

Chapter 2: Performance Measures

Performance measurement is an important tool in the implementation of complete streets. Performance measures can inform planners, decision makers and public how effective complete streets policies and projects are at reaching community goals. Performance measures are particularly important in today's environment where there is strong competition for limited transportation funds. In grant funded projects, results must be demonstrated using performance measures.

The Monterey Bay Area Complete Streets Guidebook provides a list of relevant performance measures for evaluating the effectiveness of complete street policies and projects. The suggested performance measures may be used in several different ways to facilitate the implementation of complete streets policies. First, performance measures can be used for needs assessment to identify problems in the system and to assess their relative severity. Second, performance measures can be used to rank projects for funding in the programming process. Third, performance measures can be used in impact assessments. In this application, the probable impact of a proposed development project on the performance of the street system is projected, and the result is used as the basis for impact fees or other exactions, such as requirements to provide bicycle and pedestrian facilities. Fourth, performance measures can be used to evaluate the effects of a policy or project on the performance of the system and to assess whether it achieved its goal.

Table 1 lists performance measures that can be used to gauge the effectiveness of five complete streets policy objectives (safety, health, access, economic benefit and equity). These suggested performance measures support the goals of the Metropolitan Transportation Plan and the Regional Transportation Plans for Monterey, Santa Cruz and San Benito Counties.

Using consistent methodology for collecting before and after data is important when measuring performance. Best practices for data collection, such as the establishment of a consistent way of conducting bicycle and pedestrian is helpful to demonstrate changes in trends over time that may result from the implementation of complete streets. The Santa Cruz County 2012 Bike and Pedestrian Count Report aimed to standardize methodologies for bicycle and pedestrian counts done within the county using the Institute of Transportation Engineers Pedestrian and Bicycle Council recommend methods and includes templates and instructions for data collection.

MEASURES OF EFFECTIVENESS

Table 1: Complete Streets Performance Measures

	Measure	Source
Safety	Reduce collisions involving bicycles and pedestrians	SWTRRS counts
	Improve speed suitability through street design	Number of bicycle routes on low speed streets
	Increase the number of local traffic calming plans	Number of traffic calming plans adopted by local jurisdictions
	Decrease the number of citations for jaywalking, reckless behavior or missing helmet (if under 18 years)	Pedestrian and bicycle observation surveys
	Reduce the number of bicycle and pedestrian hazards	Number of bicycle and pedestrian facilities repaired
Health	Increase the percent of people who walk, bike and take transit	American Community Survey or local survey
	Increase the number of students walking, bicycling or taking transit to school	Bicycle and pedestrian counts and surveys
	Increase the number of events that promote alternative transportation	Number of events held in Santa Cruz County that promote alternative transportation
Access	Number of households within 1/4 mile of transit stop	
	Increase the percent of people who walk, bike and take transit	American Community Survey
	Decrease transit headways on high quality transit corridors	Santa Cruz Metro
	Improve the quality of walk, bike, and transit trips	MMLQS or QOS
	Increase the % of population within a 30 minute walk, bike or transit trip of key destinations	GIS Street Network and Place Type Designations
Economic Benefit	Increase property values	Tax assessment
	Increase business activity	Taxable sales
	Increase investment	Number of new commercial and residential investments
	Government fiscal health	Cost per mile of transportation improvements
Equity	Increase the number of improvements completed near key destinations for transportation disadvantaged populations such as near schools, hospitals, transit stops	GIS Project Location and Key Destinations

LEVEL OF SERVICE

The traditional performance measure for street design is Level of Service (LOS). A methodology for calculating Level of Service can be found in the current version of the Highway Capacity Manual (HCM) published by the Transportation Research Board. This measure, in all its forms, is a function of the ratio of the number of cars on a road to the road's carrying capacity, and is expressed by assumed delay for each vehicle. Historically, it has been used to calculate how much road capacity is needed to serve a given volume of vehicles, and it is directly tied to the goal of reducing automobile congestion and delay. In most common use, LOS is reported on an A through F scale, with LOS A representing free-flowing automobile traffic, and F representing complete congestion. Although it has the advantage of being highly standardized and widely used, traditional vehicular LOS measurement does not account for all users of a roadway nor tradeoffs between different modes. This results in facility design based solely on the needs of automobile users often at the expense of others.

The revised version of the Highway Capacity Manual, adopted in 2010, includes methods (referred to as Multimodal LOS), for measuring the quality of travel for bicyclists and pedestrians, including comfort and sense of safety. In the absence of established standards, communities have been developing their own methods for measuring LOS for bicycles, pedestrians, and transit. In general, bicycle, pedestrian, and transit levels of service tend to be more complex to measure than vehicle LOS.

One of the common concerns with using Multimodal Level of Service is that it requires a substantial amount of data that may not be regularly or reliably collected. If data does not exist for the study area, new data must be collected in order to utilize this performance measure, which can be time intensive and expensive. Some communities are not pursuing new LOS measures, but instead are choosing more qualitative measures of success. The Santa Cruz County Regional Transportation Commission recently tested a Quality of Service (QOS) measure to evaluate how transportation investments affected the quality and convenience of bicycle, pedestrian and transit trips (Appendix C). The performance measures recommended in Table 1 provide a range of options for evaluating the effectiveness of complete streets policies and projects while recognizing limited data and resources available to project sponsors.