



The Monthly Dirt
A monthly newsletter on the California
Construction General Permit

HYDROSEEDING

Setting your site up for success!

Hydroseeding is an expensive proposition. We understand that while hydroseeding can be one of the best BMPs for certain site areas to achieve soil stabilization and coverage, it can be quite a gouge in the budget too. There are a lot of factors that can contribute to the success or failure of this particular BMP selection, and because it is such an expensive endeavor, we want to help you achieve success on your first try and not have to repeat the process over and over again until stabilization is accomplished. In this month's edition of **The Monthly Dirt**, we will give you tips that will hopefully help you achieve success!

To get started, it's important to understand the difference between hydromulching, hydroseeding, and hydraulic seeding. It is not uncommon to hear these terms used interchangeably, even though they refer to completely different techniques. **Hydromulching** involves applying a slurry of water, a mulch product (usually made from wood fiber), and often a tackifier, to problematic areas in an effort to prevent soil erosion. **Hydroseeding** is much the same as hydromulching, except that a seed mix and, many times, a fertilizer are added to the hydromulch slurry. **Hydraulic seeding** sounds similar to hydroseeding, except that the seeds are applied without the mulch product, tackifier, or fertilizer. Since there is nothing to hold the soil in place until the seeds germinate, hydraulic seeding is not considered an effective erosion control measure until the plants reach maturity.

To be successful, hydroseeding requires a team effort. It just takes one person to add "EC-4 Hydroseeding" to a SWPPP, but it takes a whole team of people to make it work successfully. Sometimes we think hydroseeding simply starts with QSDs specifying hydroseeding or even certain seed mixes in the SWPPP, but in reality it starts long

before that. Seed developers grow and gather seeds and blend mixes that are location and climate-appropriate for the diverse regions in California. Contractors need to prepare the soil by track walking, smoothing, and making sure that the organic soil content is sufficient to support healthy vegetation. And hydroseeding companies need to help specify the right approach and application for the site. This BMP selection is definitely not a one man job.

Success is also dependent on choosing the right seeds. The choice of seed (or seed mix) depends on quite a few factors. First, it's important to determine the climate and soil type of the project location. California is a very diverse state – within a few hours, you can drive to the rugged Sierra Nevadas, the fertile Central Valley, the beaches of Southern California, or the wastelands of the Mojave Desert. Plants that thrive in the warmer San Diego climate will not last long in the Lake Tahoe area (nor would you want San Diego plants in Tahoe – but more on that later). You will also want to consider the slope of the area to be hydroseeded. Not all plants grow well on a slope, and depending on how steep the slope is, the hydroseeding may fail without some form of

reinforcement. Will the area be irrigated? Many seed mixes are designed with arid conditions and seasonal rains in mind and usually require little (if any) irrigation. But if the application area can handle it, irrigation will often extend the growth time of the plants for a longer green period. Another important consideration is the desired longevity of the hydroseeding, and whether you need the plants to reseed themselves. Some seed mixes are better at reseeding than others, and often irrigation is recommended to help get satisfactory reseeding. Probably one of the most important questions to consider when choosing a seed mix is whether native or non-native plants should be used. Native landscaping is becoming very popular in California, and native plants would likely be preferable in many cases, especially if the longevity of the hydroseeding application is longer than a month or two. In some sensitive areas, native species may be required for hydroseeding applications. In speaking of seed types, diversity is extremely important. In a field training event, the USDA Natural Resource Conservation Service demonstrated, using an excavated trench in a vegetated area, how plant diversity provides greater stability of the soil. Plants with deep

tap roots provide vertical stability while plants with shallow spreading roots provide horizontal control. Caltrans also advocates for diversity stating, *“in selecting plant material to control erosion, designers should try to maximize all potential environmental benefits of roadside planting. Because roadside planting is linear, adding pollinator friendly plants to the roadside can help restore transportation corridors for pollinators and other wildlife. For example, adding pollinator friendly plants to roadside erosion control mixes could increase the pollinator population in California by closing gaps in the corridors that connect butterfly breeding grounds along the coast with their winter homes in Arizona, Nevada, Oregon and Washington. A diverse seed mix that can address a variety of environmental problems (erosion control and pollinator propagation) is always preferable to a planting palette that only addresses a single environmental issue.”*¹

As every gardener knows, soil health determines a lot of the success of a garden’s harvest. So too, the type of soil affects the germination rate and success of the seed. If fertile topsoil was removed and preserved throughout the duration of the project and then returned to be used in landscaped areas, the soil should still be nutrient rich. Historically, that has not always been the case. Topsoil tends to get mixed into the construction and grading activities and the infertile soil beneath the fertile layer of topsoil gets moved to the surface where it becomes the base for future vegetation – which if the word infertile didn’t give it away, is not a great scenario for trying to grow anything. But now under the 2022 Construction General Permit, there are requirements to preserve topsoil. It is also important to select the right seed mix for the location. For some projects, California native mixes are the only species allowed – and these native mixes can be notoriously finicky to grow. They get easily choked out by invasive and noxious weeds, especially when the hydroseed is applied with a fertilizer. Natives tend not to respond to fertilizers, whereas weeds do. Applying fertilizer just promotes the competition. Geographically where you plan to hydroseed affects which type of seeds you select. California native species are location specific – what grows in San Diego won’t necessarily grow in the Sierra foothills. Nor should it. Selecting a native mix appropriate for the application location is very important. And while some locations allow

you to plant non-native species, there are other locations which must maintain a strict natives-only seed mix. Caltrans has an online resource that can be very helpful in finding native seed types for your area. **TransPLANT** is a tool to aid professionals in selecting regionally appropriate plant species for erosion control, revegetation, biofiltration, and other highway planting situations. It takes into consideration factors such as elevation, rainfall, soil type and regional plant communities.

Success is also influenced by the time of year when hydroseed is applied. There are a lot of elements which go into determining when you should hydroseed – some of which are not completely predictable. But there is definitely a correct season to hydroseed. *The ideal scenario is to hydroseed before the seasonal rains begin in the fall (around the end of August – September) so the seeds can germinate while the weather is still warm and when moisture first arrives. This allows the seedlings to establish and take root before becoming dormant for winter.* After winter, when the weather warms and the spring rains arrive, the plants will usually spring back to life and develop seeds which will help with propagation of the vegetation during the next season. And although the spring season appears perfect for hydroseeding, doing it in March or April may be too risky for successful germination and sustainable vegetation rates. Because while germination may occur with the spring rains, especially in California, there isn’t a guarantee of more rain in the forecast and the seedlings might sprout and get burned off by the warming temperatures and lack of water before they have a chance to establish and have a full life cycle. While temporary irrigation may help to somewhat sustain the growth, it may not be enough for complete establishment. Likewise, hydroseeding in the dead of winter can lead to less successful growth rates. Heavy rain might either wash seeds away or allow germination to begin prematurely. Most people would say that early summer is the worst time to hydroseed. But that’s not necessarily true. Seeds, especially natives, will lie dormant like they do in nature, until the right weather conditions occur. Yes, there is a chance of birds or mice eating the seeds, foot or vehicle traffic disbursing or damaging them, or germination beginning and then abruptly ending, but most of the seeds will just wait for the right time to grow. If you have to

hydroseed and establish some sort of vegetation in the dead of summer, you will need to select a warm season native or non-native – there are several grasses and forbs and some wildflowers which grow well during warmer months. However, summer native mixes tend to be more limited, and you have to install temporary or even permanent irrigation to help these seeds germinate and establish. *If you go with native species, you have to pay attention to the calendar. They need a full season of cooler weather and rain to establish them. Otherwise, use non-natives.*

And here’s one last consideration for achieving successful hydroseeding. Say you’ve found suitable erosion control seed mixes from two separate suppliers. One supplier is charging \$3.50 per pound, while the other charges \$6.00 per pound. Most people would choose the \$3.50 product, assuming that it’s the better deal of the two. Or is it? You may be saving a little money by going with the cheaper product, but you might also be sacrificing quality. The seed industry uses a term called “Pure Live Seed,” or PLS – this is the percentage of the seeding mix that is actually viable seed, versus the percentage of the mix that is essentially of no value. A higher PLS percentage means a higher rate of germination and consequently requires fewer bulk seed. For instance: the first supplier may sell seed that is only 45% PLS and requires an application rate of 60 lbs. per acre, while the more expensive supplier may be selling seeds in the 90% PLS range which only needs to be applied at 30 lbs. per acre. So even though you may be paying more per pound for seed from the second supplier, you won’t have to buy as many pounds of seed, which may end up saving you money.

We hope you have great success with your next hydroseeding application!

¹ [CalTrans Hydroseeding Guidance](#)

Please contact us if you have any questions ...
The Monthly Dirt

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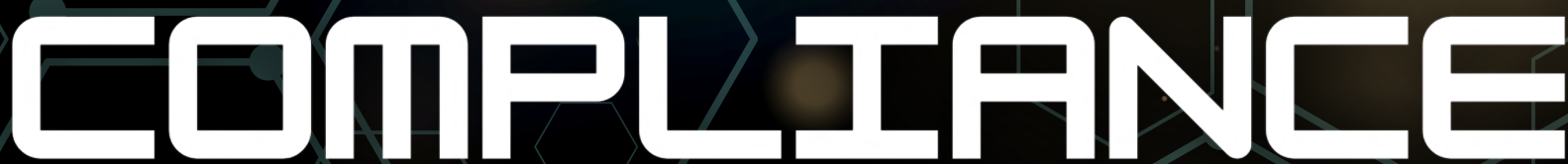
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2009 CGP

NOTICE OF TERMINATION

On September 1st of this year, the 2009 CGP will be terminated and all projects will need coverage under the 2022 CGP. 2009 SWPPPs will need to be converted to meet the 2022 Permit requirements and 2009 projects will need to be completed or apply for 2022 CGP Permit coverage by August 31st.

Need help converting your 2009 CGP sites to
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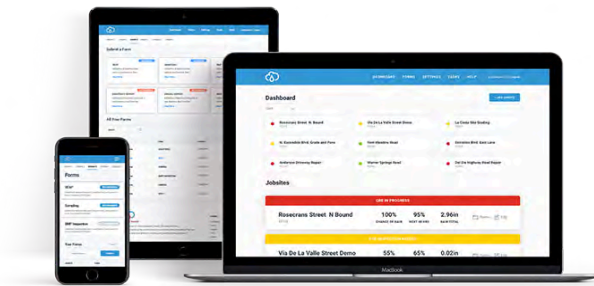
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