



Bureau of Fire Services

CANNABIS DIVISION



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Objectives

- Understanding role of CRA, the local municipality (AHJ) and Bureau of Fire Services (BFS)
- Adopted codes being used by BFS plan review and inspections
- Define different types of Cannabis occupancies
- Develop knowledge of Cannabis processes
- Recognize hazards associated with each Cannabis occupancy
- Recognize most common code violations

Cannabis Regulatory Agency - CRA

- CRA – lots of info on website – www.michigan.gov/CRA
- Enacted new Marijuana Rules in July 2020
- Rules consist of 10 categories
- Marijuana Facilities and Operations is the one with Building Rules and BFS Rules
- Recognize hazards associated with each Cannabis occupancy
- Recognize most common code violations

Bureau of Fire Services Enforcement:

- Marijuana Operations – rule set
- 420.208, Building and Safety
- Rule 8 (4) requires BFS to perform Plan Review of certain Cannabis facilities and to do semi-annual inspections of all licensed Cannabis facilities.

CRA Schedules BFS Inspections for the following:

- Provisioning Centers (Medical Licenses) / Retailers (Adult-Use Licenses)
- Secured Transporters
- Safety Compliance Facilities
- Temporary Marijuana Events (Festivals)

PLAN REVIEW – Cannabis Division

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Plan Review Basics

- Facility Plans to be Reviewed for Fire & Life Safety by BFS and Local AHJ
 - Grow
 - Outdoor Grow
 - Processor
 - Micro Businesses
 - Consumption Establishments
- Publications
 - NFPA 1, 2018
 - NFPA 101, 2018

Plan Review Pitfalls

- Common Path of Travel
- Sprinkler System
- Separation
- Extraction Rooms
- Aisles
- Interior Finishes
- CO2 Enrichment



Plan Review Pitfalls

- **COMMON PATH OF TRAVEL**

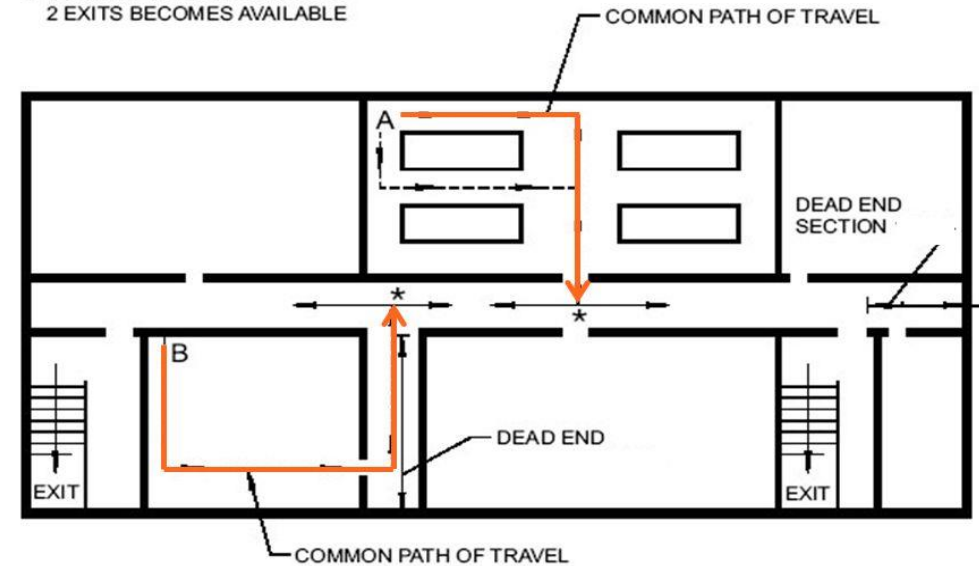
- **3.3.66 Common Path of Travel.**

The portion of exit access that must be traversed before two separate and distinct paths of travel to two exits are available.

- **Un-sprinkled 50'**
 - **Sprinkled 100'**

Common Path of Travel

★ POINT AT WHICH A CHOICE OF 2 EXITS BECOMES AVAILABLE



Plan Review Pitfalls

- **SPRINKLERS**

- New industrial occupancies, other than low-hazard industrial occupancies, shall be protected by an approved automatic sprinkler system in accordance with NFPA 13 in any of the following locations.
 - Throughout all industrial occupancies **3 or more stories in height**,
 - Throughout all industrial occupancies exceeding **12,000 sq. ft. in fire area**,
 - Where the total area of all floors, including mezzanines, **exceeds 24,000 sq. ft.**

Plan Review Pitfalls

- **SEPARATION**

- The Occupancy of buildings or portions of buildings where the growing or processing of Marijuana occurs shall be in accordance with Chapter 6 and the applicable building code.
 - Extraction Rooms will be considered **Industrial – Special Purpose**.
 - Separate the Extraction room with a 1-hour fire barrier using “**Separated Occupancy**”
 - Comply with the most restrictive requirements of the occupancies using “**Mixed Occupancy**”
 - Provisioning Centers are considered Mercantile and require a 2-hour separation from Industrial (Grow and Processor)

Plan Review Pitfalls

- **EXTRACTION ROOMS**

- For other than CO2 and nonhazardous extraction process, the Marijuana extraction equipment and process shall be located in a room of noncombustible construction dedicated to the extraction process and the room shall not be used for any other purpose.



Plan Review Pitfalls

- **EXTRACTION ROOMS**

- For extraction rooms using **hazardous materials**, each room shall be provided with at least one exit access door complying with the following:
 - The door shall :
 - swing in the direction of egress travel
 - be provided with a self-closing or automatic closing device
 - be equipped with panic or fire exit hardware



Plan Review Pitfalls

- **Aisles**
- (14.8.3.4.1.1)
 - For New Exit Access 36"
 - For Existing Exit Access 28"
- **EXCEPTION**
 - Exit Access Not more than 6 people, not exceeding 50' allows
 - 18" width @ 38" or lower
 - 28" width @ 38" or above
- NOTE: The code also says that in an existing building , Exit Access width shall not be less than 28"

Plan Review Questions



Types of Cannabis Facilities

- Growers
- Processors
- Provisioning Centers
- Safety Compliance (Testing Labs)
- Secured Transporters
- Microbusinesses
- Designated Consumption Establishments



Grow Facilities

- Classified as a general industrial occupancy (NFPA 1, 2018)
- Required 2-hour separation from Mercantile or Business
- Plan review required by BFS and local AHJ
- Rooms broken down to different operations:
 - Flower, veg, clone, and mother rooms
- Must have Certificate of Occupancy from AHJ

Hazards of a Grow/CO2 Enrichment

- CO2 enrichment usually less than 2000 ppm
- Can be piped in from outside bulk tank
- Portable tanks
- CO2 burners
- Supplied from building mechanical equipment



Hazards of a Grow/CO2 Enrichment

- CO2 monitoring set at 5000 ppm
- Audio or visual alarm notification in room or area of use or storage
- NFPA 704 placarding on entrance doors to rooms and on exterior doors
- CO2 warning signs on entrance doors to grow rooms
- Auto calibrating and self-zeroing shall be prohibited
- Monitoring device located no higher than 12 inches above floor
- If cylinders are used, they need to be secured



- Exterior Bulk Storage



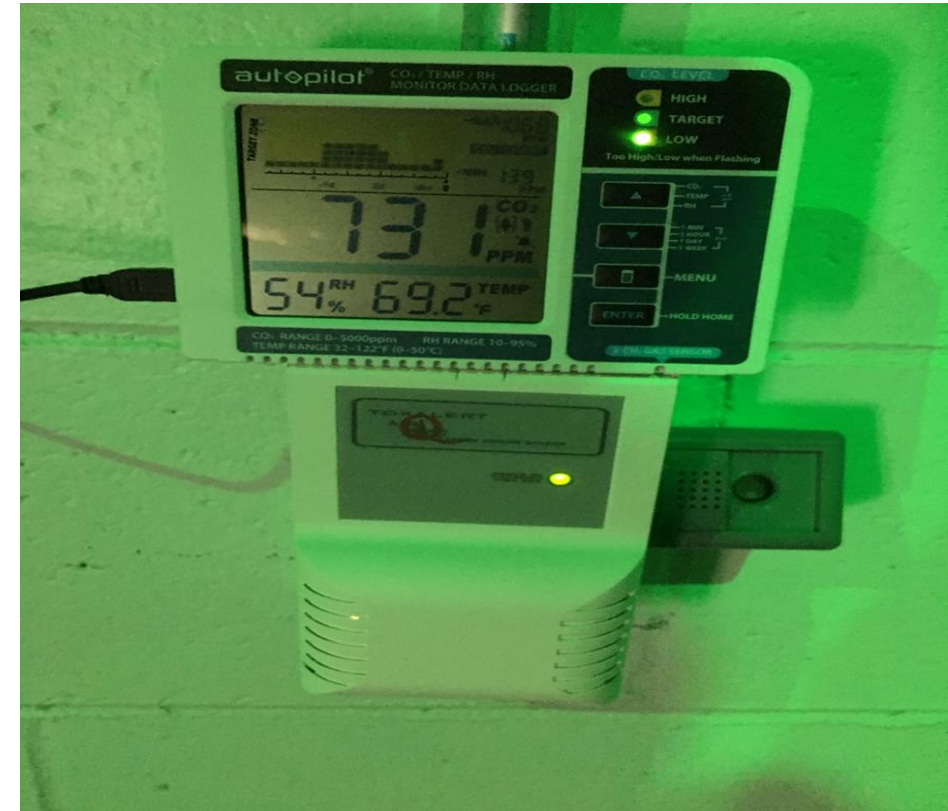
- CO2 Burner



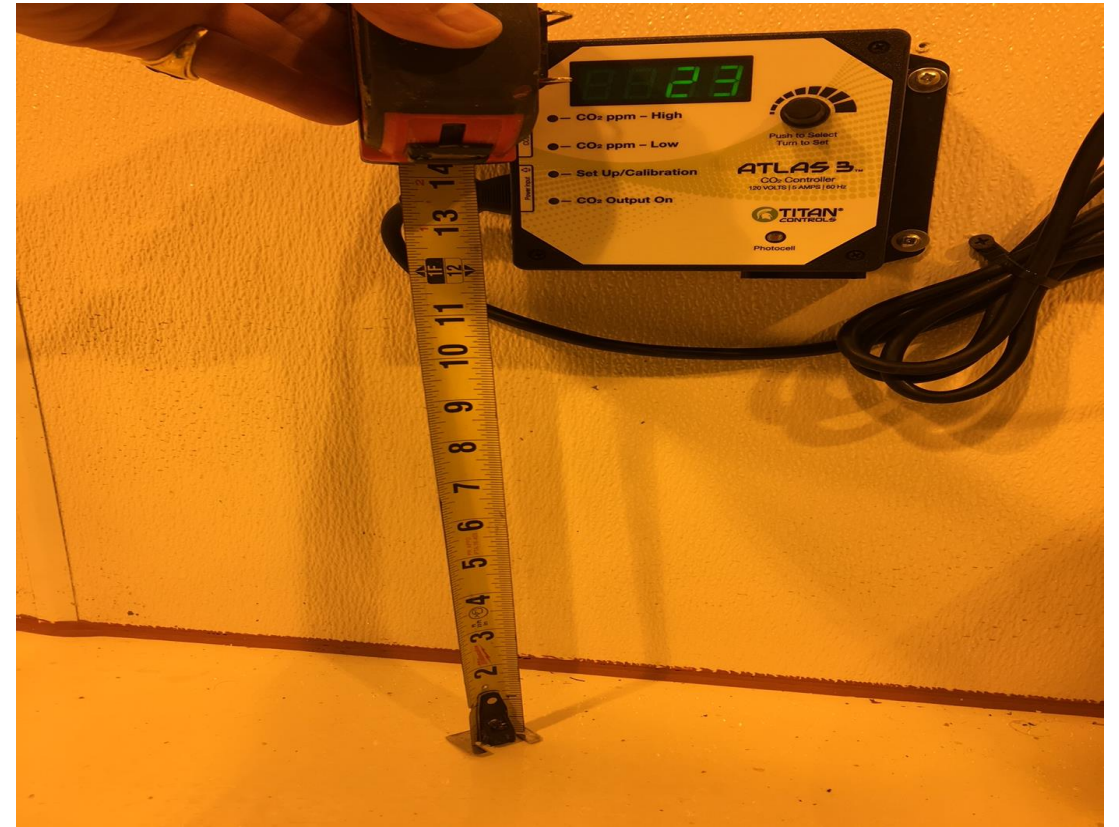
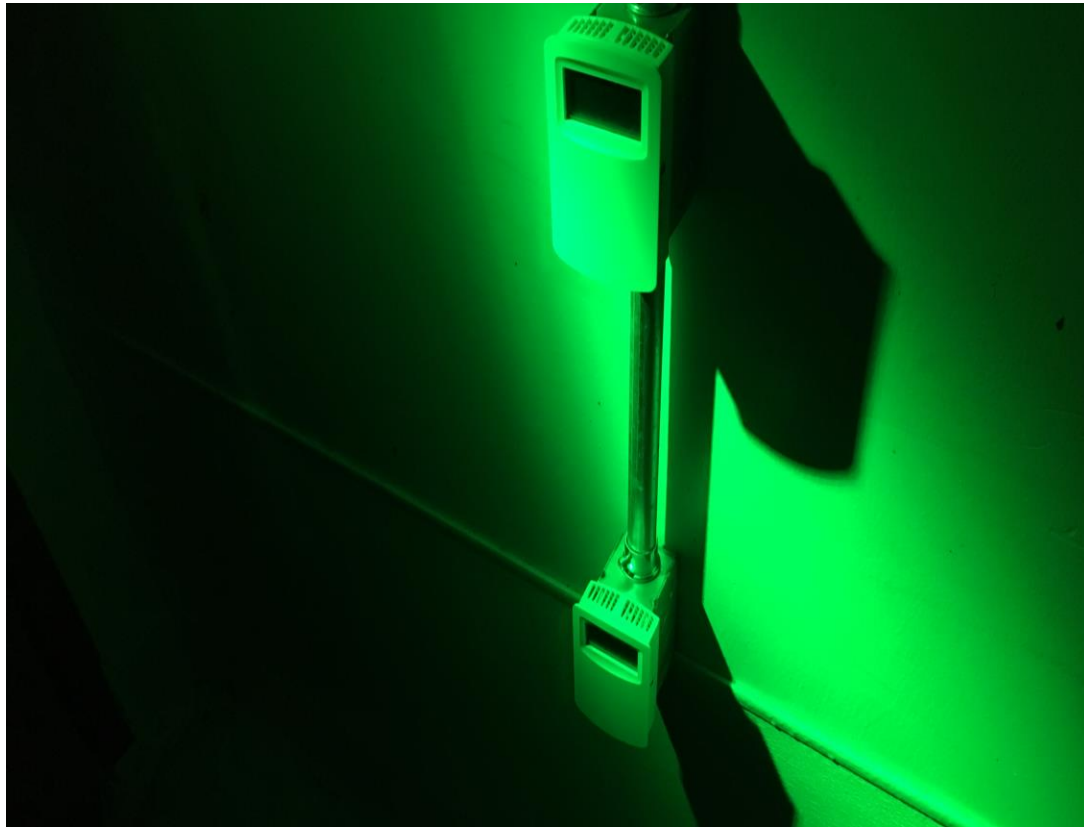
CO2 Generator



CO2 Monitoring



CO2 Monitoring




More Grow Operations Concerns...

- Aisle width
- Spray on foam insulation – NFPA 286, ASTM E-84 test - intumescent paint or drywall protection
- Emergency lighting – Photometric point by point calculations (required)
- Power taps – UL-1363/1363A
- Extension cords
- Water tanks
- Light hangers
- Hazmat – fertilizers and pesticides
- Secured access
- Placards
- Fire protection systems
- Dry rooms
- Interior finish / Plastic hanging
- Netting and headroom
- Visibility of exits due to plant canopies









**FLASHING LIGHT
MEANS CARBON
DIOXIDE LEAK
DETECTED –
EVACUATE ROOM**

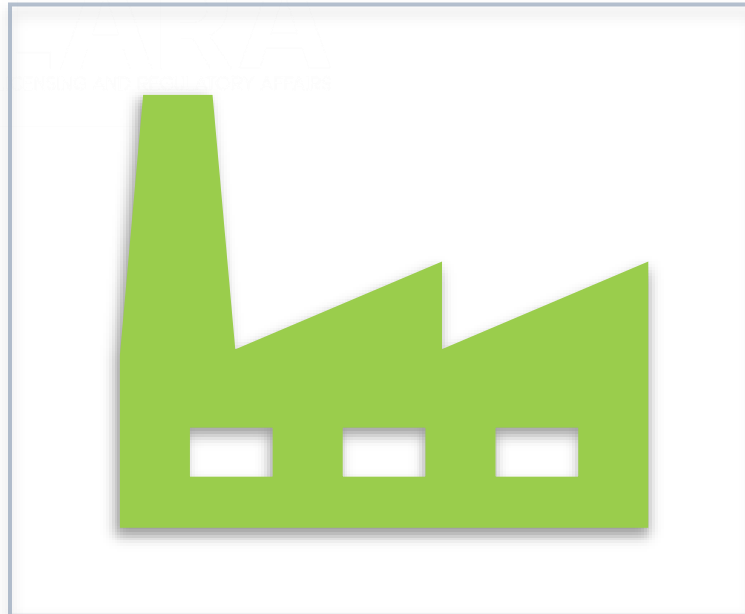






Cannabis Processing Facilities

- Classified as special industrial

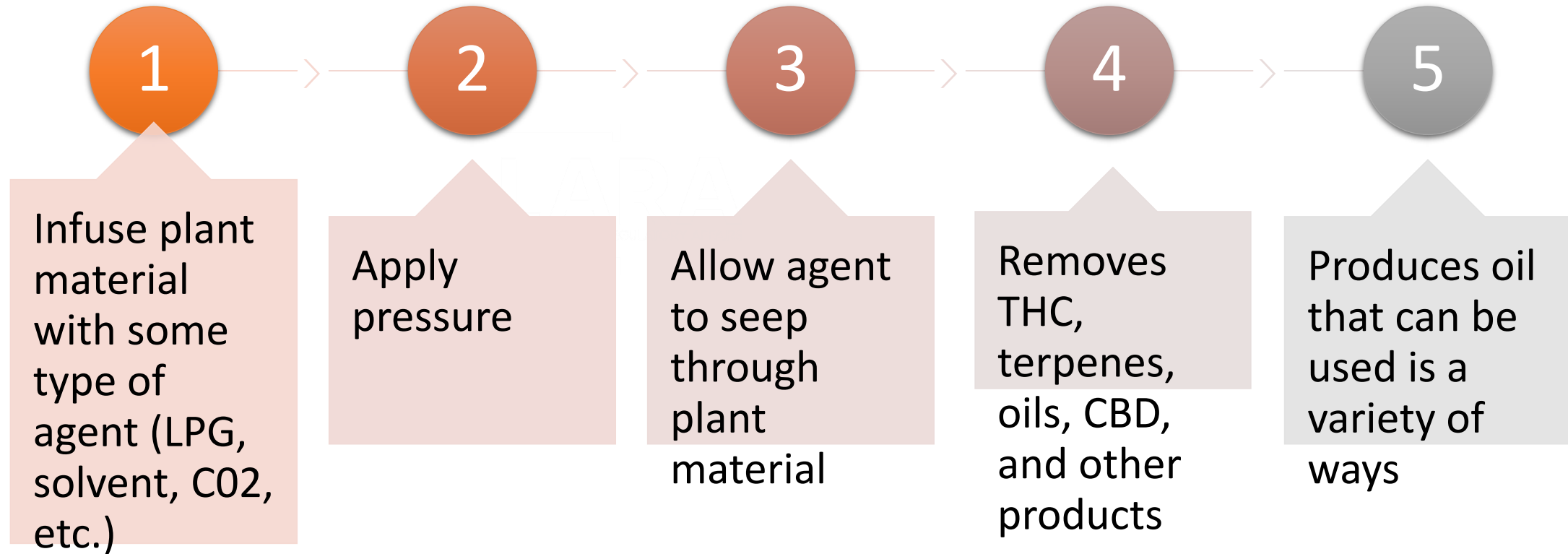


Processing Facilities



- Extract resin or create infused products for sale
- Most hazardous area of Cannabis industry
- Common extraction methods are:
 - LPG Extraction
 - Alcohol or other solvent extraction
 - CO2 extraction
 - Miscellaneous methods

Extraction Process Basics



LPG Extraction

- Propane, Butane & Pentane or mixtures are most used
- Must be done in closed loop extraction machine system
- Extraction machine must be in C1D1 booth or lab hood
- Booth or hood shall have interlocking features
- Shall have gas monitoring set to 25% LEL/LFL
- Shall have automatic suppression system in booth/hood along with duct work

LPG Extraction Continued:

- LPG containers shall not be stored in extraction rooms
- Transfilling shall take place outside
- NFPA 704 placard on entrance doors
- Shall have an automatic emergency power system installed
- Used plant material must be allowed to off gas in booth/hood







Flammable Liquid Extraction

- Most common solvents are ethanol, methanol and isopropyl alcohol
- Closed loop system
- Conducted in Chemical Fume Hood-Chapter 7 of NFPA 45 or approved exhaust system – NFPA 91 or Mechanical Code
- Most facilities use C1D2 booth or hood
- Hood or booth must have interlocking systems
- No fire suppression required in hood or booth unless building is required to be suppressed

Flammable Liquid Extraction Continued:

- Storage, use, and handling shall comply with NFPA 1, chapter 66
- Heating of flammable or combustible liquids over open flame is prohibited
- Maximum allowable quantities
- Signage, 704 placard, no smoking, flammable liquids
- SDS

CO2 Extraction

- High Pressure
- Gas detection system required set at 5000 ppm
- Pressure relief devices piped to exterior of building
- Auto calibrating and self-zeroing detectors are prohibited
- No booth or hood requirement
- Signage, 704 placard, CO2 warning signage

Other Post Extraction Processes

Roto-vape (under
hood or booth)

Ovens

Edibles (may
require Kitchen
Hood System)

Flammable liquid
refrigeration

Infused soft drinks

Infused cooking
products (oils,
syrup, ketchup,
butter, etc.)





Safety Compliance Facilities

- Classified as business
- Testing labs
- Flammable liquid storage cabinets
- Vent hoods
- SDS sheets
- Flammable liquids refrigerators
- Signage, 704 placard
- UL 1363/1363A listed power taps
- General inspection practices



Secured Transporter

- Classified as a business
- Possible inside storage of vehicles
- Security concerns
- UL 1363/1363A
- Products may be stored up to 48 hours
- General inspection practices

Provisioning Centers - Retailers

- Classified as a mercantile, providing products to card holders and authorized caregivers
- Separation may be required if attached to a processor or grow
- 2nd floor separation
- Security/roll-up doors/gates/fenced in area/vaults
- Blocked egress
- Large product and cash present
- Situational awareness
- UL 1363/1363A
- General inspection practices



Door Security



Door Security







SHUTTER DOORS
SHALL REMAIN
OPEN WHEN
SPACE IS
OCCUPIED



**SHUTTER DOORS
SHALL REMAIN
OPEN WHEN
SPACE IS
OCCUPIED**



Other Facility Types

- Microbusinesses (Requires BFS Plan Review)
- Designated Consumption Establishments (Requires BFS Plan Review)
- Temporary Marijuana Events (Requires BFS Site Plan Review)

QUESTIONS