

Companion Guide

to the ‘Growing Responsible and Socially Sustainable Cannabis’ Self-Assessment Tool, ‘GRASS-C’

OVERVIEW and PURPOSE of the Companion Guide to the GRASS-C (“Companion Guide”)

This document was designed to parallel the Growing Responsibly and Socially Sustainable Cannabis (GRASS-C) self-assessment tool, which allows outdoor cannabis growers to score themselves on their application of watershed best management practices. The vision for the GRASS-C is to develop it into a certification program, with willing Resource Conservation Districts as the third-party certifiers. **This guide is for the grower who would like additional information on what some of these practices are, what they look like, how they can be implemented, and when to seek professional guidance.**

Resource Conservation Districts (RCD) are autonomous semi-governmental special districts established during the Dust Bowl to disseminate understanding of water and soil conservation practices to local landowners. They are governed by locally-appointed or elected boards of directors, and they are a trusted source of local expertise on land stewardship and best management practices. When you encounter a challenge in any of the subjects listed in the GRASS-C, call your local RCD. To find your local RCD, you can use the map available at the California Association of Resource Conservation Districts (CARCD) website, <https://carcd.org/rcds/find/>

For a general description of best management practices for cannabis growers, see Mendocino County RCD’s publication Watershed Best Management Practices for Cannabis Growers and other Rural Gardeners, which we will refer to as the “Cannabis BMP Guide.” **Also available in Spanish** and found at <http://mcrd.org/resources/publications>



The State Water Quality Control Board’s Cannabis Cultivation Policy (“Cannabis Policy”) is implemented through the General Waste Discharge Requirements for Discharges of Waste associated with Cannabis Cultivation Activity (also known as the “General Order” or “Permit”). Those enrolled in the Permit are subject to the requirements of Attachment A of the Cannabis Policy. To help the grower understand when recommended best management practices intersect with the Cannabis Policy, this document refers the grower to the Cannabis Policy, updated and approved on April 16, 2019, found at https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf.


This Companion Guide is a work in progress. Please send all feedback to: sara-letton@carcd.org

The information provided in this Companion Guide parallels that content and flow of the GRASS-C self-assessment tool. To obtain a copy of the GRASS-C, please see <https://www.us-ltrcd.org/sustainable-cannabis>.

INSTALLATION OF GROWING OPERATION

Land Use & Conservation Measures


Topography -

- What is a [conservation plan](#)? Contact your local RCD for more information.
- How to measure slope, angle and aspect (both old fashioned way and using a smartphone) ([video](#))
- How to determine landscape slope, using professional tools ([video](#))
- How to estimate area and draw a property map using Google Maps ([video](#))
-  Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) evaluates threats to water quality based on the slope of the cultivated area and the proximity to waterbodies. See page 18.

Soils -


- The [Cannabis BMP Guide](#) discusses soil health and management starting on page 33.
- Learn how to find out your soil types using the NRCS Web Soil Survey (WSS) ([video](#))
 - This is the [WSS site](#)
 - How to interpret your soil types: Read the 'map unit description' after using the WSS above. This is downloadable and printable as well. There is a wealth of information about your soils available from the different tabs.

Light/Sun -





- Removing native vegetation to increase your crop's access to natural light might be a good idea, but you may run afoul of your Water Board Permit if you remove commercial trees or oaks, especially those in a riparian area.
 -  Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#):
 - notes when you need to hire a California Licensed Timber Operator on page 21 of Attachment A.
 - notes restrictions of cutting trees in riparian habitat on page 29 of Attachment A.

Access/roads -

- The [Cannabis BMP Guide](#) discusses road construction and maintenance starting page 24.
- This shows the basics of a [proper road surface](#), page 20.

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 Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) is heavily concerned with potential erosion from roads, see pages 38-46 of Attachment A.
- [Pacific Watershed Associates Handbook for Forest, Ranch, and Rural Roads](#) was updated as a project Mendocino County RCD. This is a 420 page book, and it is the one the professionals use. Projects involving the design of roads and watercourse crossings often require a professional. Call your local RCD for a recommendation to a licensed professional.

Waterbodies -

- Mendocino County RCD's [Cannabis BMP Guide](#) discusses surface water diversions starting on page 13.
- Various smartphone apps can be helpful to measure distance from a waterbody ([video](#))
- If you want to find out what basin you are in and what basins are downstream, input your address into the search bar in the upper left corner of this [interactive map](#) legend.
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Permitting intersection: Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) evaluates threats to water quality based on the slope of the cultivated area and the proximity to waterbodies. See page 18.
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Permitting intersection: Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) defines the 'setback requirements' (between 50 - 150 feet, depending) of the cultivation area in Section 1, Requirement 37 on page 31 of Attachment A.
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Permitting intersection: Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) talks about springs on page 68 of Attachment A.
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Permitting intersection: Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) defines the waterbody type:
 - Waterbody definition, page 16 of Attachment A.
 - Water body type, page 31 of Attachment A.
 - Exemption for indoor cannabis growers, page 32 of Attachment A.

Fish and Wildlife Resources -

- How do you know if you need to do a biological survey and how would you go about selecting someone?
 - Your local RCD may have a qualified biologist on staff to walk your property and tell you if you likely have species or habitats of concern to CDFW. The RCD may be able to perform a formal survey or recommend someone.
- What should you expect from the survey?
 - The extent of the survey depends on who is asking for it, and if it concerns a state permit. Consult your local RCD for guidance. This [link](#) is for guidance for a biological survey requested by the State Water Resources Control Board

- This [link](#) is for a template for a biological survey requested by the Water Board.
- This shows how to make an easy map to demonstrate the areas of your property ([video](#))
- The following list provides information on how to provide insect and wildlife habitat
 - [Hedgerows](#)
 - [Bird stands](#)
 - [Songbird, bat and owl boxes](#)
 - [Monarchs](#)
 - [Bees 1](#)
 - [Bees 2](#)
 - [Bees 3](#)
 - [Bees 4](#)
 - For more extensive habitat projects such as incorporating predatory bird stands, protection of stream habitat, preservation of wetlands, and forest/woodland area management, contact your local RCD for guidance.

Cultural Resources


- If you have ever found something that you suspect is a historical or cultural resource, reach out to your local RCD for advice on how to find and move forward with a desktop analysis by a qualified archaeologist. If something of concern is found via desktop, then the qualified archaeologist will advise you.

Planting Setup

Power -

- The [National Center for Appropriate Technology's Energy page](#) will educate you on how to minimize energy needs and/or generate energy on site.

Water -

- Mendocino County RCD's [Cannabis BMP Guide](#) provides water use and conservation tips starting on page 8.
-  **Permitting Intersection:** If you are interested in growing licensed commercial cannabis and you have not yet verified/secured your water right with the State Water Resources Control Board's Division of Water Rights, start [here](#).
- Sources of water used for irrigating cannabis should be sustainable. If the water source is groundwater, a proximity analysis and well draw down calculator should be conducted to determine how to minimize groundwater impacts. Contact your local RCD about this.
- If the source is from surface-water, withdrawals should be limited to wet months (January to April). Surface-water pumps should be screened with openings no greater than 3/32" (i.e., small enough to exclude small fish) and screen diameter must be large enough that the suction pressure is invisible. [National Marine Fisheries Service has guidelines](#) for surface-water screens.

- [Rain water harvest](#) and [greywater](#) . These are sources of water that can be used for irrigation. If these systems are used, they should be designed, engineered, and operated to be used during wet winter months and avoid impacts to neighboring waterbodies.
- This document has some [information on water storage reservoirs](#), but read your water supply documents carefully and make sure you are in compliance with the [Water Board Division of Water Rights](#) before considering a water infrastructure project.
- Trout Unlimited put together a helpful pamphlet, “[A Guide to California Water Rights for Small Water Users](#)” and it does refer to cannabis growing specifically.
- [Water conservation and water quality, especially in a greenhouse](#): page 18,
- Water conservation on a cannabis farm ([video](#)).
- Southern Sonoma RCD provided great photos and DIY solutions to stormwater management and water conservation in their publication, [Slow It, Spread It, Sink It](#)

Noise -

- Find out your local noise ordinance and the decibel level for compliance.
 - Download a decibel reading app on your smartphone and test while you are running different sorts of equipment to find out if you are in compliance.

Spacing -

- How do you know what the ideal spacing is for your soil, rootstock, terrain, variety, and clone in order to reduce the likelihood of pest transmission?
 - This is a question for your industry professionals and is outside the scope of RCD technical assistance.
- There are many videos available on [youtube.com](#) on a search for “trellising and training cannabis”

Odor -

- **Local Permitting Intersection:** Check with your city or county codes to see if they require odor control plans. Their guidelines may require that the plan be reviewed by a licensed Professional Engineer or Certified Industrial Hygienist. This is an [example](#) from Modesto.

OPERATION AND MAINTENANCE PRACTICES

Crop Water Use

Source of water



- **Permitting intersection:** Permitting intersection: State Water Quality Control Board’s Cannabis Cultivation [Policy](#) describes:
 - water flow and gauging requirement, pages 11-13
 - Small Irrigation Use Registration, page 23

- [Water rights information and consulting firms and attorneys](#) from the California State Water Resources Control Board
- For cannabis-specific discussion, see the bottom of page 7 and beginning of page 8, and page 10, of Trout Unlimited's '[A Guide to California Water Rights](#)' (May 2019)


Irrigation practice –

- [Microirrigation](#) tips from UCANR
- Water and soil conservation tips for cannabis growers ([video](#)) from SYRCL.

Water quality

- A water quality analysis will tell you what minerals are present in your water which will help you determine troubleshoot irrigation line maintenance issues and help you choose complimentary nutrient management strategies. Ask your local RCD where to go to get a reliable water quality analysis.
- How do you interpret the results? Usually, water quality results should be interpreted in combination with soil test results. Water quality results that would be red flags for one type of soil can be ignored for another one. Most labs will not really interpret results, though they may flag a result that is outside of the "good" range, and then you have to research it yourself to give that context. Ask your local RCD for help interpreting your soil and water quality results.

Soil & Sediment Erosion Control

- Mendocino County RCD's [Cannabis BMP Guide](#) has a help section on roads and land development starting on page 18.
- RCD of Monterey published a helpful document compiling information about approaches and techniques for managing runoff from hillside farmland, including information on cover cropping, [Hillslope Farming Runoff Management Practices Guide](#)
- What does [mulch](#) do?
- 'Healthy Soils' on cannabis farms ([video](#))
-  Permitting intersection: State Water Quality Control Board's Cannabis Cultivation [Policy](#) requires Site Erosion and Sediment Control Plans for cannabis operations at moderate risk. It talks a lot about erosion control, starting on page 37 of Attachment A. It explains the mandate for Site Erosion and Sediment Control Plans on page 73 of Attachment A.
 - If your site may necessitate an Site and Sediment Erosion Control Plan, you may consider employing the help of a longstanding leader in erosion consulting, such as [Pacific Watershed Associates](#). Or, ask your local RCD for a recommendation.
- What are filter strips?
 - [NRCS Practice 393](#):
 - [UCANR Filter Strips 393](#)
- [Prevent erosion from your soil piles](#), page 16 and 21:
- [Conservation Cover](#)

- [Vegetative barrier](#)
- “[Groundwork](#)” is all about erosion and what you can repair and how to know when you need to hire a professional, published in partnership with Marin RCD:
- Improper road construction could potentially lead to significant erosion. See the Roads Manual, previously mentioned: [Pacific Watershed Associates Handbook for Forest, Ranch, and Rural Roads](#)

Waste Management


Collection facility/process

- What does ‘adequate’ storage of waste materials really mean or look like?
 - [Cal EPA resource](#) on Cannabis Waste Management
 - [Trash storage](#), page 12:
 - [Fuel facilities](#), page 13:
 - [Stormwater BMP resources](#) from CASQA.

Composting

- How can you make compost and how long to leave it? [UCANR on compost](#).
- How to [properly locate, buffer and cover a compost pile](#): Page 10
 - [UCANR Buffer Strips](#)

Disposal Area

- How do you know if you have sufficient solid waste storage areas?
- [Storing and containing potential waste](#) discharge, Page 11
-  **Permitting Intersection:** Permitting intersection: State Water Quality Control Board’s Cannabis Cultivation [Policy](#). Setbacks are described on page 31 of Attachment A.
- [Hazardous versus nonhazardous](#) resource from the EPA.

Soil Management

- Soil management on cannabis farms ([video](#))
- Resource from the NRCS on [Nutrient management](#).
- Talk to your local RCD staff about how to estimate the organic vs inorganic proportion in your soil.

Materials Storage

- [California Fire Code Hazardous Materials Management Plan](#)
- California Office of Emergency Management resource on [Hazardous Materials Business Plans](#)
- California Office of Emergency Management [help to develop preparedness programs](#)

- Oftentimes products come with a Material Safety Data Sheet (MSDS). You must keep this onsite, and available to those handling the chemical. A simple binder in the storage facility could work best.
- [California and MSDS](#)
- Several websites allow you to download and print MSDS. An account or payment may be required.
- If you have a specific question or need additional information on an MSDS, please call the Cal/OSHA Consultation Service at 1-800-963-9424 or HESIS of the Occupational Health Branch at 510-622-4317 (English)
- California [Hazardous Materials Spill Guidance](#)

Pest Management

- What pests are typical on cannabis? Because of recent research restrictions, peer-reviewed research is limited and thus resources from IPM experts such as from UC Agricultural and Natural Resources are hard to find. Peer-to-peer expertise is heavily relied upon for now, while new research is being conducted. Here is a [recent article](#) by a California-based IMP non-profit, with citations.
- [Clean Green Certification list of approved pesticides](#)
- Cannabis Pesticides that are [Legal to Use, according to DPR](#)
- Cannabis Pesticides that [Cannot be Used, according to DPR](#)
- [Pesticide storage](#) tips, page 16
- [Hedgerows provide habitat for beneficial insects](#)
- [Managing garden pests](#), article
- ATTRA has a new Ecological Pest Management, [on-line pest management tool](#) for farmers. This database highlights reduced risk materials that can be integrated with ecological pest management strategies.
- [Organic Materials Review Institute](#) (OMRI), (the generic search tool is very helpful also).
- [CDFA Fertilizer Product Database](#) – Organic Input Materials (OIM)

WORKFORCE

Social Equity and Labor Management

- Search “California employee handbook template”. A number of templates are available for a fee.
- [Job Hazard Analysis](#) publication from OSHA
- Information for employers in California from the [Employment Development Department](#)
- The California Office of Human Resources provides some helpful [guidance and links regarding grievances](#).