

Drought Management Plan

for

UP 20-21

High Valley Oaks Inc.

APN 006-004-19

9850 High Valley Road, Clearlake Oaks

Prepared for:



**Lake County Community Development
Department**

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A. Purpose

The purpose of this Drought Management Plan (DMP) is to meet the requirements of Lake County Ordinance 3106, passed by the Board of Supervisors on July 27, 2021. The Ordinance requires all projects that require a CEQA analysis of water use to provide a DMP depicting how the applicant proposes to reduce water use during a declared drought emergency to ensure both the success and decreased impacts to surrounding areas. In addition to the DMP, Ordinance 3106 requires a Hydrology Report addressing water usage, water supply, and cumulative impacts to surrounding areas. The Hydrology Report, dated August 2021, for this project has been submitted as a separate document.

Note: The project proposes water metering and conservation measures as part of the standard operating procedures. These measures will be followed whether or not the region is in a drought emergency. These measures are included below.

B. Project Description

The project applicant for UP 20-21, High Valley Oaks Inc., proposes 4-acres of full sun, outdoor cultivation, in the ground with amended soils. The source of irrigation water will be from an existing, permitted well. Irrigation will be drip irrigation via black polyvinyl drip tape used to irrigate each plant. The irrigation water will be pumped from the well to four (4), 5,000-gallon water storage tanks and then delivered to the drip irrigation system. The drip lines will be sized to irrigate the cultivation areas at a rate slow enough to maximize absorption and prevent runoff. Drip irrigation systems, when done properly, conserve water compared to other irrigation techniques.

C. Operational Water Monitoring and Conservation Measures

As part of the project's standard operational procedures, the project proposes to implement ongoing water monitoring and conservation measures that would reduce the overall use of water. These measures have been provided in the Water Use Management Plan section (Section 15.2) of the project's Property Management Plan. The Water Use Management Plan includes information on Water Sources and Metering, Estimated Water Use, Water Conservation, and the Irrigation System. On-going water conservation measures include:

- No surface water diversion;
- Selection of plant varieties that are suitable for the climate of the region;
- The use of driplines and drip emitters (instead of spray irrigation);
- Cover drip lines with straw mulch or similar to reduce evaporation;
- Water application rates modified from data from soil moisture meters and weather monitoring;
- Shutoff valves on hoses and water pipes;
- Daily visual inspections of irrigation systems;
- Immediate repair of leaking or malfunctioning equipment; and



- Water use metering and budgeting – a water budget will be created every year and water use efficiency from the previous year will be analyzed.

In addition to water use metering, water level monitoring is also required by the Lake County Zoning Ordinance. Ordinance Article 27 Section 27.11(at) 3.v.e. requires the well to have a meter to measure the amount of water pumped as well as a water level monitor. In addition to the above measures, well water level monitoring and reporting will be performed as follows:

Seasonal Static Water Level Monitoring: The purpose of seasonal monitoring of the water level in a well is to provide information regarding long-term groundwater elevation trends. The water level in each project well will be measured and recorded once in the Spring (March/April), before cultivation activities begin, and once in the fall (October) after cultivation is complete. (note: The California Statewide Groundwater Monitoring Program (CASGEM) monitors semi-annually around April 15 and October 15). Records shall be kept, and elevations reported to the County as part of the project's annual reporting requirements. Reporting shall include a hydrograph plot of all seasonal water level measurements, for all project wells, beginning with the initial measurement(s). Seasonal water level trends will aid in the evaluation of the recharge rate of the well. For example, if the water level in a well measured during the Spring remains relatively constant from year to year, then the water source is likely recharging each year.

Water Level Monitoring During Extraction: The purpose of monitoring the water level in a well during extraction is to evaluate the performance of the well to determine the effect of the pumping rate on the water source during each cultivation season. This information shall be used to determine the capacity and yield of the project's wells to aid the cultivators in determining pump rates and the need for water storage. The frequency of water level monitoring will depend on the source, the source's capacity, and the pumping rate. It is recommended that initially the water level be monitored twice per week or more, and that the frequency be adjusted as needed depending on the impact the pumping rate has on the well water level. Records shall be kept and elevations reported to the County as part of the project's annual reporting requirements. Reporting shall include a hydrograph plot of the water level measurements, for all project wells, during the cultivation season and compared to prior seasons.

Measuring a water level in a well can be difficult and the level of difficulty will depend on site-specific conditions. As part of the well monitoring program, the well owner/operator shall work with a well expert to determine the appropriate methodology and equipment to measure the water level in their well(s) as well as who will conduct the monitoring and recording of the well level data. The methodology of the well monitoring program shall be described and provided in the project's annual report.

In addition to monitoring and reporting, an analysis of the water level monitoring data shall be provided and included in the project's annual report, demonstrating whether or not use of the project wells is causing significant drawdown and/or impacts to the surrounding area and what measures were taken to reduce impacts. If there are impacts, a revised Water Management Plan shall be prepared and submitted to the County, for review and approval, demonstrating how the project will mitigate the impacts in the future.

D. Drought Emergency Water Conservation Measures

In addition to the above, on-going, water monitoring and conservation measures, during times of drought emergencies or water scarcity, the project may implement the following additional measures, as needed or appropriate to the site, to reduce water use and ensure both the success and decreased impacts to surrounding areas:

- Install additional water storage;
- Install moisture meters to monitor how much water is in the soil at the root level and reduce watering to only what is needed to avoid excess;
- Cover the soil and drip-lines with removable plastic covers or similar to reduce evaporation;
- Irrigate only in the early morning hours or before sunset;
- Cover plants with shaded meshes during peak summer heat to reduce plant water needs; and/or
- Use a growing medium that retains water in a way to conserve water and aid plant growth. Organic soil ingredients like peat moss, coco coir, compost and other substances like perlite and vermiculite retain water and provide a good environment for cannabis to grow.

In the event the well cannot supply the water needed for the project, the following measures may be taken:

- Reduce the amount of cultivation and/or length of cultivation season;
- Install additional water storage; and/or
- If possible, develop an alternative, legal, water source that meets the requirements of Lake County Codes and Ordinances.

