CULTIVATION & OPERATIONS PLAN

VERSION: 06-14-2023

APPLICANT: PACIFIC ROOTS CANNABIS LLC

APN: 104-232-012 & 105-141-001

Submitted to:

County of Humboldt
Planning and Building Department
3015 H Street
Eureka, California 95501-4484
(707) 445-7541

Prepared by:

Cenci Consulting
Po Box 148
Petrolia, CA 95558
Contact: Kate Cenci
cenciconsulting@gmail.com
(707) 616-7207

On behalf of:

Pacific Roots Cannabis LLC
PO Box 118
Petrolia, CA 95558

TABLE OF CONTENTS

1. INTRODUCTION

1.1. PURPOSE

This Cultivation and Operations Plan is intended for Pacific Roots Cannabis LLC (the "Applicant") on APNs 104-232-012 and 105-141-001 (the "Property"), which is one legal lot as defined by Humboldt County Code (HCC). It is structured to address Performance Standards set forth in Humboldt County's Commercial Cannabis Land Use Ordinance (CCLUO), No. 2599 (aka "Ordinance 2.0") §55.4.12, as well as other requirements set for the by the County Planning Department). The specific Performance Standard that is addressed by each section is listed in the section title.

1.2. EXECUTIVE SUMMARY

Pacific Roots Cannabis LLC is seeking Special Permits for 33,576 sf of new open-air full-sun outdoor cannabis cultivation, manufacturing (non-flammable extraction and infusion), and distribution, and a Zoning Clearance Certificate for commercial processing on APNs 104-232-012 and 105-141-001. Existing permitted operations include 5,040 sf of commercial nursery space, 9,984 sf of mixed-light greenhouse cultivation with supplemental lighting not to exceed 6 watts/sf, although the use of lighting has yet to occur due to electrical availability at the site. On-site processing was previously approved under PLN-2019-15618 but has yet to be implemented.

Within this application, the Applicant is also requesting a reconfiguration of existing cultivation and nursery spaces. This will reflect current cultivation layout at the site and allow for use of an existing legal non-conforming barn. Also proposed is the relocation, size, and layout of a new multi-use building, aspects of which were proposed in the previous application.

Cultivation will result in 1-3 cycles annually, depending on the method. The Project proposal includes permitting of proposed facilities and structures that are appurtenant to the cultivation activities, which include 1,920 sf of drying facilities and 608 sf of storage. Proposed reconfigured Nursery facilities total 5,120 sf and include 4,416 sf of greenhouses, 320 sf of indoor/enclosed clone room, and 384 sf of indoor/enclosed R&D space. The total Nursery footprint is + 80 sf to that which was previously approved for all nursery areas.

A 2,016 sf multi-use building with commercial space and ag-exempt area is proposed to house 768 sf drying space, 384 sf of R&D (shared portion of drying space), a 560-sf commercial processing facility that includes breakroom and bathroom, 120-sf manufacturing facility, and 168-sf distribution facility. Processing and distribution will focus mainly on cannabis and manufactured cannabis products produced on-site but will allow for distribution of off-site cannabis, as well. While a new commercial building was previously approved under PLN-2019-15618, the Applicant is proposing herein to relocate the building, redistribute facilities within it, and add manufacturing and distribution.

Total water demand for all cannabis activities and associated uses is projected to be 462,836 gallons. Of that amount, water use specifically for cannabis irrigation is projected to be 367,631 (6.6 gal/sf cultivation, 17.1 gal/sf nursery). All water for cannabis activities will be sourced from rainwater catchment. A total of 500,000 gallons of water storage is proposed. Water will be stored on-site in one agricultural pond with ± 425,000-gallon capacity, and fifteen (15) plastic tanks, each with 5,000-gallon capacity (total 75,000 tank capacity). Power is from PG&E service and on-site solar array. There will be a maximum number of 10 employees: 3 year-round plus an additional 7 during peak seasonal operations. Access to the site is from Chambers Road, a paved County-maintained road.

1.3. COMPLIANCE & INSPECTIONS (§55.4.12.1.1-7, §55.4.12.2.1-4,7)

The Applicant will comply with all environmental protections and standards, performance standards, and associated reporting, payment of fees, inspections, and licenses in conjunction with the following regulations and/or agencies, as applicable:

- Humboldt County CCLUO 2.0
- Humboldt County Planning & Building Department (the "Department")
- California Department of Cannabis Control (DCC; CCR Title 4, Div.19, Cpt.1 §15000-17905)
- State Water Resources Control Board (SWRCB; Order No. 2019-0001-DWQ)
- California Department of Fish & Wildlife (CDFW; CCR Title 14 § 722, Standard LSAA for Cannabis Cultivation & Non-cannabis, App. ID: EPIMS-18009)
- California Department of Pesticide Regulation (CDPR)
- California Department of Tax and Fee Administration (CDTFA)
- Humboldt County Treasurer-Tax Collector
- Humboldt County Agricultural Commissioner
- California Department of Industrial Relations, Cal-OSHA, US Department of Labor, and any other employment regulations and agencies

The Applicant consents to inspections and terms thereof outlined in CCLUO 2.0 as well as other inspections as described in various documents put forth by the agencies listed above.

The Applicant is a registered "agricultural employer" with the California EDD.

1.4. RELATED OPERATIONS

The Applicant holds current County permit PLN-2019-15618 and associated state licenses CCL20-0000319 and CCL20-0000317 on the Property for commercial nursery and 10,000 sf Tier 1 mixed-light cultivation, respectively, as well as a state license for transport-only self-distribution

(C13-0000223-LIC). The County permit also already authorizes on-site processing and Research and Development (R&D) garden in a new commercial building, although these items have not yet been implemented.

2. SITE INFORMATION

2.1. SITE HISTORY

A Zoning Clearance Certificate (PLN-2019-15618) was approved by the County in November 2019 under Ordinance 2.0 authorizing 10,000 sf of open-air cultivation in greenhouses, associated drying and processing, and commercial nursery operation. A Substantial Conformance review was completed early in 2020 to allow for reconfiguration of the cultivation and nursery areas within the same disturbed area as originally proposed. After receiving state permits in spring 2020, the Applicant began cultivation and nursery operations, which were continued in 2021.

2.2. SITE CHARACTERISTICS

The Project site consists of a flat agricultural field predominated by native and non-native pasture grasses. The site is immediately bordered to the north and west by neighboring pastureland and to the south by Chambers Road and a eucalyptus (*Eucalyptus globulus*) grove. East Mill Creek (Class I stream) runs north-south through the Property near the eastern boundary, and a narrow strip of riparian vegetation runs along both sides of the stream. A small Class III drainage is found roughly in the middle of the Property, near the southern border. A handful of trees and shrubs are found along this drainage. More extensive woodlands occur approximately 1, 0.5, and 0.75 miles to the north, northeast, and east, respectively. Climate at the site is dominated by coastal and geographic influences, with year-round strong winds. Due to this weather feature, the Applicant intends to erect wind fencing and/or plant windrows where necessary around the Project site.

2.3. ROAD SYSTEMS (§55.4.12.1.8)

2.3.1. ACCESS ROADS & DRIVEWAYS

A private driveway currently provides access to the Project site from Chambers Road, which is a paved county-maintained road developed to the Category 4 Standard. (Please see the *DPW Road Evaluation Report* included in the application package.) The driveway only provides access to the parcels of the Property. The current length of the driveway to existing infrastructure is approximately 0.16 miles. The driveway access is slightly different that shown on PLN-2019-15618 application materials, as a fork was added to the west, approximately 0.06 miles in length, to limit travel through an area of the Property that contains non-cannabis structures. The drive is gravel-surfaced, does not cross any streams, wetlands, or drainages, and required no grading activities. Slope of the drive is 3% or less.

Chambers Road and the private driveway will see routine use during project operations. Current traffic levels associated with *existing* operations consist of:

- Employees traveling to cultivation and nursery facilities (there are currently no processing activities, although this was approved in the current permit and associated traffic impacts were considered at that time of review)
- Other cultivators traveling to and from the commercial nursery
- Distributors traveling to and from the site
- Deliveries of supplies and materials

Traffic will moderately increase above current and "routine use" along Chambers Road and the private driveway during the initial phase of the Project, when any construction and site preparation activities are taking place. Traffic will also increase above current levels during spring planting and fall harvest as a result of additional employees (for expanded cultivation operations and implemented processing operations) traveling to and from the site. Sixteen (16) trips/day are anticipated during peak operations. Daily peak use time is estimated to be between 7:00 – 9:00 AM and 5:00 – 6:00 PM. Traffic shall observe a 5-mph maximum speed limit on the private drive and 25-mph maximum speed limit on Chambers Road.

The Applicant shall maintain the intersection of the driveway and Chambers Road in accordance with the requirements of HCC. These include ensuring all fences and gates are not located within the County right-of-way and will not impede traffic when being open and closed. The visibility triangle will be maintained in accordance with HCC §341-1. No construction or new buildings are proposed within the visibility triangle. If any fencing is installed, it shall be of a nature and type that does not obstruct vision, and all brush and vegetation shall be kept mowed at this intersection. In 2021, the driveway apron was paved and meets current County standards for a commercial driveway.

The driveway surface beyond the paved apron and will be maintained so as to minimize dust during the season of use, in accordance with SWRCB Order WQ 2019-0001-DWQ.

2.3.2. STREAM-CROSSINGS

Currently the only stream crossing on the Property is that of Chambers Road at East Mill Creek, at the far southern property boundary. Installation and maintenance of this crossing is the responsibility of Humboldt County Department of Public Works.

2.3.3. PARKING PLAN & FIRE-APPARATUS TURN-AROUND

A total of fifteen (15) designated parking spaces will be located onsite. Fourteen (14) spaces will be arranged in perpendicular fashion on either side of the driveway approximately 150 ft from the intersection with Chambers Road. One (1) ADA-compliant van-accessible space will be located adjacent to the new multi-use building, near the southeast corner. Parking is based on all activities being conducted by a maximum of 13 employees during peak times. If additional

employees are hired in the future, the parking area will be enlarged to accommodate more vehicles, if applicable, subject the requirements of HCC §313-109.1. Parking spaces shall be without cover with the area of each parking space 9 ft x 18 ft, and each ADA space 14' X 18' to meet both CCR and HCC requirements.

The turn-around area has been relocated from previous plans and now consists of a hammerhead/T configuration located off a spur from a southwestern corner of the access road. The turn-around area is at least 60 ft in length and as wide as the driveway – which is approximately 12 ft – in order to meet CalFIRE SRA requirements.

The parking and turn-around areas shall be maintained so as to minimize dust during the season of use, in accordance with SWRCB Order WQ 2019-0001-DWQ.

3. ENVIRONMENTAL STANDARDS

3.1. STORMWATER MANAGEMENT PLAN – SITE DRAINAGE, RUNOFF, & EROSION CONTROL MEASURES (§55.4.12.1.12)

3.1.1. SITE DRAINAGE & RUNOFF

The Project site consists of a relatively flat agricultural field predominated by native and non-native pasture grasses. The Project site is bordered to the east by a Class I stream, East Mill Creek, a tributary to the Mattole River. A small un-named Class III drainage is located farther to the west of the Project site. The Project will not divert water from these watercourses and will not require any grading work to facilitate drainage. All new/additional cultivation will occur in the proposed open-air cultivation areas adjacent to existing operations on relatively level ground with drip irrigation systems. All cannabis activity areas are located at least 150 and 50 feet from the Class I and Class III tributaries, respectively.

The slopes of the new garden sites range from 6.4 – 8.4% east-west and 4.4 – 6.2% north-south. Surface water is naturally absorbed and recharged back into the existing landscape without channelization. The Project will not result in discharges or that could affect surface water or groundwater quality. Irrigation water will be applied at agronomic rates via timed drip irrigation to minimize potential runoff. Any detected leaks in the irrigation system/s shall be fixed immediately so as to reduce runoff from such incidents.

Pond overflow will be constructed consistent with engineering professional standards and relevant local and state guidelines. The overflow will consist of an armored (rocked) channel that empties at the natural grade and dissipates water back into the existing landscape or an engineered bioswale constructed to accommodate the anticipated overflow. The pond will be designed by a qualified licensed engineer and constructed by a licensed contractor, in accordance with HCC and SWRCB regulations.

All water storage features shall have emergency shut-off valves (timed or manual), and/or have float valves installed where appropriate, in order to reduce run-off from such features in the event of a leak or human error. All drainage features (if any) and potential sources of runoff shall be inspected on a weekly basis during the wet season and after all significant storm events.

All runoff from soil and garden wastes shall be minimized by storing such wastes on low-gradient slopes in distinct compost areas surrounded by straw and/or straw baffles. Drainage and potential runoff associated with fertilizer, amendment, and fuel storage shall be minimized through the use of secondary containment systems within proper covered off-the-ground storage.

For current operations, the Applicant has enrolled in SWRCB Order No. 2019-0001-DWQ and a Site Management Plan (SMP) was developed in accordance with the General Order and Cannabis Cultivation Policy. The SMP includes erosion and sediment control Best Practicable Treatment or Controls (BPTCs) designed to prevent, contain, and reduce sources of sediment. The Applicant will update enrollment and the SMP to recognize expanded cultivation operations at the site upon imminent permit approval.

3.1.2. Erosion Control Measures

Topsoil preservation measures include planting cover crop (clover and other species) during the fallow season, minimal tilling on calm days during garden preparation and planting, and mulching or utilizing weed mats where appropriate. For minimizing erosion relating to roads and driveways, road and driveway conditions shall be inspected on a weekly basis during the year, and after major storm events during the wet season. Any future driveway improvements shall utilize angular rock, outsloping, rolling dips, and water bars, as appropriate.

At all areas where excavation of soils, ground disturbance, grading, or spoil piles are proposed, best practicable treatments and controls (BPTCs) will be utilized immediately following such activities to ensure such features do not deliver sediment to surface waters. BPTCs include the use of erosion control seed, straw wattles, tarps and mulching with weed free straw. Application rates for erosion control native seed mix and mulch/straw/hay will be no less than 50 lbs/acre and 4,000 lbs/acre, respectively.

3.2. Water Source, Storage & Use

3.2.1 Water Source

The Project has the potential to source all cannabis irrigation and other cannabis-related activities water needs from rainwater harvest alone. This water source is not subject to the SWRCB Department of Water Rights Cannabis SIUR Program guidelines and restrictions. Trucked water may only be used for emergency situations, as defined by CCLUO §55.4.12.2.5.

3.2.1.1. Rainwater harvest

Three precipitation data sources were used to assess this aspect of Project feasibility. Using several sources was done to best reflect Project site conditions in elevation and geography in order to obtain the most accurate rainfall data for average and drought years. The various data sources are described as follows.

PRISM Climate Data[1]

PRISM data sets are the most widely used spatial climate data sets in the United States and are the official spatial climate data sets of the USDA. PRISM provides location-based 30-year average monthly and annual precipitation (1991-2020 is the most recent 30-year dataset currently available on PRISM). As elevation is the most important factor in the distribution of climate variables, the 800-meter resolution was used for the 30-yr dataset so as to match the Project elevation as closely as possible; PRISM 30-year average data are for 305 ft elevation and the elevation at the center of the Project site is approximately 190 ft. PRISM data were used to determine monthly and annual averages. To determine the driest year, PRISM time series data were used (which uses an elevation of 325 ft). The driest year was 2013 with 26.24 inches of precipitation; this is the lowest precipitation amount found from all the available data sources.

Mattole NCWAP[2]

Appendix C of the North Coast Watershed Assessment Program (NCWAP): Mattole River Watershed Assessment Report provides Department of Water Resources data that is from a weather station that was in operation from 1958 – February 1995. It was at an elevation of 175 ft and distance of 0.8 airmiles from the Project site. Only annual data are available from this source. The driest year on record from this station was 1977 with 27.24 inches of rainfall.

CoCoRaHS Petrolia Station Data[3]

CoCoRaHS is an acronym for the Community Collaborative Rain, Hail and Snow Network. A station is currently located approximately 0.6 airmiles from the Project site at an elevation of 92 ft. The station has been in continuous operation since September 1, 2016. As both monthly and annual data are provided, the 2020 dataset was used in analysis as this year was a notable recent dry year.

Table 1 shows the Project's catchment surfaces and their respective footprints with the corresponding individual and combined collection potentials for an average year and the driest years by data source.

[1] https://prism.oregonstate.edu/explorer/

[2] Downie, Scott T., C.W. Davenport, E. Dudik, F. Yee, and J. Clements (multi-disciplinary team leads). 2002. Mattole River Watershed Assessment Report. North Coast Watershed Assessment Program, p. 441 plus Appendices. California Resources Agency, and California Environmental Protection Agency, Sacramento, California.

[3] https://wys.cocorahs.org/

Table 1. Rain-catchment Surfaces and Water Collection Potential (in Gallons) for Average and Dry Years, Based on Recorded and Modeled Precipitation Amounts for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Rain-catchment Facility	Catchment Surface Material	Footprint (sf)	PRISM 30-Yr Average Precip. (73.46 in)	PRISM Record Low (2013: 26.24 in)	CoCoRaHS Record Low (2020: 35.4 in)	NCWAP Record Low (1977: 27.24 in)
Pond	EPDM, poly-ethylene	8,000	366,346	130,859	176,540	135,846
Tanks (new)	EPDM, poly-ethylene	402	18,415	6,578	8,874	6,828
Greenhouses	poly-ethylene	14,400	659,423	235,547	317,773	244,523
Barn	galvanized steel	2,400	109,904	39,258	52,962	40,754
New Building*	galvanized steel, Galvalume	2,144	98,181	35,070	47,313	36,407
Sheds (2)	galvanized steel	1,033	47,304	16,897	22,796	17,541
TOTAL COLLECTION CAPACITY (GAL)			**1,299,573**	**464,209**	**626,258**	**481,900**

* The calculations for the New Building include an 8'X16' covered porch.

Collection capacity was determined using the following equation:

$$Rainwater\ collected\ (gal) = catchment\ surface\ area\ (ft^2) \times Rain\ (in) \times Conversion\ factor$$

Where the *Conversion factor* is: $0.623377 = \left(\frac{1\ in}{12\frac{in}{ft}}\right) \times \left(\frac{7.48052\ gal}{1\ ft^3}\right)$

The total amount of water required for all cannabis-related uses (including pond evaporation) is 462,836 gallons. If all catchment surfaces are employed, only 26.16 inches of rain is required to meet this amount, and the average annual rainfall of 73.46 inches is more than enough. The Project has enough rainwater harvesting capacity to meet all water demand even in the driest of years on record.

One can see that in a drought year, all the listed catchment surfaces will be utilized in order to address water needs, while in an average or particularly wet year, only the pond, tanks, barn, and new building may need to be used for catchment. This will be the case in over 75% of years, given the precipitation patters of the last 30 years (1993-2022).[4] Once storage facilities are at capacity, various catchment surfaces may be disconnected to avoid excess pond overflow. The Applicant will monitor water storage levels throughout the wet season to make such determinations in a timely manner.

3.2.1.2. Groundwater well

A permitted well was installed in September 2020 and was used for cannabis irrigation in 2020-2022 for initial operating years. Use of the well has been discontinued for 2023 and future years, dependent upon the results of surface-water connectivity analysis conducted by a qualified licensed professional. If such analysis demonstrates no such connectivity exists sufficient to meet Planning Department policies and standards, and/or if Department or County policy changes regarding groundwater well use for cannabis-related purposes to allow for use of the well without such a study, then groundwater well use for cannabis irrigation and/or other cannabis uses may resume, dependent upon approval by the Department. At such time, the well would be used and operated in compliance with any local and/or state regulations and/or restrictions in place at the time of use. Production capacity of the well is 7,200 gallons per day according to the *Well Completion Report* (please see attachment). In past years, groundwater provided approximately 80% of irrigation water, with 20% provided by rainwater catchment.

3.2.1.3. Imported Drinking Water

Drinking water for employees will be imported (i.e., bottled water) until appropriate measures are in place to render water sourced from rainwater catchment safe for human consumption. To render such water safe, the Applicant will follow requirements established by the County Department of Environmental Health for storage, filtration, and chlorination.

3.2.1.4. Reclaimed/Recycled Water

Supplemental water may also be sourced from water recycling and reclamation practices that include aerial capture via nursery dehumidification methods and livestock watering overflow. Amounts from these sources may be significant or negligible, dependent on seasonal variability.

[4] https://prism.oregonstate.edu/explorer/

3.2.2. WATER STORAGE (§55.4.12.7.1.C, §55.4.12.8)

A total of 500,000 gallons of water storage is proposed. Cannabis-related water will likely be stored on-site in one agricultural pond with ± 425,000-gallon capacity, and fourteen (14) plastic tanks, each with 5,000-gallon capacity (total 70,000-gallon tank capacity). An additional one (1) tank shall be reserved for fire suppression and prevention uses (total 5,000 gal). All tables shown are in consideration of the preceding scenario. In lieu of a pond or in combination with a smaller pond, however, large steel water storage tanks (± 200,000 gallons each) may also be used. These tanks would be located within the same proposed Project footprint as the pond and/or other additional plastic tanks.

The water storage amounts proposed herein accommodate the measure of water usage for the size of the nursery and cultivation areas as shown on the Site Plan, and also the water required for the scope of other cannabis activities. If pond evaporation is greater than estimated or the number of plants increases, the water storage amount will increase accordingly and proportionately, unless other farming practices (i.e., dry farming) or cultivation of specific drought-tolerant strains are pursued.

3.2.3. WATER REQUIRED

A total of 462,836 gallons will be required annually for all Project activities and other associated demands, such as evaporation. Please see Table 2 for monthly water requirements by category (fire suppression is not included). Water use for the 2021 calendar year for the existing nursery and 10,000 sf cultivation is 270,773 gallons (Table 3a). Additional water demand for new proposed activities (expanded cultivation, processing, manufacturing) and associated used (pond evaporation) is 192,063 gallons (Table 3b).

3.2.3.1. Evaporation

Evaporation was calculated year-round using the monthly average Class A Pan Evaporation Rate[5] for Ferndale station, the closest station to the Project site (Table 2). Total annual evaporation from the pond is projected to be 80,030 gallons, which is approximately 20% of pond volume. This is comparable to existing and projected evaporation amounts of other agricultural ponds in the greater Petrolia area. If large enclosed steel tanks are used, then evaporative demand would be non-existent and overall water needs would be reduced by 80,030 gallons.

3.2.3.2. Processing

Processing water needs address employee hydration and employee and workspace sanitation. Processing water needs average 25 gallons per week when activities occur (Table 2).

3.2.3.3. Manufacturing

Manufacturing water needs are estimated at 100 gal/day when activities occur (Table 2).

[5] https://ggweather.com/climate/evap.htm

3.2.3.4. Fire Suppression

A designated amount of water shall be kept on-site for fire suppression purposes. This amount is 5,000 gallons and is reserved in one (1) plastic tank labeled as "FIRE".[6] The water tank containing the designated water supply is linked to a standpipe that meets CCR Title 14, Division 1.5, Chapter 7 requirements (CalFIRE SRA Fire Safe Regulations) and HCC § 3114-4 (SRA Fire Safe Regulations).

Table 2. Monthly and Annual Water Requirement (in Gallons) by Demand Category for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Month	All Cultivation	Pond Evaporation	Processing	Manufacturing	Total Water Required
January	1,812	2,618	429	-	4,859
February	1,634	4,344	500	600	7,078
March	5,062	8,301	-	-	13,363
April	19,201	11,548	-	-	30,750
May	29,549	13,522	-	-	43,071
June	51,029	13,905	232	-	65,166
July	64,840	12,521	554	886	78,800
August	71,721	9,351	554	886	82,511
September	63,955	6,249	536	857	71,597
October	44,459	2,463	554	886	48,361
November	12,551	786	446	514	14,298
December	1,817	420	286	457	2,980
TOTAL	**367,631**	**86,030**	**4,089**	**5,086**	**462,836**

Note: Components may not sum to totals because of rounding.

[6] The 5,000 gallons reserved for Fire Use only is not included in Table 2, as it is anticipated this will be a one-time input and will not be used or required on an annual basis.

Table 3a. Current Monthly and Annual Water Use (in Gallons) by Activity for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Month	Light-Dep (10,000 sf)	Nursery	Total Current Water Use
January	-	1,812	1,812
February	-	1,634	1,634
March	-	5,062	5,062
April	14,225	4,976	19,201
May	21,239	8,309	29,549
June	29,367	14,142	43,509
July	29,645	8,701	38,346
August	29,866	14,610	44,477
September	29,146	8,444	37,590
October	28,496	6,730	35,225
November	7,772	4,779	12,551
December	-	1,817	1,817
TOTAL	**189,756**	**81,017**	**270,773**

Note: Components may not sum to totals because of rounding.

Table 3b. Proposed Additional Monthly and Annual Water Use (in Gallons) by New Activity for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Month	Full-Sun Outdoor (33,560 sf)	Pond Evaporation	Processing	Manufacturing	Additional Water Required
January	-	2,618	429	-	3,047
February	-	4,344	500	600	5,444
March	-	8,301	-	-	8,301
April	-	11,548	-	-	11,548
May	-	13,522	-	-	13,522
June	7,520	13,905	232	-	21,657
July	26,494	12,521	554	886	40,454
August	27,245	9,351	554	886	38,035
September	26,366	6,249	536	857	34,008
October	9,234	2,463	554	886	13,136
November	-	786	446	514	1,747
December	-	420	286	457	1,163
TOTAL	**96,858**	**86,030**	**4,089**	**5,086**	**192,063**

Note: Components may not sum to totals because of rounding.

3.2.4. WATER USE (§55.4.12.7)

A total of 367,631 gallons of water will be required annually for cannabis irrigation activities at full capacity. See Tables 4 and 5 for a breakdown of use by cultivation area and water use per square foot by cultivation area.

3.2.4.1. Cultivation of Mature Plants

Water will be used on-site for crop irrigation, fertilization, and pest management activities. Water use amounts associated with cultivation have been calculated based on the number of plants expected to be grown and number of cycles at maximum capacity. This amount per plant includes regular crop irrigation in addition to feedings (April through November) and < 1 gallon per plant at transplant times. Throughout their life-cycle, rooted individual plants will be watered only by focused drip irrigation or hand-watering methods. Both methods will ensure maximal water use efficiency and that no runoff is created. Clones in the nursery operations will be watered via misting methods. Cultivation-specific water use by method is shown in Table 4.

3.2.4.2. Commercial Nursery

The watering regime for the nursery is based on the number of clones and potted juvenile plants in aggregate for any one week during the year. Water use is estimated based on an average production capacity of 14,000 clones per month year-round and an average weekly holding of 2,077 small pots March – September and 569 2-3-gallon pots during mid-June – mid-July (Table 4).

Table 4. Monthly and Annual Water Use for Irrigation (in Gallons) by Cultivation Area for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Month	Light-Dep (current)	Full-Sun Outdoor (proposed)	Nursery	Total Cultivation (gal)
January	-	-	1,812	1,812
February	-	-	1,634	1,634
March	-	-	5,062	5,062
April	14,225	-	4,976	19,201
May	21,239	-	8,309	29,549
June	29,367	7,520	14,142	51,029
July	29,645	26,494	8,701	64,840
August	29,866	27,245	14,610	71,721
September	29,146	26,366	8,444	63,955
October	28,496	9,234	6,730	44,459
November	7,772	-	4,779	12,551
December	-	-	1,817	1,817
TOTAL	**189,756**	**96,858**	**81,017**	**367,631**

Note: Components may not sum to totals because of rounding.

Table 5. Water Use per Square Foot by Cultivation Area
for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Mature Plant	Light-Dep Greenhouse (LD)	19.0
	Full-Sun Outdoor (OD)	2.9
	Overall Average	6.6
Nursery		17.1
TOTAL CULTIVATION AVERAGE		7.6

3.2.5. IRRIGATION PLAN (§55.4.12.7.1.A,B,C)

All irrigation water will be sourced from the pond and storage tanks designated for such, which will have a total combined capacity of 495,000 gallons. A maximum of ~134 gallons per mature full-sun plant are anticipated (Table 6a) and ~22 gallons per plant in light-deprivation ("light-dep") and/or mixed-light operations (3 rounds, approximately 10 weeks each; Table 6b). All water shall be applied at agronomic rates. For clone rearing, a misting system will be used that applies water at a rate of approximately 0.042 gallons (0.67 cups) per tray per week. For cultivation beyond the clone stage, the Project will utilize focused drip irrigation systems and/or top feed hand watering to provide direct-to-root irrigation with minimal or no water waste. A limited amount of hand-watering will be done at time of transplant for full-sun plants (< 1 gal per plant) and during any top-dress fertilization or amendment. All irrigation via drip method is limited by timers, so a precise amount of water per plant is applied. Timers also have the benefit of limiting water loss via any spontaneous leaks that may arise.

Table 6a. Drip Irrigation Rates for PACIFIC ROOTS CANNABIS LLC for Full-Sun Plants

Dates (approximate)	# Weeks	Water Amount (gal/plant/week)	Total (per plant)
Jun 11 - Jun 30	2.86	4.8	13.8
Jul 01 - Sep 30	13.14	7.9	104.2
Oct 01 - Oct 21	3.00	5.3	16.0
TOTAL			134.0

Table 6b. Drip Irrigation Rates for PACIFIC ROOTS CANNABIS LLC for
Light-deprivation/ Mixed-light Plants

# Weeks	Water Amount (gal/plant/week)	Total (per plant)
10	2.18	21.8
TOTAL		**21.8**

3.2.6. Water Conservation Measures (§55.4.12.7.1.d)

On-site water management and conservation activities include:

- Timed drip irrigation applied at agronomic rates
- Any exposed soils are mulched and/or cover-cropped to reduce evaporative loss
- Groundcover and/or mulch used in cultivation area
- All water sourced from rainwater catchment in most years
- Float valves installed in all tank inlets
- Regular monitoring for leaks at designated intervals
- Using mixed-light and/or deprivation techniques to produce smaller plants which require less water per plant throughout the season
- Low flow toilets & shower in employee bathrooms

3.2.7. Measurement & Recordkeeping (§55.4.12.7.5,6,7)

Water meters will be installed at the well and all exit points from storage facilities (i.e., pond and tanks), to account for and report actual water used, which will be recorded weekly and reported in accordance with local and state guidelines. The water level in all storage facilities will be visually monitored once per week during the cultivation season (approximately April – October) and at least 2 times per month during the winter period, and it shall be recorded at least once per month. Safety valves (volume or time-oriented) shall exist at all storage facility main exit points so that in the event of a leak, only a limited amount of water can be lost.

During the cultivation season, leaks will be monitored for at least once per week in all lines and fittings, or more frequently after unusual wind events. During other times of the year, leaks will be checked for through regular visual inspection of storage facilities and irrigation lines conducted at least 2 times per month, or after large storm events.

3.3. Agricultural Chemicals

BPTCs will be employed when storing, handling, mixing, applying and disposing of all fertilizers, pesticides and fungicides.

3.3.1. Storage

When not in use, all nutrients, fertilizers and amendments (collectively “agricultural chemicals”) associated with cultivation will be stored in the barn on a cement floor in an enclosed, locked area designated as such (see *Barn Detail – Draft*). It is anticipated that most soil amendments will be purchased in bulk and immediately mixed into the soils or planting medium, so storage requirements for these particular compounds are minimal. However, any remaining products will be stored in bins the designated area in the barn. The agricultural chemical storage location shall

have an impervious floor and is completely protected from wind or rain to prevent any leachate from entering groundwater or any debris from entering surface waters. All agricultural chemicals shall be contained within their original labeled containers and stored in accordance with manufacturer instructions, and within secondary containment (bins or tubs) if the items are of a liquid nature. Pesticides will be stored in a separate compartment or bin from the fertilizers and amendments if their composition requires such measures as indicated by the label.

3.3.2. USE

All agricultural chemicals shall be applied according to manufacturer instructions and at manufacturers' suggested rates, or less. Application rates and times for all pesticides will be tracked and reported as required by CDPR and the County Agricultural Commissioner. Application rates for fertilizer will be tracked monthly in accordance with SWRCB requirements.

The Applicant already possesses a pesticide application certification (i.e., Private Applicator Certificate / PAC) received through the County Agricultural Commissioner. This PAC meets state DPR requirements for a Qualified Applicator License. Any applicable employees are trained to handle, mix, apply, and dispose of pesticides/fungicides with proper hand, eye, body, and respiratory protection in accordance with the manufacturer recommendations and CDPR requirements. Agricultural chemical safety procedures include fire safety, use of rubber (or similar material) gloves and respirators (if applicable), proper hand washing guidelines, and emergency protocols. The material safety data sheets (MSDS) for each chemical are kept on site and accessible to employees. The Applicant and any employees are trained in spill prevention, countermeasures, and cleanup protocols should emergency arise. Spill kits are available in the area designated for agricultural chemical storage. A shower will be located in the ADA bathroom in the new multi-use building in the event of a spill or exposure resulting in skin contact.

3.3.3. PRODUCTS USED

The Applicant uses site-specific soil amendments and conditioners which are determined by annual and/or semi-annual soil tests (see Table 7). Several non-plant food products are also used to help boost the vigor of plants (Table 7).

Fertilizers and nutrients are based on products and regimens recommended by local cannabis nutrient experts (e.g., Soilscape Solutions®). Fertilizers are classified as those products that contain a listed amount of Nitrogen (N), Phosphorous (P), and/or Potassium (K). Please see Table 8 for a list of fertilizers and nutrients used by the Applicant.

Nursery operations require additional specific compounds, such as plant hormones, that are used in cloning and propagation activities (see Table 9).

Integrated pest management strategies include chemical, biological, and cultural controls that are used in a manner so only affected areas are treated when there is an economic benefit. Pests and diseases are controlled with biological controls, bioinsecticides, and/or plant essential oils

and/or beneficial bacteria (see Table 10). No rodenticides will be used on site. Please see the accompanying *Pest Management Plan* for more details.

Table 7. Soil Amendments & Plant Conditioners Used by PACIFIC ROOTS CANNABIS LLC

BRAND	PRODUCT	ACTIVE INGREDIENTS
Soilscape Solutions	Phylloscape Ful-Humic powder	humic acid
	Phylloscape Calcium	calcium
	Phylloscape Copper	copper
	Phylloscape Iron	iron
	Phylloscape Magnesium	magnesium
	Phylloscape Manganese	manganese
Albion	Metalosate Multimineral	amino acids, trace minerals
Southern Organics & Supply	Yucca Extract	*Yucca Schidigera*
Dirt MD	Dirt MD	humic acid, fulvic acid
Beneficial Living Products	BioSilicate	silica
	Bacillus blend	beneficial bacteria
Xtreme Gardening	Azos	beneficia bacteria
	MykosWP	mycorrhizae
Orca	Liquid Mycorrhizae	beneficial bacteria & mycorrhizae

Table 8. Fertilizers Used by PACIFIC ROOTS CANNABIS LLC

BRAND	PRODUCT	N	P	K	OTHER ACTIVE INGREDIENTS
Soilscape Solutions	Rhizoscape/Rhizothrive	1	0	3	humic acid
	Soluble Kelp Powder	1	0	12	
	Phylloscape Boron	0	0	2	boron
Pacific Gro	Sea Phos	1.7	7	0	
	Oceanic hydrolysate	2	1	0.3	
Beneficial Living Products	SassaFrass	2	2	2	mealworm frass

Table 9. Compounds Used in Nursery Operations by PACIFIC ROOTS CANNABIS LLC

BRAND	PRODUCT	ACTIVE INGREDIENTS	USE
Dyna-gro	K-L-N rooting concentrate	indole-3-butyric acid, 1-napthaleneacetic acid	cloning
Hygrozyme	Horticulture Enzyme Formula	cellulase, xylanase, hemicellulase, beta-glucanase	propagation

Table 10. Pesticides† Used by PACIFIC ROOTS CANNABIS LLC

PRODUCT	ACTIVE INGREDIENTS	USE
BioSafe Systems – AzaGuard	Azadirachtin	Bacteria & fungus
BioSafe Systems – SaniDate 5.0	hydrogen peroxide, peracetic acid	insects
BioSafe Systems – ZeroTol 2.0	peracetic acid, hydrogen peroxide	fungus, molds, mildews
BioWorks SuffOil-X	mineral oil	mold, mildew, mites & insects
Bonide Micronized Sulfur	sulfur	mold & mildew
Chester Boone's	citric acid	mildew, insect pests
Green Cleaner	soybean oil, sodium lauryl sulfate	mites, soft-bodied insects, mildew
Green Cure	potassium bicarbonate	powdery mildew
Lost Coast Plant Therapy	soybean oil, peppermint oil, citric acid	powdery mildew, mites & insects
Mammoth CannControl	corn oil, thyme oil, oleic acid	mold, mildew, mites & insects
The Amazing Doctor Zymes	citric acid	molds, mildews, soft-bodied insects
Trifecta Crop Control	thyme oil, clove oil, garlic oil, peppermint oil, corn oil, geraniol, rosemary oil, citric acid	molds, mildews, soft-bodied insects, mites
Biological Controls	e.g., ladybugs, praying mantis, predator mites	mites & insects

†This table represents the current products used for pest control and is not intended to be an exclusive list. Other brands or products may be use that contain the same active ingredients or combination of the same active ingredients as listed in the table. The table and Integrated Pest Management plan will only be updated upon introduction of a new or different product containing an active ingredient/s not listed above.

3.4. Soils Management Plan

Existing site soil is classified as prime agricultural soils and not prime agricultural soils. Cultivation of mature plants will occur in amended native soil in tilled beds for proposed full-sun plants, as well as existing greenhouse operations.

Some input of imported soils to all cultivation areas on an annual basis will also occur when immature plants are transplanted into the canopy areas. Immature plants will be grown to a maximum size of 6-inch pots in the nursery in manufactured potting soil. It is estimated that up to 21.72 yd^3 of soil per year may be imported for this use. Bulk soil will initially be deposited in the Soils Management Areas designated on the Site Plan and then taken from there to the nursery greenhouses, as needed. All imported soil will be incorporated into the cultivation areas and/or recycled for on-site use in subsequent years.

The nursery may additionally use manufactured soil for potting mothers, seed production/genetic plants, and R&D plants. Approximately 14.56 yd^3 of imported soil is anticipated for these uses. Wholesale nursery activities will also result in imported manufactured soil leaving the site when potted immature plants are purchased by other cultivators or distributors. Only 7.43 yd^3 of soil is anticipated for this purpose, as the nursery primarily sells clones and only sells potted plants on rare occasions.
Any remaining soil piles at the onset of the winter season (November 15 or the first fall rains, whichever is sooner) shall be tarped and surrounded by straw baffles. The cultivation area and all other disturbed areas will be seeded with cover crop in the fall of each year, following cultivation operations. Each spring, some amending of the native soil with composted manures and other agricultural minerals will take place, dependent on the results of yearly soil tests.

Other than through commercial wholesale plant transactions, no manufactured soil is expected to be removed from the site or disposed off-site.

3.5. Waste / Materials Management Plan (§55.4.12.1.13)

3.5.1. Cannabis-related Products

All employees will receive job-specific training on the proper handling of live plants and fresh and dried flower, trim, and any other non-manufactured cannabis products. Such training includes cultivation and harvesting techniques, hand tool use, and proper Personal Protective Equipment (PPE) storage and use.

3.5.2. Agricultural Chemicals

Relevant employees will be trained on the proper storing, handling, mixing, and application of all amendments, fertilizers, and pesticides, and proper PPE use. All agricultural chemicals will be applied according to manufacturer recommendations. Please see previous Section 3.3 for more details.

3.5.3. Cultivation & Nursery Plant Waste

Vegetative matter such as root balls, branches, leaves, and other plant material will be composted on-site in designated compost areas located adjacent to cultivation and nursery areas. Each compost area will be approximately 500 sf; It is estimated 2 compost areas will be necessary (please see Site Plan for locations).

No materials associated with the cultivation and processing of cannabis will be burned (CCLUO §55.4.12.1.9).

3.5.4. Solid Waste

All other wastes, including cultivation-related (non-plant material) refuse, household refuse and recycling, plastics, packaging, irrigation, pots, lighting, pond liners, electrical fixtures, wiring, and fencing shall be collected in designated trash and recycling containers that are covered and will be located on-site within or adjacent to the new multi-use building. The storage area for trash and recycling will be covered and off the ground. The location of the receptacles shall prevent storm water contamination and leachate from entering or percolating to receiving waters. The containers will also be restricted from animal access. Solid waste and recycling will be hauled off-site by the Applicant at least 2 times per month, or as necessary. Please see the attached Site Plan for building location.

3.5.5. Hazardous Waste

Although their production is not anticipated, any hazardous wastes, such as fuels or solvents, shall be logged, stored in secondary containment, and taken to a County-approved hazardous materials collection facility, as appropriate. An EnviroStor Database search was performed, and no hazardous waste sites were found within at least a 5,000 ft radius of the site.

3.5.6. Wastewater / Sewage Disposal Plan

Since irrigation shall be applied at agronomic rates, no effluent from cultivation (i.e., cultivation wastewater) is anticipated at the site. For handwashing, toilet, and "household" effluent, an on-site wastewater treatments system (OWTS) is proposed that will service the processing and manufacturing areas, kitchen, and restrooms. The OWTS shall be designed to accommodate the number of anticipated daytime employees, and processing and manufacturing facilities. Please see the Site Plan for proposed leach field (septic drainfield) location. The Applicant will work with the County to ensure all necessary permits are on-file for these facilities prior to construction. The OWTS will be serviced by a licensed septic pumping professional at least once per year, prior to the winter period (November 15), or more frequently, as necessary.

3.6. Light Pollution Control Plan (§55.4.12.4)

All lighting associated with cultivation, nursery, processing, and manufacturing activities shall be shielded by use of tarps or other covers, and, where applicable, window shades or blinds. No lighting will be used in full-sun outdoor (OD) areas and currently is *not* used in light-dep

greenhouse (GH) cultivation. If and when mixed-light operations are feasible, they will replace light-dep operations, and the greenhouses will contain artificial lighting at an intensity not to exceed 25 watts/sf (DCC Mixed-Light, Tier 2 maximum intensity). All existing greenhouses – cultivation and nursery – are already equipped with automated blackout tarp systems. The tarps are deployed a minimum of one half-hour before sunset and one half-hour after sunset whenever supplemental lighting is in use. This is so that no light escapes from sunset to sunrise to meet LZ-0 and LZ-1[7] standards, providing for a dark ambient environment. Exterior and task lighting shall only be used for basic human safety and basic operations. Exterior permanent artificial light fixtures shall exist only where necessary for safety, where mandated by codes, or where a discreet need is identified, shall be angled downward, and shall be extinguished when not in use.

3.7. Noise Source Assessments & Mitigation Plan (§55.4.12.6)

Noise levels will increase for a brief period of time during initial construction associated with the new multi-use building. Typical construction equipment may include a dozer and backhoe, although minimal grading and site preparation are anticipated due to the relatively flat topography of the site. Equipment noise is predicted to be a maximum of 85 dBA at a distance of 50 ft (with acoustical usage factor of 40%).[8] The impacts will be temporary in nature and will end when construction is complete. Weather-permitting, construction activities will attempt to occur between September 1 and November 15 each year to avoid noise disturbance to migratory nesting birds. Noise will also increase at the start of each cultivation season as cultivation areas are tilled with a tractor, which typically has slightly less noise output than that of construction equipment (84 dBA @ 50 ft, usage factor 40%). The activities generating equipment noise shall be limited to those daylight hours specified in CCLUO 2.0 §55.4.12.2.8.

Noise from project operations will come from the general occupation of the Project areas. The only anticipated potential on-going noise sources will be greenhouse fans and vehicular traffic to and from the Project site. Fan noise will be attenuated by installation design, placement/orientation (away from property lines and forested areas), and model selection. Currently, the nursery and cultivation greenhouses use passive air-flow venting (specifically designed to shield light) and domestic box fans when necessary at certain times.

The noise from all potential sources will be monitored throughout the year at the identified noise measurement sites on the Site Plan: near the northeastern property corner at nearest distance to the neighboring residence, the southern property boundary nearest to pastureland and residences to the southwest, and at the riparian edge of East Mill Creek to the east of greenhouse cultivation. No other sensitive receptors are located within 600 ft of the project site.

[7] Lighting Zone 0 and Lighting Zone 1, as defined by the International Dark-Sky Association and the Illuminating Engineering Society of North America.

[8] Federal Highway Administration *Construction Noise Handbook*, https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm

Current ambient noise levels range from 30 dBA to 58 dBA (wind speed 2 - 18 mph). All cultivation, nursery, and processing activities shall not increase ambient noise levels by more than 3 decibels as measured at each property line.

3.8. Watershed & Habitat Protection – SWRCB Cannabis Cultivation General Order & Policy Compliance Summary

The Applicant has enrolled in SWRCB Order No. 2019-0001-DWQ (the "Order) as a Tier 1 Discharger and will update their enrollment to a Tier 2 Discharger upon imminent permit approval. A Site Management Plan (SMP) was developed in accordance with enrollment will be updated to reflect additions and changes to the operation proposed herein. Adherence to the SMP will ensure that the watershed and surrounding habitat are protected. All areas of cannabis activities, including cultivation, shall occur on slopes less than 30% and outside of the listed riparian setbacks (relevant 150 ft, 100 ft, and 50 ft) in the Order. Below is a summary of how the proposed activities will meet BPTCs for each relevant category listed in Attachment A (Cannabis Cultivation Policy) of the Order. Where these elements have previously been described in detail herein, the section number is noted for reference.

3.8.1. Land Development & Maintenance, Erosion Control & Drainage Features

Site development and maintenance activities will utilize BPTCs in accordance with the SWRCB recommendations. Grading and earthwork activities will be conducted by a licensed contractor in accordance with approved local grading permits and the SMP. See §3.1 for more descriptions.

3.8.2. Stream-crossing Installation & Maintenance

The only stream-crossing is on Chambers Road over East Mill Creek, and maintenance is the responsibility of Humboldt County Department of Public Works.

3.8.3. Soil Disposal & Spoils Management

No soil will be taken off-site. All unused soil and soil piles shall be tarped and baffled when not in use. Any spoils from construction activities shall be distributed according to the BPTCs outlined in the Order, Attachment A.

3.8.4. Riparian & Wetland Protection & Management

The Applicant will observe all necessary and required setbacks from wetland and riparian areas. Noise will be measured at the nearest riparian drip edge throughout the year, as cannabis activities take place year-round. The Project will result in no discharge of agricultural water to any of the water features on or near the Project site. No non-invasive trees or other vegetation shall be removed from riparian and wetland areas. Any invasive plants found within such areas will be removed via manual methods with minimal ground disturbance.

3.8.5. Water Storage & Use

See §3.2 for a detailed description of water storage, use, and BPTCs for water conservation.

3.8.6. Fertilizers, Pesticides & Petroleum Products

All the BPTCs described previously in §3.3 of this document will be utilized. Petroleum products will be stored separately from fertilizers and pesticides in lawful containers within secondary containment. All refueling and equipment maintenance of small motors shall be done within secondary containment, and any equipment maintenance involving larger motors (e.g., tractor) will be done off-site or within a covered garage with impermeable floor located elsewhere on the Property (not part of the cannabis operation).

3.8.7. Wastes

See §3.5, previously, for a detailed description of waste handling BPTCs that will be used.

3.8.8. Winterization

The Applicant will complete all necessary winterization activities listed in the Order by November 15 of each year. The cultivation area shall also be cover-cropped by this date each year, or as soon as feasible following the end of cultivation operations.

3.9. Invasive Species Control Plan (§55.4.12.16)

The Applicant shall work to limit and control any invasive species on the parcel via methods appropriate and effective to the species. As identified in the *Technical Memorandum: Biological Survey*, Scotch broom (*Cytisus scoparius*) currently exists on the Property. The landowners have worked diligently over the years to control the spread of this species using manual removal techniques, mowing, and livestock grazing (goat, alpaca, llama). The Applicant will assist the landowners in the control of Scotch broom, as necessary. The Applicant prefers to work with and follow the recommendations of the Mattole Restoration Council – a local non-profit organization with extensive experience in the management of invasive species – regarding broom and other invasive species management, and if possible, eradication. Although invasive species are present on the Property, the historical presence of the species is not incidental to the cannabis operation, and it is not expected that Scotch broom would be established in the immediate areas surrounding the proposed cultivation area, associated buildings, or storage pond.

In addition, the water storage pond has the potential to harbor the invasive American bullfrog (*Lithobates catesbeianus*). A plan for monitoring and management of this species will be followed. The plan involves conducting regular annual surveys and undertaking eradication methods should the animals be found. Please see the *Bullfrog Monitoring and Management Plan* (created by CDFW) for additional details.

3.10. Energy Plan (§55.4.12.5)

3.10.1. Electricity

Energy shall be provided via grid power. Current on-site renewable energy is sourced from a 6.4 kW solar array. Energy will be required for cultivation (fans and lighting, where applicable),

nursery activities, drying, processing, manufacturing, and general task and security uses, as applicable. At total of 234,454 kWh is predicted once the Project reaches full capacity and is based on 600-amp service by PG&E. It is estimated that the earliest this service would be available is 2027, but likely even later. As such, energy usage will be limited to what is currently available via grid power until such time as more becomes available. Please see the Energy Budget in Table 11 for a breakdown of electricity use by month for each activity requiring electricity. Table 11 assumes 600-amp service with the Project running at full capacity.

Options to meet 100% renewable energy requirements are listed as following in order of preference.

- A permitted 6.4 kW solar array exists at the site, installed in 2020 (BLD-2019-50511). Analysis of grid-contribution is underway. Depending on the results, the Applicant will choose to offset the percentage of PG&E grid power that is not renewable by the annual amount contributed from the solar array. If this amount is insufficient to meet renewable energy requirements, then the Applicant will may also choose from additional options below. The Applicant will provide evidence of grid-power offset as relevant to the energy used for cultivation, nursery, and processing activities when such evidence is requested by the Department.
- PG&E: The "100% Solar Choice" and "Green Saver" plans provides 100% renewable energy, according to PG&E's 2020 Power Content Label.
- Redwood Coast Energy Authority (RCEA): The "RePower+" service is able to provide up to 100% renewable energy for its customers.
- PG&E: In 2020 (the most recent year data is available), 84% of PG&E's power mix was greenhouse-gas free and/or renewable.[9] The "Base" and "50% Solar Choice" plans provide 30.6% and 65.3% renewable[10] energy, respectively, according to PG&E's 2020 Power Content Label.[11]. If the Applicant opts for either of these plans, then they will purchase carbon offset credits to mitigate the portion of energy not supplied by renewable resources. Credits will be purchased from a reputable source recognized by relevant state regulatory agencies.

Generator use shall be limited to "emergency" use only, as defined in CCR Title 17, Division 3, Chapter 1, Subchapter 7.5, §93116.2(a)(12), or the "emergency use" definition for stationary engines in Title 17, Division 3, Chapter 1, Subchapter 7.5, § 93115.4(a)(30).

[9] https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page
[10] A significant portion of PG&E's energy supply comes from large hydroelectric power stations which do not qualify as an eligible renewable resource under California law
[11] https://www.energy.ca.gov/filebrowser/download/3882

Table 11. Energy Use per Cannabis Activity by Month, in kilowatt-hour, for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Description of Activity	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL BY ACTIVITY
Mixed-Light Cultivation	-	-	-	22,464	23,213	22,464	23,213	23,213	23,812	27,855	26,957	-	**193,190**
Nursery Greenhouse Lighting	1,150	1,150	1,088	927	958	927	958	958	983	1,150	1,113	1,150	**12,513**
Clone Room	562	508	562	544	562	544	562	562	544	562	544	562	**6,623**
R&D lighting	1,786	2,150	1,786	1,728	-	-	-	-	-	-	2,304	1,786	**11,539**
Drying	-	-	-	-	-	479	-	205	274	1,728	873	-	**3,559**
Processing	604	548	-	-	-	585	604	604	585	604	585	604	**5,323**
Manufacturing	-	106	-	-	-	-	159	159	141	159	88	71	**883**
Utility, gen. lighting, security, etc.	70	63	70	68	70	68	70	70	68	70	68	70	**823**
TOTAL BY MONTH	**4,172**	**4,526**	**3,506**	**25,731**	**24,803**	**25,068**	**25,566**	**25,771**	**26,407**	**32,129**	**32,532**	**4,242**	**234,454**

3.10.2. Heating

In some years heating may be necessary for nursery activities. Heating will be accomplished using commercial propane heaters designed for such uses. Heating may be either direct ambient air type or through radiant floor heating infrastructure via boiler system. Heating will bring internal greenhouse temperatures to ~50°F during the coldest months, approximately January – April, and ~60°F inside the building and barn from November – April. The mechanical heating capacity will not exceed 10 BTU/hour per square foot, per County building regulations for Ag-exempt structures. A Title 24 Building Energy Requirement for Plant Growth exemption letter certifying the heating is not for human occupancy will be obtained from a qualified Energy Consultant and supplied to the Department during the building permit application process. Total annual propane usage is estimated at 738 gallons.

3.11. Security Plan

Access to the cultivation, nursery, processing, manufacturing, and storage facilities will be secured and restricted. The cultivation premises and any associated facilities shall be locked when not staffed. Only employees or contractors of the Applicant and designated County and state officials shall be allowed to enter the garden sites or any other associated cultivation facilities. All employees and contractors of the Applicant shall be at least 21 years of age.

The site is not visible from high-traffic public roads, and no high-density residential, commercial, school, or other uses are located near the Project site. Access to the Property is via a locked gate. Additionally, it is anticipated that the Project site will be partially enclosed within wind-fencing or wind-rows. All buildings and structures associated with cannabis cultivation, nursery, processing, and storage will be locked when not staffed or in use.

To ensure against diversion to illegal marketplaces, the Applicant is a participant in the California Cannabis Track-and-Trace (CCTT) system. The Applicant has also delineated specified areas for materials holding and/or destruction, as may be deemed necessary according to state regulations. The Applicant shall also comply with any forthcoming safety and security regulations that may be specified by the County or state. All appropriate and pertinent records, permits, and licenses shall be on-hand at the Project site, pursuant to County and state regulations.

4. CANNABIS ACTIVITIES

Six (6) main activities are proposed at the Project site: commercial nursery, cultivation, drying, processing, manufacturing (non-flammable extraction and infusion), and distribution. Some activities have already been approved under PLN-2019-15618, some are new, and some are previously-approved activities that are proposed to be modified. Please see the Site Plan for locations and layout. It should be noted that all facilities and cultivation areas are orientated in such a manner as to confine operations to a particular region of the Property.

4.1. Commercial Nursery

Total area is 5,120 sf. This is 80 sf more than what was previously approved (commercial plus ancillary) via a Substantial Conformance process in January 2020. The Applicant will reconfigure and reposition the nursery areas and will consolidate all nursery areas to fall under the umbrella of a commercial nursery to meet logistical needs (as this is how it administered under the state license).

4.1.1. Facility Description

The commercial nursery facility is composed of three main spaces.

4.1.1.1. Greenhouses

This component is two (2) stand-alone greenhouses totaling 4,416 sf. Greenhouses will house immature cannabis plants and immature cannabis plants intended for clone production ("mother" plants). A combination of artificial light and black-out tarps will be used in the greenhouses at sufficient levels throughout the year to keep such plants in a vegetative state. A portion of the greenhouses may also house seed-production plants. Greenhouses may be heated during winter and early spring months. Greenhouse floors are native surface.

4.1.1.2. Cloning Room

This is an indoor commercial nursery facility totaling 320 sf housed in a room with a cement floor in the existing barn. Propagation and clone rearing take place within this room. Artificial lighting (LED) is used for cloning operations (see *Barn Detail – Draft*).

4.1.1.3. Research & Development (R&D) Room

An indoor space with an area of 384 sf and cement floor will be designated for R&D activities. Artificial lighting at an intensity appropriate for vegetative growth and flowering will be employed. R&D activities will only take place if and when elevated (600 amp) PG&E service becomes available. Activities are scheduled to be seasonal in nature, December – May, and occur specifically at times when drying is not taking place. As such, the R&D facility is proposed to share a portion of space as the drying facility in the Ag-exempt portion of the new multi-use building. Temporary interior infrastructure may be erected to partition the area from the remainder of the larger drying space (see *Building Detail – Draft*).

4.1.2. Operations

The commercial nursery serves to produce clones, immature plants, and seeds for wholesale and/or transfer to licensed cultivators and distributors.

4.1.2.1. Mother plants

Cuttings (clones) will be taken from the current stock of mother plants in order to create the next batch of mother plants. Mother plants may also be generated from seed, as well. Cuttings are taken from mother plants for the entirely of their lifetimes. Mother plants are kept for approximately 6 months then the plant is destroyed and composted. Thus, there are

approximately 2 rounds of mother plants each year. Mother plants are not allowed to flower, which will require supplemental lighting in certain periods of the year when daylight hours approach 12 or less hours. All activities shall be recorded in the CCTT system.

4.1.2.1. Clones and immature plants for sale

Clones will be taken from the mother plants year-round. Clone production capacity is approximately 14,000 clones per month. Clones are taken the first week of the month and then reared in trays under artificial light for 3 weeks. The Applicant will sell clones when they are 2-3 weeks old at the rooted stage, but still in "cube" medium (biodegradable non-soil medium).

If any clones remain unsold at the end of the month, they are usually composted. Exceptions are those cases where customers may require potted immature plants. For such orders, clones will be up-potted to 6-inch pots after 3 weeks using imported soil. The potted plants will be grown in the nursery greenhouses. Plants may remain in 6-inch pots for approximately 4 weeks. If a larger size plant is ordered, then plants may be up-potted into 2-3-gallon pots. Plants may remain in this size pot for up to 4 weeks prior to sale or transfer. All activities shall be recorded in the CCTT system.

4.1.2.2. Seed Production

Plants may be grown to maturity (flowering) in a portion of one of the nursery greenhouses in order to produce seeds for wholesale. No cannabis byproducts or materials except seeds will be sold from such operations. All activities shall be recorded in the CCTT system.

4.1.2.3. Research & Development (R&D)

The R&D room will allow the Applicant to run expedited trials of seed stock generated from seed production operations. Such trials will allow the Applicant to select for phenotypically desired traits, generate new strains for the market, and help determine proper nutrient and lighting regimens for such strains. No cannabis byproducts or any materials (e.g., stems, leaves, flowers, seeds) derived from R&D activities will be sold and all activities will be recorded in the CCTT system.

4.2. Cultivation / Cultivation Plan

4.2.1. Facility Description

A maximum total of 43,560 sf cultivation will occur on-site. All cultivation is classified *new open-air cultivation*, as defined by CCLUO 2.0. Cultivation of mature plants will occur in amended native soil in tilled beds for greenhouse and full-sun plants. Three methods of cultivation may be employed.

4.2.1.1. Full-sun outdoor – outdoor garden areas

Two distinct areas will contain a total of 33,576 sf (0.77 acres) of canopy in a total disturbed area that is ~1.1 acres. Outdoor area 1 (OD-1) is located to the north of existing greenhouses and

outdoor area 2 (OD-2) is located to the south/southwest of the greenhouses. The layout is based on a 6-ft diameter plant. Rows of plants are grouped into blocks. Rows within each block are separated by a 2-ft walkway, which is included in the total square-footage calculation. Blocks are separated by 6-ft wide aisles in which no canopy will occur and, thus, are *not* included in the total cultivation area. All aisles and walkways are necessary to accommodate personnel and equipment performing plant maintenance activities. Please see the Site Plan for specific layout, as rows vary by length in order to accommodate existing fencing, features, and neighboring residential setback.

It is noted that at the beginning of any given year, the Applicant may propose to reconfigure the outdoor cultivation area (e.g., no or reduced aisleways) and will seek County approval to do so prior to cultivation by submitting a revised Site Plan and any other required documentation and/or forms.

4.2.1.2. Light-deprivation (dep) or mixed-light – greenhouses

This area is a total of 9,984 sf (0.23 acre) in four (4) greenhouses that measure 104' X 24' (2,496 sf) each. When growing using light-deprivation techniques *no* artificial light will be in the canopy area. When sufficient grid power becomes available, mixed-light operations may occur in this same space (supplanting light-dep operations). Mixed-light operations will use supplemental artificial lighting in the canopy area at an intensity consistent with the DCC Mixed-light Tier 2 classification (≤ 25 watts/sf). Both light-dep and mixed-light cultivation will produce 2-3 cycles per year (weather-dependent). Black-out plastic sheeting will be used to exclude natural light and shield any artificial light, when appropriate. Greenhouse floors are composed of native surface.

4.2.2. OPERATIONS

Up to three (3) rounds of cultivation will occur each year in the light-dep/mixed-light greenhouses. One (1) round of cultivation will occur in the full-sun area, unless auto-flower plants are used, which may produce two (2) rounds. All activities will be entered in the CCTT systems as required. Please see the *Schedule of Activities* section (§5) below for more details regarding timing.

4.2.2.1. Propagation

All plants will be started in clone or seedling (juvenile) form from the on-site nursery. Propagation activities will occur continuously from February – early-September as cultivation areas and rounds are planted in succession.

4.2.2.2. Planting

In general, planting will occur at a rate of 1 greenhouse per week for light-dep/mixed light operations and ~10,000 sf per week for the outdoor garden areas. Plants will be transferred from the nursery spaces directly to the canopy (cultivation) areas. Approximately 0.5 gallons of water per plant may be used at time of transplant.

4.2.2.3. Cultivation / vegetative growth & flowering

During this stage, plants are monitored for health and progress. Plant-management activities include pruning and de-leafing, with all excess plant material placed in designated compost areas. Other main activities include irrigation and administration of fertilizers, pesticides, and compounds or teas to maintain plant health and vigor. Integrated pest management strategies – including application of biological controls – are employed to minimize pest infestation. Any necessary weeding is done by hand.

4.2.2.4. Harvest

Plants will be harvested in up to 3 cycles in the light-dep/mixed-light greenhouses and 1-2 cycles for the outdoor full-sun plots. Harvest will occur at the rate of approximately 1 greenhouse per week for light-dep/mixed-light areas and ~10,000 sf per week for outdoor areas. This reflects labor logistics and allows for the offset of drying and processing activities. In general, upon maturation, plant material will be harvested into manageable pieces and weighed, in compliance with CCTT requirements. If plant material is to be sold fresh/fresh-frozen, it is bucked shortly after harvest. If material is to be dried, plant material is placed in totes and then taken to drying areas. Some fresh plant material may also move immediately off-site to distribution or manufacturing at this time. Post-harvest, root-balls may be extracted from cultivation areas and placed in the compost areas and/or tilled in with a tractor where feasible.

4.3. Drying

4.3.1. Facility Description

Two (2) main drying areas are proposed, with supplemental space also designated in four (4) shipping containers.

4.3.1.1. Barn

This is a ~512 sf indoor room with cement floor; dimensions are approximately 16’ X 32’ (see *Barn Detail – Draft*).

4.3.1.2. New multi-use building

Designated dry space measures 24’ X 32’ (768 sf). One-half of this space is seasonally shared with R&D. Drying will be located in a portion of the building (or an attachment to it) designated as “Ag-exempt”. Please see *Building Detail – Draft* for floorplan.

4.3.1.3. Shipping containers

A total of 1,600 sf overflow dry space will occur in 4 shipping containers each measuring 8’ X 20’ (400 sf). The containers will be located just to the north of existing greenhouses.

4.3.2. Operations

If cannabis is to be dried, it will be taken to one of the drying locations and hung for several days. The rooms and/or containers may be equipped with fans and air conditioning and/or heating

units (specifically for non-human use) and/or dehumidification units for proper curing and elimination of conditions that promote mold. The interior of the drying locations shall remain unfinished, per Building Department "Ag-exempt" permit regulations. (A Title 24 Building Energy Requirement for Plant Processing exemption letter certifying the environmental controls are not for human occupancy will be obtained from a qualified Energy Consultant.) Depending on conditions, it may take from 5-10 days for cannabis to properly dry and cure. All work surfaces and equipment used for drying shall be maintained in a clean and sanitary condition. The building, barn, and shipping containers will be locked when immediate access is not required. All pertinent activities will be recorded in the CCTT system.

4.4. Processing/ Processing Plan

4.4.1. Facility & Location

This facility will mainly process cannabis produced on-site by the Applicant. Processing of cannabis produced off-site is not anticipated, however the state license that will be required for consolidated processing of all on-site produced cannabis allows for this activity[12], and the Application would like to have that option available in future years. Processing will occur in a new multi-use building in a portion that is commercial grade within a 24' X 16' (384 sf) room. All processing, trimming, weighing, and packaging will occur within this space. Please see the Site Plan for building location and the associated draft building floorplan.

The building will also house an employee breakroom, kitchen, restroom with shower, and appurtenant storage areas for supplies and refuse/recycling. The processing and packaging room, breakroom / kitchen area, and bathroom will be ADA-accessible. The building will have associated permitted electricity supplied by grid power, a permitted OWTS, and ample parking, including an ADA space.

4.4.2. Operations

All necessary processing and packaging activities will occur on-site by employees or contractors of the Applicant. Trimming and packaging activities will primarily occur for cannabis produced on-site. If product is to be bucked and trimmed, these activities will occur in the processing room in the building. Trimming will be done by hand and/or using automated trimming machines. After trimming, employees shall perform all additional processing and packaging activities in the designated space. Additional processing includes creation of non-manufactured cannabis products, such as cannabis cigarettes. All work surfaces and equipment used for processing and packaging shall be maintained in a clean and sanitary condition, and PPE (e.g., dust masks, gloves) shall be provided for employee use. All pertinent activities will be recorded in the CCTT system.

[12] Because the Applicant will be cultivating using 2 methods, 2 separate state licenses are required. In order to process 2 licensees within the same location, a commercial processing license is required at the state level.

4.5. Manufacturing

4.5.1. Facility Description

This facility will be located in the commercial portion of the new multi-use building and occupy a 10' X 14' (140 sf) room (see *Building Detail – Draft*).

4.5.2. Operations

Non-flammable extraction will occur to produce bubble hash, kief, rosin, cannabis-infused lipid, concentrates, oils, tinctures, etc. Methods employed may include cold water, heat press, lipid (butter, milk, oil) or other non-chemical extraction methods, and ethanol, alcohol, and CO2-based solvent extraction.

Infusion may also occur in which cannabis, cannabinoids, cannabis concentrates, or manufactured cannabis products are directly incorporated into a product formulation (e.g., oil, milk, butter, other lipids) to produce a cannabis product including tinctures, lotions and salves, soaps, vape pens, and the like.

Manufacturing operations will mainly occur in the second half of the year as on-site product becomes available and is focused on increasing the market value of cannabis produced on-site. All pertinent activities will be recorded in the CCTT system.

4.6. Distribution

While the scale of distribution activities is expected to be small and mainly focused on on-site produced cannabis and cannabis products, the Applicant is pursuing full-scale distribution permitting in order to secure the operational flexibility to adapt to a rapidly changing industry landscape.

4.6.1. Facility Description

This facility will be located in the commercial portion of the new multi-use building and occupy a 12' X 14' (168 sf) room. The Applicant will comply with all DCC requirements for facility security and structural integrity. Please see the draft building plan for details.

4.6.2. Operations

Distribution will occur year-round and allow for the following:

- transport of clones and immature plants from the commercial wholesale nursery to other farms and retail
- transport of clones and immature plants from the commercial nursery to on-site cultivation licenses (canopy areas)
- transport of harvested cannabis from cultivation licenses to consolidated on-site drying facilities (in barn, building, and shipping containers) and processing facility (in building)

- transport of fresh, bucked, or trimmed cannabis, bulk plant material ("trim"), and non-manufactured and manufactured cannabis products produced on and off-site to other distributors and/or manufacturers
- arrange for the testing of on-site produced cannabis and cannabis products, as well as that of other licensees
- sell on-site produced cannabis and manufactured cannabis products directly to retail
- sell cannabis and manufactured cannabis products from other state licensees directly to retail

All activities will be recorded in the CCTT system.

5. SCHEDULE OF ACTIVITIES

5.1. TIMELINE

A phase-in approach is anticipated for implementation. From permit approval, the Applicant anticipates a 5-year implementation period until all Project activities are at full-capacity. The implementation schedule is also dependent on when sufficient grid-power becomes available at the site (and in the Petrolia area, in general). The current PG&E wait time for the amount of power necessary for full capacity is minimum 5 years. This schedule is intended to show *anticipated* Project implementation and the Applicant reserves the privilege to amend or adapt this schedule as economic and logistic conditions may change. This schedule is not to be used to define benchmarks or annual limits for Project implementation or Conditions of Approval.

YEAR 1

9,984 sf of cultivation in greenhouses (GH) using light-dep (continue current operation)
10,000 sf of full-sun outdoor cultivation
2 nursery (CN) greenhouses (4,416 sf total; continue current operation)
Use of barn for drying, cloning, ag chemical storage
Add 3 shipping containers
Water storage: add pond and/or large tanks prior to operations

Year 2

Add 23,576 sf full-sun outdoor cultivation (33,576 sf total)
Water storage: add 8 tanks prior to operations
Add new multi-use building (2,016 sf)

Year 3

Continue operations

Year 4

Continue operations

Year 5

Convert light-dep cultivation to mixed-light cultivation
Add R&D

5.2. Calendar of Activities

Table 12. Calendar of All Cannabis Activities for Pacific Roots Cannabis LLC on APN 104-232-012, et al.

Component	Description of Activity	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Commercial Nursery (CN)	Maintenance of mother plants												
	Cutting, propagation, sale of clones & juvenile plants												
	R&D												
Outdoor: Full-sun Cultivation (OD)	Cloning & ancillary nursery activities												
	Plant, veg & flowering in canopy area												
	Harvest												
Light-dep Greenhouse Cultivation (GH)	Cloning & ancillary nursery activities												
	Plant, veg & flowering in canopy area												
	Harvest												
Processing (P)	Drying												
	Trimming & packaging												
Manufacturing (M)	Non-flammable extraction & infusion												
	Product assembly												
Transport Only Self-Distribution (D)	Transport clones & juvenile plants to onsite canopy areas & customers												
	Transport cannabis products to processing & distributors												
Site maintenance (S)	Irrigation & water system monitoring												
	Invasive species monitoring & mgmt												
	Winterization												
	Drainage features maintenance & monitoring												

5.3. Detailed schedule of activities

January

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

N: R & D

P: trim & package OD & GH round 3

D: transport clones to customers

D: transport on-site cannabis material to other distributors/manufacturers

S: water system & drainage feature monitoring & maintenance

February

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

N: R & D

GH: round 1 clone cutting, propagation

P: trim & package GH round 3

M: extraction & infusion, production

D: transport clones & juvenile plants to customers

D: transport on-site cannabis material to other distributors/manufacturers

S: water system & drainage feature monitoring & maintenance

S: invasive plant monitoring & maintenance

March

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

N: R & D

GH: round1 clone cutting, propagation

GH: round 1 juvenile plant veg & maintenance

D: transport clones & juvenile plants to customers

D: transport on-site cannabis material to other distributors/manufacturers

S: water system & drainage feature monitoring & maintenance

April

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

N: R & D

GH: round 2 clone cutting, propagation

GH: round 1 juvenile plant veg & maintenance

GH: plant round 1

GH: veg, flowering & maintenance

OD: clone cutting, propagation

OD: juvenile plant veg & maintenance

D: transport clones & juvenile plants to customers

D: transport juvenile plants to canopy areas

D: transport on-site cannabis material to other distributors/manufacturers

S: water system monitoring & maintenance

MAY

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

N: R & D

GH: round 2 clone cutting, propagation

GH: round 2 juvenile plant veg & maintenance

GH: round 1 veg, flowering & maintenance

OD: clone cutting, propagation

OD: juvenile plant veg & maintenance

D: transport clones & juvenile plants to customers

D: transport juvenile plants to canopy areas

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system monitoring & maintenance

S: Bullfrog detection/monitoring surveys

JUNE

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

GH: harvest round 1

GH: round 2 juvenile plant veg & maintenance

GH: harvest round 1

GH: plant round 2

GH: round 1 &2 veg, flowering & maintenance

OD: juvenile plant veg & maintenance

OD: plant canopy area

OD: veg & maintenance

P: dry & trim GH round 1

D: transport clones & juvenile plants to customers

D: transport juvenile plants to canopy areas

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system monitoring & maintenance

S: Bullfrog detection/monitoring surveys

JULY

N: mother plant veg & maintenance

N: Clone cutting, propagation

N: juvenile plant veg & maintenance

GH: harvest round 1

GH: plant round 2

GH: round 3 clone cutting, propagation

GH: round 3 juvenile plant veg & maintenance

OD: veg & maintenance

P: dry, trim, package GH round 1

M: extraction & infusion, production

D: transport clones & juvenile plants to customers

D: transport juvenile plants to canopy areas

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system monitoring & maintenance

AUGUST

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

GH: round 2 & 3 veg, flowering & maintenance

GH: harvest round 2

GH: round 3 juvenile plant veg & maintenance

GH: plant round 3

OD: veg, flowering & maintenance

P: trim & package GH round 1; dry GH round 2

M: extraction & infusion, production

D: transport clones & juvenile plants to customers

D: transport juvenile plants to canopy areas

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system monitoring & maintenance

SEPTEMBER

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

GH: harvest round 2

GH: round 3 juvenile plant veg & maintenance

GH: plant round 3

GH: round 3 veg, flowering & maintenance

OD: flowering & maintenance

P: dry, trim, package GH round 2

M: extraction & infusion, production

D: transport clones & juvenile plants to customers

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system monitoring & maintenance

OCTOBER

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

GH: round 3 flowering & maintenance

GH: harvest round 3

OD: flowering & maintenance

OD: harvest

P: trim & package GH round 2; dry OD

M: extraction & infusion, production

D: transport clones to customers

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system & drainage feature monitoring & maintenance

S: Bullfrog eradication/pond draining (if necessary)

S: winterization – cover crop, stow cultivation supplies, cover soil piles, apply native seed mix to bare areas, mulch

NOVEMBER

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

GH: round 3 flowering & maintenance

GH: harvest round 3

OD: harvest

P: dry, trim, package OD; dry GH round 3

M: extraction & infusion, production

D: transport clones to customers

D: transport on-site cannabis material to drying/processing & other distributors/manufacturers

S: water system & drainage feature monitoring & maintenance

S: winterization – cover crop, stow cultivation supplies, cover soil piles, apply native seed mix to bare areas, mulch

DECEMBER

N: mother plant veg & maintenance

N: clone cutting, propagation

N: juvenile plant veg & maintenance

N: R & D

P: trim & package GH round 3 & OD

M: extraction & infusion, production

D: transport clones to customers

D: transport on-site cannabis material to other distributors/manufacturers

S: water system & drainage feature monitoring & maintenance

5.4. HOURS OF OPERATION

Activities will take place at the Project site between 7:00 AM – 6:00 PM, 7 days per week April – November and 8:00 AM – 5:00 PM, 5 days per week December – March. The hours of operation may vary depending on changing economic and logistic conditions.

6. EMPLOYEES

A maximum of 10 employees will work at the site once the project reaches full capacity.

- Four (4) one-quarter full-time equivalent (FTE) positions will be filled by the owner-operator.
- Two (2) FTE managers – one each for nursery and cultivation – will work year-round.
- Two (2) FTE seasonal laborers (i.e., employed on a seasonal basis but full-time when employed) will work in both cultivation and nursery facilities.
- Five (5) additional laborers will be hired seasonally on an as-needed basis during peak times.

Table 13, below, provides a general breakdown of employees by cannabis activity and employee classification, although it is expected that fluidity will exist between which laborers are assigned to which activity and at what time during the year. Peak times will see maximum employment. These periods occur at regular intervals between June – November, depending on the season's planting and harvesting schedule. Non-peak times are December – May, when only managers and year-round laborers will be employed.

Table 13. Employees by Activity and Classification for PACIFIC ROOTS CANNABIS LLC on APN 104-232-012, et al.

Activity	Owner-Operator Manager	Year-round Managers	Seasonal Full-time Laborers	Seasonal Part-time Laborers
Nursery	-	1	1	0.5
Cultivation	-	1	1	1.5
Processing	0.25	-	-	3
Manufacturing	0.25	-	-	-
Maintenance	0.25	-	-	-
Distribution	0.25	-	-	-
Classification Subtotal	*1*	*2*	*2*	*5*
TOTAL EMPLOYEES	**10**			

6.1. Employee Safety Practices

Cultivation, harvesting, and processing will be performed by employees specifically trained in each activity, including techniques and use of pruning tools, and proper application and storage of pesticides and fertilizers. Applicable PPE shall be employed when handling agricultural chemicals, during routine garden activities, processing, and manufacturing. All employees will be provided PPE free of charge. All PPE will be stored on designated shelves and/or bins within the employee break room or in adjacent storage areas. As required by law, these locations are separate from the locked agricultural chemicals storage area.

The Applicant shall utilize proper safety procedures including fire safety, use of rubber (or similar material) gloves and respirators (if applicable), proper hand washing guidelines, and emergency protocols. Contact information for the Petrolia Volunteer Fire Department, CalFIRE, Humboldt County Sheriff, and Poison Control will be posted within the employee break room in plain view and/or at the employee restroom, and the agricultural chemicals storage area. A written copy of emergency procedures and contact information will be kept on site and provided to each employee, as well. The material safety data sheets (MSDS) for all chemicals and compounds will be kept on site, updated monthly (if necessary), and accessible to employees. All work performed will follow Cal-OSHA standard practices.

The Applicant and its employees and contractors shall comply with CDC, Cal-OSHA, and Humboldt County DPH COVID-19 and/or other emergency outbreak safety procedures that are current at the time of operation. On-site personnel shall be limited to the minimum required number for task completion each working day.

6.2. Employee Sanitation & Hydration

Restroom and hand washing facilities will be available for employee use. It is estimated that an extra 25 gallons per day maximum will be generated from these uses during the peak times. The septic system will be designed to accommodate this amount. Drinking water shall be sourced from the on-site well and available from the sink in the employee break room, restroom, and external taps/spigots.

To limit the possibility of spread of COVID-19 and other infectious diseases, and to comply with basic sanitation procedures, employees shall be required to wash their hands after using the restroom, and prior to and after consuming food. Employees involved in processing and manufacturing operations will also be required to wash their hands after arriving to the site and coughing or sneezing. In addition to the washing facilities, hand sanitizer will be available in the processing room, break room, drying room/s, kitchen, and restroom facilities.

6.3. On-Site Housing

No on-site employee housing is proposed. All employees will live off-site and commute daily to the Project site.