Overview of Cannabis and Commercial Operations

A Review of National Cannabis Industry by the Numbers, Licensing Categories & Product Information

Dustin McDonald, Vice President of Government Relations, Weedmaps

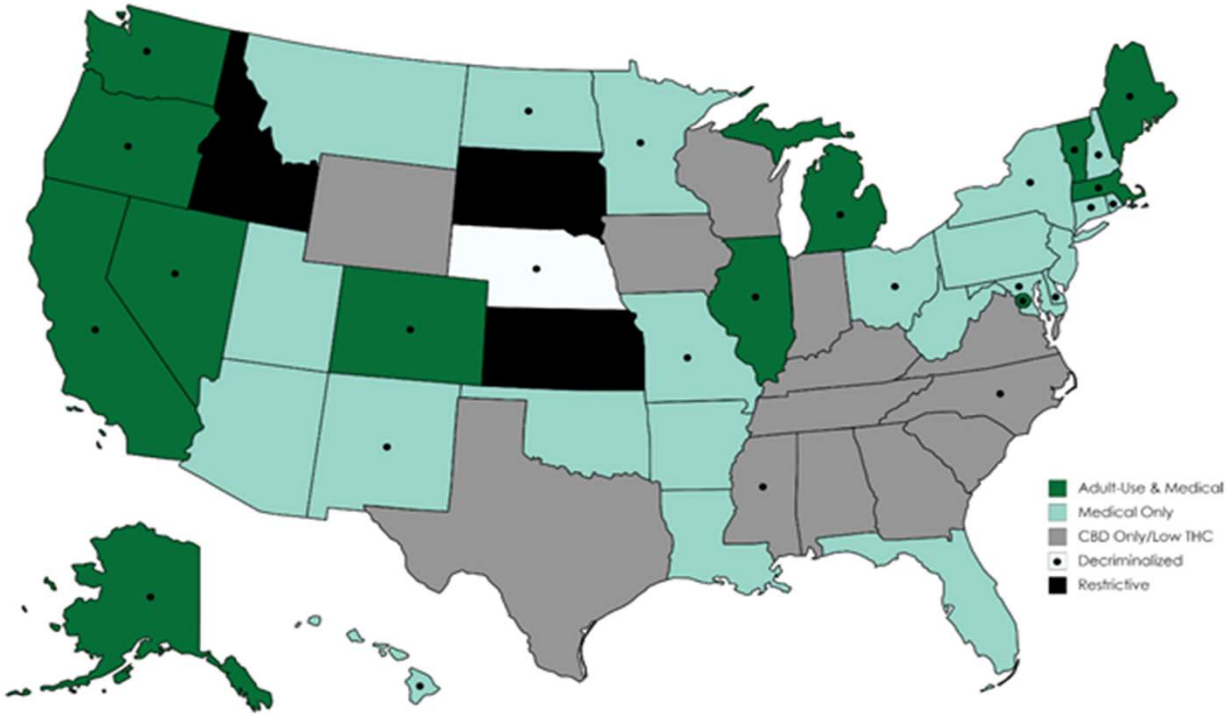
Presented to NFWL's Evolution of Marijuana Policy Summit on August 15, 2019

wm | POLICY

Cannabis in the U.S. by the Numbers

- Overview of states who have adopted reforms
- National economic impact of state policy reforms
- Projected industry growth

Overview of the U.S. Cannabis Policy Landscape



Adult-Use Access	Medical Access	Decriminalized	CBD Only/Low THC	Restrictive
11 States & D.C.	33 States & D.C.	26 States & D.C.	13 States	3 States

Cannabis Regulations: 47 States & DC

Adult-Use & Medical: 10 States & DC

Medical Only: 23 States

CBD Only/Low THC: 14 States

Restrictive Policies: 3 States

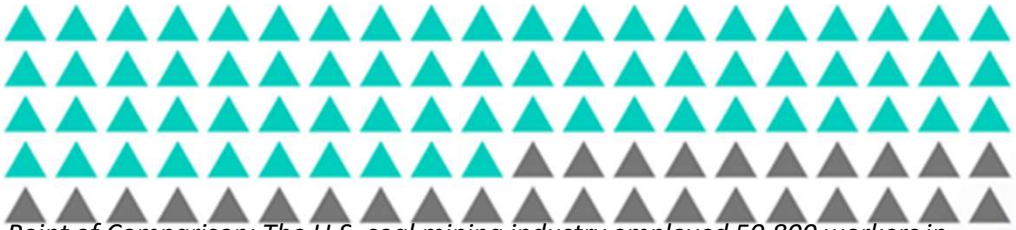
Bottom Line: The vast majority of states now have some form of legal cannabis access (98.6% of the U.S. population lives in a state with regulated cannabis access).

Economic Impact of U.S. Cannabis Industry (2017)

Industry Sales: **$8.5 Billion (Conservative Estimate)[1]**

Job Creation:

Total of 170,000 Industry-Supported FTE Jobs[1]



Direct Employment:
120,000 FTE Jobs

Indirect & Induced Employment:
50,000 FTE Jobs

Point of Comparison: The U.S. coal mining industry employed 50,800 workers in 2017.[2]

Tax Revenue:

State Cannabis Tax Revenue[3]

1. Arcview Market Research & BDS Analytics Figures.
2. U.S. Department of Labor, Bureau of Labor Statistics.
3. Washington State Liquor & Cannabis Board; Colorado Department of Revenue; Oregon Department of Revenue; Nevada Department of Taxation.

wm | POLICY

Projected Growth of the Cannabis Industry

An Emerging Global Cannabis Market

Source: Grand View Research https://www.grandviewresearch.com/industry-analysis/legal-marijuana-market

- The U.S. and global cannabis markets are projected to grow dramatically.
- **Projected Growth of U.S. Cannabis Market:**
  - *2017 U.S. Cannabis Sales:* $8.5 Billion[1]
  - *2022 U.S. Cannabis Sales:* $23.4 Billion[1]
  - *Total U.S. Market Potential* $50.0 Billion[2]
- **Projected Growth of Global Cannabis Market:**
  - *2017 Global Cannabis Sales:* $9.5 Billion[1]
  - *2022 Global Cannabis Sales:* $32.0 Billion[1]
  - *2025 Global Cannabis Sales:* $194.0 Billion[3]
- Policymakers have the opportunity to establish a regulated industry that can become the center of an emerging global cannabis market.

1. Arcview Market Research & BDS Analytics Figures
2. Marijuana Business Daily Projection
3. Bank of Montreal Projection

Overview of Cannabis Licensing Categories

- Cultivation
- Manufacturing
- Testing
- Distribution
- Retail - Storefront
- Retail - Delivery

Indoor Cultivation

	18,000 Sq. Ft. of Canopy *(Industry Average)*	**44,000 Sq. Ft. of Canopy** *(Large Scale Operator)*
Average # of Employees	16 FTEs[1]	39 FTEs[1]
Average Wage	$15-$20 per hour[1]	$15-$20 per hour[1]
Average Gross Receipts	$2,700,000[2]	$6,644,000[2]
Average Square Footage (Canopy)	18,000 sq. ft.[2]	44,000 sq. ft.
Average Capitalization Costs	$1,350,000[2]	$3,300,000[2]
Average Water Requirements	1,110,330 gallons per year[3]	2,714,140 gallons per year[3]
Average Energy Requirements	1,800,000 kwh per year[4]	4,400,000 kwh per year[4]

1. California Department of Food and Agriculture.
2. Marijuana Business Daily.
3. BOTEC Analysis Corporation.
4. Northwest Power and Conservation Council

wm | POLICY

Outdoor Cultivation

Source: https://www.cannabisbusinesstimes.com/article/the-inside-scoop-on-outdoor-cultivation/

Average # of Employees	15 FTEs[1]
Average Wage	$15-$20 per hour[1]
Average Gross Receipts	$580,500[2]
Average Square Footage (Canopy)	38,700 sq. ft.[2]
Average Capitalization Costs	$380,700[2]
Average Water Requirements	2,260,080 gallons of water per year[3]
Average Energy Requirements	n/a

1. California Department of Food and Agriculture.
2. Marijuana Business Daily.
3. BOTEC Analysis Corporation and SURNA.

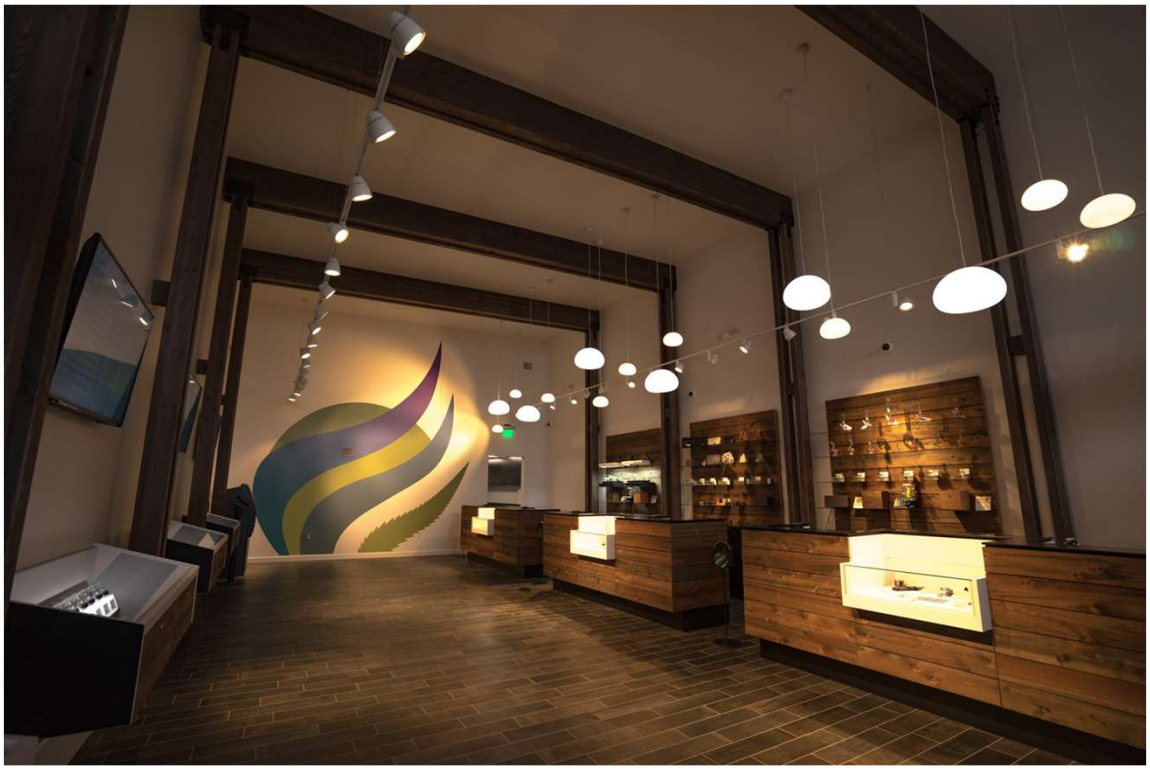
Manufacturing

Source: https://www.bizjournals.com/portland/news/2018/08/06/portland-gets-a-big-new-cannabis-extraction.html

Average # of Employees	9 FTEs[1]
Average Wage	$16.27 per hour[1]
Average Gross Receipts	$1,500,000[2]
Average Square Footage	5,901 sq. ft.[2]
Average Capitalization Costs	$700,000[2]

1. Washington State Institute for Public Policy.
2. Marijuana Business Daily.

Retail (Storefront)



Average # of Employees	20 FTEs[1]
Average Wage	$16.66 per hour[2]
Average Gross Receipts	$2,541,953[3]
Average Square Footage	2,100 sq. ft.[2]
Average Capitalization Costs	$775,000[1]

1. Marijuana Business Daily.
2. Washington State Institute for Public Policy.
3. Weedmaps analysis of licensing and revenue data in Colorado and Washington.

Retail (Delivery)

Average # of Employees	20 FTEs[1]
Average Wage	$16.66 per hour[2]
Average Gross Receipts	$2,541,953[3]
Average Square Footage	2,100 sq. ft.[2]
Average Capitalization Costs	$775,000[1]

Testing Laboratories

Source: https://www.oregonbusiness.com/article/item/17305-behind-the-scenes-what-happens-at-a-pot-lab

Average # of Employees	8 FTEs[1]
Average Salary	$61,329[2]
Average Gross Receipts	$1,000,000[1]
Average Square Footage	3,250 sq. ft.[1]
Average Capitalization Costs	$700,000[1]

1. Marijuana Business Daily.
2. Simply Hired.

Additional Licensing Categories

Source: https://www.trucks.com/2017/08/28/legal-marijuana-industry-needs-weed-trucks/

- Microbusinesses, Distributors, and Nonstorefront Retailers are all critical licensing categories for driving economic development, expanding patient/consumer access, advancing social equity goals, and broadly promoting a more functioning regulated cannabis market.
- However, there is limited data available to date on these licensing categories and their scale can vary considerably, thus preventing a more detailed breakdown of their typical economic impacts.

CA: Adult-Use Businesses by License Type

License Type	Total Active Licenses (As of 2/18/2019)
Cultivation	6,908
Manufacturing	1,263
Testing Laboratory	49
Retailer	945
Distributor	1,399
Microbusiness	294
Cannabis Event Organizer	101
All Cannabis Licenses	**10,959**

Source: CDPH, BCC, and CDFA

Overview of Cannabis Products

- Cannabis 2.0: Beyond cannabis the plant
- Concentrate and extract products
- Extraction Process and Existing Federal Regulations

Cannabis Concentrates

A cannabis **CONCENTRATE** is an accumulation of desirable compounds (i.e. Trichomes) that is achieved through *mechanical or chemical* means.

A cannabis EXTRACT is a concentrate made by dissolving the trichomes from the plant using a *liquid solvent (chemical)*.

Light Hydrocarbon Based Extraction

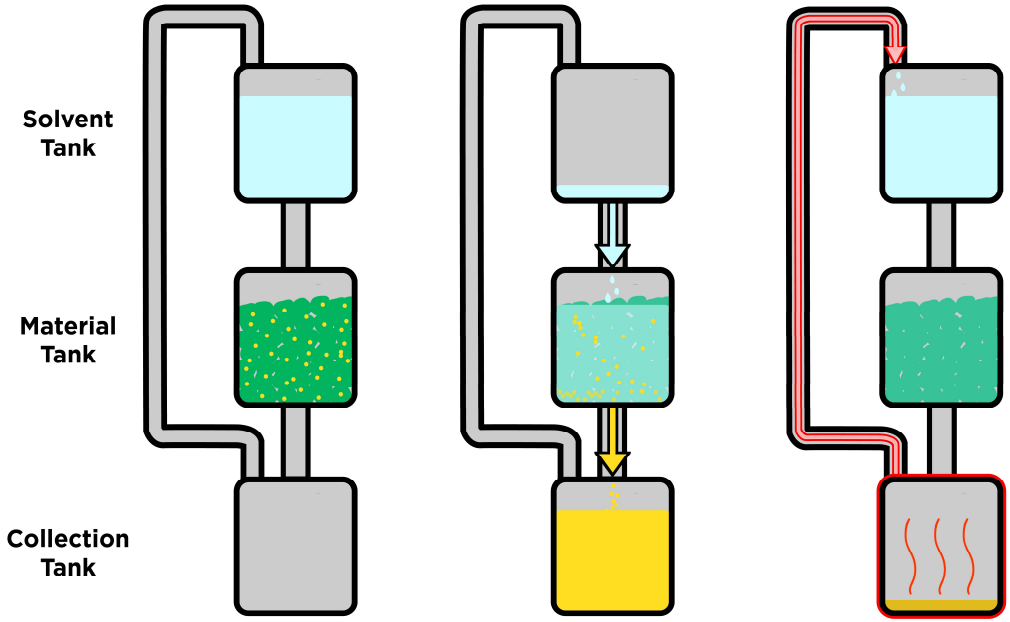
How Are Extracts Made?

Equipment Necessary

1. Closed Loop System
2. Cannabis (Live Resin, Nug, Trim)

Process

1. Plant material is placed into material column
2. Liquid Solvent passes over material and dissolves the trichomes to create a *Solution*
3. Liquid Solvent must be removed from the *Solution*



Primary Hazards

The extraction process uses hazardous materials that inherently pose a range of health and safety concerns, all of which could result in an accident or serious injury.

Primary Hazards:

- Chemical exposure to the solvents - Acute or chronic exposure by means of inhalation, direct contact and/or injection.
- Fire and explosion – Result of leaks (system failure) and ignition source (e.g. spark from electrical equipment)
- Oxygen Deficiency – Displacement by another gas where oxygen concentration in air decreases to 16%.
- Electrical Hazards – Improperly ground equipment
- Noise – Not to exceed an 8-hour, time-weighted average sound level of 90 decibels

** Confidential presentation property of Weedmaps **

Engineering Controls

- Ventilation Controls
- Suppression Systems – Automatic fire suppression systems.
- Class I Division I electrical systems should be used and located in accordance with the NEC Chapter 5 to where flammable gasses are present.
- Flammable Solvent Storage Cabinets – Limit chemical exposure
- Personal Protective Clothing – Limit chemical exposure by means of clothing, eyewear and respirator
- Combustible Gas Indicator - Detects any combustible quantities of solvent in the air
- Oxygen Meter - Reads oxygen concertation in air to reduce oxygen deficiency hazard
- Outside Gas Storage – Limit chemical exposure and possibility of explosion after operating hours
- Emergency Action Plans
- Hygiene-sanitation programs

** Confidential presentation property of Weedmaps **

Codes & Standards

The following codes and standards are relevant to the lab design and construction of cannabis extraction facilities:

- National Fire Protection Association (**NFPA**) – NFPA 58, Currently developing the language for a new chapter in the 2018 edition of NFPA 1
- International Fire Code (**IFC**) – Chapters 34-37,61
- International Building Code (**IBC**) – 307
- National Electric Code (**NEC**) – Chapter 5
- International Mechanical Code (**IMC**) – 506,507,510
- International Plumbing Code (**IPC**) – 1008.1.8.3
- Occupational Safety and Health Standards (**OSHA**) - Specifically Standards 29 CFR 1910.137 & CFR 1910.95 Table G-16
- Generally Recognized as Safe (**GRAS**) – U.S. Food and Drug Administrations list of safe solvents
- American Conference of Governmental Industrial Hygienist (**ACGIH**) Industrial Ventilation Handbook

** Confidential presentation property of Weedmaps **

Thank You for Your Attention!

Any Questions?

wm | POLICY