ATTACHMENT 1B

Cultivation and Operations Plan

Cultivation & Operations Plan (Revised)

Combined Operations of Humboldt County Cannabis Projects:
210-144-017; PLN-11797-SP
210-144-011; PLN-11969-CUP
210-144-012; PLN-11795-CUP

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NRM
NATURAL RESOURCES MANAGEMENT
CORPORATION

I. Summary

Humboldt County Parcels 210-144-017, -011, and -012 , herein 'project parcels,' are utilized for cannabis cultivation. These parcels are all operated by Fantastic Gardens LLC and are associate with planning application numbers 11797, 11696, and 11795 (respectively). These cannabis cultivation operations share propagation, water sources/storage, composting, waste collection, and processing facilities, and are represented here as a combined cultivation effort by Fantastic Gardens LLC, herein the 'applicant.'

The project parcels are located in rural southeastern Humboldt County, approximately 5.5 miles southeast of Larabee Valley off of Burr Valley Road; all parcels share one primary access road (Plot Plan(s), NRM 2022). All three project parcels have western-facing aspects (the HUC-12 watershed is Little Van Duzen River) with an average elevation of 4,000 feet (elevation range between 3,400 and 4,550 feet). All project parcels are zoned Forestry Recreation (FR) and have a natural environment of mixed conifer forest, oak woodland, and grassy ridgetop.

II. Cultivation

1. Background

The Project Parcels were initially visited by NRM in 2020. At this time, it was recognized that multiple cultivation areas and project infrastructure on APNs 210-144-011 and -012 were located in close proximity to watercourses, in violation of the Humboldt County Streamside Management Ares and Wetlands Ordinance (SMAWO), property line setbacks, and the State Cannabis General Order (SWRCB, WQ 2019-001-DWQ) setback requirements.

Relocation plans to relocate the cultivation areas and infrastructure outside of watercourse buffers and parcel boundaries for these parcels were prepared and submitted to Humboldt County in 2021. Modifications to these 2021 Relocation Plans were requested during a Dec 8, 2021 site visit by Humboldt County planner, Steve Cannata. Revised Relocation and Restoration plans incorporating recommendations by County staff for 210-144-011/012 have been prepared (Nov 2022, NRM). The relocation and restoration elements described in the 2022 plans will be carried out pending approval from the County of Humboldt.

The total cultivation areas and types reflect the future potential implementation of the Relocation Plans for PLN-11969 and PLN-11795.

2. Cultivation Area and Support Infrastructure

The combined flowering cultivation area on the contiguous parcels is 40,453 ft^2, consisting of 23,466 ft^2 of outdoor and 16987 ft^2 of mixed light cultivation.
The combined propagation area on the contiguous parcels is 2,650 ft^2.
The combined area on the contiguous parcels that is used for both cannabis propagation and flowering is 43,103 ft^2.

2.1 PLN-11969 /APN 210-144-011-000

Cultivation Area

APN 210-144-011-000 has 20,391 ft^2 of Outdoor cultivation and 6,270 ft^2 of Mixed Light = 26,661 ft^2 total Cannabis cultivation.

There will be 10,327 ft^2 of full sun outdoor in pots in the northeast corner of the property and to the southeast of the full sun outdoor will be a 2640 ft^2 outdoor greenhouse (30x88).

Near the residential building there will be another 3174 ft^2 of full sun outdoor and the only 2 mixed light greenhouses on the parcel (3450 ft^2 and 2820 ft^2).

To the southwest of the residential building is a 1250 ft^2 outdoor greenhouse. To the west of that, there are 2 additional 1500 ft^2 outdoor greenhouses.

Two additional propagation greenhouses (totaling 2,650 ft^2) will be constructed on this parcel, 900 ft^2 (20x45), and 1,750 ft^2 (25x70).

Infrastructure:
This APN has and existing fertilizer and chemical storage building (300 ft^2), an existing harvest storage building (1,040 ft^2), and an existing residence (1,515ft^2). Water is discussed below (Section IV.).

No drying or processing will occur on this parcel.

PLN-11795/ APN 210-144-012-000

Cultivation Area
APN 210-144-012-000 will have a total of 3,792ft^2 of mixed light cultivation = 3,792 ft^2 total flowering cannabis cultivation area.

The original cultivation areas will be reduced and relocated to one consolidated area near the western boundary of the parcel. The flowering area will be contained in three mixed light greenhouses: 2 -(P) 1,200ft^2 (20x60) greenhouses and 1- (E) 1,392 ft^2 greenhouse.

There are no propagation greenhouses on this parcel; no propagation greenhouses are proposed on this parcel.

Infrastructure:
This APN has and existing fertilizer and chemical storage building (225ft^2), an existing compost area (100ft^2), an existing generator shed, and an existing residence (800ft^2). Water is discussed below (Section IV.)

No drying or processing will occur on this parcel.

PLN-11797/ APN 210-144-017-000

Cultivation Area
APN 210-144-017-000 has 3,075 ft^2 Outdoor cultivation and 6,925 ft^2 of Mixed Light = 10,000 ft^2 total cannabis cultivation.

2,075 ft^2 of full sun outdoor cultivation (pots) is located between the rainwater pond and the eastern residential building. An additional 1,000 ft^2 of outdoor is contained in a greenhouse in the southeastern corner of the parcel.

Mixed Light cultivation is in greenhouses spread over the parcel. From west to east, there are 7, 360 ft^2 greenhouses (2,520 ft^2), 2, 480 ft^2 greenhouses (960 ft^2), a 1,820 ft^2 greenhouse and a 1,625 ft^2 greenhouse.

There are no propagation greenhouses on this parcel; no propagation greenhouses are proposed on this parcel.

Infrastructure
This APN has and existing processing/ harvest storage and fertilizer and chemical storage building (1200ft^2), an existing processing/harvest storage and generator and tool storage building (1800ft^2), an existing compost area (100ft^2), and two existing residences (1500ft^2 each). Water is discussed below (Section IV.)

III. Cultivation & Processing Activities/Schedule

On project parcels, propagation begins in the spring. Mixed light greenhouses are planted in April/May with propagation greenhouse stock and Outdoor greenhouses and full sun outdoor planted in early to late June using propagation greenhouse stock or from a licensed nursery. Mixed light greenhouses employ LED string lights to maintain plant stages and otherwise utilize light deprivation techniques to achieve 2 flowering cycles; the first harvest is in July and the second in late October or November.

Bucking of mature plants is conducted by hand with wet flower taken to APN 210-144-017 where it processed in one or both of the existing processing and storage buildings (30x40 and 30x60). 'Processing' here means drying. The stem and leaf waste is removed to one of several existing compost piles.

Dried product will generally be stored in place on 210-144-017, but may also be stored on 210-144-011 in the existing the harvest storage building (1040ft^2).

IV. Water Supply and Use

Storage/Supply

The primary water source for cultivation irrigation on the Project Parcels is rainwater that is captured and stored in the rainwater catchment pond (located on 210-144-017); this pond is not associated with any watercourse (not an onstream pond/ not a diversion point). This pond is identified in the Final LSA Agreement as Associated Point #5 and a Pond Stability Report has been provided by an engineer (North Point Consulting, 2/12/2019). As described by the engineer, the pond volume is approximately 420,000 gallons.

The project also holds water rights for 4 separate surface water diversions (PODs). Three of these diversions are for cannabis irrigation; these PODs (known as POD 1, POD2, and POD3) have an active Small Irrigation Use Registration with the SWRCB DWR (SIUR H509346). The fourth surface water diversion (POD4) is a domestic only diversion sourced from an off parcel spring (S027048). All 4 PODs are disclosed, with diversion infrastructure permitted under LSAA 1600-2020-0288-R1.

During wet season diversion days, water is diverted (pumped) from PODs1-3 and from the rainwater pond into water storage tanks and bladders on the project parcels. Existing tank/bladder storage allows for 143,000 gallons of irrigation water storage spread between 41 tanks and 2 water bladders. See Table 1 below.

Additional tanks include mixing tanks, domestic water storage tanks and tanks for fire suppression water storage; water for fire suppression is found in 2, 2500 gallon tanks on APN -012 and in 2, 2,500 gallon tanks on -017.

There are a total of 55 tanks and 2 bladders on the project parcels. See updated (10.2022) Site Plans for accurate spatial representation of tanks and bladders.

Table 1. Total Irrigation Storage (Tanks and Bladders)

	# of Tanks & Bladders (B)	**Tank Size (gal)**	**Total Gallons/ Tank type**
Irrigation	35	2,500	87,500
	1(B)	25,000	25,000
	1(B)	20,000	20,000
	1	5,000	5,000
	1	1,500	1,500
	4	1,000	4,000
Total # of Irrigation Storage Tanks+Bladders = 43 **Total gallons =143,000**			
Mixing Tanks	6	350 to 900	2800
Domestic	4	2,500	10000
Fire	4	2,500	10000
Total # of Tanks= 55 Total # of Bladders = 2 Total gallons =165,800			

Water Use

Electric water pumps move the water into tanks and bladders with gravity as the primary driver of water movement from storage tanks into mixing tanks and into the drip irrigation systems. A combination of drip irrigation and hand watering is utilized; hand watering is used to water plants in pots in all full sun areas while drip is/will be setup for all greenhouse beds.

The estimated water use for 2023 is 465,000 gallons, (Table 2) includes a more accurate measure of flowering plant needs on all project parcels as well as additional gallons needed for propagation. The estimated total annual water use for cultivation on project parcels is 465,000 gallons, or 9.2 gallons/square foot of cultivation per year.

Table 2. Estimated 2023 Irrigation Water Use and Cultivation Schedule on Project Parcels

Irrigation	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	TOTAL
Schedule mixed light	-	-	Veg	Veg/ Bloom	Bloom	Bloom	Harvest /Veg	Veg/ Bloom	Bloom	Bloom	Harvest	-	n/a
Schedule outdoor	-	-	-	Veg	Veg	Bloom	Bloom	Bloom	Bloom	Harvest	-	-	n/a
Water used from the rainwater pond (gallons)	0	0	15,000	20000	40000	40000	40000	90000	90000	60000	0	0	395,000
Water used from Storage tanks (gallons)	0	0	0	0	0	10000	20000	20000	10000	10000	0	0	70,000
Total Estimated Water Use **465,000** Gallons/Year													

V. Power Demand, Supply and Use

The cultivation projects on the project parcels include propagation, flowering, harvesting, and processing (bucking and drying) of harvested plants. These activities requires energy to run water pumps, lights, fans, heaters, and (depending on the season) dehumidifiers.

The project parcels host 3, pole mounted, solar arrays, 1 on -012 and 2 on -017. These arrays are primary power sources for the cultivation activities. Two gas powered Honda generators are utilized as a back up power sources when the weather is cloudy or the power demand exceeds capacity (experienced during drying phases).

VI. Hazardous Materials Use and Management

1. Fertilizers/Pesticides

The Cannabis cultivation at this site includes the use of fertilizers/amendments. The fertilizers used are, Maxsea, Grow More, Cha-Ching, chicken manure, and guano. Plant Therapy is used as needed for combating unwanted insects. The cultivator does not use any rodenticides. The cultivator picks up fertilizers and amendments from the suppliers (in Eureka or Fortuna) at the beginning of the season and as needed. All fertilizers are kept in totes that are stored in a metal shipping container. Fertilizer products that are used in their entirety by the end of each season have their packaging disposed of at Recology Eel River, while left-over products will be stored in the totes during the winter season to be used the following year.

2. Petroleum Products

Very few fuel products are stored on the property, fuel is brought up on an as-needed basis. All water pumps are electric. Generators are run on gasoline, and additional electricity is provided by solar panels. Pumps, generators, rototillers, and fuel cans are stored in shipping containers adjacent to the lower cabin on parcel 210-144-012-000 during the winter

VII. Employees

The site expects to have two (1-3) employees onsite from 5-7 days a week during the growing and harvesting season. The employees will work from Spring through Fall only and only during daylight hours. Due to the remote location of the project, employees are expected to live onsite during the cultivation season. The owners will stay onsite during the cultivation season as well, since they perform much of the required labor themselves. Employees will park at residential buildings (4 total); there are 2 cabins on 210-144-017, 1 on 210-144-011, and 1 on 210-144-012. Employees are expected to come from communities in Humboldt County.

VIII. Compost

The plants will be harvested, dried, and processed on site. The root balls, stems and trimmings from the harvests (2) will be taken to the compost pile on 210-144-011 located on the south side of the residential building or the compost pile on The compost area will be protected from the elements and will be located on a non-permeable surface. The project is exempt from the SWRCB general order concerning composting operations (WQ 2015-0120-DWQ) because the project handles only 100% agricultural materials derived from an agricultural site with the end product returning to the soil onsite and the composting operation is not expected to exceed 500 cubic yards of materials at any one time.

IX. Solid waste & Wastewater

Trash/refuse generated at this site consists of general household waste (cardboard, glass, metals, plastics, organics, etc.) as well as garden-specific waste. The organic garden waste (stems, roots, and leaves) will be composted onsite starting in the 2022 cultivation season. The other cannabis-related waste produced at this site includes, but is not limited to, oil filters, wiring, cardboard, and plastic packaging (cellophane and recyclable HDPE containers). All trash is kept in standard, Rubbermaid garbage cans with lids in a dog kennel cage and stored onsite until taken to Recology Eel River in Fortuna, CA; trips are made approximately one time each month during the cultivation season.

Domestic wastewater generated at the site consists of ordinary household-generated wastewater. The domestic wastewater is disposed of in septic tanks and leach fields. It is unknown if the onsite wastewater treatment systems were ever permitted. The septic systems have not been modified since before the properties were purchased.

X. Security Plan

The primary security measure that the applicant utilizes is lack of public views and access. The project parcels are accessed via locked gate and the cultivation areas will not be viewable from a public road. Additionally, as required by state law (§15000.7) harvested product is stored in secure area.