

# TALK ON WATER

March 2016

## In the News

### "Stormwater Salvation"



Changing views on stormwater in the Southland [Read More on Page 6 >>](#)

### "Miracle March?"



El Nino snow dumps are coming our way... [Read More on Page 10 >>](#)

## By the Numbers



You have up to **72 Hours...** after a rain event where BMP deficiencies have been noted to begin fixes. It is best to address deficiencies **IMMEDIATELY.**

## BMP of the Month: Silt Fence

A run-down guide on when, where, and how to use silt fence as an effective BMP on your project site. [Read More on Pg. 3>>](#)



## Upcoming Classes



### QSP Training PDH Classes

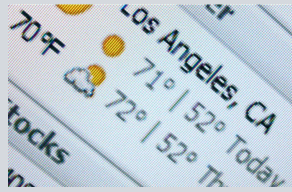
|                |           |
|----------------|-----------|
| Apr. 14th/15th | Mar. 16th |
| June 25th/26th | May 11th  |
| Oct. 20th/21st | 2         |
| Dec. 8th/9th   | e 21      |
|                | o 1       |

## The LEW Calculator is Back!

After going down for the last few months, the LEW calculator is now reestablished at the EPA site. The state water board requires that you use this calculator instead of manual calculations for R values in your risk analysis. You can access the new calculator [here](#).

[a n a e o a o a a o a o n o n e g e o o](#)

## Reading the Weather



Are you taking your weather everyday? If not, you should be. [Read More on Page 5>>](#)

### The Good, The Bad, and the Ugly Photo Contest



Provide CAL-Storm Compliance with an original Good, Bad, or Ugly site photo to enter. Monthly winners will receive a FREE PDH class and have their submissions appear in an upcoming newsletter! Congrats to this months winner: Alan Parks

*Contest Rules:* Photo cannot be used that do not protect contractor or site personnel anonymity. Please send submissions, with signed release, to [info@calstormcompliance.com](mailto:info@calstormcompliance.com)

No matter what type of stormwater compliance services you may need, CAL-Storm Compliance, Inc. can guide you through your options and provide quality, cost-effective solutions.

Sincerely,

*The CAL-Storm Team*  
(949) 354 5530

CAL-Storm Compliance, Inc.  
[info@calstormcompliance.com](mailto:info@calstormcompliance.com)

# BMP OF THE MONTH

## SILT FENCE

Silt Fence is a temporary linear sediment barrier of permeable fabric designed to slow the flow of run-off. Silt Fence **does not** filter, it slows water down so that sediment has an opportunity to settle out before run-off leaves the site.

### *When to use:*

- At the toe of slope
- To encircle a spoils pile
- Around a projects perimeter



### *When not to use:*

- Not designed for mid-slope use on slopes greater than 1:4
- Not designed for use in concentrated flows, e.g. a swale
- Not designed to be used as a diversion



Installing silt fence in a direct flow is wrong for two basic reasons, either the fence will fail immediately, rendering it ineffective, or the water will pile up behind it and fail catastrophically, taking out everything downstream...

### Product Options:



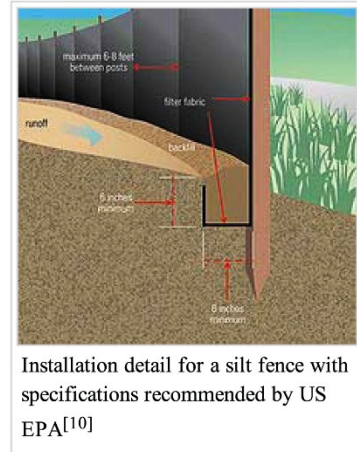
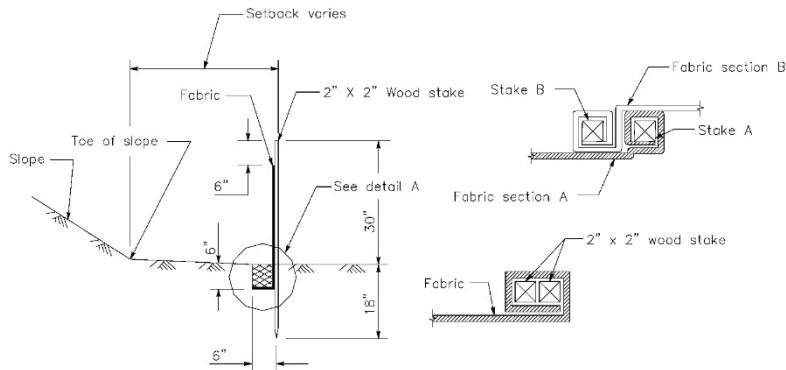
- Standardized 100' rolls with stakes pre-stapled at 10' intervals
  - Commercial Grade (Short Life)
  - Mid-Grade (Moderate Life/Cost)
  - DOT – Grade (Maximum Life/Cost)
- Standardized Bulk Rolls, 330' no stakes included
  - Mid-Grade (Moderate Life/Cost)
  - DOT – Grade (Maximum Life/Cost)
- Alternative stake options, wooden stakes, metal posts, existing fence line
  - Zip Ties or other fastening method required
- Reinforced (Super) Silt Fence
  - Wire backed providing additional support, must still be trenched in

### Layout and Design Constraints:

- Maximum slope length 200'
- Must be used in conjunction with other BMPs when adjacent to ESA's
- Must be installed on a level path
- Must be trenched in 6"
- Or alternatively must be sliced in using an installation device, e.g. Tommy

## Installation:

- Must be trenched in 6" or sliced in accordance with specs
- Stakes must always be located on the downhill side of the fencing
- Ensure that the last stake is wrapped several times around the next stake in the new roll
- Ensure adequate compaction of disturbed earth



## Inspection and Maintenance:

- Ensure that fencing is not undermined, concentrated flow compromises compaction
- Ensure fabric has integrity, which can be compromised by wind, water, or UV
- Ensure that maintenance is performed once a third of total sediment capacity is reached

## Things to Remember:

Anyone with experience installing silt fence knows that the standard wooden stakes are less than great, so it is critical that you always have additional stakes to repair or replace those damaged during installation.

Standard 100' rolls with stakes at 10' intervals will often be adequate, at least in Southern California, but what are your options when the specification requires 6' centers on the stakes?

1. You can purchase custom rolls at a premium with 6' centers.
2. You can purchase bulk fence, and then purchase stakes separately
3. Or you can purchase standard 100' rolls with stakes at 10' intervals and install additional stakes.

Remember you will need zip ties or some other method to attach the silt fence to the stakes with options 2 and 3.

# READING THE WEATHER

## USING NOAA

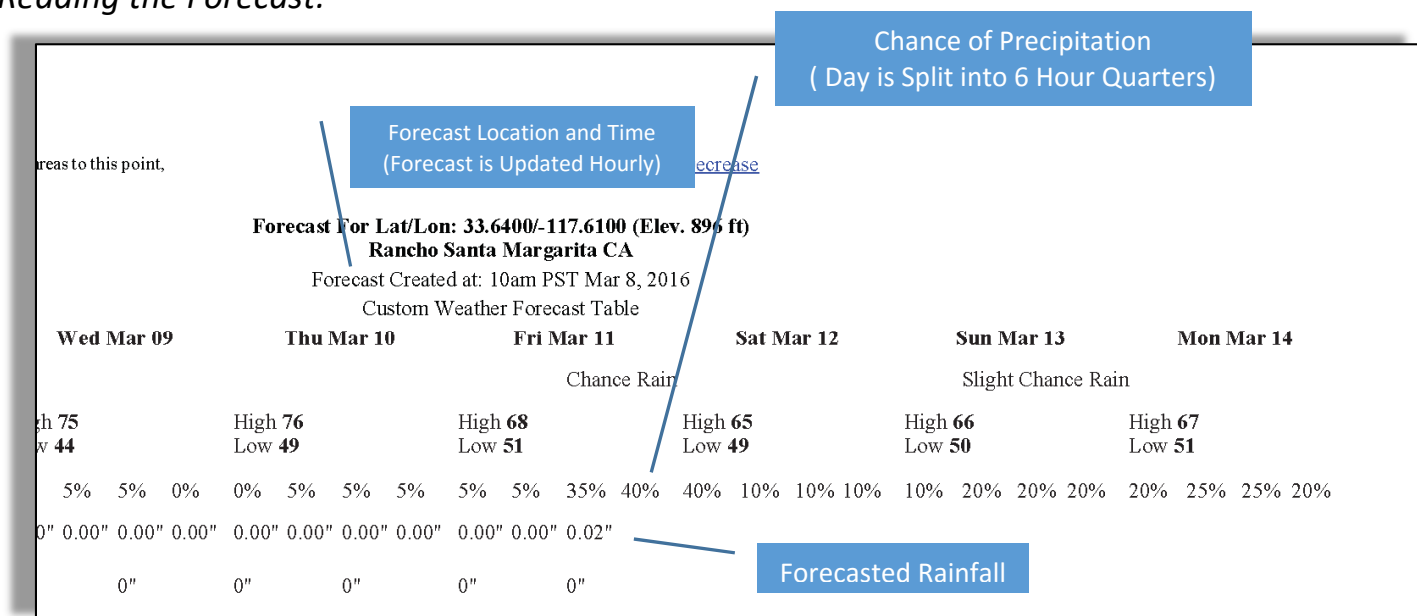
Are you taking your weather every day? If not, you need to be. Daily weather tracking forms the impetus for REAP preparation as well as overall site stormwater management.

### How to Get NOAA Weather:

1. Visit the NOAA Website
2. Enter your project's zip code or city, state in the search box
3. Scroll down to the bottom right hand side of the page under Additional Forecasts & Information
4. Click on Forecast Weather Table Interface at the bottom of the section
5. Click print version (this link can be bookmarked for future dates)

**Good Practice:** Print copies daily, not just electronic copies. Electricity to the job trailer is not always a sure thing!

### Reading the Forecast:



### Triggers to Remember:

A REAP must be developed 48 hours prior to any likely precipitation event  $\geq 50\%$  Chance of Precipitation

Qualifying Rain Event = Any event that produces 0.5 inches or more precipitation with a 48 hour or greater period between rain events

Remember, being on top of weather means a smoother rollout of BMPs, more effective BMPs, and a better managed site.



U.S.

# Storm Water, Long a Nuisance, May Be a Parched California's Salvation

By ADAM NAGOURNEY FEB. 19, 2016

LONG BEACH, Calif. — The winter rains finally arrived in Southern California, bringing drenching relief in recent days to a part of the nation suffering one of the worst droughts in history. But the El Niño storms brought something else as well: a reminder of lost opportunity, on display in this coastal city, as millions of gallons of storm water slipped down the usually dry Los Angeles River and out into San Pedro Bay.

After a year in which Californians cut water use by 25 percent, storm water has become the next front in what amounts to a fundamental restructuring of Southern California's relationship with its intricate water network. More than 200 billion gallons of storm water, enough to supply 1.4 million households for a year, could be captured statewide — but instead end up spilling down sewers and drains and into the ocean, as was on display Thursday, in the hours after the rainfall ended, at the spot where the Los Angeles River ends here.

Nowhere is the disparity felt more than in parched Los Angeles, with its short winters and its overwhelming reliance on water imported from Northern California and the Colorado River. For nearly a century, since deadly floods in 1938 killed 97 people, engineers have focused on ways to flush storm water safely out of Los Angeles as quickly as possible. Now, officials want to capture that water.

“Something that was once viewed as a nuisance is now seen as a necessity,” said Eric M. Garcetti, the mayor of Los Angeles. “We haven’t done enough.”

Mr. Garcetti invoked the legacy of William Mulholland, the city engineer who oversaw the construction of the Los Angeles Aqueduct, as he outlined policy intended to press Los Angeles to increase the amount of storm water captured, to 50 billion gallons by 2035 from 8.8 billion gallons now.

“This is a Mulholland moment,” he said in an interview. “I intend to re-engineer the water system again to keep water here.”

Still, the long-predicted El Niño rains have yet to arrive with the fury that has been promised. While there was heavy rain — and, just as critically, snow — in Northern California through January, Southern California has been baking in record-high temperatures. The rain here on Thursday was the first major precipitation in more than a month.

Potentially more worrisome, the heavy January rains and snows that socked the northern part of the state — home to most of California’s reservoirs — have not kept pace into February. A critical measure, the snowpack, which provides water as it melts into the spring, was at 94 percent of normal statewide last week. Still, meteorologists, pointing to the history of El Niño storms, said the heaviest rains could arrive later this month and in March and April.

The renewed focus on storm water that began five years ago appears to have intensified in recent months. Efforts seem to be hastened by the drought, the promise of El Niño and the widening view — promoted by people like Gov. Jerry Brown, a Democrat — that because of climate change, California is entering into hotter and drier times that will tax an already overburdened water system.

“The view has changed from seeing storm water as a problem to seeing storm water as an opportunity,” said Richard G. Luthy, a professor of civil and environmental engineering at Stanford University. “By capturing storm water, we can take advantage of a local water source to augment our urban water supply. This would mean we would become less dependent on imported water. It means we would have greater resilience against droughts.”

He added: “There’s a realization that the answer to our problem can’t be taking water from someone else or somewhere else. Those days are over. There’s no more water to go get.”

This shift in approach will not be easy. The State Water Resources Control Board had earlier authorized spending \$200 million on an array of projects devoted to capturing storm water. But officials said it would cost more than \$1 billion for the kind of ambitious water-collection goals set by Los Angeles, San Diego and the San Francisco Bay Area.

There is no indication where that money might come from, though Mr. Garcetti noted that in Los Angeles, at least, there would be significant cost savings by cutting back the water the city now needs to buy. Los Angeles imports about 85 percent of its drinking water.

Further, the battle to capture rain will involve more than persuading people to tear out lawns or take water-on-water-off military showers; there is no single project that can capture all the rainwater lost.

Rather, officials said, the job will require a variety of efforts: installing plots of land where water can soak into the ground (these are known as “spreading grounds”); building underground cisterns for homes and businesses; installing new drainage systems on streets, in homes and in shopping center parking lots; and issuing more of the city-subsidized 50-gallon rain barrels that have become an increasingly common sight in backyards here.

“There is so much water that is not caught,” said Marty Adams, the senior assistant general manager with the Los Angeles Department of Water and Power. “We are really kind of scratching at the surface.”



Nearly two-thirds of Los Angeles is paved, meaning water that might otherwise soak into the ground runs down streets, driveways and sidewalks and into sewers. On its way, it picks up pollutants before flowing into the Los Angeles River, which cuts across 43 miles of the region before reaching the ocean.

“Storm water is an important new resource for California that is underappreciated and undercaptured,” said Peter Gleick, a founder of the Pacific Institute, a think tank dedicated to water issues. “Governments increasingly see this as a resource, but it takes time. We are going to see a lot of water this year flood out to the ocean.”

In the future, Dr. Gleick said, “we are not going to solve California water problems with traditional big massive infrastructure that we have built in the past.”

Some advances have been made, particularly in Los Angeles. “It’s amazing, and it’s taken 20 years,” said Felicia Marcus, the head of the State Water Resources Control Board, which supervises efforts to manage the drought. “But you now have an acceleration of interest and intention and dollars really trying to go into that kind of work.”

Still, officials acknowledge that in coming weeks, there might be frequent images of water disappearing down storm drains or into the river.

“There’s a massive amount of water we throw away,” said Andy Lipkis, the founder of TreePeople, an environmental group whose mission includes planting trees. For example, he said, in 2013 — then the driest year on record — “it still rained 3.6 inches on Los Angeles, and we threw away 12 billion gallons.”

A version of this article appears in print on February 21, 2016, on page A14 of the New York edition with the headline: A Parched California Turns to Storm Water for Salvation .

Capital Weather Gang

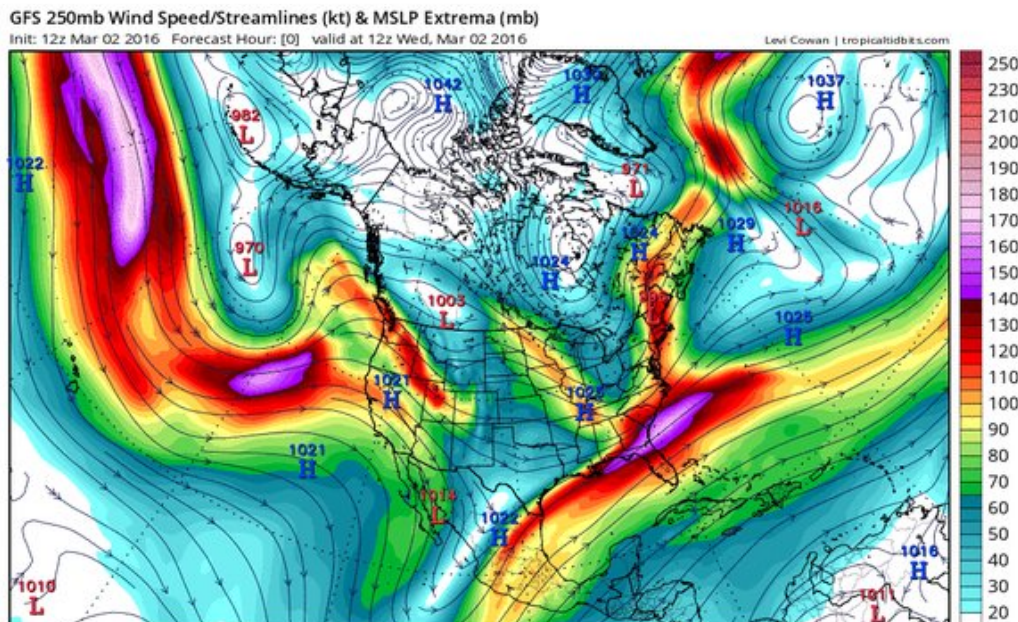
## Snowfall could be measured in feet across Sierra during ‘miracle March’ storms

By **Angela Fritz** March 3

A series of Pacific storms are lined up in the forecast for California over the next week with the potential to dump a truckload of snow on the Sierra mountains. Over the next two weeks, forecast models are suggesting the potential for more than five feet of snow across the Sierra crest — much-needed precipitation at the end of a winter that has not lived up to El Niño hype.

The weather pattern has shifted significantly since February, when record high temperatures were set across Southern California and rainfall totals were [well below average](#). While high pressure dominated the West Coast weather last month, low-pressure systems with strong connections to tropical Pacific moisture appear to be the norm for March. Models are now forecasting this to remain in place through at least mid-month.

After February’s abysmal precipitation, Californians are [calling this month “miracle March,”](#) with fingers crossed that forecasts prove right.



Pacific moisture will stream into the West this weekend and continue through next week. An atmospheric river of moisture — meteorologists call it the “pineapple express” — will extend from the central Pacific Ocean, near Hawaii, all the way to the West Coast. For the lower elevations, the storms that tap into this river could dump up to 11 inches of rain on Northern California over the next week. For the higher elevations, snowfall totals will be measured in feet.

Exactly how much snow the Sierra collects will be determined by how warm the storms are as they come ashore. Though pineapple express systems usually contain boatloads of moisture, they also tend to be on the warm side, which means precipitation will begin as rain everywhere but the very highest elevations before colder air moves in.

For this weekend's storm, the snow level around Lake Tahoe is expected to remain around 8,000 feet through much of Saturday, which means everything below 8,000 feet will fall as rain. This includes Donner Pass, where Interstate 80 crosses the Sierra at a peak elevation of around 7,000 feet. Once the cold front sweeps through, snow levels could drop to around 6,000 feet — or lake-level — on Sunday or Monday.

As much as two to three feet of snow could fall along the Sierra crest through Monday morning alone. But over the next two weeks, models are forecasting the possibility of up to six feet in the highest elevations. In its long-range outlook, the National Weather Service is forecasting "heavy snow" in the northern and central Sierra Mountains every day from Saturday through the following Monday, March 14. That's 10 days in a row with heavy snow in the forecast.

Sierra snowfall is just as important for drought conditions as the rain that runs off into reservoirs. Snow pack serves as secondary reservoirs for the state, holding water in the form of snow until the spring months when it can replenish lakes. The water that flows through reservoir dams also enables utilities to generate hydroelectric power, instead of relying on greenhouse gas-emitting coal or gas.

California is in basically the exact same drought situation that it was in one year ago, despite a winter's worth of strong El Niño conditions and wild forecasts. As of Thursday, a little more than 38 percent of the state was in "exceptional drought" — the most severe category on the U.S. Drought Monitor scale. That's only down from around 40 percent at this time last year.

Though very strong El Niño years have a history of big Sierra snow pack, this season has been running close to average — far from the snowiest season on record back in 1982-1983, but much better than last year's paltry winter. On Feb. 1, snow water equivalent, or how much water is contained in the snow pack, was estimated at over 100 percent of normal for the date in the north, central and southern Sierra.

That changed after a month of warm and dry conditions. As of March 3, central Sierra snow water equivalent was down to 82 percent of normal for the date — about six inches less than what is measured at this point in an average year. The region would need around eight additional inches of snow water equivalent to stay in place through April 1 to call this an average year. Although it's the best precipitation the state has seen in half a decade, what California really needs is an above-average year.