Chapter 3
Environmental Impact Analysis

3.0 Introduction and Approach to Analysis

This chapter discusses the environmental impact analysis approach, methodology, and cumulative project scenario for the County of Santa Cruz (County) Commercial Cannabis Cultivation and Manufacturing Regulations and Licensing Program (Program). This section describes the environmental baseline as accurately as possible, given the limits of the available data for the existing cannabis industry in the County. The approaches and methodologies to assess direct, indirect, and secondary impacts of both the Project and More Permissive Project scenarios described in Chapter 2, *Project Description*, are also described. Further, the assumptions used by this analysis for the amount and location of development associated with commercial cannabis activities, including site improvements required by the Santa Cruz County Code (SCCC), are detailed in this Chapter.

3.0.1 Environmental Resources Analyzed in the EIR

The scope of this Environmental Impact Report (EIR) is based on the Project Description outlined in Chapter 2, and the Notice of Preparation (NOP) (Appendix B), focusing on potentially significant impacts of the Program on environmental resources. This chapter evaluates the potential for environmental impacts in 14 resource areas which were identified during the NOP scoping process:

- Section 3.1, "Aesthetics and Visual Resources"
- Section 3.2, "Agricultural and Timber Resources"
- Section 3.3, "Air Quality"
- Section 3.4, "Biological Resources"
- Section 3.5, "Cultural Resources"
- Section 3.6, "Geology and Soils"
- Section 3.7, "Greenhouse Gas Emissions and Climate Change"
- Section 3.8, "Hazards and Hazardous Materials"
- Section 3.9, "Hydrology and Water Quality"
- Section 3.10, "Land Use and Planning"
- Section 3.11, "Public Services"
- Section 3.12, "Population, Employment, and Housing"
- Section 3.13, "Transportation and Circulation"
- Section 3.14, "Utilities and Energy Conservation"

Sections 3.1 through 3.14 provide detailed discussions of the environmental baseline or setting, methodology for impact assessment for the resource, impacts associated with the Project and More Permissive Project, and mitigation measures designed to reduce significant impacts where required and when feasible. The level of impact that will remain after mitigation is implemented and cumulative impacts also are discussed. Additionally, Section 3.15, *Other CEQA Issues,* identifies other California Environmental Quality Act (CEQA) resource areas for which implementation of the Program was found to have no significant effect on the environment, in this case Noise and Minerals, and provides a brief discussion of why they were not analyzed as primary environmental resources areas in this EIR. Section 3.15 also addresses growth inducing effects of the Program.

3.0.2 Assessment Methodology

Establishing the Baseline Environmental Conditions

Baseline conditions are defined as the existing physical setting that may be affected by the Program (State CEQA Guidelines, § 15125, subd. (a)). Baseline conditions are the local and regional physical environmental conditions as they existed at the time of the Notice of Preparation (NOP), which was published on February 13, 2017. This environmental setting constitutes the baseline physical conditions against which the County will determine whether impacts from the Program and alternatives are significant. The impacts of the Program are defined as changes to the environmental setting that are attributable to Program. Existing cultivation and manufacturing activities are part of the baseline because they are part of the existing environmental condition, even if illegal and difficult to fully describe. Therefore, it is only the projected new and expanded cannabis cultivation and manufacturing activities, which are not part of the baseline, that are the focus of this EIR.

Because the existing cannabis industry has been illegal, subject to sometimes vigorous law enforcement action (even while sometimes qualifying for limited immunity from local law enforcement action), and typically exists largely in remote, mountainous, poorly accessed, and/or well-screened regions of the County, precise and reliable data on existing cannabis cultivation and manufacturing is difficult to obtain. Information on the existing environmental baseline has been obtained from the 2016 Cannabis Growers Survey acquired during the Cannabis Cultivation Choices Committee (C4) process, 2016 County License Registration data, 2017 Cannabis Manufacturers Survey conducted by the County, 2015/16 cannabis enforcement case data from the Santa Cruz County Sheriff's Office, the County Planning Department's active zoning or permit enforcement case data, information from the Regional Water Quality Control Board and California Department of Fish and Wildlife, and interviews with representatives of or participants in the cannabis industry.

Commercial cultivation sites within Santa Cruz County can be small-scale indoor or outdoor operations with less than 100 square feet of canopy. At least 80 percent of survey and registration responders indicated having grows smaller than 5,000 square feet.

Commercial cultivation sites also include indoor or outdoor operations that can cover relatively large areas of land. Approximately 13 percent of survey and registration responders indicated having grows larger than 5,000 square feet (0.11 acres).

Existing Cannabis Industry

Because data on the existing cannabis industry is incomplete and difficult to confirm, this EIR discloses the best available information on existing cannabis cultivation and manufacturing conditions in the County to characterize a cultivation and manufacturing baseline for the purposes of impact analysis. The existing data cannot provide a precise picture of existing operations because the existing cannabis industry is illegal and the locations and operations of the industry are, to a large degree, unknown. However, the collated information characterizes the general range, type, location, and resource demands of existing cannabis cultivation and manufacturing in the County to support an understanding of the environmental baseline sufficiently for impact analysis.

Existing cannabis cultivation includes indoor, outdoor and greenhouse grows. These existing grows are known to occur in urban and rural communities, within residential, agricultural, and commercial-industrial and remote mountain areas and large-scale commercial greenhouses. Cannabis canopies range in size from under 100 square feet (sf) to over 5,000 sf and up to 2 acres at the estimated largest extent, and primarily occur in the Mountain and Agricultural Regions of the County. Grow sites are supported by drying and processing rooms within homes, outbuildings, or warehouses and supporting cultivation infrastructure, such as watering, lighting and fertilization systems.

Cannabis product manufacturing involves the transition of raw cannabis into other products, such as oil, rosin, hash, or tinctures, which is then often used in other products, such as edibles, salves, and cosmetics. As discussed in Chapter 2, manufacturing can use intensive processes, such as closed loop system, super-critical carbon dioxide processes for hash production and heated hydraulic pressing for creating rosin, or less intensive methods, such as screen filtering for straining hash or soaking cannabis in alcohol to create tinctures. The division between flammable (or pressure greater than 2,000 psi) extraction methods and non-flammable (or pressures less than 2,000 psi) processes is defined by "classes" of manufacturing activities. (see Section 2.3.4, *Types of Cultivation and Manufacturing*, for a more complete discussion).

Cultivation Information from Cannabis Industry Representatives

While entirely accurate data is not available and cannot be independently verified, representatives of the County's established cannabis industry, local representatives of the National Organization to Reform Marijuana Laws (NORML), and the Santa Cruz Veteran's Alliance (SCVA) and other cultivators, manufacturers, and suppliers provided information to inform the following observations and characteristics about the existing cannabis industry in the County:

- There are perhaps as many as 10,000 existing cannabis cultivation operations in Santa Cruz County ranging in size from small backyard, bedroom, and garage grows to large greenhouse and warehouse grows, with cannabis processing/manufacturing occurring both at cultivation sites and at other locations throughout the County. It is estimated there are approximately 300 to 350 established cultivators and that the other thousands that exist are very small "micro" operations growing for both personal and commercial purposes. It is estimated that there are approximately 49 – 100 larger/higher-yield manufacturing operations (average employment of six persons) and 200 – 300 smaller/lower-yield manufacturing operations (average employment of two persons) in the County. Therefore, this EIR conservatively assumes a total of 400 existing manufacturing operations with one-half of the estimated existing 1,200 employees involved with manufacturing also involved with cultivation work at cultivation sites (the employees do both types of work), resulting in an estimated existing 600 employees that are involved only with cannabis manufacturing/processing activities;

- Small-scale garage, backyard, and bedroom grows, and "micro" home-based manufacturing, constitute a significant portion of the cannabis production industry, for personal use as well as for commercial purposes. It is reasonable to assume that many, or most, of these existing baseline activities would end up continuing as unlicensed (illegal) small operations that try to stay unnoticed and out of sight. Based on that assumption, this level of baseline activity would not be expected to change from existing conditions as a result of Program implementation (i.e., the level of overall activity is not affected either before or after approval and implementation of the Program). Code enforcement by the Licensing Office and other agencies would occur, which on balance is expected to prevent increases in the overall level of these types of operations. This EIR is being prepared to evaluate the potential environmental impacts of implementing a Program of licensed, permitted and legal operators in the future.
- Commercial cannabis growers currently employ an estimated total of 1,500 full-time employed (FTE) staff working in cultivation activities at the estimated 300 to 350 established larger commercial cultivation businesses along with the smaller businesses on the existing 36 acres currently cultivated by registrants. Employment includes trimmers and other processing workers at cultivation sites. Based on the above assumptions regarding manufacturing employees, about 600 of the cultivation employees also do some level of cannabis manufacturing/processing at these existing cultivation sites;
- Total value of cannabis production and manufacturing in the County has been estimated at $250 to $300 million annually; however, estimates vary widely and the total may be higher. For comparison purposes, strawberries are the County's most valuable traditional crop, with an estimated total value of $219 million in 2015.
- As other jurisdictions have adopted local licensing programs, such as Monterey County, industry sources say that some growers and manufacturers have left Santa Cruz County, particularly those that were less confident of being able to obtain an eligible site and/or a license.

The following summarizes the available information on existing cannabis cultivation and manufacturing in Santa Cruz County:

Cannabis Cultivation Registration and Survey Data

The County's 2016 Cannabis Licensing Program Registration Process enrollment occurred in August through November of 2016. Of the 760 respondents engaged in cultivation, 567 reported currently cultivating cannabis and in some cases manufacturing cannabis products as well. The 2016 Cannabis Growers Survey supported by the SCVA, Association for Standardized Cannabis, Responsible Cultivation Santa Cruz, and Santa Cruz Mountains for Sustainable Cannabis Medicine (SMC2) received responses from 284 cultivators, of which 229 are currently cultivating (Appendix D)..[1] While available locational data is not entirely based on specific address locations, the data from license registrations and survey respondents indicates that existing cannabis cultivation tends to be concentrated in certain regions and communities. Of the 796 registrants and survey responders who provided general location information, at least 316 (40 percent) are in the Mountain Region proximate to the San Lorenzo Valley, and at least 176 (22 percent) in the South County Region primarily surrounding Watsonville. Approximately 12 percent of respondents did not disclose location information (Table 3.0-1). Combining data from both the 2016 Cannabis Growers Survey and the County's Cannabis

[1] There may be overlap in sites between the 2016 Cannabis Growers Survey and the 2016 County License Registration Data.

Licensing Program Registration Data yield the following information concerning existing grow types and total canopy coverage within the County (refer to Table 3.0-2, Table 3.0-3, and Appendix D).

Table 3.0-1 Cultivation Site Location Summary of Registrant and Growers Survey Data

County Region	Total Registrants & Survey Respondents	Percent of Total
Mountain	316	40%
Urban	151	19%
South County	176	22%
North Coast	58	7%
Undisclosed	95	12%
Total	**796**	**100%**

Source: 2016 Growers Survey and 2016 County Licensing Registration Data

Table 3.0-2 Existing Cannabis Site Cultivation Types based on Registrant and Survey Data

Cannabis Cultivation Type	Total Registrants & Survey Respondents	Percent of Total
Indoor	198	25%
Outdoor	326	41%
Greenhouses	138	17%
Multiple Types	128	16%
Undisclosed	6	1%
Total	**796**	**100%**

Source: 2016 Growers Survey and 2016 County Licensing Registration Data

Table 3.0-3 Existing Cultivation Canopy Sizes

Canopy Size (square feet)	Total Registrants & Survey Respondents	Percent of Total
Under 100	77	10%
100 to 500	194	24%
500 to 1,000	94	12%
1,000 to 5,000	274	34%
Over 5,000	107	13%
Undisclosed	50	6%
Total	**796**	**100%**

Source: 2016 Growers Survey and 2016 County Licensing Registration Data

Other County Data Sources

Additionally, the County maintains a limited range of data related to existing cannabis activities from its enforcement programs, including those from the County Sheriff's Office and the Planning Department's Code Compliance team. Input from these departments and data from 2015/2016 indicate the following:

- Although no "hard data" was available, the County Sheriff's Office has provided an informal estimate that there are at least 1,800 cultivation sites in the County, twice the total initial registration respondents of 951.
- In March of 2015, Code Compliance staff in the Planning Department identified a total of 145 potential Cannabis related code violations, an increase of 58 percent from 84 in September of 2014. This increase is considered to reflect a "green rush" that coincided with changes in County regulations in 2014, which banned cannabis cultivation, but which offered limited immunity if cultivation adhered to defined criteria. The staffing levels available for cannabis code enforcement by county staff did not provide a sufficient enforcement program. Many of these green rush cases resulted in environmental damage associated with vegetation clearing, illegal stream diversions, extensive grading, illegal development and habitation, and solid waste management. Some of the cases involved use of flammable and/or high pressure manufacturing processes, such as open blasting for butane honey oil (BHO).

Cannabis Product Manufacturing Data

Only 8 percent of license registrants report manufacturing cannabis products onsite.

Due to the nature of cannabis product manufacturing activities, many of which can be done at a very small scale, it is not possible to describe with certainty cannabis product manufacturing activities existing within the County. Cannabis industry representatives estimate the number of manufacturers in the County at up to 100 larger higher-yield manufacturers, and about 200 to 300 smaller lower-yield operations. About 8 percent of registered cultivators reported that they also engage in small scale manufacturing and that other small businesses use cannabis in their products. Due to high risks of self-reporting illegal cannabis manufacturing, and based on discussions with industry representatives, this percentage appears to be underreported. However, it is recognized that the rate of growth of demand for processed cannabis products will be strong.

- Based on interviews with local cannabis industry representatives in February and March 2017, there are approximately 100 higher-yield cannabis product manufacturers producing more than $3.5 million each in revenue annually; an estimated 200 to 300 additional lower-yield small- to medium-scale manufacturers. There are also an unknown number of home-based commercial manufacturers in the County yielding unknown profits, perhaps on the order of 1,000 operations, which are part of the environmental baseline and considered likely to continue regardless of whether and how the County implements the Program, and would be subject to SCCC enforcement.
- Review of sales data available from local dispensaries indicates that sales of natural cannabis flowers and buds account for 55 percent to 60 percent of sales, while concentrates (e.g., oils) or hash accounts for roughly 18 to 21 percent of sales, and edibles roughly 6 to 7 percent of sales. A range of other products such as lotion and vape cartridges make up remaining sales. It is unknown what portion of these products are manufactured within the County.

Environmental Effects of Existing Cannabis Industry

The environmental baseline includes County landscapes that have been altered by past and ongoing cannabis cultivation and manufacturing. Current cultivation and manufacturing sites vary widely in their location, characteristics, maintenance, cultivation practices, and related effects on the environment. As discussed above, no comprehensive survey of existing cannabis cultivation sites could feasibly be performed, so it is not possible to characterize the total amount of current cannabis cultivation by acreage, annual production quantities, or the precise mix of cultivation types or precise

Some existing grows within the County do not conduct environmentally friendly cultivation methods or use agricultural best management practices, such as in the above case: illegally diverting surface water from a stream.

Some existing grows within the County support environmentally friendly cultivation methods; one approach is to provide electricity needs for fans and other motors through solar panels and batteries.

effects on the environment. Additionally, it is not possible to determine exact percentages of manufacturing technique types used within the County due to limited data.

However, County Code Compliance staff and resource agencies such as the California Department of Fish and Wildlife have documented instances of water quality violations and adverse effects on natural resources. For example, acres of sensitive habitats, such as Santa Cruz Sand Hills Habitat and redwood forest, have been disturbed on multiple different sites, water has been illegally diverted from creeks, and grading has occurred on hillside and ridgelines without permits (see Appendix D). However, these records are limited and are contrasted with other well-run, low-impact operations visited during preparation of this EIR that employ many beneficial and sustainable practices, such as organic cultivation, water recycling, and use of previously cultivated areas to minimize adverse environmental consequences.

It is important to note, that despite areas where impacts of substantial concern have occurred to State Parks, sensitive habitats, creeks, or neighborhoods, cannabis cultivation occupies a relatively minor amount of the County's landscape, with direct and indirect cultivation disturbances likely confined to thousands rather than tens of thousands of acres. For example, based on the best available data, the clear majority of cannabis sites appear to have canopies that occupy less than 1,000 square feet (2016 Cannabis Cultivation Survey; 2016 License Registration data).

According to the County's License Registration data, there are approximately 36 total acres of known, existing cannabis canopy under cultivation in 2016.

Based on 2016 License Registration data, a total of 36 acres is currently under cultivation in the County as of November 2016. While future secondary effects of road improvements, and construction of ancillary structures and other features to achieve compliance of existing cultivation sites may lead to greater ground disturbance, the total amount of land that is currently directly impacted by cannabis plants appears to be relatively limited compared to other major land uses. For example, cultivation of row, orchard, and berry crops occupy over 17,000 acres of the County's landscape with associated potential for impacts to habitats and water quality, while urban uses occupy thousands of additional acres. Part of the potentially disproportionate effect of cannabis cultivation on the environment and

communities is its former illegality that has forced cultivation and manufacturing into settings such as dense forest, steep hillsides, or rural neighborhoods where impacts of even limited operations become magnified. Limited knowledge of regulations or attention to standards and best practices, as well as the absence of traditional agricultural inspection and oversight also exacerbate impacts for some operations. While cultivators and manufacturers operate in warehouses, greenhouses, and residential garages in less sensitive locations, cultivation in remote and sensitive areas is more likely to create impacts to streamside habitats and water quality, as well as to create land use compatibility impacts in affected residential communities, such as in Bonny Doon and Corralitos.

Unlicensed Commercial Cannabis Activities

Estimates of the number of growers and the amount of cultivation by known, registered cultivators represents the minimum size of the industry, as it does not include many other operations by unidentified growers in the County. As described above, the understanding of the actual size and character of cultivation outside of the County's License Registration process is based on anecdotal input from the County Sheriff's Department and CalFire, records from County Code Compliance, and local knowledge in the cannabis cultivation community. Members at the California Cannabis Industry Association, California Growers Association, California Department of Consumer Affairs at the Bureau of Medical Cannabis Regulation, the California Department of Food and Agriculture at the Medical Cannabis Cultivation Program, California NORML, California Cannabis Advocates, California Cannabis Association, and the Marijuana Policy Project were contacted to receive input about the quantity of total growers in the County.

Based on this feedback, the County's License Registration data captured only a portion of the total existing cultivators in the County. At a maximum, the County would license the 760 registrants, plus an additional unknown number of existing commercial farmers on CA zoned lands and with existing greenhouses who are not required to have registered in order to receive a license. Any cultivators not in one of those categories would not be licensed under the Program. Further, it is impossible to know how many of the existing manufacturers of cannabis products will seek a license from the County, but any existing or future manufacturers that decide not to apply would likely opt to operate without a license or required permits, which would be a continuation of baseline. Implementation of the Program will not create the existing illegal activity even if it continues and continues to be illegal. Furthermore, many registrants have stated an intention to increase cannabis activities in the future, which may occur illegally if registrants do not obtain licenses and no longer seek to be consistent with any limited immunity provisions (that are proposed to be eliminated from the SCCC as part of the Program).

As evidenced in other states where medical and recreation cannabis cultivation and manufacturing has been legalized, such as Colorado, illegal markets for cannabis product are thriving, changing, and growing. For example, as described by a range of news sources, including Newsweek, legal recreational cannabis is satisfying only 59 percent of the demand for marijuana in Colorado. The remaining 41 percent of users are turning to the illegal market and medical marijuana growers. Due to operating expenses including taxation on cannabis at government-licensed dispensaries, many users are looking to unlicensed sources, including home-based cultivators and delivery services, to obtain cannabis. Further, demand from residents living in nearby states where cannabis is still illegal supports illegal cannabis activities. For example, in Oregon, as much as 80 percent of the state's cannabis crop leaves Oregon. Much of this export is shipped to the East Coast, where residents in states with high demand but harsh penalties are able to take advantage of the quality facilitated by

legal cannabis systems in other states.[2] To address this issue, law enforcement efforts combined with legislative efforts to limit the total amount of cannabis produced and encourage participation in legal cannabis business can help to reduce the illegal market.

The potential for future unlicensed cultivators and manufacturers to remain or increase in the County is high. 760 of the initial 951 registrants moved forward with the registration process in 2017. While it is the County's goal to license all registrants in a location and site configuration that is appropriate under the Program, it is unlikely that all 760 registrants will receive a license under the Program or the State Licensing program administered by BMCR. Some properties are inherently not suitable for cultivation. Also, license requirements such as site improvements to construct SCCC compliant roads, homes, and utilities, preparation of site-specific technical studies, meeting County permit requirements, payment of fees, and taxation may create a burden, primarily for small to medium cannabis cultivators, that may be too onerous and could result in the potential license registrant to abandon the Program. It is also likely that not every manufacturer will be granted a license for similar reasons. Those that choose not to seek a license may cease cannabis activities, but unlicensed cannabis activities may continue to occur and change.

Additionally, based on the sources described above, the cannabis industry may be much larger than reflected in the County License Registration data. The cannabis industry changes over time; changes of products and technologies occur to changes in processing and manufacturing systems. Cultivation and production can therefore increase, and movement of operations to different sites occurs. Given the potential for an expanding illegal market in the state and the County, the effectiveness of enforcement programs in the County and alternative levels of permissiveness of Program requirements to encourage participation by the local cannabis industry are addressed in this EIR.

EIR Assumptions for the Program

Calculating the Projected New and Expanded Cannabis Activities Beyond the Baseline

As described in Chapter 2, *Project Description,* the impact analysis in this EIR assumes that the future amount of cultivation licensed under the Program would be up to 44.3 acres of cannabis cultivation proposed by current registrants, with plans to expand such cultivation up to 79.1 acres over the life of the Program. This would be an increase of between 8 acres and 43 acres of commercial cannabis canopy pursued by registrants in the future as the Program is implemented. The impact analysis also takes into account the potential for up to 147 additional acres of cannabis to be cultivated by commercial farmers within greenhouses on lands designated Commercial Agriculture (CA). In total, for the purposes of EIR analysis, the increase in commercially cultivated cannabis canopy attributable to the Program would be 190.1 acres.

As described in Chapter 2, *Project Description*, up to 20 new larger higher-yield manufacturers and up to 60 new smaller lower-yield manufacturers are expected to seek licenses in 2018 alone. For the EIR analysis, it is reasonable to assume that this number of new manufacturers seeking licenses would occur annually as an ongoing typical rate until the industry stabilizes in about five years. In addition, for the purposes of this EIR, it is assumed that up to 40 cannabis home occupation licenses may be issued annually over the five-year period (8 per year). In total, up to 88 manufacturing licenses could

[2] Source: Newsweek, February 2014 - http://www.newsweek.com/weed-black-market-424706 -

be issued annually within eligible areas Countywide (20 larger higher-yield + 60 smaller lower-yield + 8 home occupations = 88). While many of the manufacturing licenses would occupy existing buildings or developed quarries, limited manufacturing land and vacant building space could drive development of new buildings, which would be subject to existing SCCC regulations.

Required Site Improvements to Support Commercial Cannabis Activities

Residential Units and Site Improvements

Since the Program requires a residence for eligible parcels in the A, RA, TP, and SU zone districts, this EIR reviews potential indirect impacts associated with construction of a maximum of 228 new residences under the proposed project, with associated roads, driveways, septic systems, water storage tanks (as needed) and other infrastructure. This estimate is based on licensing registration data that indicate that a home may not be present at 75 percent of registrant-provided locations that are located within A, RA, TP, or SU zoning districts. (Appendix D). New residences would typically require new or improved roads, driveways, site preparation, clearing, and infrastructure consistent with the SCCC. New development would need to comply with development standards and requirements of the zoning ordinance and other applicable chapters of the SCCC, including but not limited to Title 16 (Environmental and Resource Protection), Title 12 (Building Code) and Chapter 7.92 (Fire Code).

County Fire Code Requirements for Cannabis-Related Structures

A significant amount of commercial cannabis cultivation and manufacturing occurs on rural lands, particularly in the Mountain Region and the foothills of the Urban and South County Regions. As these areas are characterized by dense, flammable vegetation and frequently have limited access via narrow or unimproved rural roads, substantial portions of these Regions are mapped as High Fire Hazard Zones by CalFire. CalFire and the Santa Cruz County Fire Department (SCCFD) have noted a history of structure fires and wildfires associated with illegal and unregulated cannabis cultivation and manufacturing. While data on the number, exact cause, and severity of such fires is unavailable, anecdotal accounts based on interviews conducted with Richard Sampson, Division Chief and Chris Walters, Deputy Fire Marshal from CalFire between February and May 2017, cite increased human habitation in rural areas, open blasting cannabis product manufacturing, poor site access, unpermitted wiring, poorly designed and managed onsite electricity generation (e.g., use of generators that overheat or are improperly used and create fires), campfires, smoking, use of power tools, and insufficient water supply for firefighting purposes as factors in increased fire hazard. Fire risks from such illegal and unpermitted cannabis activities have resulted from cannabis sites that are not constructed, operated, and maintained consistent with the SCCC.

Fire Code Interpretation and Program Impacts

Adherence to and interpretations of the Fire Code are key factors that could influence direct, indirect, and secondary Program impacts:

- **Direct Impacts** – Impacts that may be created by cannabis activities such as increased fire hazards
- **Indirect Impacts** – Impacts that may be caused by fire protection requirements, such as road construction, managing vegetation for defensible space, and water storage tanks
- **Secondary Impacts** – Project-induced additional or expanded cannabis activities that are illegal and unregulated as growers and operators seek to avoid expenses or licensing, which can increase fire hazards.

SCCC Chapter 7.92 (Fire Code) adopts the California Building Code (Title 24, Part 2) and the California Fire Code (Title 24, Part 9) by reference to help safeguard life, property and public welfare from the hazards of fire, hazardous materials release, and explosion. The Fire Code addresses the occupancy category and use of buildings and premises, the operation and maintenance of equipment, and the installation and maintenance of adequate egress. Based on the proposed use and occupancy of a structure, the Fire Code often results in required site improvements to ensure three main outcomes are achieved related to site fire safety:

1. Adequate vegetation management for defensible space around structures to reduce risk of wildfire;
2. Adequate road widths and turnaround areas to allow fire protection vehicles and equipment to access the site; and
3. Adequate water supply and flow to fight fires.

The Fire Code requires a 10,000-gallon fire water storage tank for a new 4,000 square foot home that relies on private water. Although dimensions vary, a typical 10,000-gallon tank would be 12 feet in diameter and 13 feet tall. The 10,000-gallon requirement for a home may also be met by two 5,000 gallon tanks.

For F-1 Factory Industrial classifications, the Fire Marshal has determined that up to a 120,000-gallon storage tank or more may be required for adequate water storage. Such a tank is roughly 30 feet in diameter by 25 feet tall. Multiple smaller tanks can also be co-located on the site to meet the storage requirement. Cannabis drying sheds and greenhouses would be considered F-1 occupancies. Sprinklers may be required, including for cannabis drying sheds and greenhouses, depending on whether located in a rural area not served by municipal water, and whether employees work within buildings.

Minimum site requirements for fire protection for any given property vary widely based on the characteristics of the site, including whether the location is in a high fire hazard zone, the type and size of proposed structure, and the proposed use or occupancy of the structure, among others factors. The occupancy (use) classification of a structure plays a key part in determining the appropriate fire protection measures. Chapter 3 of the California Building Code and Chapter 2 of the California Fire Code define the range of occupancy classifications that are recognized by the Codes.

When a structure is subject to review by the SCCFD, the Fire Marshal is responsible for determining the appropriate occupancy classification of a structure when it is constructed and first occupied and when there is a change of use. Over the useful life of a building, the activities in the building may evolve and change. Changing from one activity to another or from one level of activity to another is defined as a change of occupancy. The new occupancy must comply with applicable provisions of the Fire and Building Codes. As an example, this may occur when a toolshed or barn that has been historically used

for storage of farm equipment is converted to cannabis cultivation or a building in which employees gather to trim cannabis or to process it through various manufacturing methods.

For the purposes of this EIR, assumptions must be made about the site improvements that may be required of licensed cannabis cultivators and manufacturers to comply with the Fire Code. These improvements may have indirect impacts on the environment from roadway construction and improvement, vegetation clearing, site development and pad clearing, and provision of onsite fire water storage with effects on limited water supplies in areas dependent upon wells, springs, and stream diversions. As cannabis cultivation and manufacturing are not specifically assigned to a particular occupancy classification in the Fire Code, the Fire Marshal and the County Building Official were consulted in May and June 2017 to determine which occupancies may be applied to cannabis-related structures. Based on those consultations, the following occupancy types are relevant for the environmental analysis:

- **F-1 - Factory Industrial Group** occupancy includes the use of a structure, or a portion thereof, for moderate hazard uses, including assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations, including hemp products, tobacco, and food processing establishments/commercial kitchens under 2,500 sf that are outside of restaurants or dining facilities.
- **U- Utility and Miscellaneous Group** occupancy includes structures of an accessory character and miscellaneous structures not classified in any specific occupancy, including agricultural buildings, greenhouses, sheds, and barns, that are constructed, equipped and maintained commensurate with the fire and life hazard incidental to their occupancy.
- **H-3 - High-Hazard Group** occupancy includes the use of a structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities consistent with the California Fire Code, including materials that readily support combustion or that pose a physical hazard.
- **R-3 - Residential Group** includes the use of a structure, or a portion thereof, for sleeping purposes by permanent residents, including single family homes.

The Santa Cruz County Fire Marshal advised that commercial cannabis-related uses would be regulated similar to tobacco and hemp products, which are identified under the F-1 occupancy "moderately hazardous" classification in the Fire Code. This interpretation is consistent with interpretations of the States of California and Colorado regarding the fire risk associated with cannabis cultivation, drying/curing, and manufacturing.

Based on this direction this EIR assumes the following occupancy types will be applied to the following general types of cannabis-related structures:

Table 3.0-4 Occupancy Types for Cannabis-Related Structures

Occupancy Classification	Structure Types
F-1	• Any structure used for commercial activities that is larger than 120 sf with significant associated utilities, including 2 or more electrical outlets, including: o Indoor cannabis grow rooms o Greenhouses o Drying sheds also used by employees for trimming o Other structures where cannabis is grown, stored, processed, packaged, or manufactured • Any commercial structure larger than 120 sf with significant associated utilities, including 2 or more electrical outlets, used for non-flammable/lower pressure (less than 2,000 psi) manufacturing (Class 1, 2, and 3 Licenses), including: o Food processing facilities or commercial kitchens o Not including facilities permitted under home occupation regulations
U	• Any commercial structure of any size that has no significant associated electrical, plumbing, or mechanical equipment (no more than one electrical outlet other than to power irrigation equipment), used only for growing or storage, including: o Greenhouses o Sheds o Barns o Agricultural buildings
H-3	• Any commercial structure larger than 120 sf with significant associated utilities, including 2 or more electrical outlets, used for flammable and/or higher pressure (greater than 2,000 psi) manufacturing (Class 4 Licenses)
R-3	• Any residence used for cannabis home occupation as an ancillary use

Given these assumed occupancy types, it is apparent that the occupancy classification for most cannabis structures, particularly cultivation structures, would require substantial improvements to comply with the Fire Code. While requirements would vary by site, the following requirements are assumed for the purposes of impact analysis in the EIR.

1. **Vegetation Management to ensure Defensible Space around Structures**: All structures (building over 120 square feet with a permanent foundation) are required to have the 100' defensible space vegetation clearance found in the Fire Code and PRC 4290 and 4291. Defensible space requirements do not affect fire flow requirements or water storage requirements for the rural areas, as addressed below.

2. **Roadway Improvements**: If a structure is permitted as a building, a road to within 150' of the structure is required. There are specifications on how the road is required to be built, including a minimum 20-foot width for F-1 occupancy. Minimum road width is 18-feet for R-3 occupancy. Other requirements include minimum radius of curvature of 200 feet (which can be lessened to 50 feet with increased road width), maximum slope, surfacing specifications, required turnouts, and turnaround. There are exceptions to the width requirements for residential (R-3), but no exceptions for Factory Industrial (F-1). The road is required to meet these requirements from the end of the County maintained road to the new "structure".

3. **Fire Flow and Water Supply**: The Fire Code requires every new commercial structure to have a hydrant and a specified "Fire Flow." Fire Flow is the amount of water the Fire Code

suggests is required to put out a structure fire.[3] When calculating Fire Flow requirements, a reduction of 75 percent is allowed if the building is sprinklered by a National Fire Protection Agency (NFPA) 13 (nonresidential) sprinkler system. The Fire Flow requirements assume that the structure would be served by an established water system/municipal water. If there is no established water system or municipal water, then minimum Fire Flow standards must be satisfied by onsite water storage in tanks. Minimum required fire flow in areas without municipal hydrants, where much cannabis cultivation occurs, can be reduced from "municipal" requirements of 120,000 gallons or more by the Fire Marshal on a case-by-case basis given site conditions. To the extent that Fire Flow requirements are dependent on occupancy classification, if the use of a building changes to a different occupancy category, a different set of fire safety requirements may be imposed. In areas where no established water system/municipal water is available, the Fire Marshal may apply standards from NFPA 1142, which allows for a reduction in available water provided other aspects of fire safety, such as road access and defensible space clearance are in place. The determination regarding the requirements for Fire Flow must be made on a case by case basis and cannot be guaranteed. Therefore, for the purposes of this EIR, analysis will assume an average of 120,000 gallons of water must be available for firefighting purposes via a hydrant within 400 feet of each structure.

Taken together, these requirements would result in the following requirements for occupancy of a commercial structure with an F-1 occupancy classification:

1. 100 feet of defensible space vegetation clearance/management must be maintained around the building.
2. 20-foot wide road with 200-foot radius of curvature (may be reduced to 50 feet when additional road width is provided), and turnaround to within 150' of all portions of the building.
3. The structure would be required to have a fire hydrant or onsite water storage system capable of supplying 1,000 gallons per minute for two (2) hours (120,000 gallons).[4]
4. The structure may be required to have an NFPA 13 fire sprinkler system throughout.

It is notable that Section B103 Modifications of Appendix B addresses areas without municipal water supply systems and allows for a lesser standard for rural water supply at the discretion of the Fire Marshal. However, CalFire and SCCFD are not mandated to use the lesser standard in rural areas mainly because there can be conflict between required water storage for Fire Flow and what is

[3] Fire Flow requirements are found in the California Building Code Appendix B (Table B105.1 (1) is for R-3 and R-4 and Table B105.1 (2) is for all other structures

[4] California Fire Code Appendix B Table B105.1 (2) indicates Type V-B for a structure of 0-3,600 sf requires Fire Flow of 1,500 gallons per minute and the duration is 2 hours. However, Table B105.2 states if the structure is required to have an NFPA 13 sprinkler system, Fire Flow requirements may be reduced by 75%, but not be less than 1,000 gallons per minute. Therefore, the actual required Fire Flow is 1,000 gallons per minute for two hours, if a structure is sprinklered. This demand would be serviceable for a municipal hydrant system but in the rural area where there is no existing hydrant system with sufficient storage for the required Fire Flow of 1,000 gallons per minute for 2 hours, which is 120,000 gallons of storage. NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting, can be used to reduce Fire Flow requirements, as an exception to the fire code water supply requirements, at the discretion of the Fire Code official, as long as the storage requirement does not conflict with the flow requirements found in NFPA 13, Installation of Sprinkler Systems.

required for flow duration for any required fire sprinkler system. For cannabis-related structures, the Fire Code would be applied specifically to address the fire hazards associated with grow lights, fans, dehumidifiers, heaters, air conditioning, etc. These requirements would not be applied to indoor agriculture where the crop is other than tobacco, hemp or cannabis.

It is typical for cannabis cultivation sites to require some type of structure, such as a drying/curing shed or greenhouse, even for outdoor cultivation, and manufacturing is required to occur indoors. Since trimming operations typically involve employees, the F occupancy is assigned to buildings where trimming occurs. Therefore, the EIR analysis conservatively assumes that all licensed cultivators and manufacturers would be subject to Fire Code standards.

Based on the County's license registration data, 23 percent of the 760 registrants have access to municipal water sources, which would meet the demand for fire water flow. These sites are also more likely to be in areas of the County served by adequate roads with vegetation maintenance. The remaining 568 registrants have access to well water, stream/surface sources, or other onsite sources. Therefore, this EIR assumes that up to 568 cannabis cultivation sites may be required to make the clearing, road improvements and fire storage related improvements described above. The required improvements would differ site by site, but for the purposes of analysis, this EIR assumes improvements would involve installing a 20-foot wide access road to the structure, clearing up to 100 feet of vegetation to provide a defensible space around the cannabis-related structure(s), and constructing, filling, and maintaining up to a 120,000-gallon water storage tank onsite. These improvements would be made in rural and semi-rural areas of the County, primarily in the Mountain and South County regions. In addition, this EIR assumes that approximately 80 new (non-home-based) cannabis product manufacturers may seek a license from the County over the first five years of the Program and that half of these would locate at cultivation sites located in areas that are not served by municipal water or roads, which may necessitate the same requirements described above for cultivation structures. Cannabis home occupations would be required to adhere to R-3 standards, which for new homes would generally require a 10,000-gallon fire water tank, an 18-foot wide road, and 100 feet of defensible space vegetation management around the residence to comply with the Fire Code, if located in the rural area where no water service is available. However, in most cases those requirements would have been met when the residence was constructed and will not occur as a result of a cannabis home occupation becoming established.

Table 3.0-5 Comparison of Fire Code Requirements for Commercial Structure vs. Residential Structure Located in Rural Area not Served by Municipal Water Supply

Typical Fire Code Requirement	250-sf Cannabis Trimming Shed	4,000-sf Residence
Water Storage Tank	120,000-gallon capacity	10,000-gallon capacity
Roadway Width	20 feet wide	18 feet wide
Defensible Space Vegetation Management around Structure	100 feet	100 feet

The Fire Code requirements, as interpreted to apply to cannabis-related structures by the Santa Cruz County Fire Marshal for this analysis, are consistent with commercial development requirements and would require more site and off-site development when compared to requirements for residences and agricultural development that does not include F-1 occupancy structures. The EIR addresses the

range of indirect impacts that may occur from the site clearing, grading, soil disturbance, water demand, vegetation loss and damage, and visual change that may occur.

Water Use by Commercial Cannabis Activities

Estimating the amount of water that will be used in cultivating the amount of new cannabis production that will be licensed under the Program is a complex task and, because of a lack of data, somewhat speculative. Research indicates that formal and informal studies and surveys on water use have been conducted, with results expressed in a variety of units including gallons per plant, gallons per day per plant, gallons per square foot of canopy per day, and gallons needed to produce one pound of cannabis buds. To be useful in this context, water use data must be specific to whether the cultivation is indoor, greenhouse, or outdoor, and whether the growing medium is natural soil or a hydroponic system.

In 2014, it was reported that cannabis plants require approximately six gallons per day for a 150-day grow cycle in outdoor cultivation, or 900 gallons per outdoor plant.[5] This rate was based on estimates made by the Humboldt Growers Association (now the California Growers Association), which assumed irrigation used a half-inch water line with drip emitters, watering a half hour every other day, at 12 gallons per watering. A six-gallon-per-day statistic has been cited widely in reports about the impacts of cannabis cultivation on resources. However, the study has been criticized as exaggerating water demand by applying the water use of a large outdoor plant, measured in the driest period, to all types of plants and across an entire growing season, whether grown outdoors or in greenhouses.[6] Further, since that time, the Humboldt Growers Association has revised the irrigation estimate to 1 gallon per pound per day, basing water consumption on the yield of the plant rather than canopy size.[7]

Various informal studies and anecdotal data gathered through discussions with cannabis growers indicate there are differences in water use between greenhouse/indoor and outdoor grows, in terms of water use per square foot of canopy and total water used. Greenhouse/indoor growing can have a year-round growing season and often requires climate control and air circulation, both of which increase evapotranspiration and therefore a plant's demand for water. Outdoor growing generally produces much larger plants with a higher water demand later in the growing season. In both indoor and outdoor growing, water demand of young plants for the first 5 weeks of growth is substantially lower than all but that last few weeks prior to harvest.

For the purposes of analysis in this EIR, water use is estimated based upon a study in Humboldt County by Milewide Nursery that compared outdoor cultivation with a 180-day growing period to a test plot that used a 90-day growing period in a greenhouse.[8] The study reported that water was used

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[5] Scott Bauer, 2015, "Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds," PLOS ONE.
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0120016.

[2] "Cal NORML Challenges Fish & Wildlife Figures on Marijuana Water Consumption." *California NORML* 3 Aug, 2015

[3]Roberts, Chris. "Dry High: Despite Law Enforcement Reports, Marijuana Is Relatively Water-Friendly." *SF Weekly News* 29 April, 2015
citation

[8] (https://humboldtgrower.wordpress.com/2015/05/07/may-2015-humboldt-county-cannabis-water-use-study/)

in the greenhouse at a rate of 0.0875 gallons per square foot of canopy per day. In order to account for the fact that some indoor operations will operate at a lower efficiency, the rate used in the analysis in this EIR is rounded up to 0.1 gallons per square foot of canopy per day. For outdoor cultivation, the study reported 0.03 gallons of water used per square foot of canopy per day. This study was selected because it looked at a multi-year average, measured water use for the season per plant, and with study of both indoor and outdoor cultivation. The climate in Humboldt is comparable with many of the microclimates in Santa Cruz County. The study used industry standards (cultivating full-term plants, 6 feet tall, with 99 plants in a garden, with the plants caged and tied vertically) in the outdoor control grow, and applied higher efficiency methods in the indoor test grow. While there is broad support in the industry for using the ratio of water use per day per pound of product produced, estimating industry yield is beyond the scope of this EIR and would be speculative. The EIR analysis can anticipate a maximum allowed canopy area based upon per parcel limits.

The Milewide Nursery study includes a breakdown of the per yield water usage, showing a higher efficiency per yield using efficient indoor cultivation methods, and a reasonable assessment of the water usage per day per square foot of canopy for both indoor and outdoor production. Growing methods in a greenhouse can vary widely depending upon the grower; and with climate control, assisted light and light deprivation measures, greenhouses can function similar to an indoor grow with regard to water demand. If these extra measures are not included, then greenhouse water demand may be more consistent with outdoor cultivation. While the local industry in the County seems to be moving towards greenhouses that function more like indoor grows, with climate control and assisted lighting, the higher electricity demands of assisted lighting and climate control make predicting the long-term industry trends speculative. For the purpose of analysis based upon local industry trends and the reported preferences of growers this EIR anticipates that approximately half of the greenhouse expansion will be with natural light and half will be with assisted light, resulting in year-round irrigation. The Milewide Nursery study was based upon a 90-day cycle, two of which could reasonably be completed in a greenhouse without assisted lighting. An estimated 270 irrigation days represents an average for greenhouses that may produce between two and four crops per year (an average of 3 crops a year is assumed by this EIR within greenhouses).

3.0.3 Organization of Environmental Impact Analysis

Each section 3.1–3.14 addresses an environmental resource area and contains the following information for the Project and the More Permissive Project:

- **Introduction.** Introduces the issue area and provides a general approach to the assessment.
- **Existing Setting.** Describes the physical existing environmental conditions for the Program as they relate to the resource area in question. Per the State CEQA Guidelines, the environmental setting normally constitutes the baseline physical conditions by which the lead agency determines whether an impact of the proposed project is significant.
- **Regulatory Setting.** Summarizes the regulations, plans, and standards that apply to the Program and relate to the specific resource area in question. A compilation of applicable federal, state, regional, and local regulations are contained within Appendix A.
- **Environmental Impact Analysis and Mitigation.** Discusses the significance criteria, the environmental impact analysis, and mitigation measures that may be necessary to avoid or reduce environmental impacts to a less than significant level, or as feasible, and the residual impacts following the implementation of recommended mitigation measures.

- **Significance Criteria.** Identifies the significance criteria or, where applicable, the thresholds of significance that will be used to evaluate impacts that are not included in the baseline. The criterion or threshold for a given environmental effect is the level at which the County finds the effect to be significant. The significance criteria can be a quantitative or qualitative standard, or set of criteria, pursuant to which the significance of a given environmental effect may be determined. (State CEQA Guidelines, Section 15064.7)
- **Impact Assessment Methodology and Assumptions.** Outlines the general approach taken in evaluating the individual environmental resource area to provide a context for the analysis of impacts, which builds from the general methodology and assumptions described in Section 3.0.2, *Assessment Methodology*.
- **Program Impacts.** Considers the potential impacts resulting from short-term implementation and long-term operation of the Project, with analysis of the Proposed Project and More Permissive Project at an equal level of detail. Where impacts are similar, findings are combined to simplify analysis, with separate findings where impacts materially differ by scenario. Impacts are addressed as follows:
  - **Direct Impacts**: Includes direct impacts of cannabis cultivation and manufacturing, which may include vegetation clearing, soil tilling, irrigation, fertilization, grow room or greenhouse construction, development of structures to accommodate trimming and drying, development of manufacturing buildings or improvements, natural or intensive manufacturing operations, energy use, water use, traffic associated with operations and associated activities.
  - **Indirect Impacts**: Includes indirect impacts of cannabis cultivation or manufacturing, which may include impacts from regulatory requirements, such as compliance with environmental, fire or building code standards, septic systems, roads, houses, or other site improvements and installations.
  - **Secondary Impacts**: Includes the effects of Program-induced additional or expanded unregulated or unlicensed cultivation or manufacturing that may be discouraged from becoming licensed by Program standards, required taxes, or other factors. Secondary impacts excludes unregulated activity that is already occurring and therefore is accounted for in the environmental baseline. Note that identifying such secondary impacts of future additional or expanded unlicensed activity as associated with implementation of the Program is a conservative programmatic approach.
- **Impact Levels.** While the criteria for determining potentially significant impacts are specific to each issue area, the analysis applies a uniform classification of the impacts based on the following definitions:
  - **Significant and Unavoidable**: Significant impacts that cannot be feasibly mitigated or avoided to a less than significant level. Insufficient measures could be taken to avoid or reduce these adverse effects to an insignificant or negligible level. Even after application of feasible mitigation measures, the residual impact would be significant. If the Project is approved with significant and unavoidable impacts, decision-makers are required to adopt a Statement of Overriding Considerations pursuant to CEQA Section 15093 explaining how they have balanced the various factors and why benefits of the Project, on balance, outweigh the potential damage caused by the significant unavoidable impact.

- **Less than Significant with Mitigation**: Such impacts can be reduced to a less than significant level with feasible mitigation, which can include incorporating changes to the Project, which in this case can include refinements to proposed regulations prior to adoption and implementation. If the proposed Project is approved with significant but mitigatable impacts, decision-makers are required to make findings pursuant to CEQA Section 15091, stating that impacts have been mitigated to the maximum extent feasible and the residual impact would not be significant.
- **Less than Significant**: These potentially adverse but less than significant impacts do not require mitigation, nor do they require findings be made. Measures may be recommended to further reduce environmental effects and/or improve consistency with policies in the Santa Cruz County General Plan and regulations of County Code, but are not required mitigation measures under CEQA needed to reduce impacts to less than significant.
- **Beneficial impacts**: Effects that are beneficial to the environment.
- A determination of **No Impact** is given when no adverse changes or benefits in the environment are expected.
- **Post-Mitigation Level of Impacts** identifies the level of impact that will exist after mitigation is applied; in those instances where mitigation measures cannot reduce adverse impacts to less-than-significant levels, impacts are categorized as Significant and Unavoidable.
- **Cumulative Impacts,** (Section 15130) describes impacts that could occur from the combined effect of other past, previously approved, present, and reasonably foreseeable future projects. For each significant adverse impact identified, mitigation measures are presented where feasible to reduce the cumulative impacts to acceptable levels.
- **Formulation of Mitigation Measures and the Mitigation Monitoring and Reporting Program.** When potential significant impacts are identified, feasible mitigation measures are formulated to eliminate or reduce the severity of impacts. The mitigation measures recommended in this document are identified in the impact sections and presented in a Mitigation Monitoring and Reporting Program (MMRP) in Section 5.0.

This section references relevant existing County regulatory compliance requirements, standard conditions of approval and mitigation measures, as well as proposed Program development standards and features intended to proactively reduce potential Program impacts, for both the Project and More Permissive Project scenarios. Additional mitigation measures are defined in appropriate resource sections for Program impacts that are considered significant or less than significant with mitigation, based on the significance criteria or thresholds of significance. The level of impact after mitigation measures are assessed to determine the resulting level of impacts upon a resource.

3.0.4 Cumulative Project Scenario

State CEQA Guidelines §15130(a) clarify that an EIR shall "*discuss the cumulative impacts of a project when the project's incremental effect is cumulatively considerable*". In this context, "cumulatively considerable" means that the incremental effects of an individual project are considerable when

viewed in connection with the effects of past projects, the effects of other current projects, and/or the effects of probable future projects (as defined by Section 15130). The State CEQA Guidelines define cumulative impacts as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." Section 15355 of the CEQA Guidelines further state that the individual effects can be various changes related to a single project or the change involved in a number of other closely related past, present, and reasonably foreseeable future projects. The discussion of cumulative impacts must reflect the severity of the impacts as well as the likelihood of their occurrence. However, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Furthermore, the discussion should remain practical and reasonable in considering other projects and related cumulatively considerable impacts. Furthermore, per State CEQA Guidelines, Section 15130 (a)(1), an EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

The State CEQA Guidelines allow for the use of two different methods to determine the scope of projects for the cumulative impact analysis:

- **List Method** - A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency (Section 15130).
- **General Plan Projection Method** - A summary of projections contained in an adopted General Plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact (CEQA Guidelines §15130).

This EIR examines cumulative effects using the General Plan Projection method to programmatically evaluate the Program in the context of regional growth projections for jobs and housing, opportunities for agricultural uses, and regional trends in commercial cannabis activities resulting from different regulatory programs that have recently been adopted in adjacent cities and counties, along with the pending state licensing program for commercial cannabis businesses.

In terms of regional growth, the Association of Monterey Bay Area Governments (AMBAG) prepares the Regional Growth Forecast (RGF), which was most recently adopted in 2014. The RGF forecasts residential population in unincorporated Santa Cruz County to increase from 132,318 in 2020 to 144,227 by 2035, based on an annual growth rate of 0.42 percent and with an increase of 4,737 housing units. Employment increases are forecast from 43,559 in 2020 to 46,404 in 2035, based on an annual growth rate of 0.57 percent. These forecasts are based on existing land use and development regulations remaining in place in the County under the General Plan and the SCCC. The employment forecast does not account for employment in the cannabis industry, because of the formerly illegal status of the industry. See also, Section 3.2, *Agricultural and Timber Resources* and Section 3.12, *Population, Employment, and Housing*.

The state's CalCannabis Cultivation Licensing program is in draft form and a Draft Program EIR is currently available for public review. The Draft EIR provides information about the potential environmental effects associated with the adoption and implementation of statewide cannabis cultivation regulations. In addition, the County is one of many local agencies in California developing a set of regulations and licensing requirements for commercial cannabis cultivation and manufacturing. Regulatory programs range in level of permissiveness for commercial cannabis activities. In the region, the following counties are also preparing and implementing new local commercial cannabis regulations that range in the degree of permissiveness for cultivation and manufacturing:

- **San Mateo**: San Mateo County enacted a temporary moratorium on marijuana-related activities such as cultivation and distribution in December 2016 while options for local regulations are considered.
- **Santa Clara County**: Santa Clara County bans cannabis dispensaries and collectives and non-medical related cultivation in unincorporated areas of the County. As of May 2017, Santa Clara County is considering a moratorium on non-medical cannabis businesses in the unincorporated area as well.
- **San Benito County**: With a current interim urgency ordinance in place that limits cultivation to existing grows (as of 2016) and prohibits new grows, San Benito County is working on a commercial cultivation ordinance. Under the draft ordinance, the County accepts applications from prospective cultivators who would be permitted to commercially cultivate cannabis only in compliance with proposed regulations governing how and where cannabis may be grown in the County.
- **Monterey County**: A permit is required for all medical cannabis activities in Monterey County. Adult use/recreational cannabis businesses are not permitted until state licenses become available in 2018 for such operations. The County anticipates adopting regulations for adult use/recreational cannabis businesses in the near future.

In addition, cities within Santa Cruz County offer a range of regulatory environments for cannabis activities.

- **City of Watsonville**: The City Council adopted the Medical Cannabis Facilities (MCF) Ordinance on May 9, 2017. The Ordinance allows the establishment of up to nine medical cannabis manufacturing facilities in Watsonville. Further, in 2016, the Watsonville City Council adopted Ordinance No. 1326-16 (CM) to regulate the establishment of medical cannabis cultivation facilities. The maximum number of six permits have been approved, and no applications for new cultivation facilities are being accepted at this time. Medical cannabis facilities must be within the Industrial Park (IP) or General Industrial (IG) Zoning District
- **City of Capitola**: Indoor and outdoor commercial cultivation of marijuana and manufacturing is prohibited in all areas of the City, with limited exceptions for personal medical use consistent with state law (six plants).
- **City of Scotts Valley**: As of 2015, the City of Scotts Valley prohibits all commercial marijuana uses and marijuana cultivation, marijuana processing, marijuana delivery and marijuana dispensaries.
- **City of Santa Cruz**: Medical cannabis dispensary and cultivation businesses are permitted under existing ordinances, but no expansion for commercial non-medical cannabis businesses is currently proposed. Santa Cruz zoning laws limit medical cannabis cultivation to dispensary operations, and only two medical marijuana dispensaries are allowed within City limits.

Additionally, the cumulative impacts analysis programmatically considers land use and development patterns that would potentially occur under pending and approved plan updates for areas within the County, including the following:

- **SCCC Modernization and Sustainability Update of Land Use, Circulation, and Community Design Elements of the General Plan:** The County is planning to update the SCCC to simplify and clarify permit processing, to update use charts and regulations, to recognize agricultural practice changes and support the needs of the County's agricultural economy, consistent with Measure J, and to implement County sustainability goals and programs including the Climate Action Strategy and the Sustainable Santa Cruz County plan.
- **Update of the Public Safety Element of the General Plan/LCP:** The County plans to update the Safety and Noise Element to ensure consistency state and federal seismic safety, airport

land use, noise, coastal hazard area and flood hazard regulations; and to implement the Climate Action Strategy and the Local Hazard Mitigation Plan.

Additionally, the Program would be implemented concurrent with any pending or future timber production plans for the harvested timber regions of the County (i.e., zoned Timber Production – TP) along with ongoing changes to agricultural crops. The composition of the County's agricultural crop production changes annually, but consistently strawberry production has dominated the agricultural market in the County in recent years. The County's annual crop reports indicate change in agricultural characteristics. For example, from 2011 to 2015, organic farming increased by 3,121 acres (47 percent) Countywide. Additionally, from 2014 to 2015, cultivated acres for berries increased by 108 acres (1 percent) and nursery crops acreage increased by 54 acres (5 percent). In general, vegetable and fruit crops retained stable acreage Countywide during this timeframe, though acreage slightly reduced by 7 acres for fruit and 10 acres for vegetables.

Cumulative projects excluded from the Program cumulative impact analysis include:

- Policy initiatives and ordinance amendments that are unfunded and not included in a Board of Supervisors adopted work program, or with a foreseeable near-term completion date;
- Policy initiatives and ordinance amendments that are not "geographically" related to the Project (i.e., amendments which apply to areas outside the Project's regions of interest);
- Policy initiatives and ordinance amendments which do not cause related impacts to resources evaluated in this EIR; and
- Policy initiatives and ordinance amendments that are procedural, rather than substantive in nature.