

## Why does stormwater planning matter to you?

Under the Federal Clean Water Act, every region's Water Quality Control Board must regulate the stormwater discharge from urban areas to protect human health and safety, and to protect the public's interest in healthy watersheds. In many parts of the state, population growth has far outstripped our ability to manage the unintended impacts of urban development, and as a result, we can readily see the consequences of insufficient or ineffectual protection—polluted waterways, collapsing fish populations, increased flooding, and depleted groundwater. The Central Coast is not immune to these problems, but our region is not as densely populated and its commitment to sustainable practices, for the benefit of society and the environment alike, is strong.

The Joint Effort represents the most comprehensive effort to date to achieve the Central Coast Water Board's goal of healthy watersheds. It does so with an approach that is based on sound science, keyed to the natural differences across our landscape, and acknowledges varying degrees of preexisting human alteration that may limit the range of possible outcomes at any particular location.

The new Water Board requirements will change how stormwater is managed. Presently, stormwater runoff is typically directed off-site. In the future, projects that trigger stormwater control requirements will need to address a specified combination of water-quality improvement, flow control, and groundwater recharge, which will often necessitate reducing the amount of runoff generated from the site in the first place. Emphasizing this "on-site" stormwater management will require more thoughtful site design and use of techniques, such as those associated with low impact development, to achieve compliance.

Once the new stormwater requirements go into effect, project applicants will be able to work with county or city municipal staff to determine if their project is subject to the new stormwater control requirements and, if so, the nature of those requirements. Project applicants will also be able to use various resources that provide technical design guidance.



### Healthy Watersheds—a vision for the future

The guiding vision for the Central Coast Water Board is one of Healthy Watersheds. Healthy Watersheds are sustainable; they support healthy, diverse aquatic habitat, have healthy riparian areas and corridors to maintain healthy habitat, and have near-natural levels of sediment transport. Surface waters meet water quality objectives, sediments are low in pollutants, and groundwater is near natural levels in quantity and quality. All combine to support human and ecosystem health.



For more information, visit:

**Central Coast Water Board:** <http://www.waterboards.ca.gov/centralcoast/>

**Central Coast LID Initiative:** [http://www.centralcoastlidi.org/Central\\_Coast\\_LIDI/Home.html](http://www.centralcoastlidi.org/Central_Coast_LIDI/Home.html)



## The Central Coast Joint Effort for Controlling Impacts of Urban Growth

The Central Coast Region encompasses a magnificently diverse landscape, spanning a broad range of physiographic and ecological terrains. It is also home to more than 1.4 million people, who enjoy and value these resources on a daily basis.

Before the Central Coast was developed, only about 10% of the rainfall contributed to stormwater runoff (that is, water that flows over the land surface)—the rest soaked into the ground or evaporated back to the atmosphere. Today, our urban landscape has impervious surfaces, such as roofs, streets, sidewalks and parking areas, that do not allow water to pass. The increase in impervious surfaces has increased stormwater runoff, which commonly cause flooding, damage to property, and erosion to natural streams and rivers. Runoff also carries pollutants from the surrounding watershed, such as pesticides, bacteria, oils, metals and sediments, that can make waters unsafe for recreational use or wildlife.

Urbanization permanently changes the landscape. Our challenge is to maintain our region's environmental integrity as we grow, and to determine how best to meet this goal given our varying landscape. The Joint Effort is a project led by the Central Coast Water Board to guide new urban development and redevelopment, by using our understanding of watershed processes, landscape differences, and innovative management strategies to achieve this outcome.

### MANAGING STORMWATER BY PROTECTING WATERSHED PROCESSES

Our traditional methods for managing urban stormwater do not adequately protect the environment. They treat symptoms instead of causes, they tend to focus only on small streams, and they impose certain treatment requirements that are either too lenient for some types of waterbodies, or unnecessarily strict for others. Elsewhere, they have led to practices such as channelization and stream armoring that permanently alter stream habitat, hydrology and aesthetics. To correct this, the Joint Effort is focused instead on *protecting watershed processes*, with the scientifically-based expectation that this focus, in turn, will protect those receiving waters more effectively and sustainably for the long term.

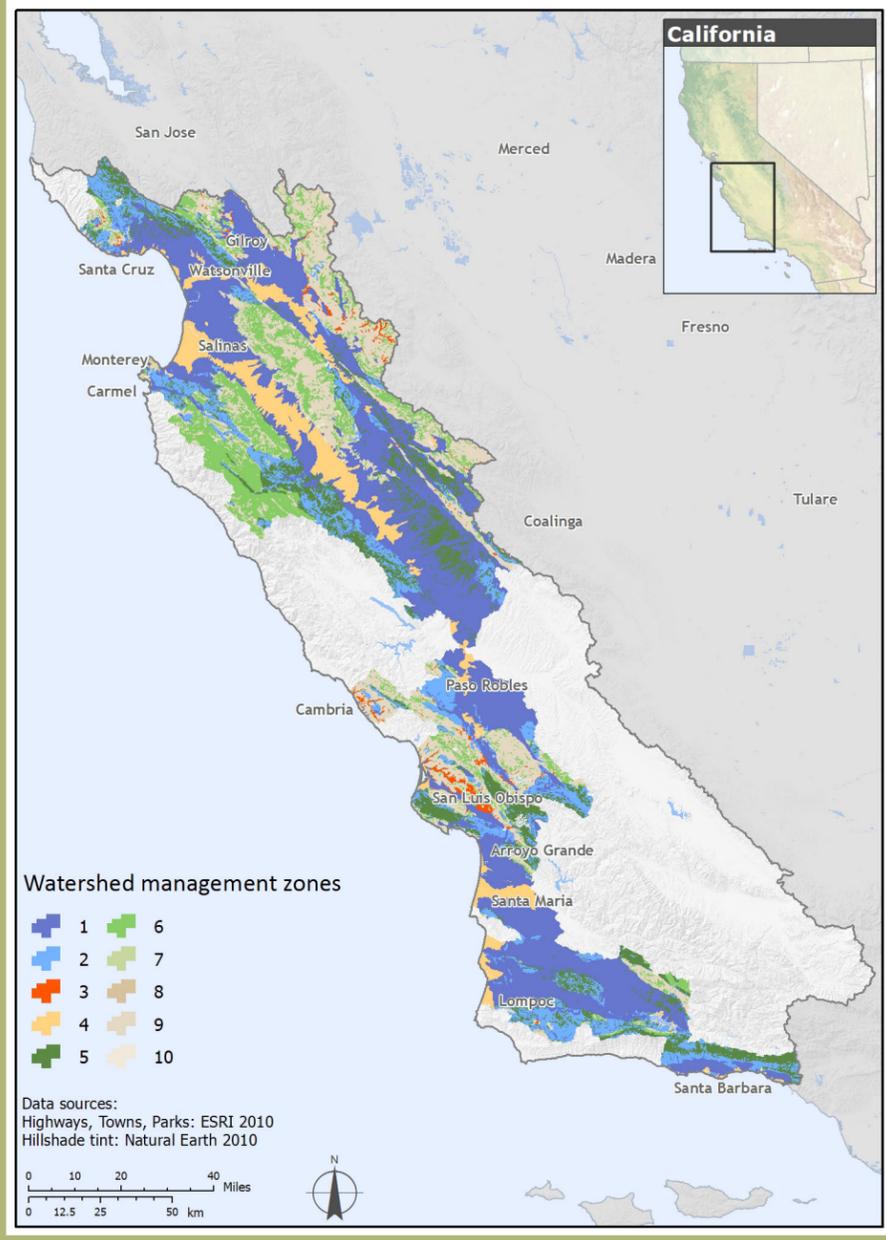


## Impacts of Urbanization

Urbanization changes the landscape forever, and it also can permanently change the rivers, streams, lakes and wetlands that flow across that landscape. Some of those changes to these waterbodies are obvious—streams are ditched and channeled, wetlands are filled, riverbanks are armored. The greater and more long-lasting changes, however, are insidious—stormwater runoff moves quickly off the land surface, and the greater rate and quantity of runoff can erode channels and destroy aquatic habitat. The increase in surface flows also means that there is less water to recharge aquifers, and the water that does infiltrate is likely to have a greater load of pollutants scoured from the urban landscape.

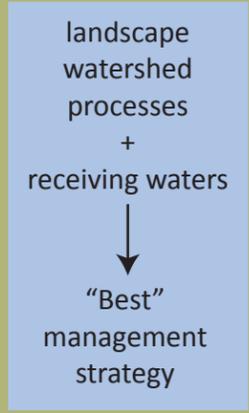
The Central Coast Region hosts a variety of landscape types, which range from high mountains to lowland valleys and coastal plains. A similar diversity is also expressed in the variety of our water bodies, which include rivers, streams, lakes and wetlands, the nearshore marine environment, and the underground aquifers whose protection is critical to both drinking water and irrigation. Some of the diversity of landscapes across the Central Coast Region include (from above left): steep, sparsely vegetated slopes of the Santa Ynez Range; more subdued, well-vegetated ridges above the Carrizo Plain; flat alluvial valley near Orcutt.

Examples of direct and indirect impacts of human activity on stream channels (from below left): channelized reach of Sycamore Creek, Santa Barbara; levee improvements adjacent to the active channel of the Santa Maria River; heavy algae growth in nutrient-enriched Carpinteria Creek.



## Mapping the “Best” Stormwater Management Strategies

Different parts of the landscape support different watershed processes, and they also drain to a variety of receiving waters (streams, lakes, aquifers, etc.). Combining these two attributes can guide the choice of stormwater management strategies and their performance standards at a site, resulting in protective but also cost-effective approaches. Through the Joint Effort, the Central Coast Water Board is working with local jurisdictions to prepare the maps that are needed for



ing much of the lowland urban areas with small streams and an underlying aquifer) has a set of stormwater-management needs that differs from Zone 8 (steep land areas that drain directly into a large river or the Pacific Ocean).

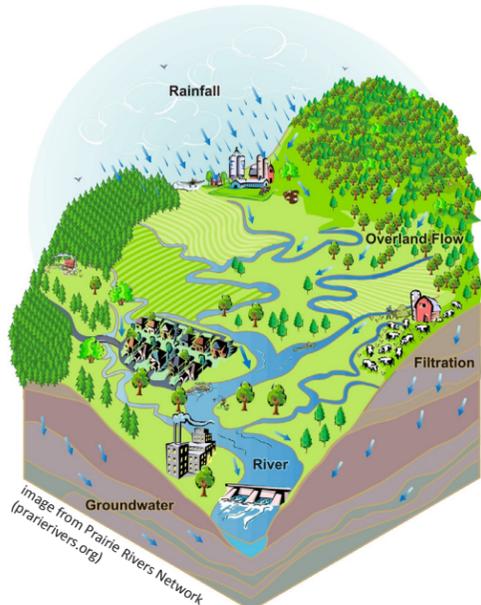
Historically, both of these areas would have the same regulatory requirements for managing stormwater—but this is clearly unreasonable. The Joint Effort is providing the scientific foundation, and the maps, to identify appropriate management requirements.

A wide range of engineered facilities, site-design practices, and other measures can be used to meet regulatory requirements for stormwater management. These “stormwater control measures” can help sustain watershed processes, protect receiving waters, and maintain healthy watersheds in the face of urbanization. Any particular one of these control measures may not be suitable, effective, or even feasible on every site—but the right combination, in the right places, can successfully achieve these goals.

The map at left displays a regional picture of the similarities, and the differences, between all of the urban areas of the Central Coast Region. Each “Watershed Management Zone” reflects a unique combination of physical landscape attributes and the type of receiving water to which each area drains. So, for example, Zone 1 (cover-

## What are Watershed Processes?

The diversity of our landscape gives rise to a similar diversity of watershed processes. These processes include the movement of water (such as infiltration or surface runoff), the movement of sediment (such as gully erosion or landsliding), and the delivery of organic material and woody debris to streams. These processes create and sustain the streams, lakes, wetlands, and other receiving waters of our region. If we cannot protect those processes, we will not protect water quality. Mapping the variety of landscape types is the first step in showing the distribution of the most important watershed processes across the landscape. This will show where to apply stormwater management measures that are most protective of those processes and, thus, the receiving waters that depend upon them.



Examples of stormwater control measures include (from above left): bioretention system, City of Morro Bay; pervious pavement (courtesy Friends of Five Creeks); an infiltration basin (courtesy of Leonel Ponce/flickr.com).