, higher speed roads with limited chance of conflict or surprise.

Due to their high speeds and overall mass, drivers feel safest when buffered from other moving vehicles, bicyclists, buses, trucks, and crossing pedestrians. Especially when making decisions at high speeds, motorists need adequate lighting and signage, as well as adequate parking provisions at their destinations.

Service operators want to move goods from their origin to their destination as easily, quickly, and conveniently as possible. Trucks benefit from high, but not unsafe speeds, curb access or docks for easy loading and unloading, and overall safety throughout the traffic system.

Emergency responders are responsible for attending to crimes, crashes, fires, and other dire scenarios as quickly as possible. They benefit from safety and predictability along their routes, with minimal conflicts with vehicles, bicyclists, or pedestrians, and direct curb access at their destinations.

.Accommodating commercial activity should balance the various users in a given location and always support a safe and vibrant street environment. Considerations should include siting and location, critical distances to maintain, spacial needs, times and seasons of use, regulations and access to utilities.

What to Measure

Measurements can focus on physical and operational changes, shifts in use, as well as their resulting impacts. The table shown here lists potential measurements to evaluate the impact of street projects of various scales. Measure as much as possible, but be strategic in prioritizing time and resources to collect the metrics that most relate to the project goals and community interests. There are three main categories of metrics for consideration.

Physical & Operational Changes

These metrics help document and evaluate the physical changes in street conditions, and the resultant operational shifts, in order to understand the impact of a particular project.

Use & Function

The measurement and evaluation of changes in use, behavioral changes, user comfort and satisfaction, and functional shifts help you to understand the success of a project and its impacts.

Resulting Impacts

Measuring and evaluating street projects can help estimate overall neighborhood and citywide impacts.

CHOOSING STANDARDS

The next page highlights goals and strategies developed collaboratively with the stakeholders and community. There are far too many to measure each individually so it will be necessary to evaluate the goals and strategies to determine holistic measures that align with the goals of the Plan and community.

CATEGORY	WHAT TO MEASURE	WHEN TO MEASURE	WHY IT'S IMPORTANT	HOW TO MEASURE	WHERE TO MEASURE
Physical & Operational Changes	The physical and operational changes resulting from a specific project.	Before: Measure and document existing site conditions. After: Measure immediately after construction completion	•For benchmarking against prior conditions or control areas. •To build an inventory and database of the city's infrastructure. •To demonstrate and communicate short-term achievements and progress to stakeholders. •To measure perceived quality of conditions.	Before-and-after photos and videos Before-and-after plans and sections Qualitative surveys of infrastructure quality	Project site and immediate surroundings. Maintain consistency with locations measured.
Shifts in Use and Function	The change in behavior and use of the street. Identify how and why the street functions differently, and measure the level of satisfaction with the changes.	Before: Observe and document existing use and function. Note locations on site plans. After: Measure periodically after 1, 3, 6, and 12 months. Measure during different seasons and at varying times of the day and week.	•To evaluate success of intended change in behavior and function. •To measure user satisfaction and user perception. •For benchmarking against prior conditions and other projects. •To build an evidence base for sustainable streets •To learn lessons and inform future street designs.	Before-and-after photos and videos On-site counts and observations Note locations Quantitative analysis Qualitative surveys	Project site, connecting networks, and surrounding neighborhood. Maintain consistency with locations measured.
Resulting Impacts	The extent to which the project contributes to larger local and regional goals and principles of: •Public Health and Safety •Quality of Life •Environmental Sustainability •Economic Sustainability •Equity	Before: Identify existing metrics or collect new data relevant to project goals and priorities. After: Measure matching metrics periodically after multiple months, and after 1, 2, and 3 years.	•To evaluate long-term impacts and benefits. •To benchmark against larger citywide goals and priorities. •To build an evidence base for sustainable streets. •To measure return on investment and evaluate cost effectiveness. •To communicate and build support for sustainable streets.	Quantitative analysis Qualitative surveys Comparative analysis of census results Environmental analysis	Project, neighborhood, network, and citywide scale. Choose scales relevant to specific metrics.

Measuring Streetscapes, Credit: NACTO

GOALS & STRATEGIES

ECONOMICS

Ensure the financial feasibility of Main Street and maximize community impact

- Catalyze adjacent redevelopment opportunities
- Support the development of an efficient operations and management plan
- Maximize economic impact to the local community by supporting the creation of local jobs
- Select materials and systems with life cycle and maintenance costs in mind
- Encourage private improvement and investment along corridors
- Encourage the revitalization and activation at ground level along corridor to ensure a consistent public realm and frontage
- Encourage redevelopment and new economic investment
- Provide economically viable parking and transit solutions that are coordinated to satisfy demand
- Source local materials and create local jobs
- Encourage a healthy and diverse mix of commercial and recreational offerings throughout the year

ENVIRONMENT

Enhance the environmental integrity and resilience of the corridor

- Improve air quality
- Improve stormwater management
- Improve human comfort
- Reduce greenhouse gas emissions
- Improve the urban canopy and species diversity throughout corridor
- Use native, non-invasive vegetation wherever possible
- Direct stormwater to bio-infiltration areas
- Increase permeable surfaces and Naturalize the drainage systems
- Reduce noise pollution
- Increase size of pedestrian spaces that will provide safety and comfort to all users

COMMUNITY

Promote community interaction and connectivity while enhancing the identity and character of Lake Tahoe

- Increase the amount of flexible community gathering spaces for varying uses and functions
- Create a sense of consistency and clarity in the corridor through implementation of design standards and guidelines that celebrate the unique character of Lake Tahoe
- Increase opportunities for public education/ interpretation along the corridor
- Provide programming opportunities that will respond to the climate and seasonal change
- Provide branding opportunities that respond to the diversity of character present on the corridor
- Increase the amount of flexible community gathering spaces) for varying uses and functions including pedestrian oriented activities and events
- Identify and provide connections to surrounding assets
- Establish gateways at major intersections and pedestrian nodes

TRANSPORTATION

Achieve a pedestrian, bicycle and transit-oriented corridor

- Improve conditions for pedestrians and Bicyclists
- Create a year-round multi-modal transportation system that is fun, exciting and enhances the “Tahoe Experience”
- Encourage the shifting of traffic away from main Street
- Increase sidewalk width
- Increase number of crosswalks and decrease crosswalk length
- Reduce vehicle miles travelled
- Increase bike parking and supporting facilities (pump and tool stations, covered parking)
- Provide frequent and reliable transit
- Provide support for multi-modal transportation
- Incorporate infrastructure for innovative micro-transit options that address seasonality and the character of the region
- Utilize loop road for the rerouting of through traffic, parking, service, and business access

PERFORMANCE STANDARDS

DOCUMENTATION

In order to measure the success of the Main Street Management Plan to its original goals, an annual report with the following metrics will be compiled by TRPA and partners following implementation of the plan. Most of the metrics listed in this table are already collected by TRPA, TTD or partner agencies, or are proposed to be collected prior to the implementation of the MSMP. This information can be used as a baseline metric to compare future street performance and success.

STAKEHOLDER COORDINATION

Following implementation of the Main Street Management Plan, TRPA will convene a group of stakeholder representatives of Main Street. TRPA would convene this group three years after the Main Street Management Plan has been implemented to evaluate monitoring results to the overall success of the street. This group would include, but is not limited to, representatives from the City of South Lake Tahoe, Douglas County, the Tahoe Douglas Visitors Authority (TDVA), the Park Avenue Redevelopment Management Agency (PADMA), the Chambers, and local business and property owners. The public would be invited and given an opportunity to provide input on how the street could better function. This group may form naturally prior to implementation of the Main Street Management Plan through the formation of a business improvement district, a downtown partnership association or another entity that assists with the operations, management and funding of implementation of the plan.

Additionally, this group, or a subcommittee of the group, could further serve to coordinate on events that result in a full or partial street closure on Main Street. It is assumed that this group would also coordinate on processing event permits, event management and event tracking.

CATEGORY					METRIC	WHO	WHEN TO MEASURE	HOW TO MEASURE
Physical & Operational		X	X	X	Active transportation: number of bike and pedestrian facilities added to Main Street	TRPA	Before: Measure and document existing conditions prior to implementation. After: Measure immediately after construction .	Before and after photos, plans, and sections
	X	X	X	X	Environment: square footage of green infrastructure facilities (i.e. bioswales, stormwater planters)	TTD		Before and after photos, plans, and sections
Use & Function	X	X	X	X	Satisfaction: percentage of residents satisfied with project outcome	TRPA	N/A	Travel Survey
		X	X	X	Mode Share: percentage of trips by mode as a percentage of total	TRPA TDVA	Bi-annually	Travel Survey
			X	X	Speed: change in average vehicle speeds on Main Street	TRPA	Annually	Quantitative analysis (streetlight)
		X	X	X	Transit: transit frequency & hours of service	TTD	Before: Data is currently collected for this metric	Annually using TTD targets following project implementation
Resulting Impacts	X	X	X	X	Active transportation: annual bicyclist/pedestrian counts	TRPA	Before: Annual data collected for this metric. Continue to measure annually prior to implementation	Bike/pedestrian counters
			X	X	Safety: number of collisions by mode	CSLT Douglas County DOT's		On-site counts from emergency responders
	X	X	X	X	Transit Ridership	TTD		On-site counts and observations
	X		X		Real Estate: property values within and surrounding Main Street	CSLT Douglas County	Collect baseline data prior to project implementation. Measure matching metrics annually following implementation	County assessor's data