



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
PLANNING COMMISSION – REGULAR MEETING
May 8, 2023 6:30 PM

1. CALL MEETING TO ORDER
 2. ROLL CALL
 3. PUBLIC REMARKS
 4. APPROVAL OF AGENDA
 5. APPROVAL OF MINUTES
 - A. April 24, 2023
 6. COMMUNICATIONS
 - A. Notice of Master Plan Adoption – Delhi Charter Township
 - B. Email from Lynne Page re: SUP #23011
 - C. Trends in intentional abuse and misuse ingestions in school-aged children and adolescents reported to US poison center from 2000-2020
 - D. Pediatric Cannabis Single-Substance Exposures Reported to the Michigan Poison From 2008-2019 After Medical Marijuana Legalization
 - E. The Legalization of Marijuana in Colorado: The Impact
 - F. Michigan seeing massive increase in marijuana poisonings with young kids
 - G. Email from Sheryl Page re: SUP #23013
 7. PUBLIC HEARINGS
 - A. SUP #23013 – Green Peak Innovations (Skymint) – Vacant Northwind parcel
 8. UNFINISHED BUSINESS
 - A. SUP #23010 – MSU to Lake Lansing Pathway – Phase II
 - B. SUP #23011 – Haslett Gallery (Herbana) 2119A Haslett Road
 9. OTHER BUSINESS
 - A. None
 10. MASTER PLAN UPDATE
 - A. Build Out Analysis
 11. REPORTS AND ANNOUNCEMENTS
 - A. Township Board update.
 - B. Liaison reports.
 12. PROJECT UPDATES
 13. PUBLIC REMARKS
 14. ADJOURNMENT
-

Individuals with disabilities requiring auxiliary aids or services should contact: Director of Community Planning and Development
Timothy R. Schmitt, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4506 - Ten Day Notice is Required.
Meeting Location: 5151 Marsh Road, Okemos, MI 48864



TENTATIVE PLANNING COMMISSION AGENDA
May 22, 2023

1. PUBLIC HEARINGS
 - A. None
2. UNFINISHED BUSINESS
 - A. SUP #23013 – Green Peak Innovations (Skymint) – Vacant Northwind parcel
3. OTHER BUSINESS
 - A. Starbucks Drive Through Signs

Individuals with disabilities requiring auxiliary aids or services should contact: Director of Community Planning and Development
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Providing a safe and welcoming, sustainable, prime community.



**CHARTER TOWNSHIP OF MERIDIAN
PLANNING COMMISSION
REGULAR MEETING MINUTES**

April 24, 2023

5151 Marsh Road, Okemos, MI 48864-1198

517.853.4000, Town Hall Room, 6:30 P.M.

PRESENT: Chair Blumer, Vice-Chair Trezise, Commissioners Brooks, McConnell, McCurtis, Scales, Shrewsbury, Richards, Snyder (arrived at 6:32pm)

ABSENT:

STAFF: Director of Community Planning and Development Tim Schmitt, Senior Planner Shorkey

1. CALL MEETING TO ORDER

Chair Blumer called the regular meeting to order at 6:30 pm.

2. ROLL CALL

Chair Blumer called the roll of the Planning Commission. Commissioner Snyder was absent, all others present.

3. PUBLIC REMARKS

Chair Blumer opened public remarks at 6:30 pm.

Lynne Page, 3912 Raleigh Drive, Okemos commented on SUP #23011 – Haslett Gallery. Page noted that she believes that marijuana commerce will negatively impact children & has significant public health and safety implications. She believes that the medical marijuana leases are place holders for recreational marijuana.

Chair Blumer closed public remarks at 6:36 pm.

4. APPROVAL OF AGENDA

Commissioner Scales moved to approve the agenda. Seconded by Commissioner McCurtis.

VOICE VOTE: Motion approved unanimously.

5. APPROVAL OF MINUTES

A. March 27, 2023 Regular Meeting

Vice-Chair Trezise moved to approve the minutes of April 10th, 2023 as amended. Seconded by Commissioner McCurtis.

Commissioner Shrewsbury noted a minor typo with staff prior to the meeting.

VOICE VOTE: Motion approved unanimously with friendly amendments

6. COMMUNICATIONS

A. NONE

7. PUBLIC HEARINGS

A. SUP#23010

Senior Planner Shorkey outlined SUP#23010 – MSU to Lake Lansing Pathway Phase 2

Senior Planner Shorkey noted that this is from the Meridian Township Engineering Department, continuing from Phase 1 brought before the Planning Commission in 2022.

The Meridian Township Engineering Department has applied for a Letter of Floodplain Amendment from FEMA & applied to the Michigan Environment Great Lakes Energy (EGLE) Department for the state permit. Any approval the Planning Commission could give would have to be on the condition of the EGLE state permit. Based on calculations provided by the Meridian Township Engineering Department, there is no expected increase in flood level.

Commissioner McCurtis inquired about materials and setup in this project.

Senior Planner Shorkey noted that these material amounts may fluctuate based on need, but they are leaning towards the 10ft of HMA pavement as their primary building material.

Chair Blumer inquired under whose authority is this being built, and why is it coming before the Planning Commission.

Senior Planner Shorkey noted that it is a SUP because of the floodplain crossing, and it is under the township's authority but they require a state permit for the floodplain crossing.

Vice-Chair Trezise inquired about construction timelines.

Senior Planner Shorkey noted that the hope is to start it this year, but they have to wait on proper permits for a definite answer.

Commissioner Brooks inquired about safety concerns around the rail.

Chair Blumer opened the floor to public comments on SUP #23010 at 6:44pm.

Bruce Peffers, 4932 Sioux Way, Okemos raised concern on maintaining the vernal pools along the proposed pathway.

Chair Blumer called for a straw vote on the approval of this special use permit #23010. By unanimous consent, the Planning Commission indicated support for SUP #23010.

B. SUP #23011

Senior Planner Shorkey outlined SUP#23011 – Haslett Gallery (Herbana) 2119A Haslett Road

Senior Planner Shorkey noted that this application is identical to SUP #19131, which was one recommended for approval by the Planning Commission in 2019.

Commissioner McCurtis inquired about the odor control of the business.

Senior Planner Shorkey noted that the applicant's system for odor control was outlined in their marijuana application.

Applicant Benjamin Joffe, 334 E Washington St, Ann Arbor stated that there would be no processing or cultivation of marijuana at this site, thus eliminating the main cause for odor that is typically experienced at similar sites.

Commissioner Snyder inquired on the specific date that SUP #19131 was approved.

Director of Community Planning and Development Tim Schmitt noted that all SUP applications involving marijuana licenses were approved by the Township Board in March, April and May of 2020.

Commissioner Richards made note of the hearing process for previous SUP applications, and made a friendly request to follow the process as it has been done previously.

Commissioner Scales requested that the applicant educate him on the process of medical marijuana.

Applicant Joffe outlined the overall marijuana licensing process as requested, highlighting the safety and security of using a medical marijuana facility as opposed to "grey/black market" sellers.

Vice-Chair Trezise inquired on how the applicant would control who is looking to purchase product at this store.

Applicant Joffe stated that all customers are ID'd before being granted access to the purchase floor.

Commissioner McConnell noted the question of volatility in general, but specifically in industrial zones, and asked the applicant on how he sees this topic in terms of the business maturing and its own volatility.

Applicant Joffe responded that there have been noted instances of the volatility that the Planning Commission raised concerns about, and further outlined the topic. He did make note that his client was not a leveraged cannabis organization.

Commissioner Richards inquired about different levels of approvals, from local to state.

Applicant Joffe responded that this is different in each municipality, and further outlined on this.

Commissioner Richards inquired on the curbside pick-up status of this location, as there have been concerns about having an armed guard in the parking lot.

Director Schmitt stated that the medical marijuana ordinance was written before the state allowed curbside service, therefore Meridian Township would not allow curbside pickup for any applicants at this time.

Commissioner McCurtis inquired about the difference between adult-use marijuana and recreational marijuana.

Applicant Joffe explained the terms, that they are both the same thing, and then restated that this would be a medical-use only facility.

Commissioner Richards stated he would like to hear from staff on this topic in a more detailed approach.

Director Schmitt stated that, with this being a medical-use only facility, it would have no interaction with recreation-use ordinances. He further stated when the Board makes a decision on recreation-use, they will be able to outline any interaction between the licenses that further.

Commissioner Richards inquired on litigation in the state that ties medical-use and recreational-use marijuana together.

Director Schmitt stated that yes, there is litigation for that purpose.

Commissioner Scales inquired about the lottery process previously utilized by the Commission.

Director Schmitt stated that the lottery system was not needed, as in the 2023 application window there was one application per overlay district.

Chair Blumer opened the floor to public comments on SUP #23011 at 7:16pm.

Lynne Page, 3912 Raleigh Drive, Okemos commented on SUP #23011. Ms. Page noted that the traffic study was from 2019, and inquired whether that was acceptable for this current SUP. She also made comment on the applicant's statement that the packaging would not be done in facility. She reminded the Commission that this was not a binding statement.

Chair Blumer requested that verbiage be added mentioning the packaging of the marijuana product, so it's not done on-site.

Commissioner Shrewsbury noted that the ordinance already enforces the odor requirement, and she raised concern that putting that level of detail on a legally permitted business would need a valid reason, and also make sure it was setting precedent for any future applicant.

Commissioner Snyder showed support for Commissioner Shrewsbury's comments, while also requesting the discussion happen at this meeting instead of waiting two weeks.

Commissioner Brooks questioned if, as a Planning Commission, it is within their scope to set stipulations such as the one mentioned above.

Director Schmitt responded that it was, and further outlined that process.

Commissioner Richards inquired if applicants have the ability to transfer licenses.

Director Schmitt stated that no, the ordinance doesn't have a transfer provision.

Commissioner Richards continued and asked if there would be a review of any building within the odor ordinance. He also recommended that the township has a 3rd party expert inspect the airflow of the building.

Director Schmitt stated that the Mechanical Inspector would review those topics if it got to building permit.

Commissioner Snyder encouraged those who have an opposition to dispensaries to visit one, as there are concerns that are typically raised in opposition that can be quelled by visiting one first hand.

Chair Blumer supported Commissioner Snyder's comments.

Commissioner Scales noted that this SUP will set the groundwork for any future SUP of this nature, so the Planning Commission should take careful time and consideration in its review process.

Vice-Chair Trezise inquired how many facilities this company is currently running, and if they have had any licensing or compliance problems.

Applicant Joffe stated that they are running at least four, and that there have been no such problems.

Commissioner Scales requested the addresses of the applicant's clients other businesses, so the Planning Commission could visit if they wished to.

Commissioner Snyder inquired about the medicinal uses of medical marijuana.

Applicant Joffe outlined his knowledge on the topic.

Chair Blumer called for a straw vote on the approval of this special use permit #23011.

STRAW VOTE: YEAS: Commissioners Snyder, Brooks, McCurtis, Shrewsbury; Vice-Chair Trezise; Chair Blumer

NAYS:

Abstain: Commissioner Richards, Scales, McCurtis

Results: 6-0-3

8. UNFINISHED BUSINESS

A. SUP #23004 – Schultz Veterinary Clinic Expansion

Senior Planner Shorkey summarized the public hearing for this Special Use Permit. He noted that the Township Engineering Department did look more into the pathway discussed, and that it will meet township standards.

He noted that there were no further concerns or public comments.

Commissioner McConnell moved to adopt Special Use Permit #23004 with the amendments to the resolution as noted. Commissioner Trezise seconded.

ROLE CALL VOTE: YEAS: Chair Blumer; Vice-Chair Trezise; Commissioner Shrewbury, McConnell, McCurtis, Scales, Brooks, Snyder, Richards

NAYS: None

Results: 9-0

9. OTHER BUSINESS

NONE

10. MASTER PLAN UPDATE

Senior Planner Shorkey outlined where staff was currently at with the Master Plan update.

A. Goals and Objectives – Handout

Members of the Planning Commission gave general feedback to the proposed Master Plan updates.

Commissioner Snyder suggested moving the bulleted section from “Maintaining Outstanding Public Services” to “Preserving and Strengthening Residential Neighborhoods”, and also suggested language in potentially both sections.

Commissioner Shrewsbury suggested a mission statement.

Commissioner McConnell suggested a land acknowledgement in the main land use planning document.

Commissioner Brooks inquired about how home-owner associations (HOAs) fit into the township’s housing development plan.

Senior Planner Shorkey noted that HOAs are outside our regulations, however the more stringent regulation between the HOA and township prevails.

Commissioner Brooks suggested a planning requirement for sidewalk walkability.

Commissioner McCurtis seconded Commissioner Brooks comments, extending the suggestion to residential areas as well.

11. REPORTS AND ANNOUNCEMENTS

A. Township Board Update

Senior Planner Shorkey announced that the sign ordinance is expected to be approved on April 25th, 2023. He also stated that the Cade Street rezoning is coming back to the Board in two weeks for final adoption.

A. Liaison Reports

Vice-Chair Trezise

- Attended the Zoning Board of Appeals 04/19/23 Meeting, where they approved a Sparrow Clinic sign on an Eyde Building. He also attended the most recent Brownfield meeting, where they discussed the reimbursement agreement for Haslett Village Square.

12. PROJECT UPDATES

- ### **A. Commissioner Scales noted that the Township Board will be taking up the issue on proper training over Robert's Rules of Order.**

13. PUBLIC REMARKS

Chair Blumer opened public remarks at 8:13 pm.

NONE

Chair Blumer closed public remarks at 8:13 pm.

14. ADJOURNMENT

Chair Blumer moved to adjourn.

VOICE VOTE: Motion approved unanimously.

Chair Blumer adjourned the regular meeting at 8:13 pm.

DELHI CHARTER TOWNSHIP
DEPT. OF COMMUNITY DEVELOPMENT

2074 Aurelius Road
Holt, MI 48842-6320

Phone (517) 694-8281
Fax (517) 694-1289



NOTICE OF ADOPTION
DELHI CHARTER TOWNSHIP
2023 MASTER PLAN

April 26, 2023

On behalf of the Delhi Charter Township Planning Commission, and in accordance with the Michigan Planning Enabling Act, PA 33 of 2008, as amended, this letter is to notify you that on April 24, 2023, the Township did adopt an amendment to the community's Master Plan. This new plan is called the 2023 Master Plan and is available on the Township's website at delhitownshipmi.gov. If you require a printed copy, please let us know by requesting it from sara.thornton@delhitownshipmi.gov.

Thank you

From: [Lynne Page](#)
To: [Planning Commission \(DG\)](#)
Subject: Opposition to SUP #23011-Haslett Gallery (Herbana)
Date: Monday, April 24, 2023 4:05:22 PM
Attachments: [RMHDTA Marijuana Report September 2021.pdf](#)
[WXYZ MI Massive Increase in Marijuana Poisonings 01.10.23.pdf](#)
[Journal of Emergency Medicine June 2021.pdf](#)
[Clinical Toxicology Pediatric Marijuana Poisoning 12.05.22\(1\).pdf](#)

Meridian Township Planning Commission Meeting 04.24.23
Agenda Item #7-B: Public Hearing
Re: SUP #23011 – Haslett Gallery (Herbana)

To the Planning Commission:

The health, safety, and welfare of the community is paramount in any land use decision. I oppose the above-captioned SUP application for the following reasons:

1. The applicant has failed to meet significant SUP Request Standards.

Per Meridian Township's SUP Request Standards, the SUP applicant must demonstrate that the project will not adversely affect or be hazardous to the neighboring uses and that it will not be detrimental to the economic welfare of the surrounding properties or the community. The support cited by the applicant in response to these requirements are two outdated articles containing unsubstantiated, subjective opinions presented as "facts".

2. Marijuana commerce in our township will negatively impact children.

Studies of poison control data published by reputable science journals such as *Clinical Toxicology* document that while pediatric alcohol exposure is decreasing, cannabis poisoning of children is a significant public health problem. (<https://www.tandfonline.com/doi/full/10.1080/15563650.2022.2120818>)

In Michigan, specifically, *The Journal of Emergency Medicine* reported that "Legalization of medical and recreational cannabis is a major contributor to pediatric cannabis exposures."
<https://www.sciencedirect.com/science/article/abs/pii/S0736467920314190>

3. Marijuana commerce has significant public health and safety implications.

The issues of public health and public safety associated with marijuana commerce may offset any unrealized potential economic benefit. Here is some additional data to consider excerpted from the Rocky Mountain High Intensity Drug Trafficking Area report for 2021. (<https://www.rmhidta.org/publications?pgid=khxvk038-6a0e2823-f0e2-4f73-b236-34dfc9e4952d>):

Executive Summary

The Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA) program has published annual reports every year since 2013 tracking the impact of legalizing recreational marijuana in Colorado.

Executive Summary

The Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA) program has published annual reports every year since 2013 tracking the impact of legalizing recreational marijuana in Colorado.

Section I: Traffic Fatalities & Impaired Driving

- Since recreational marijuana was legalized in 2013, traffic deaths where drivers tested positive for marijuana **increased 138%** while all Colorado traffic deaths **increased 29%**.
- Since recreational marijuana was legalized, traffic deaths involving drivers who tested positive for marijuana **more than doubled** from 55 in 2013 to 131 people killed in 2020.
- Since recreational marijuana was legalized, the percentage of all Colorado traffic deaths involving drivers who tested positive for marijuana **increased from 11%** in 2013 **to 20%** in 2020.

Section II: Marijuana Use

Since recreational marijuana was legalized in 2013:

- Past month marijuana use for ages 12 and older **increased 26%** and is **61%** higher than the national average, currently ranked **3rd** in the nation.
- Past month adult marijuana use (ages 18 and older) **increased 20%** and is **62% higher** than the national average, currently ranked **3rd** in the nation.
- Past month college age marijuana (ages 18-25) use **increased 10%** and is **53% higher** than the national average, currently ranked **3rd** in the nation.
- Past month youth marijuana (ages 12-17) use **decreased 22%** and is **39% higher** than the national average, currently ranked **7th** in the nation.

4. Six applicants have submitted Medical Marijuana Permit applications for 2023.

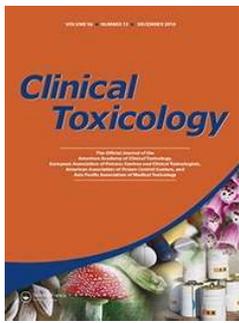
Prior to approving a single SUP application associated with these permits, the Planning Commission should be provided with information on the type and location of all 6 facilities, and the status of their compliance with the relevant Meridian Township ordinances and associated deadlines.

5. Are these medical marijuana facilities merely a placeholder for recreational marijuana commerce?

Although medical marijuana businesses have been permitted in Meridian Township since 2019, none have been opened. If, instead of serving the dwindling population of medical marijuana patients, the actual purpose of pursuing these licenses is to secure recreational marijuana business locations, the applicants should be required to disclose their true intent.

I have attached PDF copies of the documents referenced in this letter. Thank you for considering my input.

Sincerely,
Lynne Page
3912 Raleigh Drive
Okemos, MI 48864



Trends in intentional abuse and misuse ingestions in school-aged children and adolescents reported to US poison centers from 2000-2020

Adrienne R. Hughes, Sara Grusing, Amber Lin, Robert G. Hendrickson, David C. Sheridan, Rebecca Marshall & B. Zane Horowitz

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Trends in intentional abuse and misuse ingestions in school-aged children and adolescents reported to US poison centers from 2000-2020

Adrienne R. Hughes^{a,b}, Sara Grusing^c, Amber Lin^a, Robert G. Hendrickson^{a,b} , David C. Sheridan^a, Rebecca Marshall^d and B. Zane Horowitz^b

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ABSTRACT

Context: Childhood and adolescent misuse and abuse exposures remain a serious public health challenge in the United States. This study aimed to describe recent trends and patterns of intentional substance misuse and abuse exposures among school-aged children and adolescents in the United States.

Methods: This study was a retrospective cohort study of intentional misuse and abuse exposures in children 6 through 18 years reported to the National Poison Data System (NPDS) from January 1, 2000, through December 31, 2020. Demographic trends, reported clinical effects, treatments, management sites, and health outcomes were assessed overall and within four age categories: 6–9, 10–12, 13–15, and 16–18.

Results: Between 2000 and 2020, there were 338,727 cases regarding intentional misuse and abuse exposures for children ages 6 through 18 years old. Overall, misuse/abuse ingestions fluctuated over time, with a peak in 2011. The majority of intentional misuse/abuse ingestions occurred in males (58.3%), and more than 80% of all reported exposure cases occurred in youth aged 13 to 18. 32.6% of ingestions resulted in worse than minor clinical outcomes. Older age groups had a greater number of severe medical outcomes compared to younger age groups. Major or life-threatening exposures (including those resulting in death) were more common in males. Overall, deaths were rare ($n = 450$, 0.1%). Male sex, older age, abuse ingestions, exposure site of a public area or other residence, and multiple ingested substances were other factors associated with increased mortality. Marijuana exposure rates had the highest average monthly increase overall, with the most dramatic rise occurring from 2017 to 2020. Edible marijuana preparations accounted for the highest increase in call rates compared with all other forms of marijuana.

Discussion and Conclusion: With over 330,000 poison center cases reported during the 20-year study period, intentional substance misuse and abuse exposures substantially impact the pediatric population. The substances most commonly misused/abused are more widely available substances such as over-the-counter medications, household products and pharmaceuticals commonly prescribed to youth. Differences in age and sex were evident, with males and adolescents more likely to abuse and misuse substances. Our study describes an upward trend in marijuana misuse/abuse exposures among youth, especially those involving edible products. These findings highlight an ongoing concern about the impact of rapidly evolving cannabis legalization on this vulnerable population.

ARTICLE HISTORY

Received 16 May 2022
Revised 17 August 2022
Accepted 30 August 2022

KEYWORDS

Pediatric; adolescent; toxicity; overdose; substance use

Introduction

Substance misuse and abuse are significant public health threats. While national survey data helps track substance use trends among young people, it often lags behind current trends and information about impacts on the healthcare system. These surveillance methods are usually limited to adolescents and adults and rarely include school-aged children. Earlier initiation of substance use is an important predictor of developing a substance use disorder later in life. As such, clinicians who care for children and adolescents should be well-informed about emerging and shifting patterns of drug abuse and misuse to offer early identification and intervention for problematic substance use. Additionally, age-specific

substance misuse/abuse trends may provide further insight and direction for future prevention efforts. This study aimed to identify recent outcomes and trends in intentional substance misuse and abuse among school-aged children and adolescents using a national source of poison center case data over 20 years.

Methods

This is a retrospective cohort study of intentional misuse and abuse exposures in school-aged children and adolescents reported to the National Poison Data System (NPDS) from January 1, 2000, through December 31, 2020. NPDS is maintained by the American Association of Poison Control

Centers (AAPCC). Data are collected at each certified regional U.S. Poison Control Center (PCCs). Currently, 55 PCCs serve the entire U.S. population, territories, and Washington DC. Poison centers receive calls from the public, health professionals, and public health agencies for exposure to various substances through a 24-hour poison helpline. PCCs are staffed 24 h a day by health professionals with specialized training in toxicology. These trained specialists in poison information collect and code case data entered into an electronic health record collection system that is uploaded to NPDS in near real-time.

We received coded, de-identified NPDS data for all intentional abuse and misuse cases in individuals aged 6 through 18 years old. *Intentional misuse* is defined as an exposure resulting from the intentional improper or incorrect use of a substance for reasons other than the pursuit of a psychotropic effect. *Intentional abuse* exposures are from the intentional improper or incorrect use of a substance in which the patient was likely attempting to gain a “high,” euphoric effect or some other psychotropic effect, including recreational use of a substance for any effect. Only coded data were available to the investigators, not free text fields. We excluded cases from unknown geographic regions and those with missing age. The data were a mix of single-substance and polysubstance exposures; however, the number of single substance exposures was explicitly reported.

Statistical analysis

Data were received from the NPDS in Excel (Microsoft, Redmond, WA) format. Data analysis was largely descriptive and included summary statistics for demographic trends, reported clinical effects, treatments, management sites, and health outcomes. We assessed trends of intentional abuse/misuse exposures overall and within four age categories: 6–9, 10–12, 13–15, and 16–18. The top 10 most ingested substances were determined for each year of the study and plotted over time. Additionally, the substances with the highest average monthly increase in exposure rates were determined overall and for each age group using linear regression. We also analyzed marijuana exposures by type of marijuana preparation for all ages and by age group, sorted by the average monthly increase. Multivariable logistic regression of odds of death after a misuse/abuse ingestion was also performed. To correct for multiple testing, we calculated adjusted *p*-values using the Hochberg and Benjamini adaptive step-up Bonferroni method [1]. To test for multicollinearity, we calculated the variance inflation factor (VIF) for each variable, and to check model fit and specification, we calculated the *c*-statistic (AUROC) and Hosmer–Lemeshow goodness-of-fit statistic.

Clinical outcome was coded using a priori definitions from the NPDS coding manual: no effect, minor effect, moderate effect, major effect, or death [2]. This study was determined exempt by the institutional review board of Oregon Health and Sciences University (OHSU). Data management and analysis was performed in SAS 9.4 (SAS Institute, Cary, NC, USA),

and analysis and creation of figures was performed in R 4.0.3 (R Foundation for Statistical Computing, Vienna, Austria).

Results

Patient characteristics

Between 2000 and 2020, US Poison Control Centers (PCCs) consulted on 338,727 cases regarding intentional misuse and abuse exposures for children ages 6 through 18 years old. Characteristics of exposures are described in Table 1. Overall, the frequency of misuse/abuse ingestions fluctuated over time, with a peak in 2011 (Figure 1). The majority of intentional misuse/abuse ingestions occurred in males (58.3%), and more than 80% of all reported exposure cases occurred in youth aged 13 to 18 (Table 1). The greatest proportion of misuse/abuse cases involved exposures in adolescents aged 16–18 (48.5%). Overall, intentional abuse cases were more frequent than misuse (57.4% vs. 42.6%). Misuse ingestions were more common in younger age groups, while abuse ingestions occurred more frequently in older age groups. A single substance was involved in 81.2% (275,144) of misuse/abuse exposures (Table 1).

Substance trends

Figure 2 illustrates trends in total misuse/abuse cases for the most reported substances per year over the 20-year period. In 2000, the largest number of misuse/abuse cases involved exposure to ethanol (1318, 9.8%). Dextromethorphan was the most reported misused/abused substance from 2001 to 2016. Since 2018, the most reported misused/abused substance involved exposure to marijuana. Dextromethorphan had the highest total number of exposure cases (51,667, 15.25%) over the study period, followed by cases for benzodiazepines (26,037, 7.68%). Intentional misuse/abuse ingestions of diphenhydramine alone have been steadily increasing, with the number of cases reported in NPDS increasing from a low of 193 cases in 2000 to 668 cases in 2020.

Cases regarding abuse or misuse of marijuana have steadily increased over the study period (Figure 2). There were 510 and 1761 marijuana exposure cases in 2000 and 2020, respectively, corresponding with a 245% increase during the 20 years (Figure 2). Marijuana exposure cases remained relatively stable from 2000 to 2009 (mean: 636.7, range: 510–713), then steadily rose beginning around 2011, with an even more dramatic rise in cases from 2017 to 2020. This upward trend contrasts with ethanol exposure cases, which have gradually declined over the study period. There were a total of 1318 ethanol cases in 2000 and 916 in 2020, with an average linear decrease of 28.1 exposures each year (95% CI 21.8 to 34.4, $p < 0.01$) across the study period. Ethanol misuse/abuse cases exceeded the number of marijuana cases every year from 2000 through 2013. In 2014, marijuana misuse/abuse exposure cases surpassed ethanol cases, and since then, marijuana exposure cases have exceeded ethanol cases every year, and by a greater amount each year than the prior.

Table 1. Population characteristics, clinical effects, therapies, and outcomes of abuse and misuse ingestions, *n* = 338,727.

	All cases <i>N</i> = 338,727		Ages 6-9 years 28,086 (8.3%)		Ages 10-12 years 29,402 (8.7%)		Ages 13-15 years 117,019 (34.6%)		Ages 16-18 years 164,220 (48.5%)	
Gender										
Female	140,870	41.6%	10,928	38.9%	11,307	38.5%	56,094	47.9%	62,541	38.1%
Male	197,344	58.3%	17,049	60.7%	17,943	61%	60,788	51.9%	101,564	61.8%
Unknown	513	0.2%	109	0.4%	152	0.5%	137	0.1%	115	0.1%
Reason										
Intentional Abuse	194,292	57.4%	1,529	5.4%	7,462	25.4%	73,565	62.9%	111,736	68%
Intentional Misuse	144,435	42.6%	26,557	94.6%	21,940	74.6%	43,454	37.1%	52,484	32%
Single substance ingestion	275,144	81.2%	26,565	94.6%	26,728	90.9%	95,776	81.8%	126,075	76.8%
Exposure site										
Own residence	244,590	72.2%	21,651	77.1%	19,216	65.4%	80,636	68.9%	123,087	75%
School	35,388	10.4%	3,851	13.7%	6,984	23.8%	16,039	13.7%	8,514	5.2%
Other residence	16,725	4.9%	1,528	5.4%	1,422	4.8%	5,968	5.1%	7,807	4.8%
Public area	9,925	2.9%	517	1.8%	600	2%	3,244	2.8%	5,564	3.4%
Other	11,916	3.5%	437	1.6%	702	2.4%	4,275	3.7%	6,502	4%
Unknown	20,183	6%	102	0.4%	478	1.6%	6,857	5.9%	12,746	7.8%
Clinical effects										
Cardiac arrest	272	0.1%	21	0.1%	34	0.1%	81	0.1%	136	0.1%
Hypotension	8,829	2.6%	776	2.8%	774	2.6%	3,022	2.6%	4,257	2.6%
Respiratory arrest	516	0.2%	40	0.1%	37	0.1%	174	0.1%	265	0.2%
Ventricular tachycardia/fibrillation	232	0.1%	17	0.1%	30	0.1%	66	0.1%	119	0.1%
Dysrhythmia not otherwise specified	606	0.2%	44	0.2%	46	0.2%	223	0.2%	293	0.2%
Seizure	6,374	1.9%	523	1.9%	563	1.9%	2,140	1.8%	3,148	1.9%
Therapies										
ECMO	13	0%	0	0%	0	0%	6	0%	7	0%
CPR	550	0.2%	4	0%	14	0%	111	0.1%	421	0.3%
Hemodialysis	114	0%	0	0%	2	0%	23	0%	89	0.1%
Intubation	4,677	1.4%	22	0.1%	100	0.3%	1,374	1.2%	3,181	1.9%
Ventilator	4,114	1.2%	16	0.1%	86	0.3%	1,191	1%	2,821	1.7%
Vasopressors	709	0.2%	4	0%	15	0.1%	165	0.1%	525	0.3%
Highest level of care										
Patient lost to follow-up/left AMA	89,165	26.3%	19,651	70%	15,668	53.3%	25,744	22%	28,102	17.1%
Treated/evaluated and released	168,721	49.8%	6,827	24.3%	10,302	35%	63,090	53.9%	88,502	53.9%
Admitted to critical care unit	30,936	9.1%	472	1.7%	1,026	3.5%	10,098	8.6%	19,340	11.8%
Admitted to noncritical care unit	26,198	7.7%	732	2.6%	1,324	4.5%	9,360	8%	14,782	9%
Admitted to psychiatric care facility	16,973	5%	94	0.3%	628	2.1%	6,487	5.5%	9,764	5.9%
Patient refused referral/did not arrive at HCF	6,734	2%	310	1.1%	454	1.5%	2,240	1.9%	3,730	2.3%
Outcomes										
Moderate	100,333	29.6%	2,078	7.4%	3,997	13.6%	34,550	29.5%	59,708	36.4%
Major	9,555	2.8%	105	0.4%	254	0.9%	2,753	2.4%	6,443	3.9%
Death	450	0.1%	3	0%	14	0%	65	0.1%	368	0.2%

Table 2 lists those substances with the highest average monthly increase in exposure rate overall and for each age group. There were differences in the types of exposures that accounted for the increased case rates across each age group. Marijuana (all preparations) exposure rates had the highest average monthly increase overall, followed by cannabidiol (CBD), diphenhydramine-alone, eCigarettes (nicotine), and benzodiazepines (all $p < 0.01$). Exposures from vitamins, plants, melatonin, and hand-sanitizers increased during the study period in younger age groups. In contrast, marijuana, diphenhydramine-alone, hand sanitizers, CBD, e-cigarettes (nicotine), and benzodiazepine exposures accounted for the highest increase in case rates amongst older age groups.

Table 3 lists the top two marijuana preparations with the highest monthly average increase by age group. Edible marijuana preparations had the highest average monthly increase

in call rates compared with all other forms of marijuana overall and within each age group except the 6 through 9-year-old group. Overall, there was an increase in edible marijuana exposures by 11.7 cases per month from 2000 to 2020 (95% CI 9.7-13.8, $p < 0.0001$). Adolescents (age 13–18 years) had an increase in exposures to concentrated extracts during the study period.

Clinical effects

Several clinical effects occurred at similar rates across all the age groups, including seizures, hypotension, ventricular tachycardia/fibrillation, and dysrhythmia (Table 1). One-third (32.6%) of ingestions resulted in worse than minor clinical outcomes. Older age groups had a greater number of severe medical outcomes compared to younger age groups. Major or life-threatening exposures (including those resulting in death) were more common in males. Overall, deaths were rare ($n = 450$, 0.1%). Most deaths occurred in those 16 through 18 years old ($n = 368$, 81.7%), with only three deaths in children aged 6 through 9 years (Table 1). Table 4 lists those factors associated with the highest increase in odds of death. After controlling for patient demographics and substances ingested, we found that opioid exposures were associated with the highest increase in odds of death (15.6, 95% CI: 12.6–19.3, $p < 0.01$). Opioids were associated with 286 instances of death (Table 5). No documentation of laboratory verification were available in these facilities, but fatality cases undergo a second level of review during the NPDS process to determine the contribution of the substance with the death and to maximize coding accuracy. Male sex, older age, abuse ingestions, exposure site of public area or other residence, and multiple ingested substances were other factors

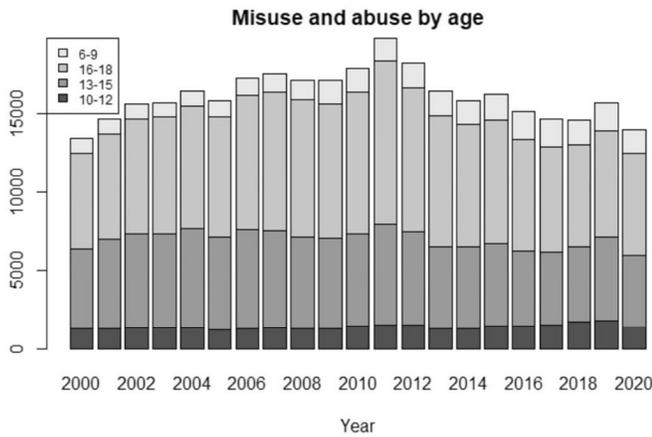


Figure 1. Misuse/abuse ingestions by age and sex over time, 2000-2020.

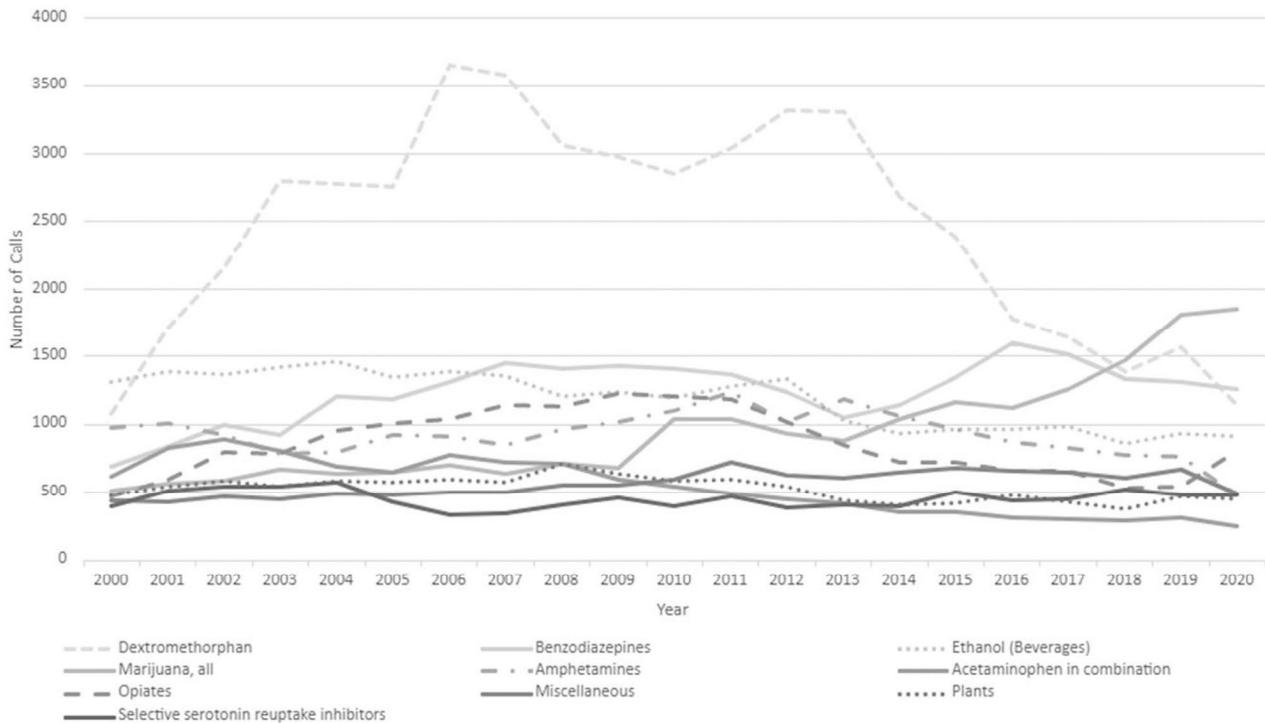


Figure 2. Top 10 substances ingested in misuse/abuse ingestions 2000-2020, by year.

Table 2. Substances with highest monthly average increase, 2000-2020 across $n = 338,727$ cases.

Grouped generic code name	N Months with Substance Present	Average monthly increase in cases (95% CI)	p-value
All ages			
Marijuana	252	4.8(4.4–5.2)	<0.01
Cannabidiol (CBD)	21	4(1.5–6.6)	0.99
Diphenhydramine alone	252	2.3(2.1–2.4)	<0.01
eCigarettes	90	2(1.3–2.7)	<0.01
Benzodiazepines	252	1.9(1.4–2.3)	<0.01
Ages 6-9			
Vitamins	250	0.6(0.5–0.7)	<0.01
Plants	247	0.4(0.2–0.5)	<0.01
Melatonin	129	0.3(0.3–0.4)	<0.01
Hand Sanitizers	110	0.3(0.1–0.5)	0.23
Objects (Pencils, Coins, Glass, Incense, Fireworks, Golf Balls, Ashes, Feces)	245	0.3(0.2–0.3)	<0.01
Ages 10-12			
Hand Sanitizers	106	0.7(0.4–0.9)	<0.01
Other Adverse Reactions to Food	30	0.4(-0.1–1)	0.99
Vitamins	237	0.3(0.2–0.4)	<0.01
Melatonin	115	0.2(0.1–0.2)	<0.01
Marijuana	177	0.2(0.1–0.2)	<0.01
Ages 13-15			
Marijuana	252	1.7(1.5–1.9)	<0.01
Cannabidiol (CBD)	16	1.2(-0.7–3.1)	0.99
Diphenhydramine alone	252	0.9(0.8–1)	<0.01
Hand Sanitizers	114	0.4(0.3–0.6)	<0.01
Benzodiazepines	252	0.4(0.2–0.6)	<0.010.06
Ages 16-18			
Marijuana, Synthetic Phenethylamines, Analogs, and Precursors	252	2.9(2.7–3.1)	<0.01
	21	1.9(-1.2–5.1)	0.99
Benzodiazepines	252	1.6(1.3–1.8)	<0.01
Cannabidiol (CBD)	15	1.4(-0.4–3.3)	0.99
eCigarettes	85	1.4(0.8–1.9)	<0.01

Table 3. Top 2 marijuana preparations with highest monthly average increase by age group, 2000-2020 across $n = 338,727$ cases.

Grouped generic code name	N Months with Substance Present	Average monthly increase in cases (95% CI)	p-value
Ages 6-9			
Not applicable, no increase			
Ages 10-12			
Marijuana: Edible Preparation	28	0.6(0.2–1)	0.01
Marijuana: Dried Plant	171	0.1(0–0.1)	<0.01
Ages 13-15			
Marijuana: Edible Preparation	44	5.1(3.9–6.4)	<0.01
Marijuana: Concentrated Extract (Including Oils and Tinctures)	42	1.1(-0.1–2.4)	0.18
Ages 16-18			
Marijuana: Edible Preparation	47	5.6(4.5–6.8)	<0.01
Marijuana: Concentrated Extract (Including Oils and Tinctures)	48	1.9(0.9–3)	<0.01

associated with increased mortality (Table 4). In the final regression model, there was no evidence of multicollinearity (all VIF < 1.5), and diagnostics indicated good model fit (Hosmer-Lemeshow $p = 0.736$; c -statistic = 0.894).

Of the 331,993 cases managed in a health care facility (HCF), 168,721 (50.82%) were treated and released, 30,936 (9.31%) were admitted to a critical care unit, 26,198 (7.89%) were admitted to a non-critical care unit, and 16,973 (5.11%) were admitted directly to a psychiatric facility (Table 1). The percentage of patients treated in a HCF varied considerably with age. Only 8.36% of children 6-9 years and 8.71% of children between 10 and 12 years were managed in a HCF compared to 34.57% of younger teenagers (13–15 years) and 48.34% of older teens (age 16–18 years).

Discussion

The current study examined trends in US intentional abuse and misuse exposures in school-aged children and

adolescents from 2000 to 2020. With over 330,000 poison center cases reported during the 20-year study period, intentional substance misuse and abuse exposures substantially impact the pediatric population. The most commonly misused/abused substances are more widely available substances, such as over-the-counter medications, household products and pharmaceuticals commonly prescribed to youth. Consistent with other studies, our current data indicate higher abuse/misuse among males and older adolescents [3–5].

Developmental and societal factors contributing to pediatric poisoning vary widely from childhood to adolescence, as do the substances involved in these exposures. Effective prevention and treatment efforts require a thorough understanding of the specific vulnerabilities of different pediatric age groups. In the current study, intentional misuse and abuse exposures were significantly less common in children than adolescents, with the majority due to misuse rather

than abuse, especially in children aged 6 to 9 years; this is consistent with prior studies [6]. While both misuse and abuse ingestions increased with age, intentional abuse was

significantly more common among adolescents than in children aged 6 to 12 years.

Consistent with prior literature, the current data indicate high sustained OTC medication misuse and abuse rates among older children and teens. OTC antihistamines were among the most commonly misused/abused substances in this study. Many OTC medications have a high potential for abuse and misuse since they are legal and easily obtainable without a prescription. Children and teens may perceive OTC drugs as relatively safe; however, a growing body of evidence demonstrates increasing rates of abuse and overdose of OTC medications in the United States [3, 7–10].

While dextromethorphan (DXM) was the most reported substance over the study period, with high average monthly increase in misuse/abuse exposures, DXM misuse/abuse rates peaked in 2006 and have decreased since that time (Figure 2). This observed decline in DXM abuse corresponds to increasing public health efforts and initiatives to reduce and prevent OTC medication abuse. In 2012, California became the first state to prohibit sales of DXM-containing products to minors. Since then, 21 states have adopted similar laws to combat teen abuse of OTC medications containing dextromethorphan.

Our study describes an upward trend in cannabis misuse/abuse exposures. These findings may reflect the impact of rapidly evolving cannabis legalization on this vulnerable population. While legalization of cannabis is primarily restricted to adult populations, it has rendered the drug more accessible to children and adolescents. In Canada, where national legalization occurred, and edibles became available in 2021, the proportion of cannabis-related

Table 4. Multivariable logistic regression of odds of death after a misuse/abuse ingestion.

	Odds of death (95% CI)	p-value
Gender		<0.01
Female	Referent	
Male	1.4(1.1–1.7)	
Unknown	5.2(0.7–38.4)	
Age		<0.01
6-9	0.3(0.1–1)	
10-12	0.7(0.4–1.2)	
13-15	0.4(0.3–0.5)	
16-18	referent	
Year	1.0(1.0–1.1)	<0.01
Exposure site		<0.01
Own residence	referent	
School	0.1(0.0–0.3)	
Public area	1.8(1.2–2.7)	
Other residence	2.4(1.8–3.3)	
Other/Unknown	1.5(1.2–2)	
Reason for ingestion		<0.01
Misuse	referent	
Abuse	5.9(3.9–8.9)	
Multiple substances	1.6(1.3–2)	<0.01
Substances		
Acetaminophen	0.2(0.1–0.3)	<0.01
Benzodiazepines	0.7(0.5–0.9)	0.01
Dextromethorphan	0.1(0.1–0.3)	<0.01
Diphenhydramine	0.6(0.2–1.3)	0.16
Ethanol beverages	0.8(0.6–1)	0.10
Methamphetamine	2.5(1.9–3.2)	<0.01
Opioids	15.6(12.6–19.3)	<0.01

Results in bold, italics are statistically significant, $p < 0.05$.

Table 5. Substances coded as fatalities.^a

Substance Coded in Death Cases	N deaths	N ingestions of this substance	% of all ingestions that resulted in death
OPIOIDS	286		
Opiate NOT in OTC combination	117	4,332	2.7%
Opiate in OTC combinations	89	13,782	0.6%
Heroin	39	1,917	2.0%
Non-Prescription Fentanyl	34	94	36.2%
Tramadol	5	2,372	0.2%
Synthetic Opioids (Excluding Pharmaceutical Preps)	2	12	16.7%
Benzodiazepines	69	26,037	0.3%
STIMULANTS	141		
Amphetamines and Related Compounds	23	10,277	0.2%
Methamphetamines	22	2,526	0.9%
Hallucinogenic Amphetamines	50	6,682	0.7%
Cocaine	46	4,023	1.1%
Synthetic Phenethylamines, Analogs, and Precursors	2	345	0.6%
Ketamine and Analogs	2	423	0.5%
MARIJUANA	66		
Marijuana: Dried Plant	45	17,302	0.3%
Synthetic Cannabinoids, Analogs and Precursors	12	8,246	0.1%
Marijuana: Other or Unknown Preparation	7	488	1.4%
Marijuana: Concentrated Extract	2	664	0.3%
Ethanol (Beverages)	54	24,922	0.2%
ANTIDEPRESSANTS	19		
Selective serotonin reuptake inhibitors (SSRIs)	9	9,092	0.1%
Other Types of Antidepressant	4	2,012	0.2%
Tricyclic Antidepressant (TCA)	2	613	0.3%
Bupropion	2	710	0.3%
Monoamine Oxidase Inhibitor (MAOI)	1	7	14.3%
Serotonin Antagonist and Reuptake Inhibitor (SARI)	1	2,364	0.0%
Lysergic acid diethylamide (LSD)	9	4,198	0.2%
Other Hallucinogens	5	328	1.5%
Diphenhydramine alone	6	9,457	0.1%

^aThere were other substances coded as occurring in one instance only that are not included.

Emergency Department (ED) visits with hospitalization for children aged 0 to 9 years old increased significantly after the introduction of edibles [11]. This increase occurred despite a decrease in total poisoning-related pediatric ED visits. As the legal landscape around cannabis continues to evolve rapidly, so do the social norms around its use, with an overall steady decline in perceived risk associated with cannabis since 2009 [12,13]. Increased availability and peer norms changes are likely strong drivers of increasing cannabis use.

Along with increasing cannabis legalization, we are also seeing the emergence of alternative modes of consumption, especially non-combustible products such as edibles and vaping devices. A significant proportion of youth use alternative methods to consume cannabis [14,15]. In the current study, edible marijuana products had the highest average monthly increase in case rates across all ages compared with any other form of marijuana. This was also true within each age group, except for children 6 through 9. Marijuana concentrates/extracts (e.g. cannabis vaping liquid) were also used at significantly increasing rates by adolescents (aged 13–18 years). These edible products and vaping products are often marketed in ways that are attractive to youth, can be used with more discretion, and are more convenient. A focus group study with teenagers found that edibles were attractive to those concerned about smoking or the smell associated with smoking marijuana [16].

While several studies show that edible cannabis products are increasingly perceived as less harmful by adolescents, concerns exist about their potency and delayed effects [17–19]. Compared to smoking cannabis, which typically results in an immediate and titratable high, intoxication from edibles usually takes several hours, which may lead some individuals to consume greater amounts and cause delayed effects with unexpected and unpredictable highs. A study of marijuana-related Emergency Department (ED) visits in Colorado between 2012 and 2016 found that edible cannabis consumption led to more acute psychiatric symptoms and cardiovascular events than inhaled cannabis and that ED visits due to edibles were 33 times higher than expected, when controlled for product sales in the state [20]. Furthermore, the duration of time since cannabis legalization is associated with earlier age of onset of edible use in adolescents [15].

Marijuana and alcohol are the two most abused substances reported by adolescents [21]. Prior to 2007, Monitoring the Future (MTF) data suggests that alcohol and marijuana use generally fluctuated in parallel; when substance use increased for one, so did the other. Since 2007, trends in reported use of these two substances have changed. While alcohol use declined markedly between 2007 and 2020, marijuana use remained steady or increased for 8th, 10th, and 12th graders [21]. These findings align with the current study, which indicates a gradual decline in poison center cases for alcohol misuse/abuse over the study period with a concomitant rise in marijuana cases. While increased marijuana use may in part account for a reduction in alcohol use, it is unclear if and to what extent the reported change in marijuana leads to a change in alcohol use. These observed trends in poison-center cases mirror MTF surveillance data that indicate an ongoing decline in admitted adolescent binge drinking since the recent

peaks reached in the 1990s with a concomitant ongoing rise in admitted marijuana use [21].

Limitations

The National Poison Data System is dependent on voluntary reporting and the data likely underrepresents the actual number of suspected intentional misuse and abuse exposures. The AAPCC maintains the NPDS, which houses only de-identified case records of self-reported cases managed by US poison centers. NPDS data do not reflect the entire universe of exposures to a particular substance nor the opinions of the AAPCC. NPDS data should not be construed to represent the complete incidence of exposures to any substance(s). Exposure does not necessarily represent poisoning or overdose. Not all substances coded are verified by a toxicology laboratory. The accuracy and completeness of the data relies on correct coding within the NPDS database by poison center specialists. Neither AAPCC nor the individual regional poison center can completely verify the accuracy of every report. Our analysis was limited to exposure cases classified as abuse or misuse. It is possible that additional misuse or abuse cases were classified otherwise and thus were missed. Despite these limitations, NPDS data can be a valuable tool for evaluating the epidemiology of substance misuse/abuse at the national level.

Conclusion

U.S. Poison Centers reported greater than 330,000 misuse and abuse exposure cases and 450 deaths over 20 years for school-aged children and adolescents, demonstrating a substantial ongoing health impact on this vulnerable population. The substances most commonly misused/abused reflect widely available substances such as over-the-counter medications, household products and pharmaceuticals commonly prescribed to youth. Differences in age and sex were evident, with males and adolescents more likely to abuse and misuse substances. Although alcohol exposure cases have been slowly decreasing, marijuana exposure cases, especially those involving non-combustible products such as edibles and vaping products, are increasing. This trend has been most apparent in recent years in the wake of legalization and decriminalization in US cannabis laws and future research is needed to better understand how legal cannabis laws may be contributing to these trends.

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Original Contributions

Pediatric Cannabis Single-Substance Exposures Reported to the Michigan Poison Center From 2008–2019 After Medical Marijuana Legalization

A preliminary version of these results was presented as an abstract (“Trends in Marijuana Exposures Reported to Michigan Poison Center from 2014 to 2019”) at the Annual Scientific Meeting hosted by the American College of Medical Toxicology, virtually, in March 2020 (New York, NY).

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Abstract

Background

Legalization of medical and recreational cannabis is a major contributor to pediatric cannabis exposures. The trends and magnitude of pediatric cannabis exposures in Michigan after medical cannabis legalization in 2008 have not been assessed.

Objective

To describe the temporal trends of pediatric cannabis exposures reported to the Michigan Poison Center (MiPC) after medical cannabis was legalized in 2008 and 1 year after legalization of recreational cannabis in 2018.

Methods

Retrospective electronic chart review of pediatric (<18 years old) single-substance cannabis exposures reported to the MiPC from January 1, 2008 to December 31, 2019. Routes of cannabis exposure were reported as ingestion, inhalation, and unknown. Types of ingested cannabis products were also documented.

Results

Between 2008 and 2019, 426 pediatric cannabis single exposures were reported. The median patient age was 6.0 years (interquartile range 2–15 years). Age distribution was bimodal. A total of 327 (76.8%) exposures were from cannabis ingestion, 79 (18.5%) from inhalation, 2 (0.5%) from both ingestion and inhalation, and 18 (4.2%) from unknown route. The doubling time for number of cases was 2.1 years, and the total number of annual reported cases increased after 2016. Teenagers (13–17 years) had the highest number of inhalational exposures, whereas young children (0–5 years) had the highest number of ingestions.

Conclusion

Single-substance pediatric cannabis exposures reported to the Michigan Poison Center increased after medical cannabis was legalized in 2008 through recreational legalization in 2018.

Introduction

Cannabis, after alcohol, is the second most commonly used psychotropic substance in the United States (1). A 2018 national survey showed that 34.8% of young adults age 18 to 25 years and 12.5% of children age 12–17 had used marijuana in the past year (1). In 2017, 36% of U.S. students in grades 9–12 used marijuana, and the rate for students in Michigan was slightly higher at 41% (2). Although it is currently unknown whether adolescent use of marijuana will rise due to the increasing nationwide trend in marijuana legalization, there is concern that legalization provides greater opportunity for youth marijuana

acquisition and subsequent toxic exposures.

At the federal level, cannabis remains a schedule I drug, defined by the Drug Enforcement Administration as a substance “with no currently accepted medical use and a high potential for abuse” (3). At the state level, adult use of cannabis is currently legal in 11 states, including our state of Michigan, with anticipated additions of four more states after voter approval occurred in the November 2020 elections (Arizona, Montana, New Jersey, and South Dakota) (4).

A consequence of increased legalization and subsequent availability of cannabis products is a predictable parallel increase in unintentional pediatric exposures. A retrospective review of national poison center data that compared state trends in unintentional pediatric cannabis exposures with respect to state cannabis legislation status found that the rate of pediatric exposure increased over a 7-year period (2005–2011) in states that had passed cannabis legislation (5). Since then, studies in states where marijuana was legalized or decriminalized have continued to show a concomitant rise in pediatric cannabis exposures and increases in emergency department visits or hospitalizations (6, 7, 8). For example, a report that combined data from Rocky Mountain Poison and Drug Center and Children's Hospital of Colorado found that calls to the state's poison control center for unintentional pediatric cannabis exposures between 2009 and 2015—when medical dispensaries proliferated and recreational use was legalized—increased 34% annually, significantly greater than the 19% increase in cannabis-related calls received by poison control centers in the rest of the United States (9). A further analysis of billing codes from hospitalizations in Colorado related to cannabis exposure reported significant increases in patients aged 0–8 and 9–17 years after liberalization of medical cannabis laws in 2010, and an even further increase in exposure for these ages after enactment of legalized recreational use in 2014 (10). This suggests that liberalization of cannabis laws is temporally related to increases in childhood cannabis exposures (11). Although studies have shown that national surveys of adolescent cannabis use have remained stable, encounters with health care facilities have increased (12, 13, 14). Some states, such as Colorado, have passed legislation focused on preventive measures, such as child-proof packaging, opaque packaging, and limited marketing, which thus far, have not been shown to be effective at decreasing health care facility visits (15).

Medical cannabis became legal in Michigan in 2008, and recreational cannabis became legal in 2018. As of December 1, 2019, recreational cannabis products were available for purchase. This manuscript reports the trend in unintentional pediatric (<18 years old)

single-substance cannabis exposures at risk of toxicity reported to the Michigan Poison Center with respect to the progression of laws pertaining to the changes in legal status of cannabis from 2008 to 2019.

Section snippets

Methods

We conducted a retrospective review of all single-substance cannabis cases reported to the Michigan Poison Center (MiPC) from 2008 to 2019. Michigan has a population of approximately 10 million people covered by one poison center. The MiPC is staffed by nurses, pharmacists, and physicians (Poison Information Providers [PIPs] and Certified Specialists in Poison Information [CSPIs]) who take telephone calls from the public and health care providers. Calls originating from within Michigan or...

Results

Between 2008 and 2019, a total of 1392 cannabis exposures in children younger than 18 years old were reported to the MiPC. We excluded 743 cases of co-exposures and 220 cases that were judged to be insignificant (licks, tastes, secondhand smoke) or were lost to follow-up, resulting in 426 cases of single-substance pediatric cannabis exposures. Total exposures reported to the MiPC ranged from 47,908 in 2008 to 54,717 in 2019, with a peak in 2010 at 72,792 reported exposures (Table 1). Despite...

Discussion

Analysis of the MiPC pediatric cannabis single-agent exposure data, the largest case series to our knowledge to date, revealed an overall increase in annual pediatric exposures of cannabis in Michigan in the years from medical cannabis legalization in 2008 through recreational cannabis legalization in 2018. A bimodal distribution in age groups showed that children ages 0–5 and teenagers 13–17 years were most affected, and that the trend was driven by ingested edible cannabis products. We...

Conclusion

Cannabis exposures reported to the MiPC consistently increased among pediatric patients in the period after medical cannabis legalization (2008) and leading up to recreational cannabis legalization (2019) in the state of Michigan. The mitigating effects of aggressive education campaigns, product labeling, and childproof/resistant packaging are unknown. Future research is needed to evaluate the effects of cannabis regulations and public health campaigns on unintentional pediatric cannabis...

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G.S. Wang *et al.*

[Association of unintentional pediatric exposures with decriminalization of marijuana in the United States](#)

Ann Emerg Med (2014)

A.A. Thomas *et al.*

[Unintentional pediatric marijuana exposures prior to and after legalization and commercial availability of recreational marijuana in Washington State](#)

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[The design of medical marijuana laws and adolescent use and heavy use of marijuana: analysis of 45 states from 1991 to 2011](#)

Drug Alcohol Depend (2017)

D.S. Hasin *et al.*

[Medical marijuana laws and adolescent marijuana use in the USA from 1991 to 2014: results from annual, repeated cross-sectional surveys](#)

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Impact of marijuana legalization in Colorado on adolescent emergency and urgent care visits

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R.S.Hoffman

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The impact of marijuana policies on youth: clinical, research, and legal update

Pediatrics (2015)

Monthly report: April 2020. State of Michigan Department of Licensing and Regulatory Affairs



View more references

Cited by (3)

Cannabis use in youth: Consumption and health consequences

2023, Encyclopedia of Child and Adolescent Health, First Edition

Show abstract

Causal effects of cannabis legalization on parents, parenting, and children: A systematic review

2022, Preventive Medicine

Citation Excerpt :

...Moreover, risk of bias assessment judged these studies at critical risk of bias due to confounding (see Fig. 2). Ten studies examined unintentional pediatric cannabis exposure, assessed using reports to poison control centers and urine toxicology at hospital visits (Close, 2019; Dean et al., 2021; Onders et al., 2016; Thomas et al., 2021; Thomas et al., 2019; Wang et al., 2013; Wang et al., 2014; Wang et al., 2016; Wang et al., 2019; Whitehill et al., 2019; 6 [75%] studies were conducted

by 2 groups, Thomas et al., 2021; Thomas et al., 2019; Wang et al., 2013; Wang et al., 2014; Wang et al., 2016; Wang et al., 2019). There were no studies examining the effects of legalization on child outcomes other than pediatric cannabis exposure, such as child behavioral adjustment....

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Medical Cannabis for Chronic Nonmalignant Pain Management

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The Journal of Emergency Medicine, Volume 60, Issue 6, 2021, pp. 764-771

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Research article

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The Journal of Emergency Medicine, Volume 60, Issue 6, 2021, pp. e155-e157

Research article

Effectiveness of Clinical Risk Factors in the Detection of Central Pathology in Patients With Isolated Vertigo

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Research article

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THE LEGALIZATION OF MARIJUANA IN COLORADO: *THE IMPACT*

Volume 8
September 2021

Rocky Mountain High Intensity
Drug Trafficking Area

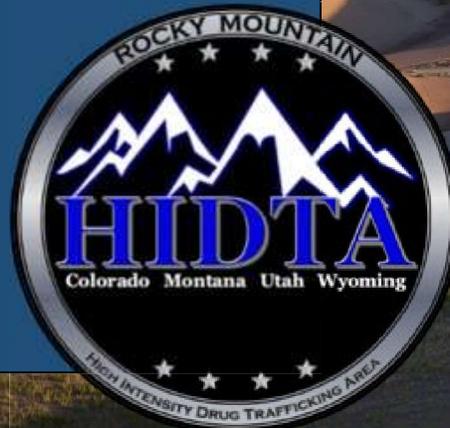


Photo: Collin Riley

REPORT AVAILABLE AT:
www.RMHIDTA.org

**PREPARED BY THE ROCKY MOUNTAIN HIDTA
INVESTIGATIVE SUPPORT CENTER
SEPTEMBER 2021**

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Executive Summary

The Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA) program has published annual reports every year since 2013 tracking the impact of legalizing recreational marijuana in Colorado. The purpose is to provide data and information so that policy makers and citizens can make informed decisions on the issue of marijuana legalization.

Section I: Traffic Fatalities & Impaired Driving

- Since recreational marijuana was legalized in 2013, traffic deaths where drivers tested positive for marijuana **increased 138%** while all Colorado traffic deaths **increased 29%**.
- Since recreational marijuana was legalized, traffic deaths involving drivers who tested positive for marijuana **more than doubled** from 55 in 2013 to 131 people killed in 2020.
- Since recreational marijuana was legalized, the percentage of all Colorado traffic deaths involving drivers who tested positive for marijuana **increased from 11% in 2013 to 20%** in 2020.

Section II: Marijuana Use

Since recreational marijuana was legalized in 2013:

- Past month marijuana use for ages 12 and older **increased 26%** and is **61% higher** than the national average, currently ranked **3rd** in the nation.
- Past month adult marijuana use (ages 18 and older) **increased 20%** and is **62% higher** than the national average, currently ranked **3rd** in the nation.
- Past month college age marijuana (ages 18-25) use **increased 10%** and is **53% higher** than the national average, currently ranked **3rd** in the nation.
- Past month youth marijuana (ages 12-17) use **decreased 22%** and is **39% higher** than the national average, currently ranked **7th** in the nation.

Section III: Public Health

- Marijuana *only* exposures **increased 185%** from 2013 when recreational marijuana was legalized compared to 2020.
- Treatment for marijuana use for all ages **decreased 34%** from 2013 to 2020.
- The percent of suicide incidents in which toxicology results were positive for marijuana has **increased** from **14%** in 2013 to **29%** in 2020.

Section IV: Black Market

- RMHIDTA Colorado Drug Task Forces (10) conducted **294 investigations** of black-market marijuana in Colorado resulting in:
 - **168** felony arrests
 - **5.54** tons of marijuana seized
 - **86,502** marijuana plants seized
 - **21** different states the marijuana was destined
- Seizures of marijuana reported to the El Paso Intelligence Center (EPIC) in Colorado **increased 48%** from an average of 174 parcels (2009-2012) when marijuana was commercialized to an average of 257 parcels (2013-2020) during the time recreational marijuana become legalized.

Section V: Societal Impact

- Marijuana tax revenue represent approximately **0.98%** of Colorado's FY 2020 budget.
- **66%** of local jurisdictions in Colorado have banned medical and recreational marijuana businesses.

Introduction

Purpose

The purpose of this annual report is to document the impact of the legalization of marijuana for medical and recreational use in Colorado. Colorado serves as an experimental lab for the nation to determine the impact of legalizing marijuana. This is an important opportunity to gather and examine meaningful data and identify trends. Citizens and policymakers nationwide may want to delay any decisions on this important issue until there is sufficient and accurate data to make informed decisions. Readers are encouraged to review previous volumes of this report for a comprehensive understanding of the topic. These reports were prepared to identify data and trends related to the legalization of marijuana so that informed decisions can be made regarding this issue.

Background

It is important to note that, for purposes of the debate on legalizing marijuana in Colorado, there are three distinct timeframes to consider: the early medical marijuana era (2000-2008), the medical marijuana commercialization era (2009–current) and the recreational marijuana era (2013–current).

- **2000 – 2008, Early Medical Marijuana Era:** In November 2000, Colorado voters passed Amendment 20 which permitted a qualifying patient, and/or caregiver of a patient, to possess up to 2 ounces of marijuana and grow 6 marijuana plants for medical purposes. During that time there were between 1,000 and 4,800 medical marijuana cardholders and no known dispensaries operating in the state.
- **2009 – Current, Medical Marijuana Commercialization Era:** Beginning in 2009 due to a number of events, marijuana became de facto legalized through the commercialization of the medical marijuana industry. By the end of 2012, there were over 100,000 medical marijuana cardholders and 500 licensed dispensaries operating in Colorado. There were also licensed cultivation operations and edible manufacturers.
- **2013 – Current, Recreational Marijuana Legalization Era:** In November 2012, Colorado voters passed Constitutional Amendment 64 which legalized marijuana for recreational purposes for anyone over the age of 21. The amendment also allowed for licensed marijuana retail stores, cultivation operations and edible manufacturers. Retail marijuana businesses became operational January 1, 2014.

NOTE:

Data, if available, will compare post-2009 when medical marijuana became commercialized and after 2013 when recreational marijuana became legalized.

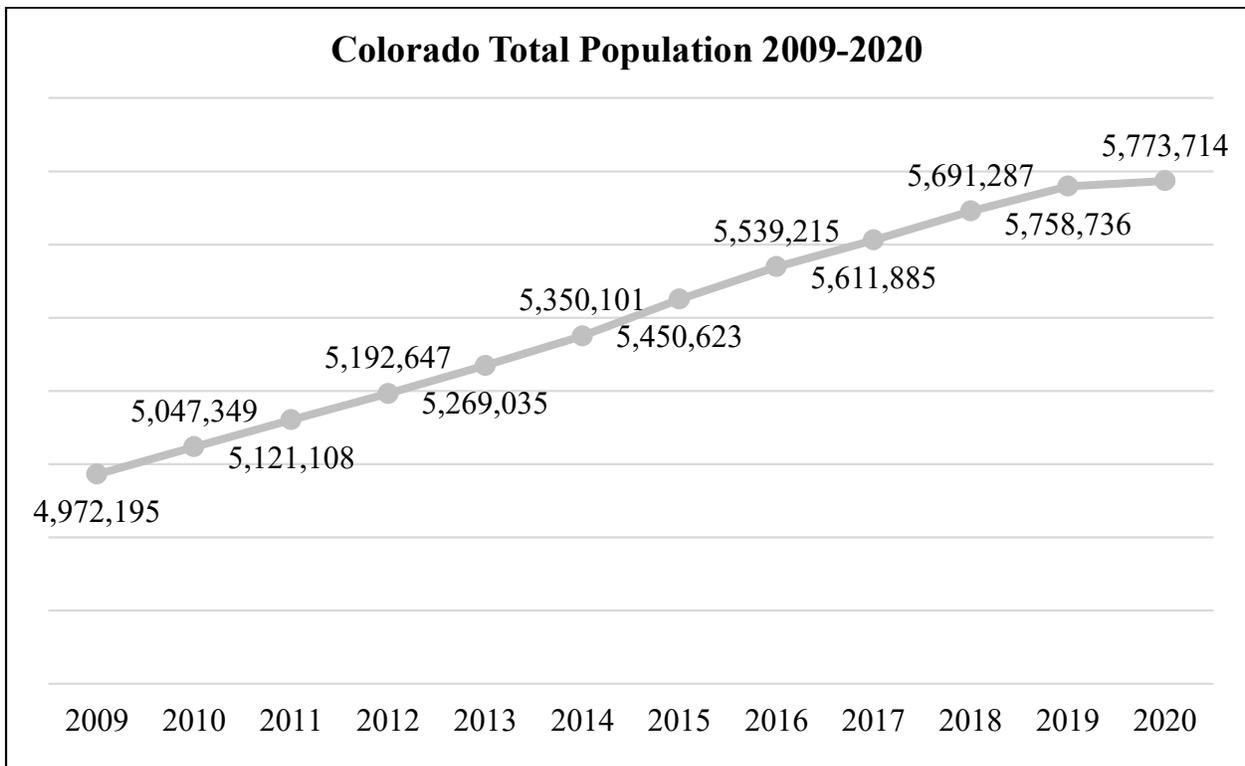
Multi-year comparisons are generally better indicators of trends. One-year fluctuations do not necessarily reflect a new trend.

Percentage comparisons may be rounded to the nearest whole number.

Percent changes found within graphs were calculated and added by RMHIDTA.

This report will cite datasets with terms such as “marijuana-related” or “tested positive for marijuana.” That does not necessarily prove that marijuana was the cause of the incident.

Throughout this report, rate per 100,000 is included to proportionately analyze various statistics. Below is Colorado’s total population from 2009 to 2020 for reference:



Section I: Traffic Fatalities & Impaired Driving

Some Findings

- Since recreational marijuana was legalized in 2013, traffic deaths where drivers tested positive for marijuana **increased 138%** while all Colorado traffic deaths **increased 29%**.
- Since recreational marijuana was legalized, traffic deaths involving drivers who tested positive for marijuana **more than doubled** from 55 in 2013 to 131 people killed in 2020.
- Since recreational marijuana was legalized, the percentage of all Colorado traffic deaths involving drivers who tested positive for marijuana **increased from 11% in 2013 to 20%** in 2020.

Definitions by Rocky Mountain HIDTA

Driving Under the Influence of Drugs (DUI/D): This term includes an individual under the influence of alcohol, marijuana, or other drugs along with any This is an important measurement since the driver’s ability to operate a vehicle was sufficiently impaired that it brought his or her driving to the attention of law enforcement. The erratic driving and the subsequent evidence that the subject was under the influence of marijuana helps confirm the causation factor.

Marijuana-Related: Also called “marijuana mentions,” is any time marijuana shows up in the toxicology report. It could be marijuana only or marijuana with other drugs and/or alcohol.

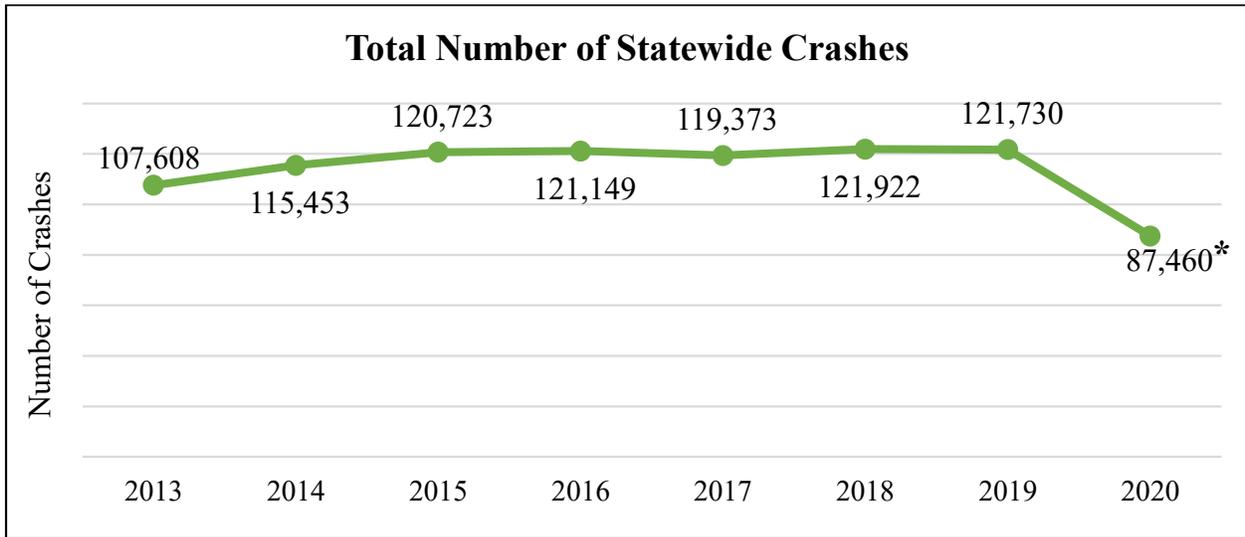
Marijuana Only: When toxicology results show marijuana and no other drugs or alcohol.

Fatalities: Any death resulting from a traffic crash involving a motor vehicle.

Drivers: An occupant who is in physical control of a transport vehicle. For an out-of-control vehicle, an occupant who was in control until control was lost.

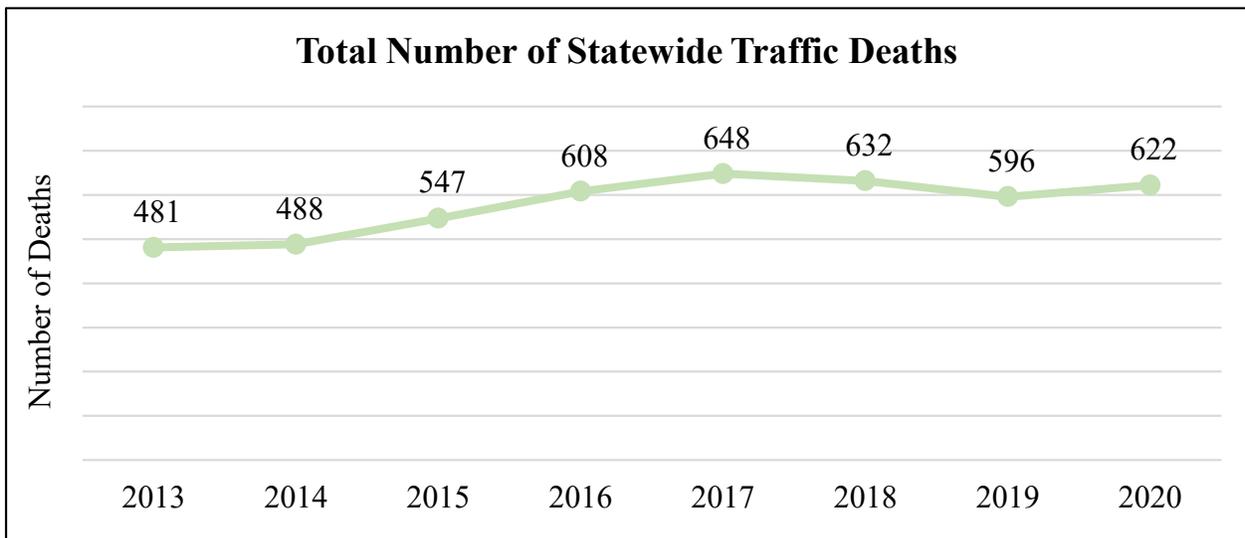
Operators: Anyone in control of their own movements such as a driver, pedestrian, or bicyclist.

Traffic Fatalities



SOURCE: Colorado Department of Transportation (CDOT)

***NOTE:** Colorado Governor Polis reported a 60% reduction in vehicle traffic in March 2020 based on automatic traffic reporters. Reference: Finley, B. (2020, April 5). *Colorado sees "significant declines" in air pollution as coronavirus ramps down driving, industrial activity.* The Denver Post.



SOURCE: CDOT 2013-2020

- In 2020, there were a total of 622 traffic deaths. Of which:
 - 402 were drivers
 - 112 were passengers
 - 93 were pedestrians
 - 15 were bicyclists

SOURCE: National Highway Traffic Safety Administration (NHTSA), Fatality Analysis Reporting System (FARS), 2009-2011 and CDOT 2012-2020

Traffic Deaths Related to Marijuana When a DRIVER Tested Positive for Marijuana

Crash Year	Total Statewide Fatalities	Fatalities with <u>Drivers</u> Testing Positive for Marijuana	Percentage Total Fatalities
2013	481	55	11.4%
2014	488	75	15.4%
2015	547	98	17.9%
2016	608	125	20.6%
2017	648	138	21.3%
2018	632	115	18.2%
2019	596	127	21.3%
2020	622	131	20.1%

NOTE: Due to changes in reporting, data from before 2013 was not included.

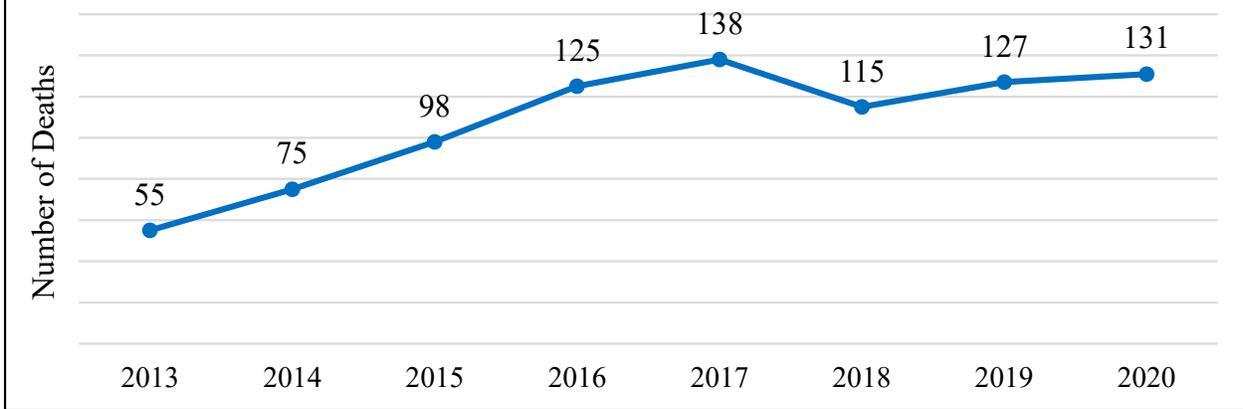
- In 2020, 131 marijuana-related traffic deaths:
 - 104 were drivers
 - 21 were passengers
 - 4 were pedestrians
 - 2 was a bicyclist

SOURCE: CDOT 2013-2020

NOTE: In 2020, 49% of drivers' blood was tested after being involved in a fatal crash.

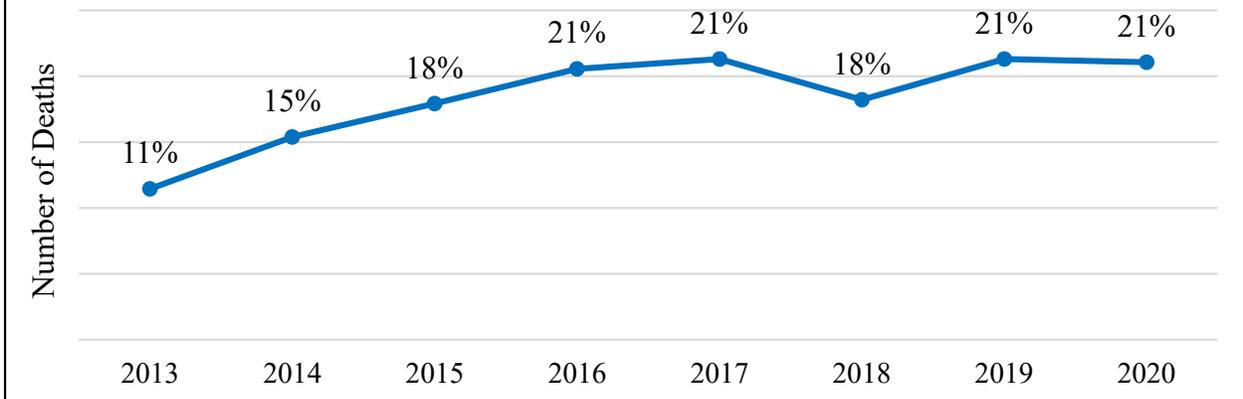
- In 2020, of the 120 drivers in fatal wrecks who tested positive for marijuana use, 117 were found to have Delta 9 tetrahydrocannabinol or THC, the psychoactive ingredient in marijuana, in their blood. This would indicate use within hours according to state data. Of those, 69% were over 5 nanograms per milliliter, the state permissible inference level for driving.
 - Similar to findings from the August 2017 article by David Migoya, "Exclusive: Traffic fatalities linked to marijuana are up sharply in Colorado. Is legalization to blame?" *The Denver Post*.

Traffic Deaths Related to Marijuana when a DRIVER Tested Positive for Marijuana



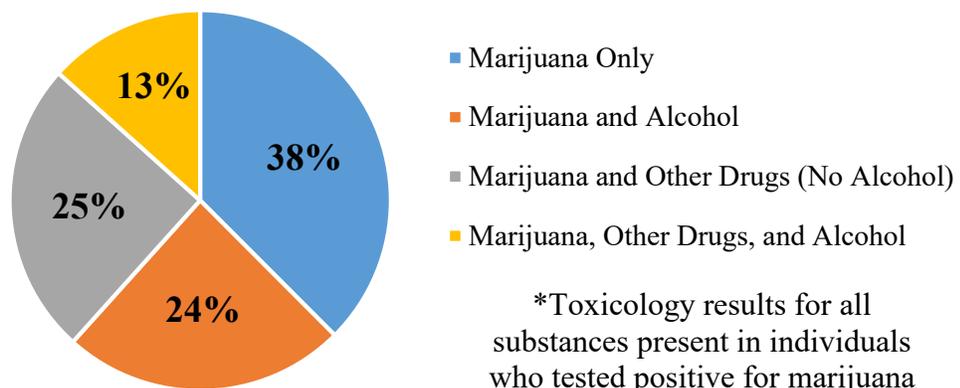
SOURCE: CDOT 2013-2020

Percent of All Traffic Deaths That Were Marijuana-Related where a DRIVER Tested Positive for Marijuana



SOURCE: CDOT 2013-2020

Drug Combinations for DRIVERS Involved in Fatal Crashes who Tested Positive for Marijuana* (2020)



SOURCE: CDOT 2013-2020

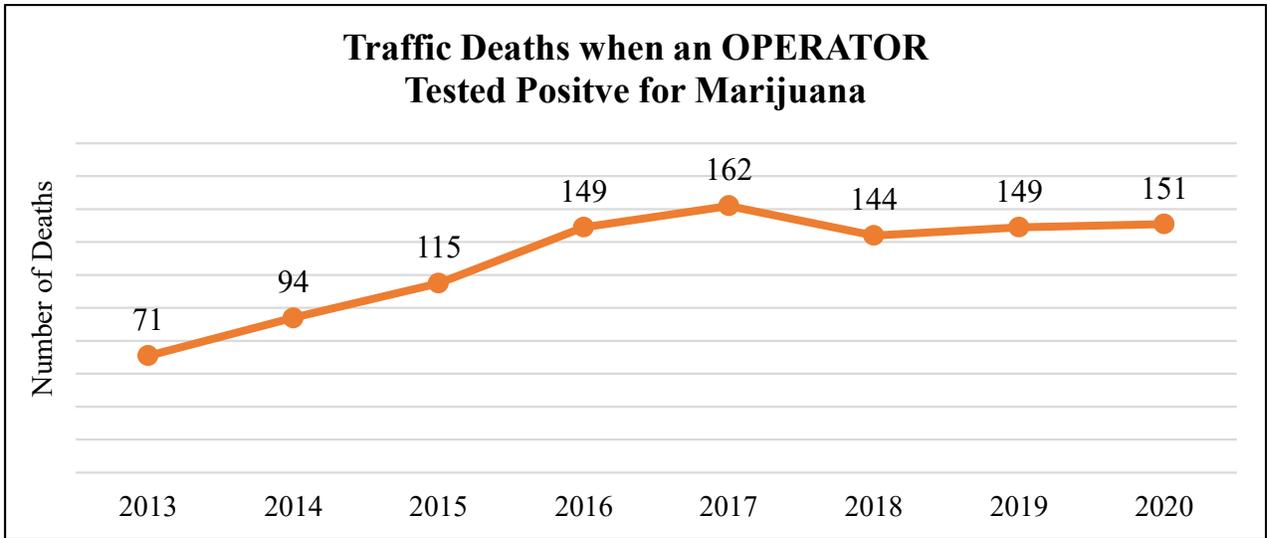
**Traffic Deaths Related to Marijuana
Where an OPERATOR Tested Positive for Marijuana**

Crash Year	Total Statewide Fatalities	Fatalities with <u>Operators</u> Testing Positive for Marijuana	Percentage Total Fatalities
2013	481	71	14.8%
2014	488	94	19.3%
2015	547	115	21.0%
2016	608	149	24.5%
2017	648	162	25.0%
2018	632	144	23.0%
2019	596	149	25.0%
2020	622	151	24.3%

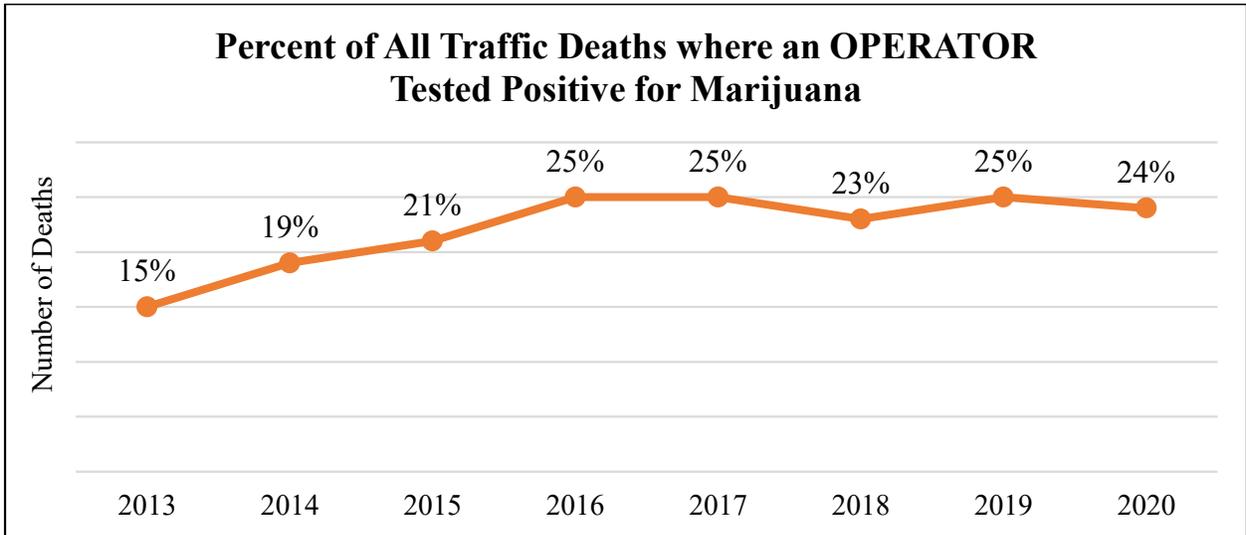
- Of the 151 marijuana-related traffic deaths:
 - 104 were drivers
 - 22 were pedestrians
 - 21 were passengers
 - 4 were bicyclists

SOURCE: CDOT 2013-2020

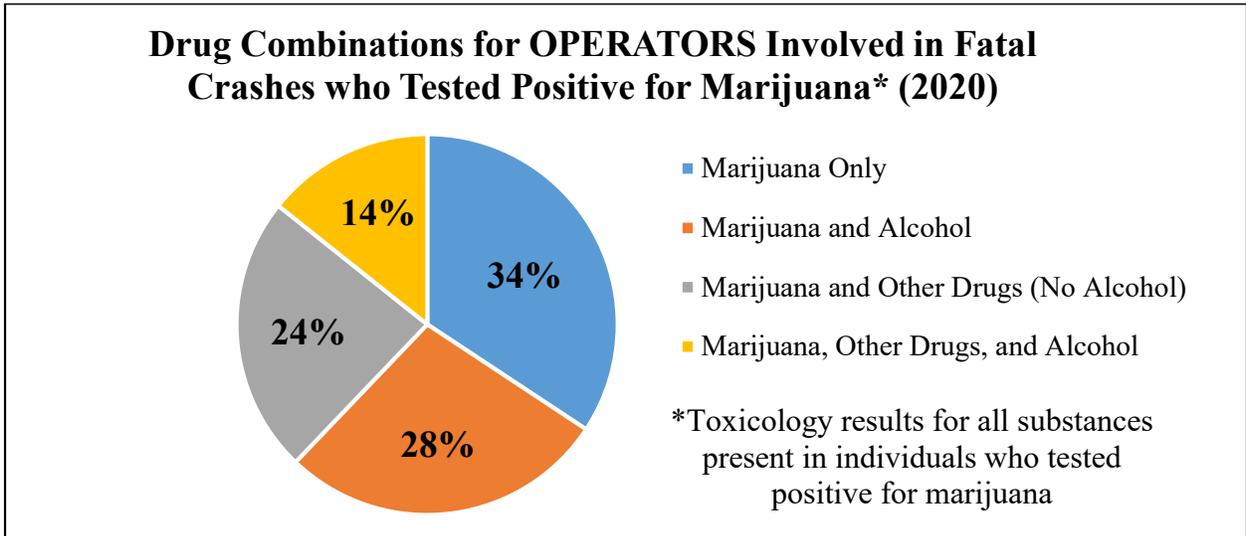
NOTE: In 2020, 51% of operators' blood was tested after being involved in a fatal crash.



SOURCE: CDOT 2013-2020



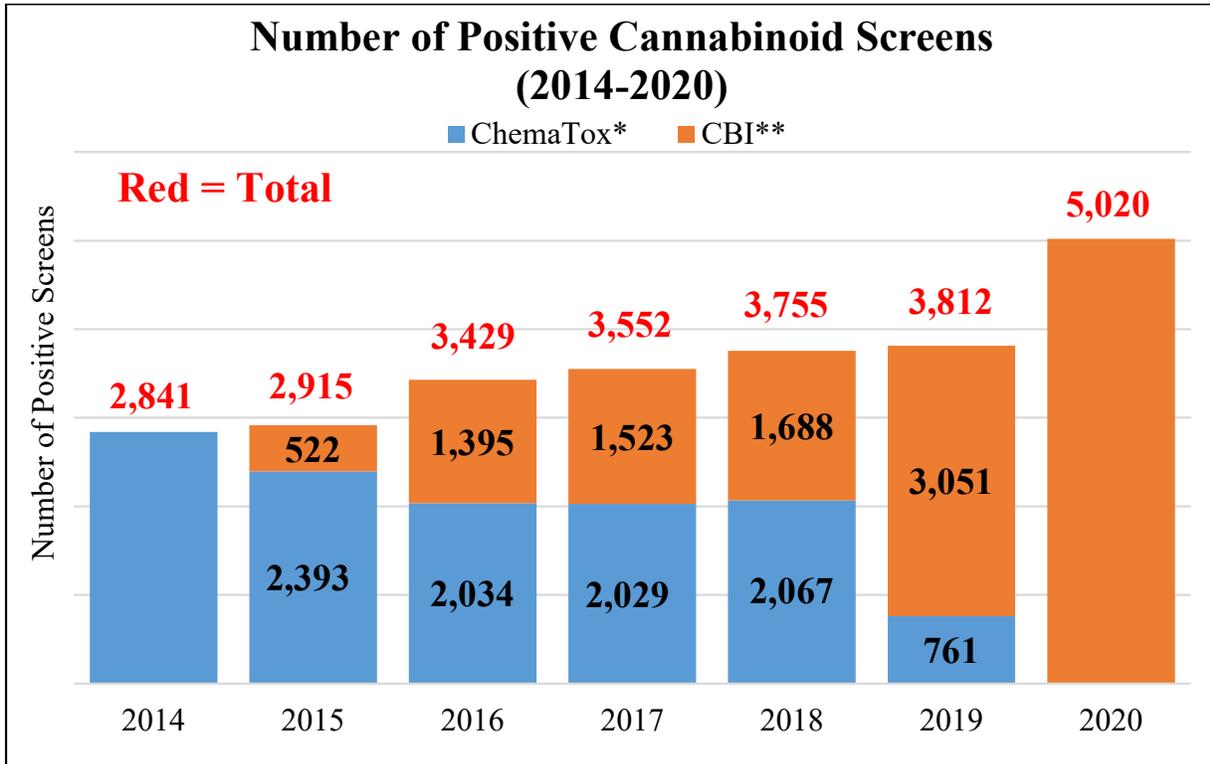
SOURCE: CDOT 2013-2020



SOURCE: CDOT 2013-2020

Impaired Driving

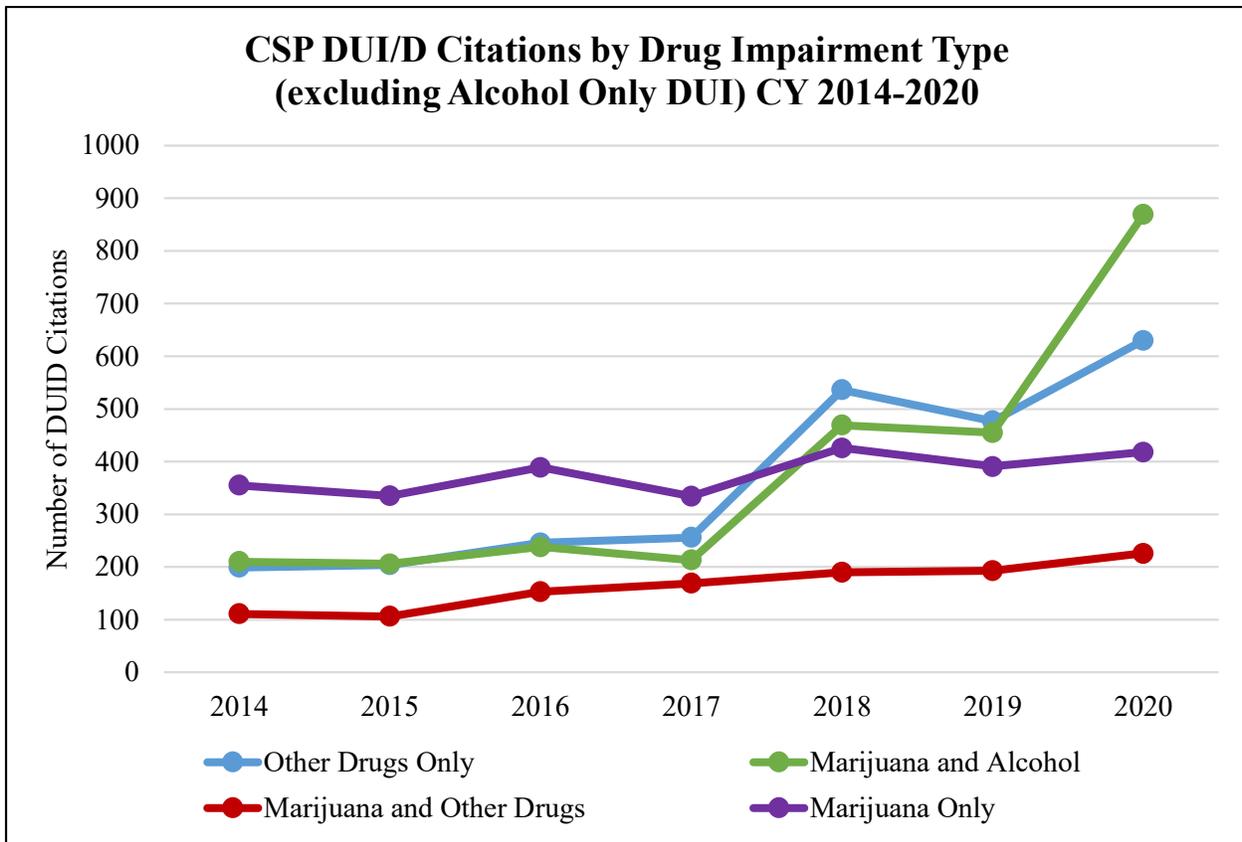
When a driver is arrested for impaired driving related to alcohol (usually 0.08 or higher blood alcohol content), typically tests for other drugs (including marijuana) are not requested since there is no additional punishment if the test comes back positive.



SOURCE: Colorado Bureau of Investigation and ChemaTox

***NOTE:** ChemaTox discontinued testing July 2019.

****NOTE:** The Colorado Bureau of Investigation began toxicology operations July 1, 2015, and became the sole agency in the state to conduct toxicology reports July 1, 2019. The vast majority of the screens are DUID submissions from Colorado law enforcement.



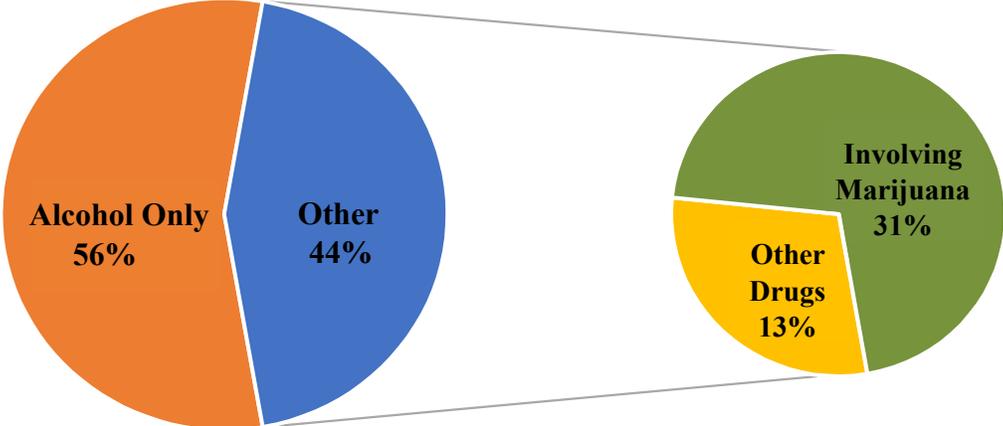
SOURCE: CSP RDW; only displaying data available as of 07/23/2021

DUI/D Citations by Drug Impairment Type							
	2014	2015	2016	2017	2018	2019	2020
Other Drugs	199	204	246	256	536	477	630
Marijuana and Alcohol	210	206	238	213	469	455	869
Marijuana and Other Controlled Substances	111	106	153	169	190	193	226
Marijuana Only	355	335	389	334	426	391	418
Alcohol Only	4,620	3,948	3,528	3,817	3,541	3,727	2,674
Total Marijuana Involved Citations	676	647	780	716	1,085	1,039	1,513
Total DUI/D Citations	5,495	4,799	4,554	4,789	5,162	5,245	4,817

SOURCE: CSP RDW; only displaying data available as of 07/23/2021

NOTE: “Citations in the Colorado State Patrol (CSP) Reporting Data Warehouse (RDW) are defined as one per involved person when the involved person has at least one charge as denoted in the RDW (excluding oral and written warnings), that occurred during a traffic stop unique on date, time, location road, mile point round, and driver’s license number. Impaired (DUI/D) citations were identified in the CSP RDW by the following common codes: 753, 754, 755, 765, 785, 800, 801, 802, 805, 806, 807, 808, 809, 810, 812, 813, 814, 815, 820, 821, or MPC.”
-Colorado State Patrol

Colorado State Patrol DUI/D Citations CY 2020



SOURCE: CSP RDW; only displaying data available as of 07/23/20210

Impaired Driving Information

THC Positive Drivers Involved in Fatal Crashes in Washington

In Washington, the AAA Foundation for Traffic Safety studied fatal crashes from 2008 to 2017 to determine the impact of the legalization of recreational marijuana. The percentage of drivers involved in a fatal crash was 88% from 2008 to 2017 compared to only 29% of drivers involved in non-fatal crashes. Of the fatal crashes, an average of 8.8% of drivers were THC-positive from 2008 to 2012. Then after recreational marijuana was legalized, the average increased to 18% of drivers testing positive for THC from 2013 to 2017. The highest level was reached in 2017 with 21% of drivers testing positive for THC that were involved in a fatal crash.

Source: Tefft, B.C. & Arnold, L.S. (2020). *Cannabis Use Among Drivers in Fatal Crashes in Washington State Before and After Legalization* (Research Brief). Washington, D.C.: AAA Foundation for Traffic Safety.

Analysis of the Impact of Recreational Marijuana Legalization on Traffic Fatalities in Colorado and Washington

In 2019, researchers examined the impact of recreational marijuana legalization on traffic fatalities in Washington and Colorado. Fatality Analysis Reporting System (FARS) from 2000 to 2016 was analyzed to compare fatal crashes where at least the driver tested positive for marijuana with the alcohol related cases. The initial findings were that marijuana-related deaths increased in Washington and Colorado compared to the rest of the country after marijuana was legalized in these two states in 2012. The rate of increase was significantly faster than the other states as well. In their final analysis, the authors were unable to determine whether the legalization of recreational marijuana alone led to the large increase in traffic fatalities in the two states.

Their conclusion states that in Colorado, “the amount of marijuana sold in recreational stores [grew] dramatically, [...] from 36,031 pounds in 2014 to 102,871 pounds in 2016. However, it is difficult to discern how much of this growth in legal recreational weed came at the expense of sales in black market or medical marijuana. Indeed, recreational marijuana can be viewed as a close substitute to black market or medical marijuana, with differences in price, quality, and ease of access. The relatively small effects we estimate are consistent with crowding-out, and could explain why we do not observe spillover effects on alcohol-related traffic accidents as other studies have found (Anderson, Hansen, and Rees 2013). Furthermore, Colorado has recently allowed consumption of marijuana in public spaces. This might increase the potential for negative externalities of recreational marijuana relative to medical marijuana. Despite that concern, we find limited overall evidence the fatalities are significantly increasing in Colorado and Washington following the legalization of recreational marijuana” (Hansen et al, 2019).

Source: Hansen, B., Miller, K., and Weber, C. (2019). *Early evidence on recreational marijuana legalization and traffic fatalities*. *Economic Inquiry*, 58(2), 547-568.

Relationship between Recreational Marijuana and Alcohol-Related Behaviors in Colorado

Some theorized that legalizing recreational marijuana would decrease the levels of alcohol consumption, while others believed that there was a positive relationship between the two. These conflicting hypotheses have generated further interest on how the legalization of recreational

marijuana impacted alcohol-related behavior in states like Colorado. Analysis of the tax revenue from alcohol sales in Colorado determined an increase in liquor tax revenue related to alcohol and alcohol-related motor vehicle crash fatalities after the legalization of recreational marijuana in Colorado. Alcohol-related crash fatalities increased by nearly two and a half fatalities per month within the state. The tax revenue increase of almost \$200,000 per month cannot definitively be linked to any changes of alcohol-related societal problems.

Source: Chamlin, M. (2021). *An examination of the unintended consequences of the legalization of recreational marijuana on alcohol-related behaviors*. Journal of Crime and Justice, 1-11

DUI Numbers Increase During Pandemic

During the height of the early stages of the pandemic from January to April 2020, DUI related deaths doubled compared to 2019 according to the Colorado State Patrol. In addition, alcohol and marijuana-related crashes increased by 32 percent during the same timeframe. The cause of this increase was unknown especially during the stay-at-home order that closed many bars. Some hypothesized that the drivers under the influence were able to drive at higher speeds with less cars on the road, leading to the increase in crashes.

Source: Grewe, L. (2020, May 26). *Despite pandemic, DUI numbers up significantly in 2020*. KKTV.

Traffic Deaths Increase Even with Less Miles Travelled

During the first half of 2020, the number of total miles travelled decreased by 17 percent compared to the first half of 2019. Despite this, the traffic deaths increased by one percent from 256 to 259 deaths. Furthermore, this increase was significant as the fatality rate increased by 20 percent due to the large decrease in miles travelled. This trend was confirmed from analysis in 22 other states.

Source: Minor, N. (2020, September 2). *Colorado's roads are emptier, but deadlier so far this year*. CPR News.

Section II: Marijuana Use

Some Findings

Since recreational marijuana was legalized in 2013:

- Past month marijuana use for ages 12 and older **increased 26%** and is **61% higher** than the national average, currently ranked **3rd** in the nation.
- Past month adult marijuana use (ages 18 and older) **increased 20%** and is **62% higher** than the national average, currently ranked **3rd** in the nation.
- Past month college age marijuana (ages 18-25) use **increased 10%** and is **53% higher** than the national average, currently ranked **3rd** in the nation.
- Past month youth marijuana (ages 12-17) use **decreased 22%** and is **39% higher** than the national average, currently ranked **7th** in the nation.

Data Consideration

Healthy Kids Colorado Survey (HKCS) data is collected in the odd years and released in even years. For this reason, HKCS data is not included in this report. Please refer to Volume 7 for the most recent numbers.

Youth Risk Behavior Surveillance System (YRBSS) data is collected in the odd years and released in even years. For this reason, YRBSS data is not included in this report. Please refer to Volume 7 for the most recent numbers.

National Survey on Drug Use and Health (NSDUH) data is averaged between two years for a more accurate representation. The most recent data averaged 2018 and 2019.

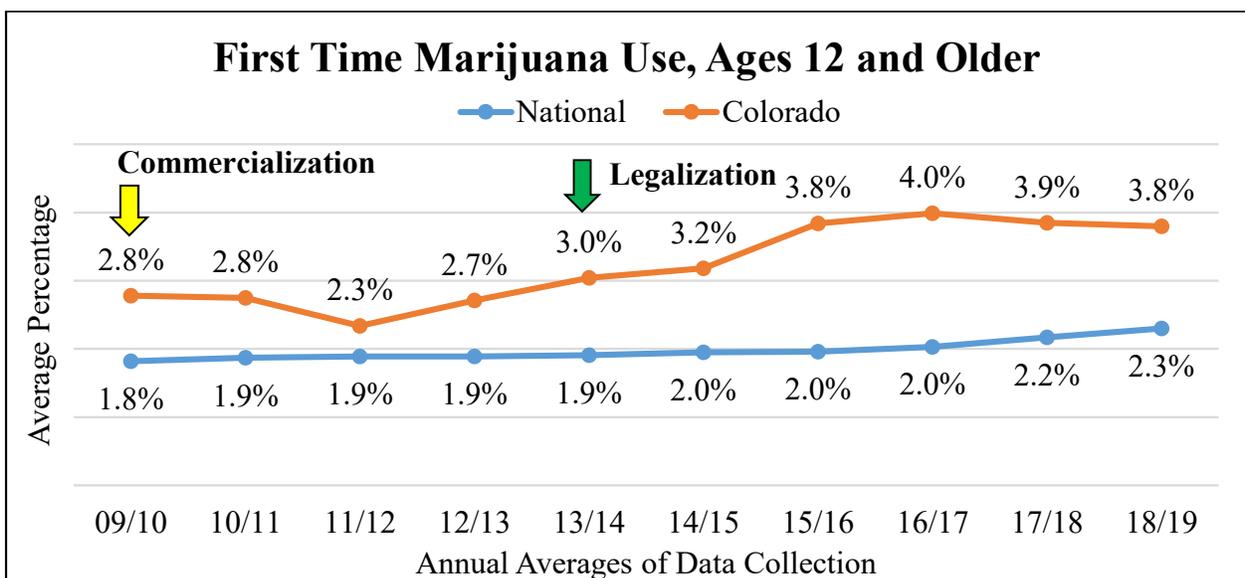
National Survey on Drug Use and Health (NSDUH) Data

Colorado Averages Compared to National Averages		
For Ages 12 and Older:	Colorado	US
Marijuana Past Month Use	17.4%	10.8%
Perceptions of Risk for Smoking Marijuana	17.7%	24.4%
Illicit Drug Use Other than Marijuana Past Month	4.7%	3.3%
Alcohol Past Month Use	60.0%	50.9%
Cigarette Past Month Use	16.3%	16.9%
Perceptions of Risk for Smoking Cigarettes	72.5%	71.5%

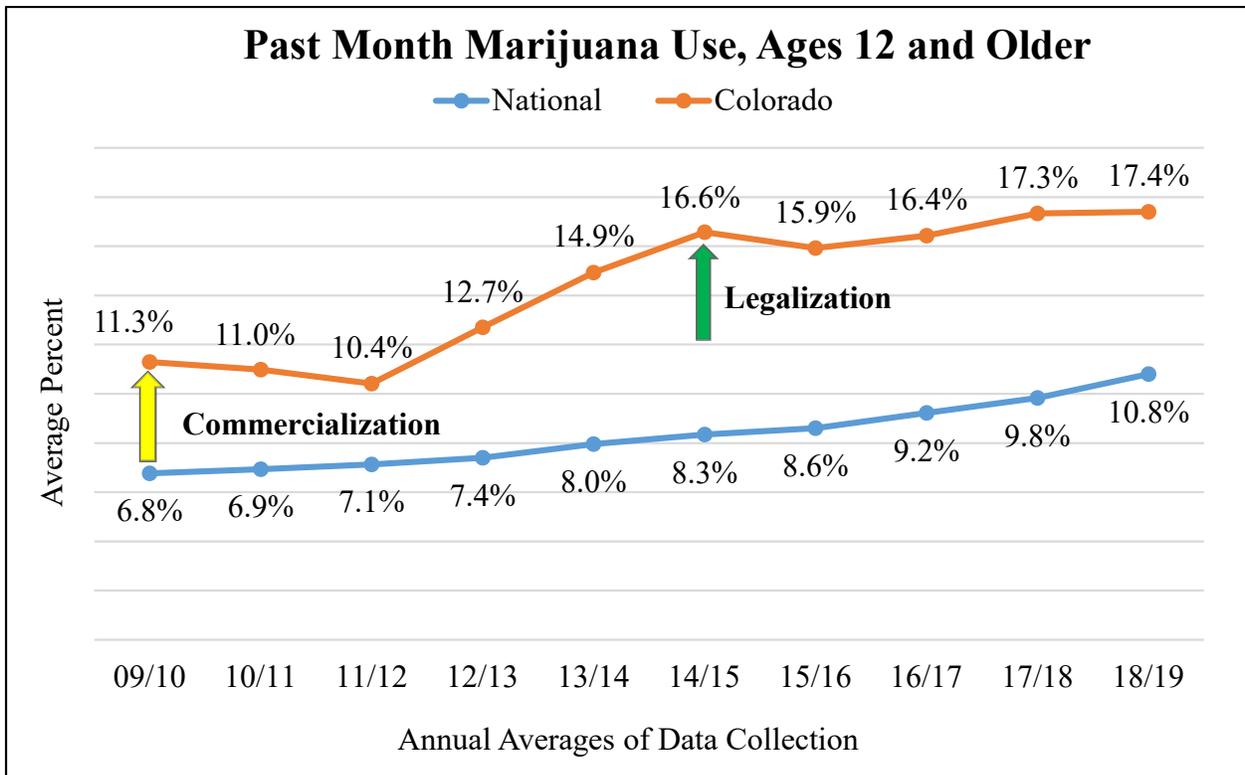
SOURCE: Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019

Marijuana First Time Use			
Age	Colorado %	Colorado U.S. Ranking	National %
12 years +	3.8%	3 rd	2.3%
12 – 17	8.0%	4 th	5.7%
18 years +	2.9%	5 th	1.7%
18 – 25	12.5%	6 th	8.4%
26+	1.2%	6 th	0.7%

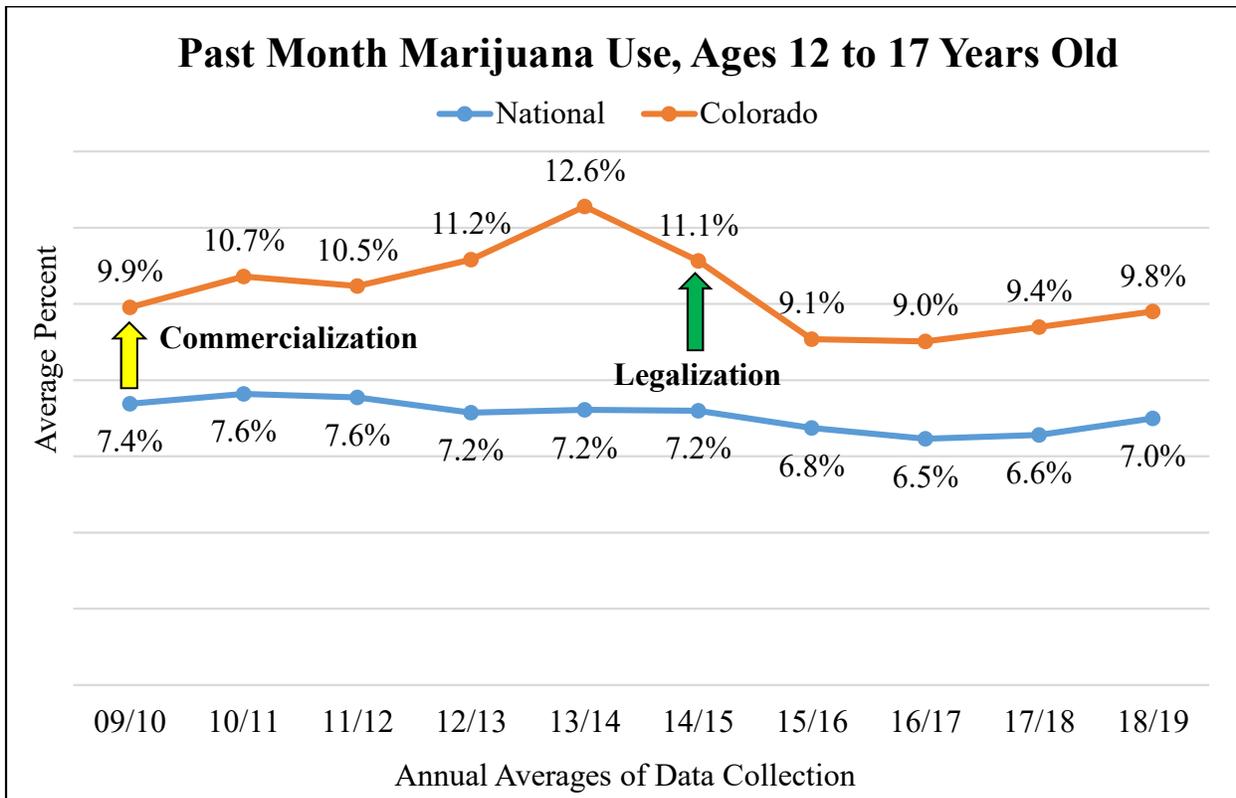
SOURCE: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019



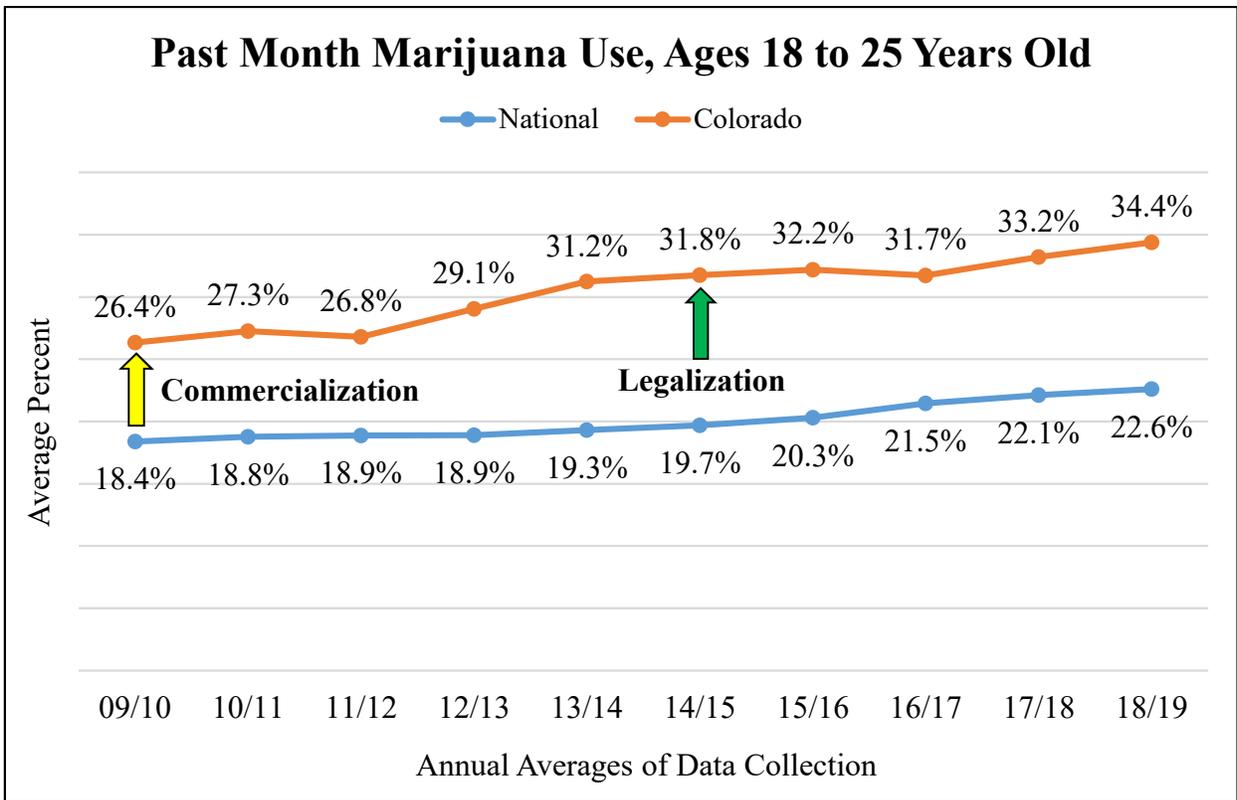
SOURCE: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019



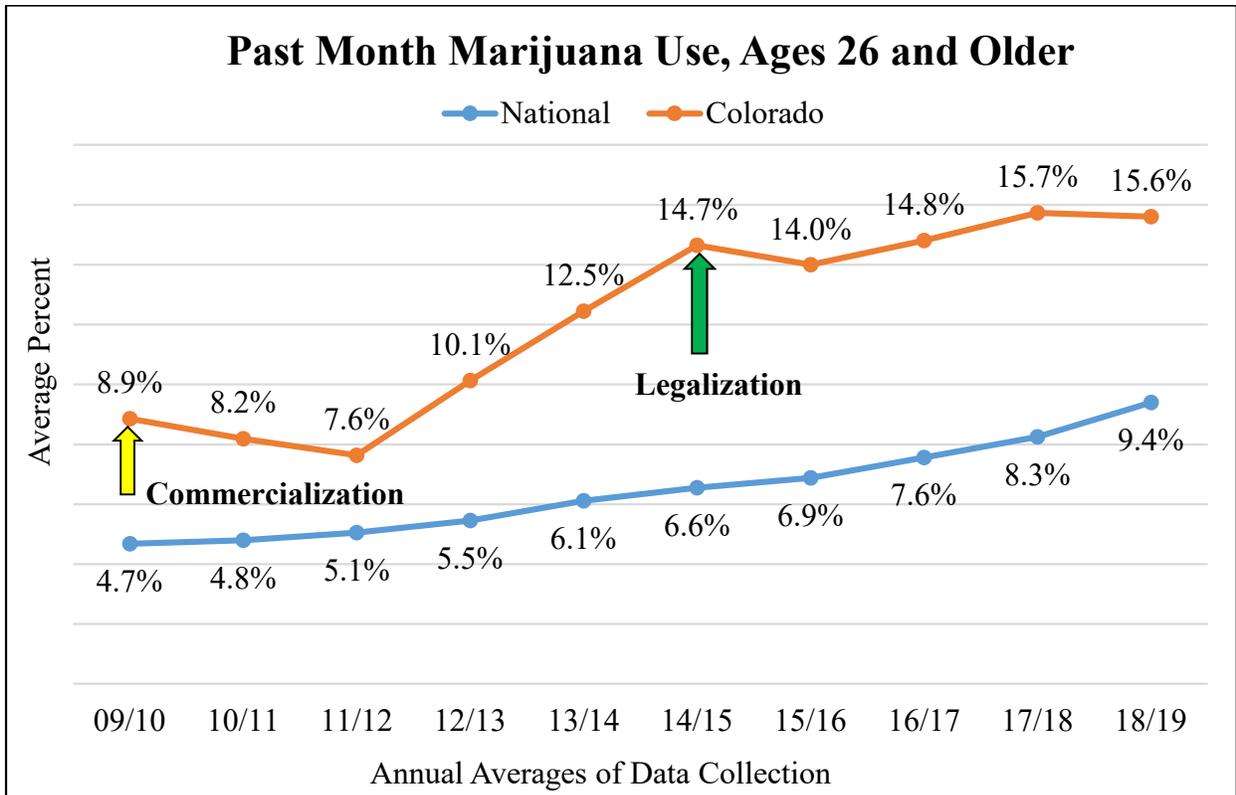
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019

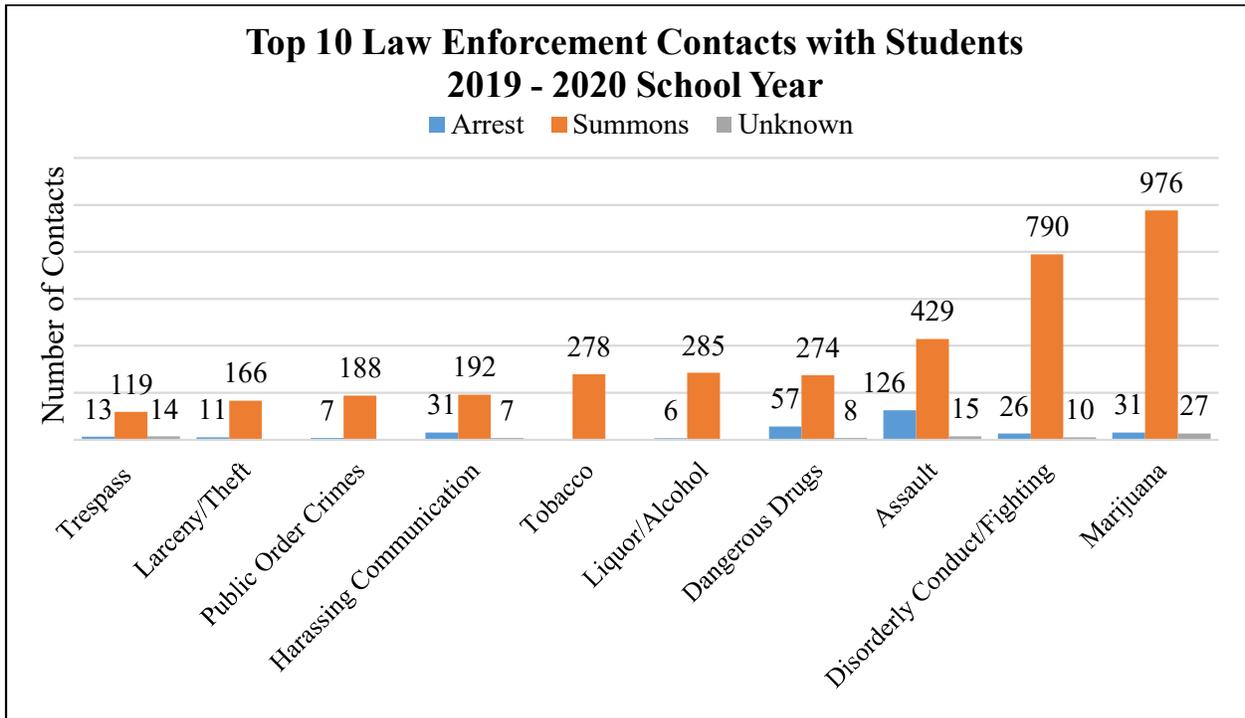


Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019



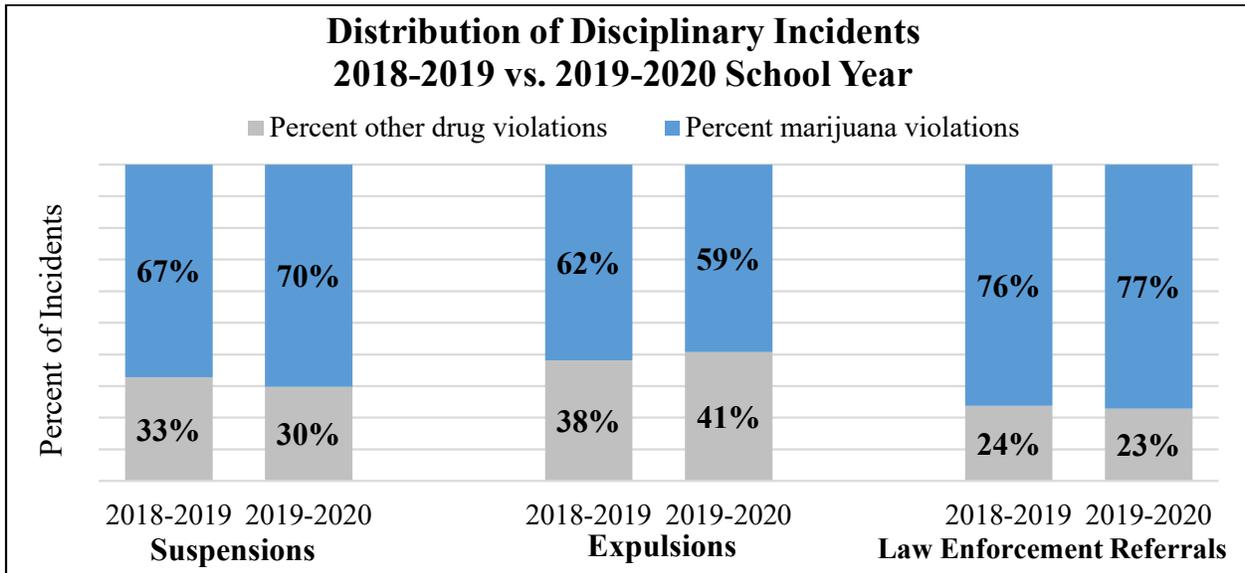
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019

Marijuana in Schools



SOURCE: Colorado Division of Criminal Justice

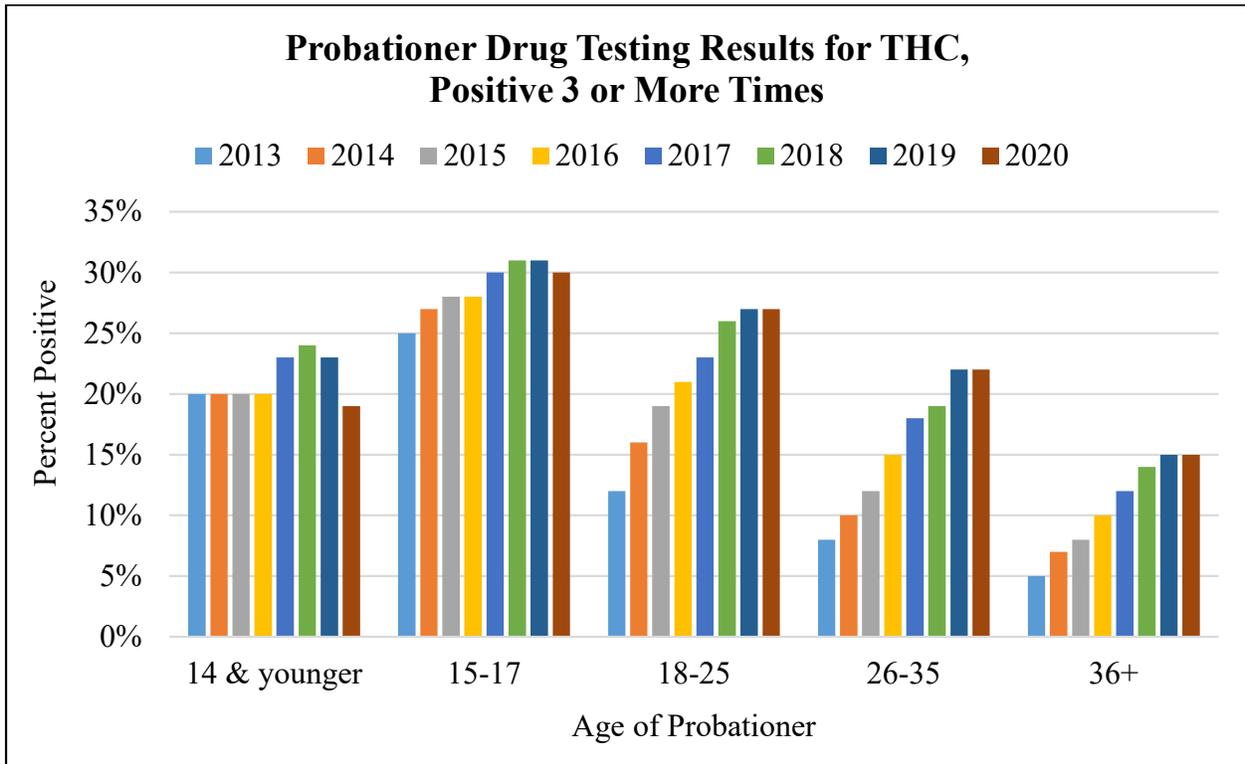
NOTE: The number of contacts from the 2019 to 2020 school year may not represent a complete school year due to the beginning of lockdowns associated with COVID-19 in March 2020.



SOURCE: Colorado Department of Education

NOTE: Law Enforcement Referrals may or may not have been in addition to another reported action taken (suspension, expulsion, or other).

Probationer Marijuana Use



SOURCE: Colorado State Judicial Branch, Division of Probation Services

NOTE: Data reflects drug test results for probationers required to undergo drug testing. This does not reflect all probationers in Colorado. Probationers who have a medical marijuana card are not prohibited from using marijuana while on probation. It is possible that some positive results may come from probationers using marijuana for medical reasons.

Marijuana Use Information

Analysis of Marijuana Use by College Students from 2008 to 2018

One of the largest questions after legalizing recreational marijuana was the impact on young adults across the country. A long-term study was created to compare marijuana use in states that passed recreational marijuana legalization (RML) compared to non-RML states. Researchers chose several post-secondary institutions and students between 18 to 26 years old were surveyed across ten academic years in 48 states. This resulted in seven RML states with nearly 235,000 participants from 135 institutions compared to 41 non-RML states with almost 600,000 students from 454 institutions.

The results indicated that “the 30-day prevalence of marijuana use increased more among college students exposed to RML relative to students attending college in non-RML states and students in RML states prior to legalization. These findings are generally consistent with those from prior studies of Oregon and Washington college students, but are a considerable extension, given that they are based on 135 institutions in seven RML states instead of one to two institutions in a single RML state. The mounting evidence for increases in college students’ marijuana use that has coincided with RML is all the more interesting in the context of the more mixed results regarding such changes among adolescents. For many young adults, the transition to college involves sudden declines in parental monitoring, exposure to older peer groups and a culture of heavy drinking and other substance use. Although heavy drinking by college students has declined nation-wide in recent years, the prevalence of marijuana use has increased” (Bae et al, 2021). Additionally, the increases in RML states were more pronounced in women, participants 21 years and older, and students living off-campus.

Source: Bae, H. and Kerr, D. (2021). *Marijuana use trends among college students in states with and without legalization of recreational use: initial and longer-term changes from 2008 to 2018*. *Addiction*, 115(6), 1115-1124.

Relationship between Neighborhood Disorder, Marijuana Use, and Life Expectancy for Young Men Involved in the Criminal Justice System

Researchers surveyed over 1,200 young males from the Crossroads study that are involved in the justice system to examine their perception of risk-taking relative to their expectations on life expectancy. In the study, the measurements were neighborhood disorder, life expectancy, substance use, offending, and risky sexual behavior. Specific to marijuana use, the results indicated that the young men living in more disordered neighborhoods used marijuana more frequently, different findings than binge drinking and cigarette use. No causal relationship was determined between life expectancy and marijuana use.

The authors stated in the conclusion, “a possible explanation for this finding is that adolescents do not perceive using marijuana as risky or harmful. Findings from the National Institute on Drug Abuse 2013 Monitoring the Future survey indicate that while cigarette use and alcohol use have steadily declined in recent years, rates of marijuana use have remained consistently high, in large part due to adolescents’ attitudes toward marijuana risks. Only 20.6% of 12th graders perceived occasional marijuana use as harmful and only 44.1% considered daily use to be detrimental (Johnston et al., 2014). If youth tend not to view marijuana as being harmful in the long run, then

it is likely that decisions to use marijuana are not informed by youths' expectations for their futures. That is, even among adolescents who expect long lives, they may be just as likely as those with short life expectancies to engage in marijuana use because they may not perceive it as a risky behavior" (Kan et al, 2020).

Source: Kan, E., Peniche, M., Steinberg, L., Knowles, A., Frick, P., and Cauffman, E. (2020). *Neighborhood disorder and risk-taking among justice-involved youth—the mediating role of life expectancy*. Journal of Research on Adolescence, 31(2), 282-298.

Examining the Validity of the Marijuana Gateway Hypothesis

Proposed during the 1970s, the marijuana gateway hypothesis was created to explain the escalation of risk from the use of tobacco and alcohol to marijuana, then to harder drugs. As a result of this hypothesis, marijuana use was harshly punished throughout the country even to today with many states legalizing recreational and medical marijuana. At this point, there has been a lack of research supporting the causal relationship between marijuana use and other drugs. The researchers in this study focused on further examining the relationship to determine the validity of the marijuana gateway hypothesis. While those who use marijuana before 21 were 157 times more likely to engage in subsequent hard drug use, most marijuana users never escalate to hard drug use. "Some studies have found moderate estimates wherein approximately 29% of marijuana users continue on to harder drug use" (Jorgensen and Wells, 2021). They state there must be a distinction between chronic users with more occasional users when examining the likelihood of escalating to harder drugs.

Data was gathered and analyzed from the National Longitudinal Study of Adolescent to Adult Health. The results showed a meaningful association between heavy marijuana use and light illicit drug use. "Considering the findings from all 18 tests together, it can be concluded that the hypothesis that marijuana is a gateway drug is unsupported. Summarily, if marijuana "really" is a gateway drug we would expect to see stronger and more consistent causal gateway effects" (Jorgensen and Wells, 2021). Additionally, the conclusion stated that if marijuana was to be considered a gateway drug that necessitates harsh punishments, the same would be needed for tobacco and alcohol.

Source: Jorgensen, C. and Wells, J. (2021). *Is marijuana really a gateway drug? A nationally representative test of the marijuana gateway hypothesis using a propensity score matching design*. Journal of Experimental Criminology, 17(3).

Changes in Marijuana Use from 2005 to 2018 across the United States

The study compares marijuana use by adults from 2005 to 2011 (pre-recreational marijuana legalization) to 2012 to 2018 (post-recreational marijuana legalization). Data was utilized from the US National Health and Nutrition Examination Survey (NHANES) from 2005 to 2018 across the country. While lifetime marijuana use and first use before the age of 18 was fairly consistent over the 14 years, there was a sizable increase in past-year marijuana use. This use was higher and more common for younger people, males, participants below the poverty line, non-Hispanic blacks. Despite this, the increase in past-year use increased across all demographics including education, race, gender, and income.

Source: Mitchell, W., Bhatia, R., and Zebardast, N. (2020). *Retrospective cross-sectional analysis of the changes in marijuana use in the USA, 2005–2018*. BMJ Open, 1-6.

Section III: Public Health

Some Findings

- Marijuana *only* exposures **increased 185%** from 2013 when recreational marijuana was legalized compared to 2020.
- Treatment for marijuana use for all ages **decreased 34%** from 2013 to 2020.
- The percent of suicide incidents in which toxicology results were positive for marijuana has **increased** from **14%** in 2013 to **29%** in 2020.

Definitions by Rocky Mountain HIDTA

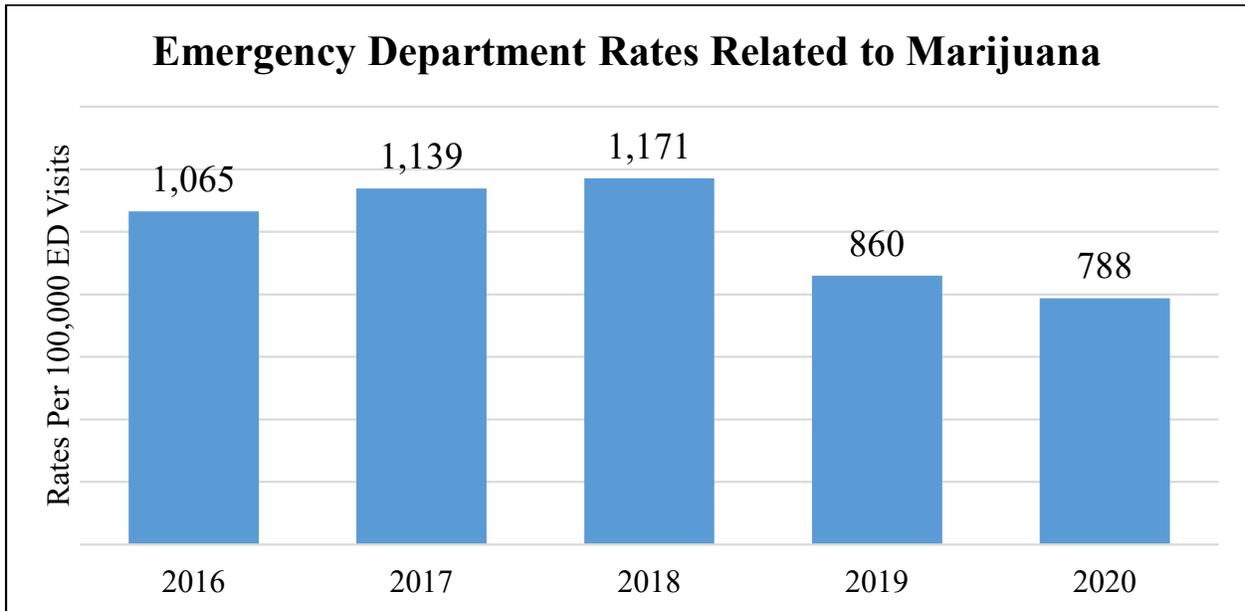
Marijuana-Related: Also referred to as “marijuana mentions.” Data could be obtained from lab tests, patient self-admission or some other form of validation obtained by the provider. Being marijuana-related does not necessarily prove marijuana was the cause of the emergency department admission or hospitalization.

International Classification of Disease (ICD): A medical coding system used to classify diseases and related health problems.

**In 2015, ICD-10 (the tenth modification) was implemented in place of ICD-9. Although ICD-10 will allow for better analysis of disease patterns and treatment outcomes for the advancement of medical care, comparison of trends before and after the conversion can be made difficult and/or impossible. The number of codes increased from approximately 13,600 codes to approximately 69,000 codes. For this reason, emergency department visits and hospitalizations related to marijuana use were restricted to 2016 to 2020 in this report.

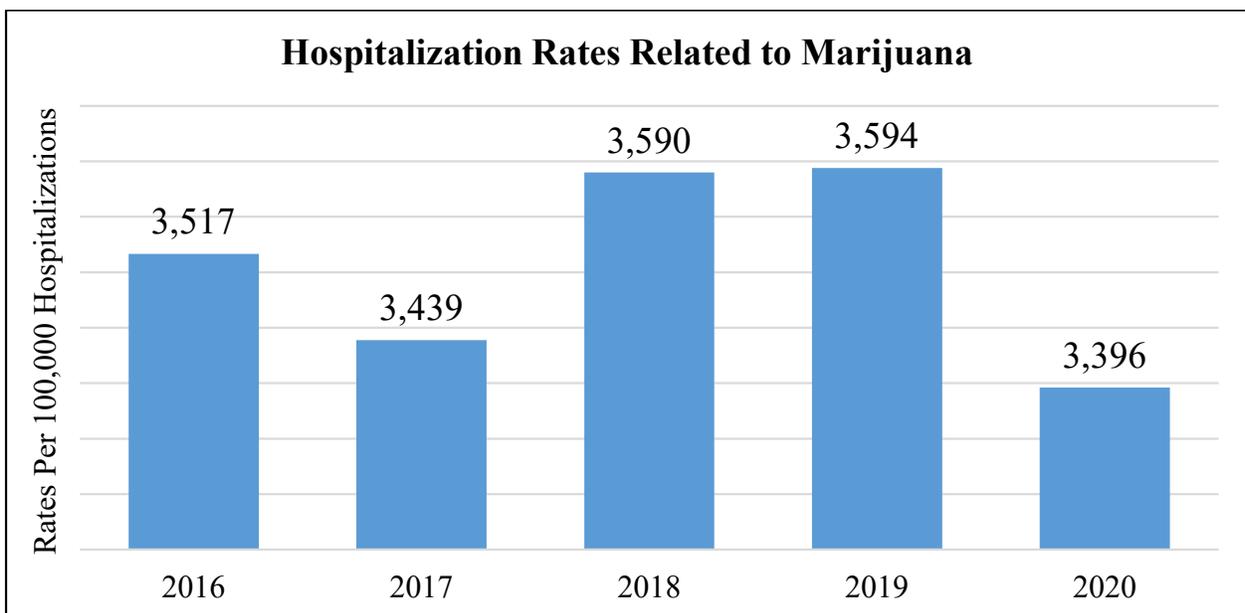
For more information regarding public health research gaps and data quality issues, please visit <https://marijuanahealthinfo.colorado.gov/research-gaps>.

Emergency Department Data



SOURCE: Emergency Department Discharge Dataset, as analyzed by the Colorado Department of Public Health and Environment; 2016-2020

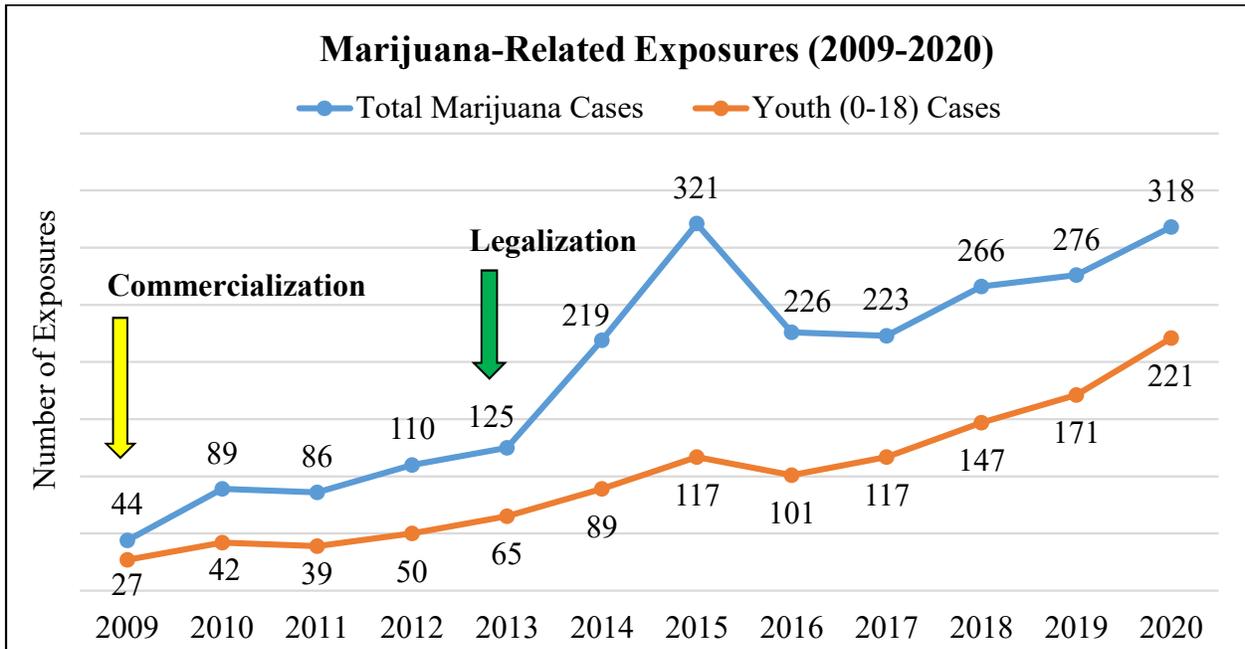
NOTE: Due to changes in the way the hospitalizations and emergency department visits data were coded, data before 2015 was not included for trend analysis.



SOURCE: Emergency Department Discharge Dataset, as analyzed by the Colorado Department of Public Health and Environment; 2016-2020

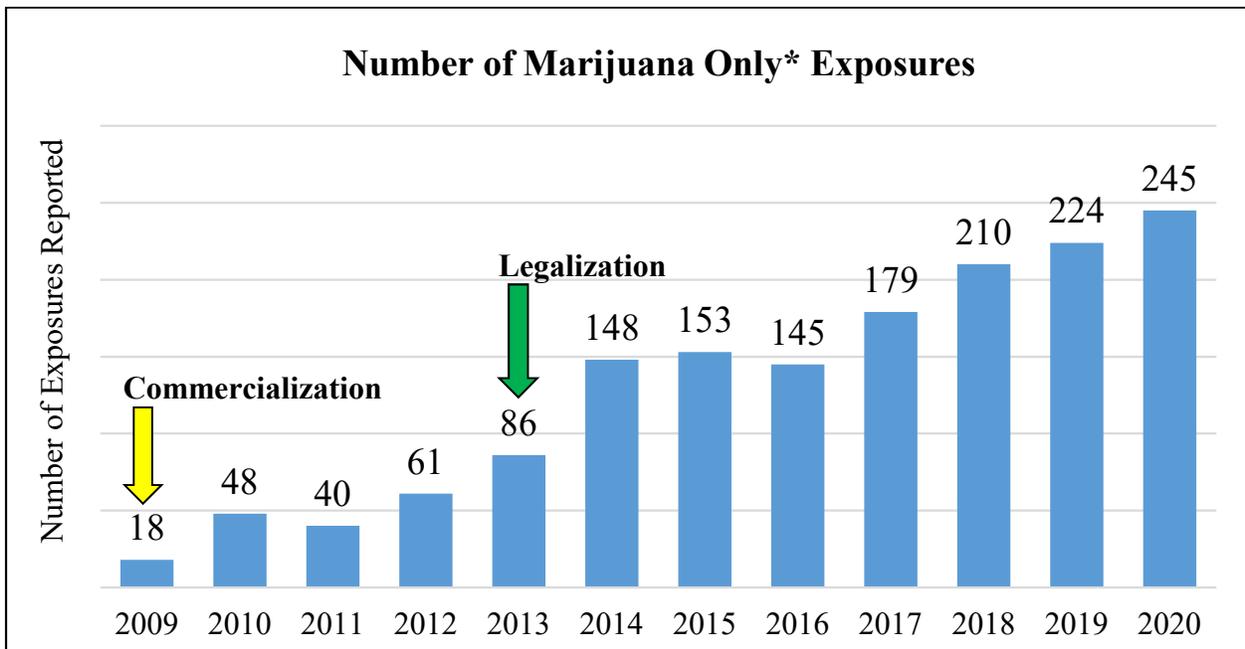
NOTE: Due to changes in the way the hospitalizations and emergency department visits data were coded, data before 2015 was not included for trend analysis.

Poison Control/Marijuana Exposure Data



SOURCE: Rocky Mountain Poison and Drug Center

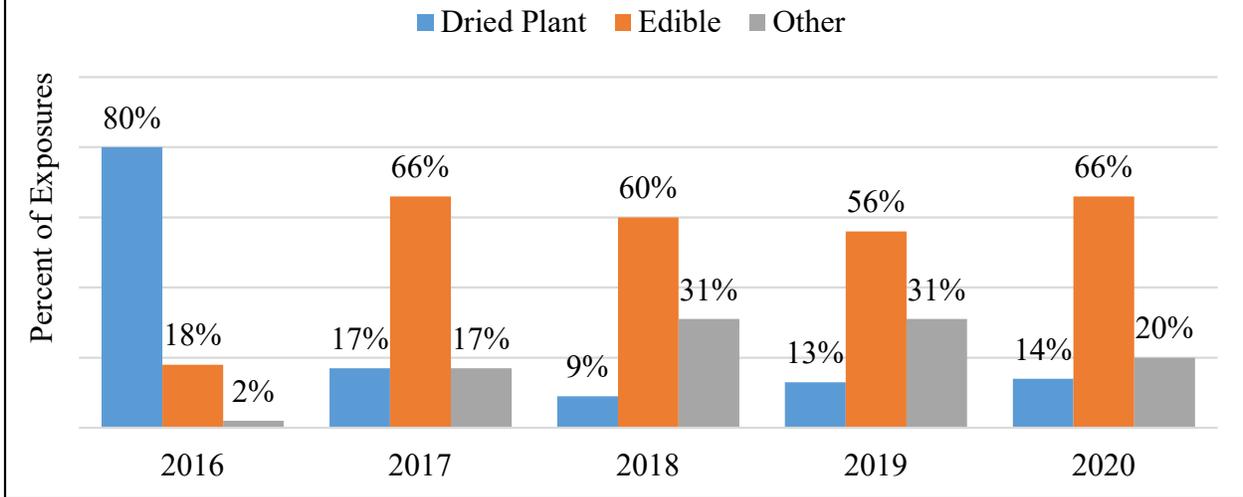
NOTE: Total marijuana-related exposure cases include unknown ages.



SOURCE: Rocky Mountain Poison and Drug Center

***NOTE:** Marijuana was the only substance referenced in the call to the poison and drug center.

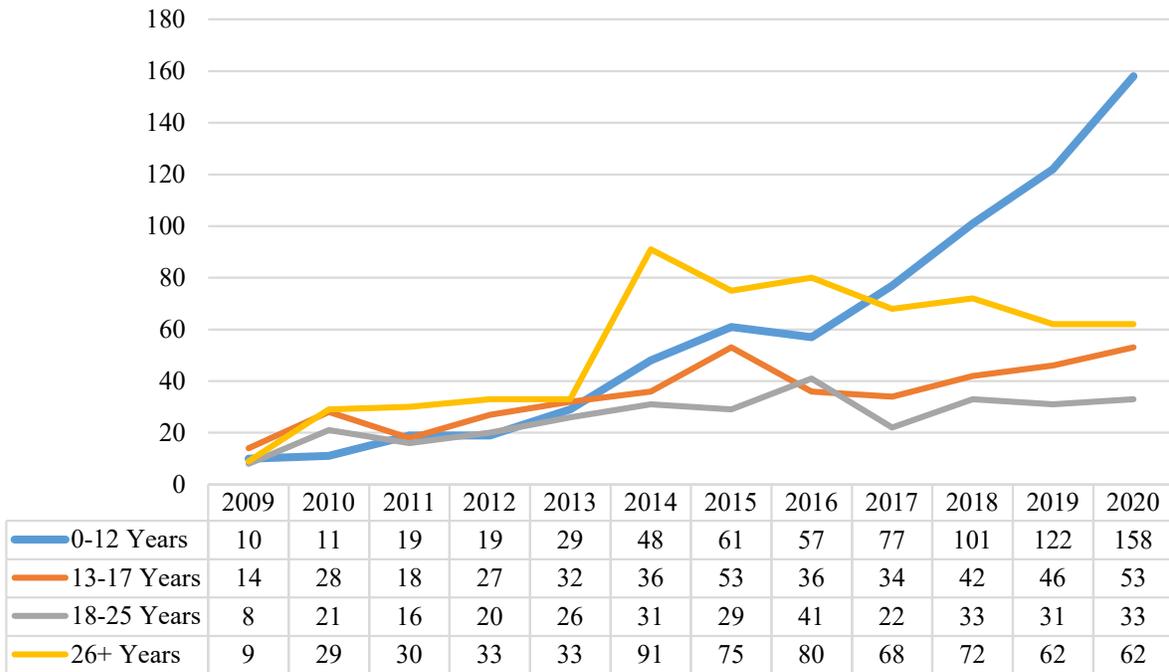
Percent of Marijuana Exposures 0-8 Year Olds, By Marijuana Type (2016-2020)



SOURCE: Rocky Mountain Poison and Drug Center

NOTE: The code for marijuana edibles did not go into effect until 2016. Therefore, any cases of edible marijuana exposure which occurred prior to 2016 were coded under “dry plant.” Other marijuana includes oral pills/capsules, concentrated extracts (to include oils and tinctures), topical preparations, marijuana devices, and unknown/other forms of marijuana.

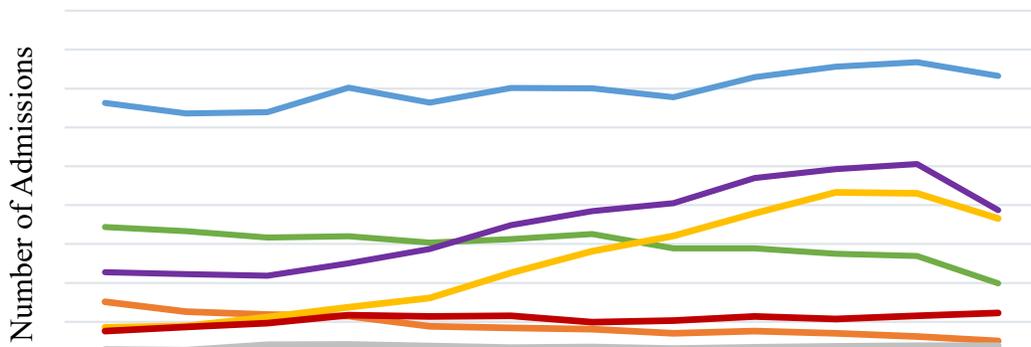
Marijuana-Related Exposures by Age Range (2009-2020)



SOURCE: Rocky Mountain Poison and Drug Center

Treatment Data

Drug Type for Treatment Admissions, All Ages

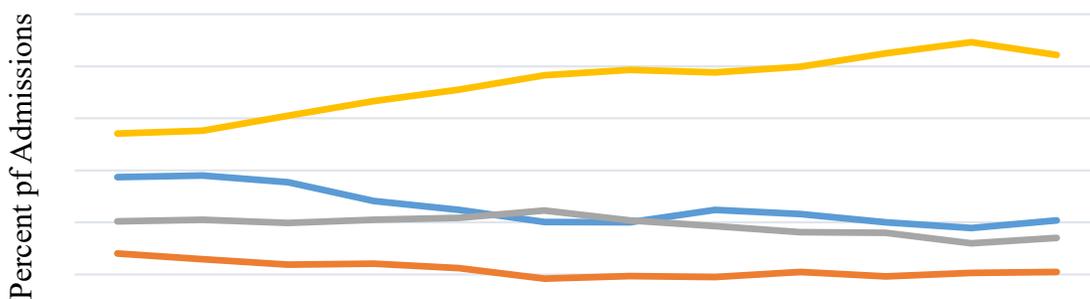


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Marijuana	6,868	6,665	6,342	6,408	6,065	6,257	6,520	5,783	5,785	5,498	5,394	3,980
Cocaine	3,034	2,523	2,380	2,288	1,775	1,681	1,618	1,414	1,518	1,402	1,252	1,017*
Meth	4,557	4,450	4,368	5,007	5,746	6,972	7,700	8,110	9,389	9,859	10,115	7,743
Heroin	1,713	1,790	2,237	2,746	3,225	4,520	5,634	6,420	7,581	8,655	8,610	7,323*
Rx Opioids	1,522	1,739	1,934	2,339	2,277	2,304	1,987	2,059	2,271	2,138	2,307	2,460
Alcohol	13,263	12,710	12,788	14,035	13,277	14,023	14,013	13,544	14,587	15,124	15,345	14,653
Other	572	548	827	830	761	667	710	620	692	734	773	768

SOURCE: Colorado Department of Health Services, Office of Behavioral Health

***NOTE:** Treatment admissions for cocaine and heroin in 2020 do not include the 12-17 age group as there were less than 30 admissions and were therefore omitted.

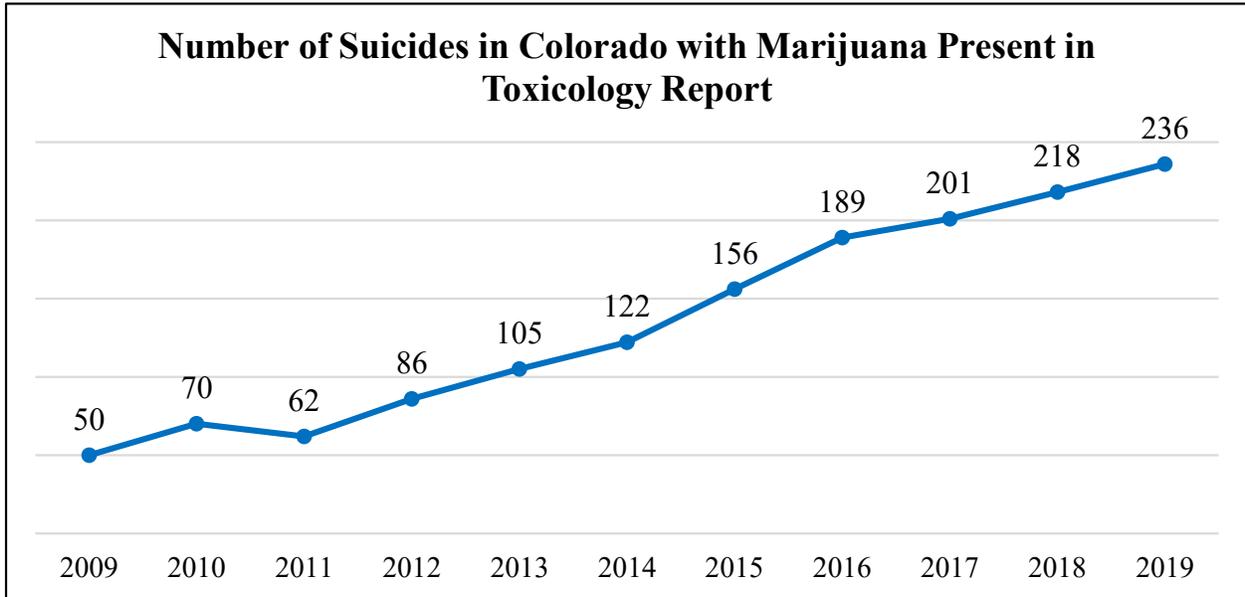
Percent of Marijuana Treatment Admissions by Age Group



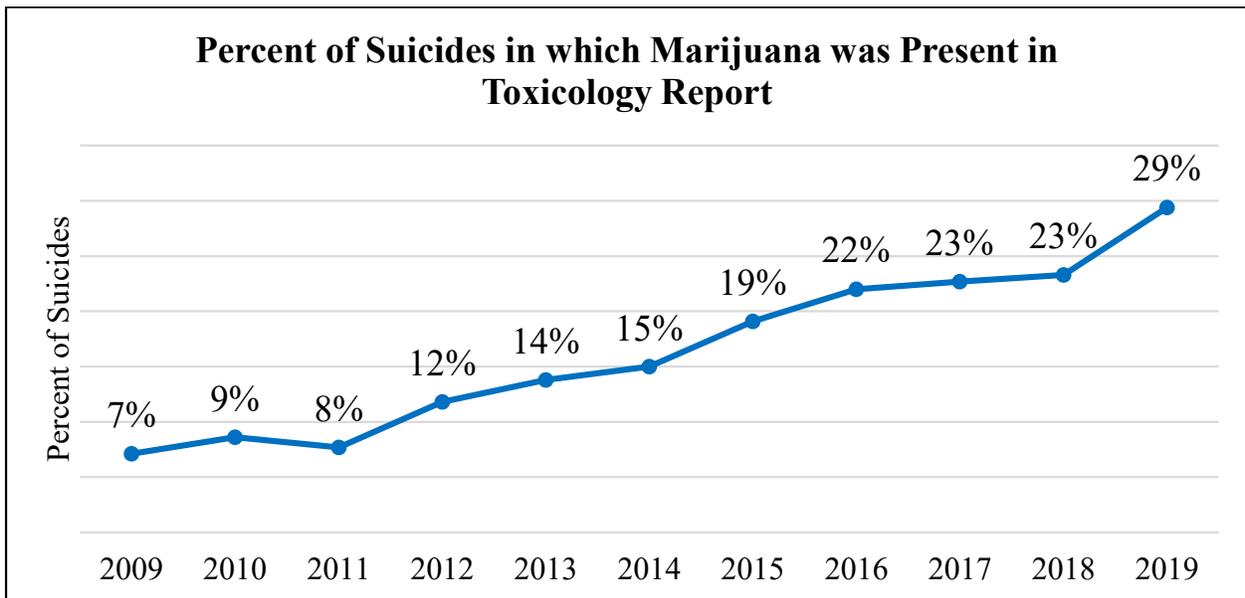
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
12-17	28.7	29.0	27.7	24.1	22.4	20.1	20.0	22.4	21.6	20.0	18.9	20.4
18-20	14.0	12.9	11.9	12.1	11.2	9.2	9.7	9.5	10.5	9.6	10.3	10.5
21-25	20.2	20.5	19.9	20.5	20.9	22.3	20.4	19.3	18.1	18.0	16.0	17
26+	37.1	37.6	40.5	43.3	45.5	48.3	49.3	48.8	49.9	52.5	54.6	52.2

SOURCE: Center for Behavioral Health Statistics and Quality, SAMHSA, Treatment Episode Data Set (TEDS). Based on administrative data reported by states to TEDS pulled on July 8, 2021.

Suicide Data



SOURCE: CDPHE, Colorado Violent Death Reporting System

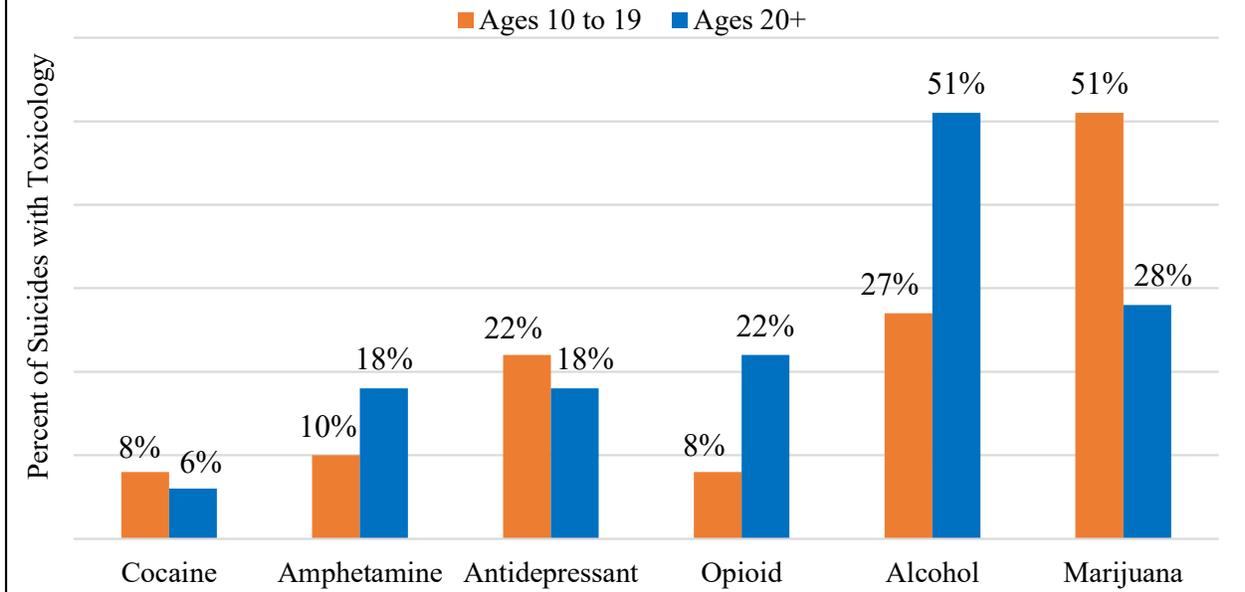


SOURCE: CDPHE, Colorado Violent Death Reporting System

NOTE: Toxicology is not available for every suicide. Only those suicides with toxicology available are represented above. Due to an 18-month lag in detailed suicide circumstances and toxicology information from coroner and law enforcement records, 2019 is the most recent year available.

NOTE: Toxicology results were available for 62% of suicides from 2019. As a result, there may be underrepresentation in the numbers and percentages presented.

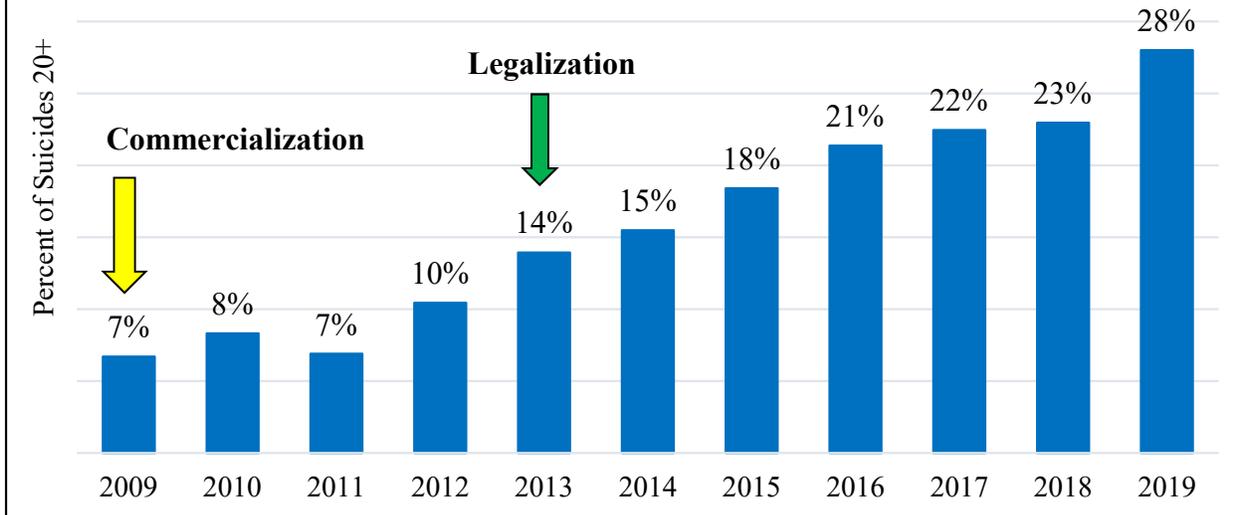
Suicide Toxicology Results by Age Group, 2019



SOURCE: CDPHE, Colorado Violent Death Reporting System

NOTE: Toxicology results were available for 62% of suicides from 2019. As a result, there may be underrepresentation in the numbers and percentages presented.

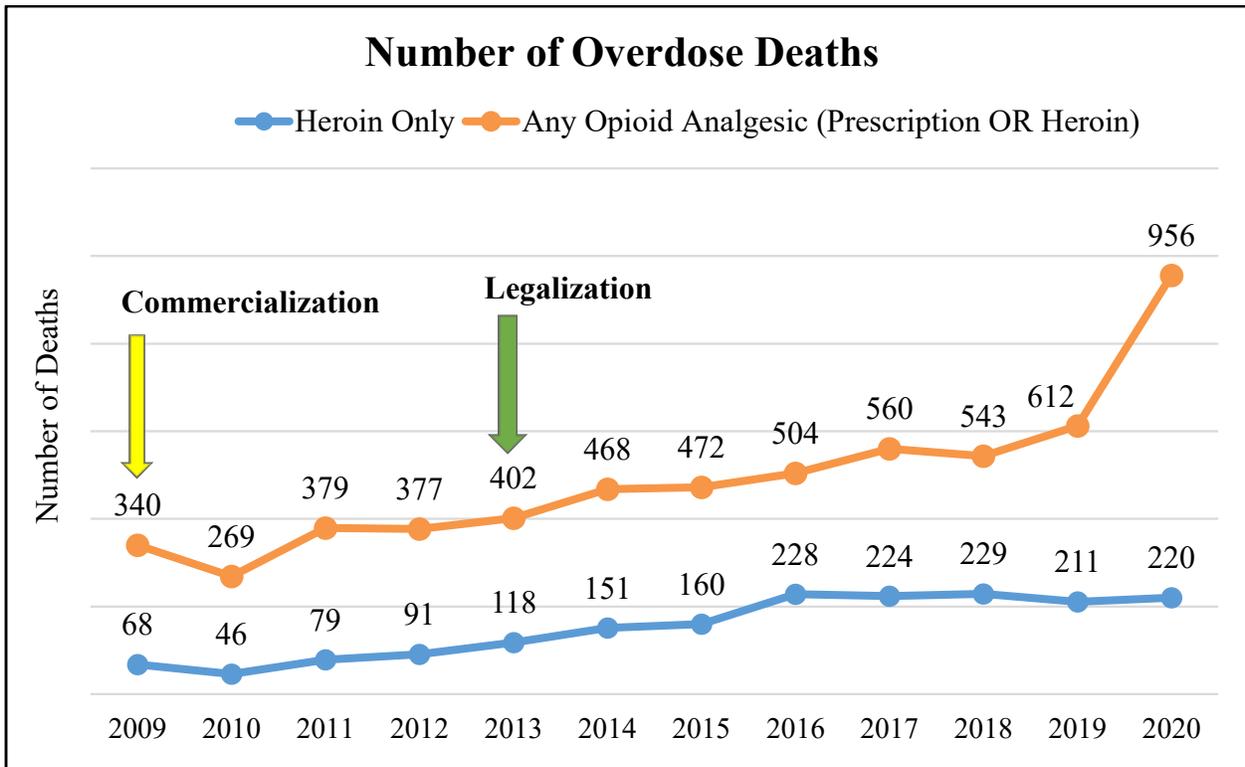
Out of All Suicides Ages 20 and Older, The Percent Positive for Marijuana



SOURCE: CDPHE, Colorado Violent Death Reporting System

NOTE: Toxicology results were available for 62% of suicides from 2019. As a result, there may be underrepresentation in the numbers and percentages presented.

Colorado Opioid Overdose Deaths



Source: CDPHE, Vital Statistics Program

This data is included in response to reports of declining opioid overdose deaths post-marijuana legalization.

NOTE: Heroin cause of death codes include T40.1. Any Opioid Analgesic (prescription or heroin) cause of death codes include T40.1-T40.4

Public Health Information

Impact of Licensed and Unlicensed Cannabis Retailers in California

California legalized recreational marijuana in 2016, which resulted in the establishment of unlicensed retailers until the issuance of cannabis retail licenses at the end of 2017. For example, in Los Angeles County, there are 37 licensed retailers compared to 92 unlicensed retailers. This can create problems for regulation as unlicensed locations “have been reported to engage in illegal business practices that can compromise public health and encourage underage use, including selling products that exceed the legal THC limit, selling counterfeit products that contain pesticides, allowing consumption of cannabis in retail stores, not imposing daily limits on purchases, staying open late at night, and selling products that are attractive to youth and lack child-resistant packaging” (Unger et al, 2020).

The results indicated that “neighborhoods with only licensed retailers represented 8% of the California population, neighborhoods with only unlicensed retailers represented 17% of the California population, and neighborhoods with both licensed/unlicensed retailers represented 18% of the California population. Of all neighborhood types, neighborhoods with only unlicensed retailers had the lowest proportion of non-Hispanic whites (25%) and the highest proportion of Hispanics (52%). However, the highest proportions of African Americans (9%), Asian Americans (15%), and individuals living in poverty (19%) were in neighborhoods with both licensed/unlicensed retailers” (Unger et al, 2020). Residents living near unlicensed retailers face greater public health risks due to the lack of regulation of the products and the authors recommend greater enforcement of these dangerous practices.

Source: Unger, J., Vos, R., Wu, J., Hardaway, K., Li Sarain, A., Soto, D., Rogers, C., and Steinberg, J. (2020). *Locations of licensed and unlicensed cannabis retailers in California: A threat to health equity*. Preventive Medicine Reports, 19, 101165-101173.

Mixed Findings for the Public Health Effects of Medical Marijuana Treatment

Researchers sought to examine the public health effects from the use of medical marijuana on various conditions- amyotrophic lateral sclerosis, autism, cancer, chronic noncancer pain, Crohn’s disease, epilepsy, glaucoma, human immunodeficiency virus/AIDS, multiple sclerosis (MS), Parkinson’s disease, and posttraumatic stress disorder. Across the 33 states in which medical marijuana is legal, there are over 50 medical conditions that have qualified to be treated through the use of medical marijuana. Nationwide, 6.2% of people use medical marijuana and 3.6% use both medical and recreational marijuana. A systematic review was conducted for studies that took place from May 2016 to October 2019.

The results indicated that “there is conclusive or substantial evidence for cannabis in treating chronic noncancer pain, chemotherapy-induced nausea and vomiting (oral cannabinoids), and MS spasticity symptoms (via oral cannabinoids). In addition, limited evidence was reported for the efficacy of cannabis and cannabinoids for the purposes of increasing appetite and decreasing weight loss in patients with HIV/AIDS, improving clinician measures of MS spasticity symptoms (specifically, via oral cannabinoids), and improving symptoms of PTSD (specifically, with

nabilone)” (Jugl et al, 2021). However, there was insufficient evidence to support evidence of medical marijuana improving glaucoma symptoms. In addition, studies showed neither support or opposition for indications such as “cancer (cannabinoids), cancer-associated anorexia-cachexia syndrome and anorexia nervosa (cannabinoids), symptoms of irritable bowel syndrome (dronabinol), epilepsy (cannabinoids), symptoms associated with ALS, or Parkinson’s disease-related symptoms or levodopa-induced dyskinesia (cannabinoids)” (Jugl et al, 2021).

Source: Jugl, S., Okpeku, A., Costales, B., Morris, E., Alipour-Haris, G., Hincapie-Castillo, J., Stetten, N., Sajdeya, R., Keshwani, S., Joseph, V., Zhang, Y., Shen, Y., Adkins, L., Winterstein, A., and Goodin, A. (2021). *A mapping literature review of medical cannabis clinical outcomes and quality of evidence in approved conditions in the USA from 2016 to 2019*. *Medical Cannabis and Cannabinoids*, 4(1), 21-42.

Analysis of Pre-Existing Factors and Experiences to Marijuana Use During Pregnancy

Similar to cigarette use during pregnancy, marijuana can have physical effects on the fetus such as anemia, low birth weight, and more time spent in the neonatal intensive care unit after birth. Although women have used marijuana to assist with nausea in the first trimester, some medical professionals have expressed concerns of this practice. A study was conducted and found 29.6% of women used marijuana prior to their first prenatal visit. Additionally, the participants in the study who used marijuana while pregnant were more likely to be unemployed, have low educational attainment, use tobacco and alcohol, and experience depression. The rate of women using marijuana decreased across pregnancy terms.

The authors of this study recruited 101 pregnant participants in Indiana who used the WIC Food and Nutrition Service. The main measures were childhood adversity, interpersonal violence, cigarette use, and marijuana use. Of the participants, 71% experienced childhood adversity like physical abuse, 28% used at least one cigarette a day, and 7% used marijuana during pregnancy. Results indicated a strong association between marijuana use during pregnancy and sexual interpersonal violence.

The researchers concluded “this study suggests that a comprehensive assessment of women’s history of exposure to violence provides insight into which women may have the most difficulty with unassisted substance cessation in the prenatal period—above and beyond already known risk factors, including sociodemographic characteristics and pre-pregnancy smoking behaviors. It could be that women who have experienced recent IPV and past childhood adversity may experience a higher general stress burden, making cessation more difficult. Providing better intervention and support around smoking and marijuana cessation for women exposed to violence is therefore a critical need, even among groups that are at a generally high sociodemographic risk” (Miller-Graff et al, 2021).

Source: Miller-Graff, L., Howell, K., Grein, K., and Keough, K. (2021). *Women’s cigarette and marijuana use in pregnancy: identifying the role of past versus recent violence exposure*. *Journal of Interpersonal Violence*, 36(7-8), NP3983-NP3998.

Section IV: Black-Market

Some Findings

- RMHIDTA Colorado Drug Task Forces (10) conducted **294 investigations** of black-market marijuana in Colorado resulting in:
 - **168** felony arrests
 - **5.54** tons of marijuana seized
 - **86,502** marijuana plants seized
 - **21** different states the marijuana was destined
- Seizures of marijuana reported to the El Paso Intelligence Center (EPIC) in Colorado **increased 48%** from an average of 174 parcels (2009-2012) when marijuana was commercialized to an average of 257 parcels (2013-2020) during the time recreational marijuana become legalized.

Definitions by Rocky Mountain HIDTA

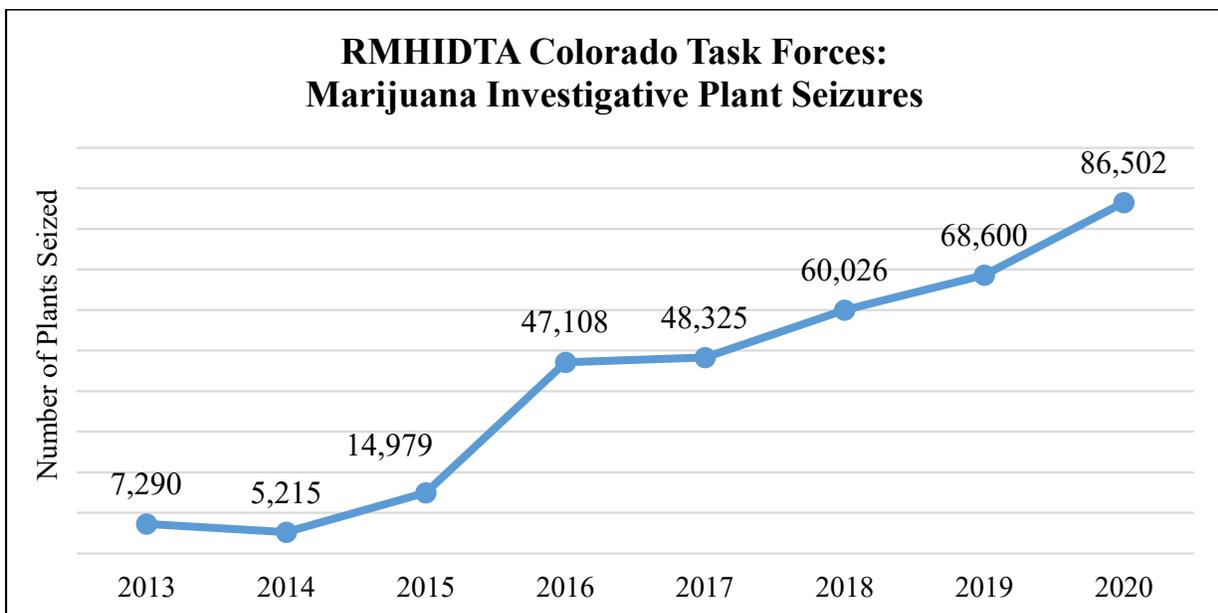
Colorado Marijuana Investigations: RMHIDTA Colorado drug task forces investigating individuals or organizations involved in illegally selling Colorado marijuana, both within and outside of the state. These investigations only include those reported by the ten RMHIDTA drug task forces.

Colorado Marijuana Interdictions: Interdictions include incidents where drugs are being transported, generally by vehicle or parcel, and the shipment is randomly seized by law enforcement. Interdictions are made by Colorado State Patrol.

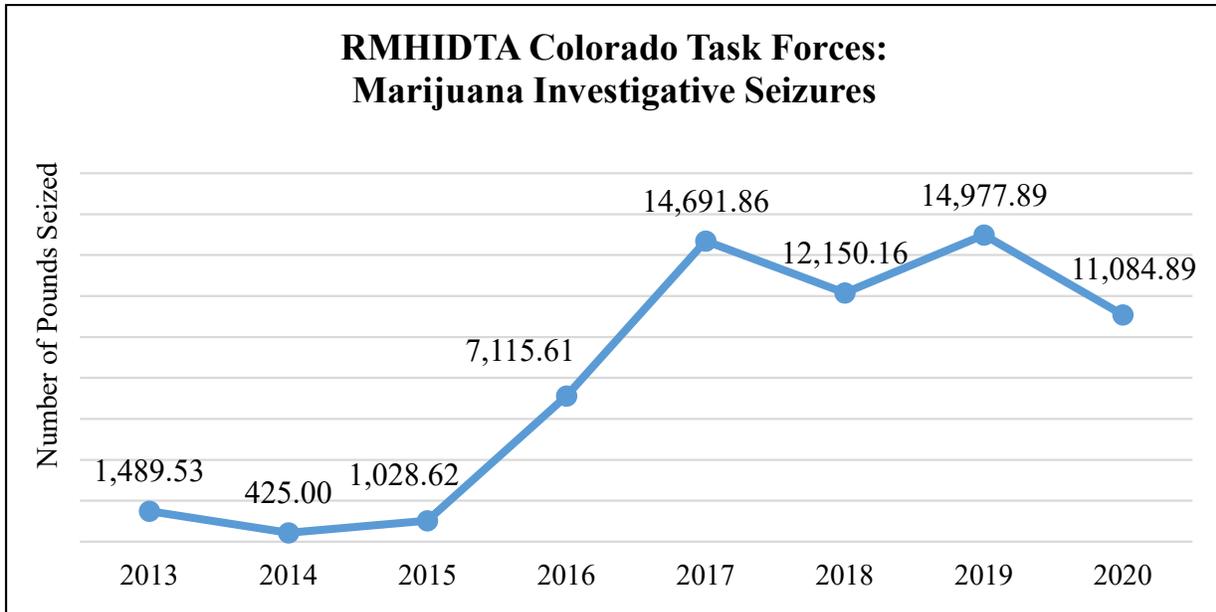
Task Force Investigations

Rocky Mountain HIDTA Colorado Task Forces			
	2018	2019	2020
Number of Completed Investigations	257	278	294
Number of Felony Arrests	192	237	168
Pounds of Bulk Marijuana Seized	12,150 (6.1 tons)	14,978 (7.5 tons)	11,085 (5.5 tons)
Number of Plants Seized	60,026	68,600	86,502
Number of Edibles Seized	2,894	15,025	4,202
Pounds of Hash/THC Concentrate Seized	319	86	626
Different States to Which Marijuana was Destined	25	29	21

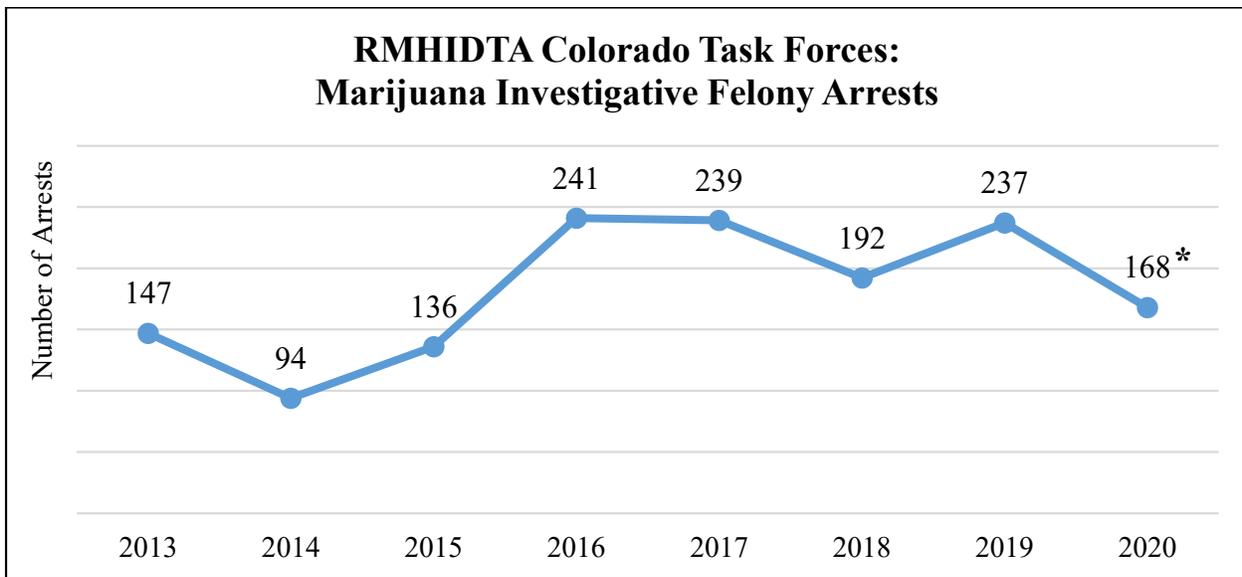
Task force data only includes completed investigations reported by the RMHIDTA Colorado Investigative Drug Task Forces. It is unknown how many of these types of investigations were completed by non-RMHIDTA Colorado drug units or task forces.



SOURCE: Rocky Mountain HIDTA Performance Management Process (PMP) Data



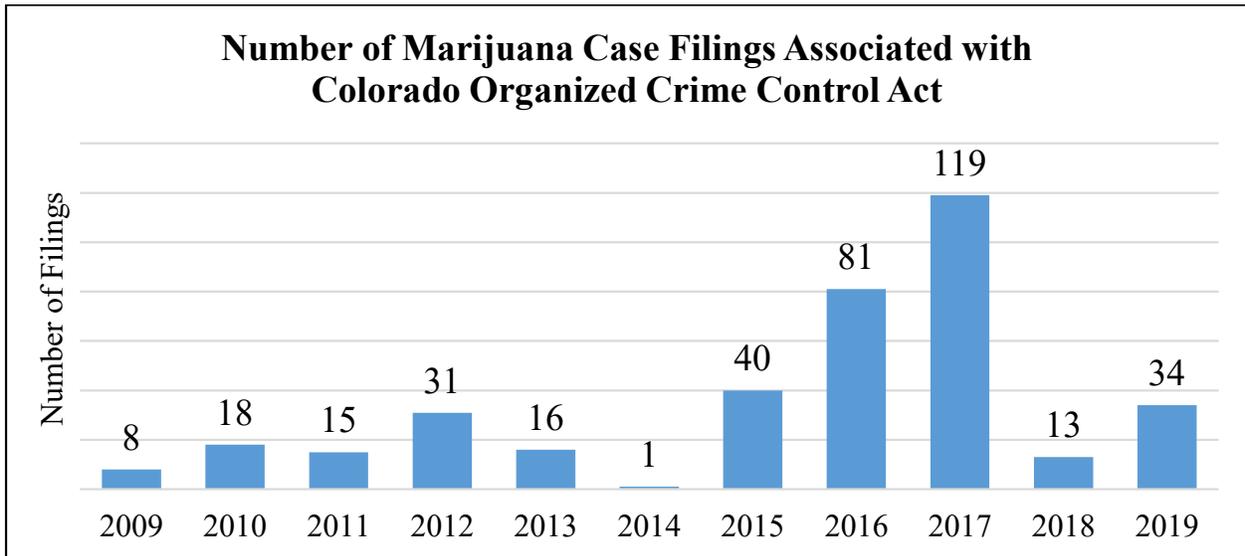
SOURCE: Rocky Mountain HIDTA Performance Management Process (PMP) Data



SOURCE: Rocky Mountain HIDTA Performance Management Process (PMP) Data

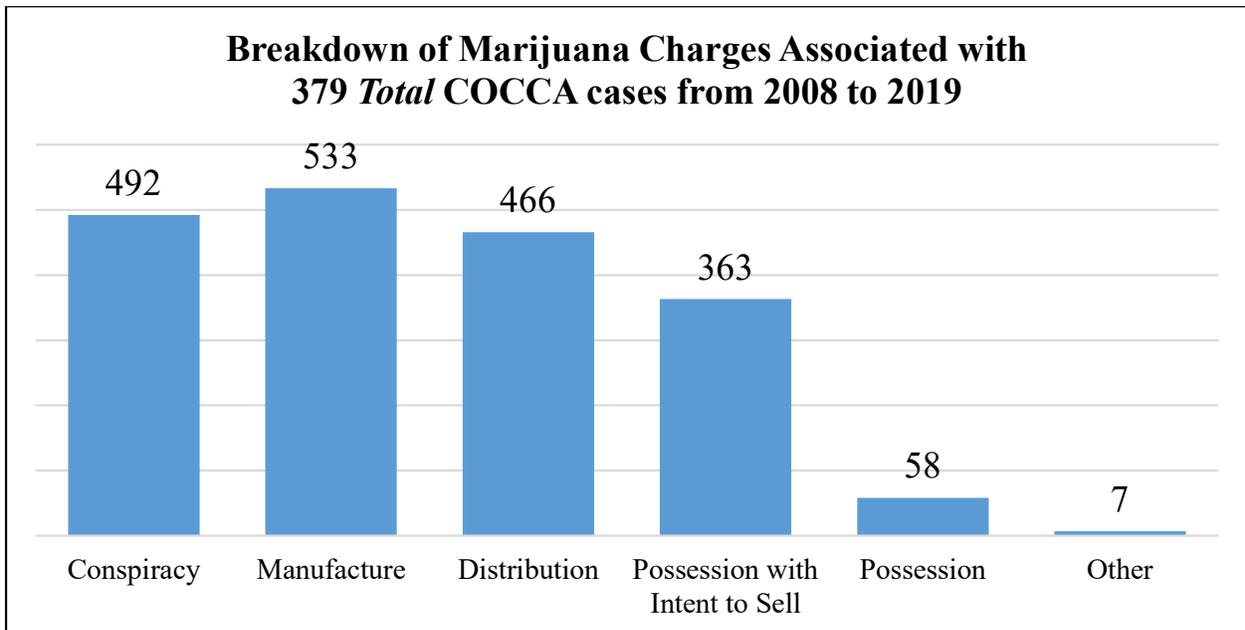
*** NOTE:** In 2020, arrest numbers were impacted by the COVID-19 pandemic's impact of the local, state, and federal judicial systems.

Colorado Organized Crime Control Act Filings



SOURCE: Colorado Department of Public Safety, Division of Criminal Justice, Office of Research and Statistics

Colorado Organized Crime Control Act (COCCA) filings are conspiracy cases in which there is potential for a larger sentence than other types of drug filings.

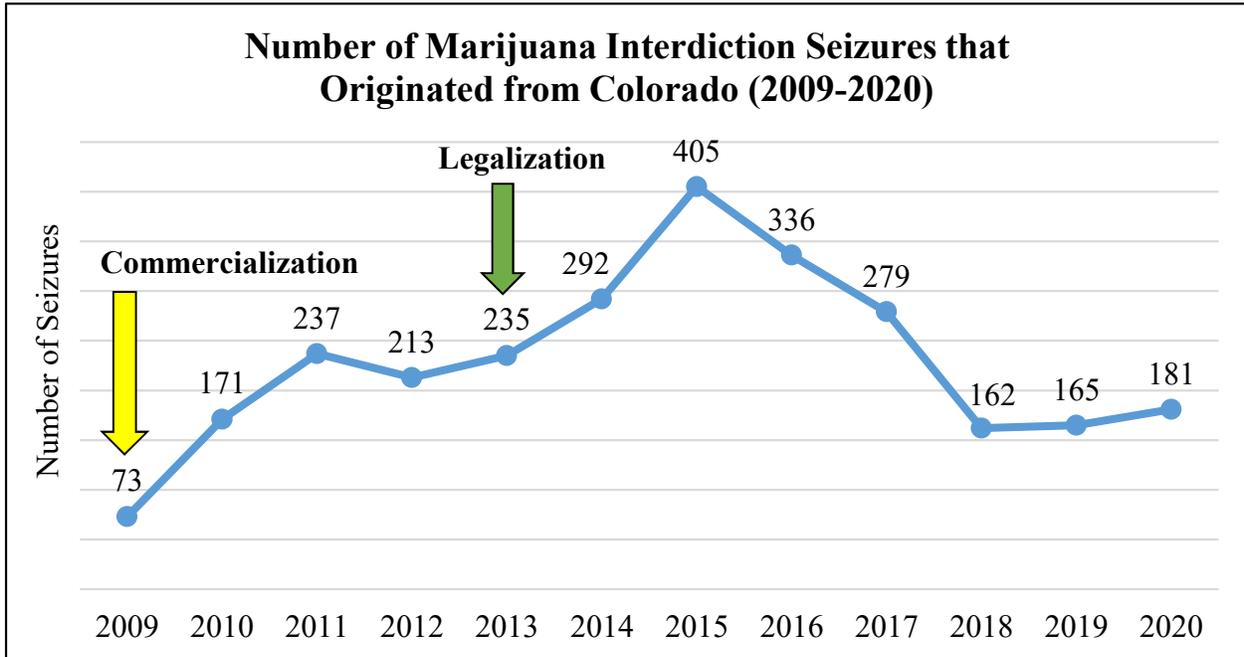


SOURCE: Colorado Department of Public Safety, Division of Criminal Justice, Office of Research and Statistics

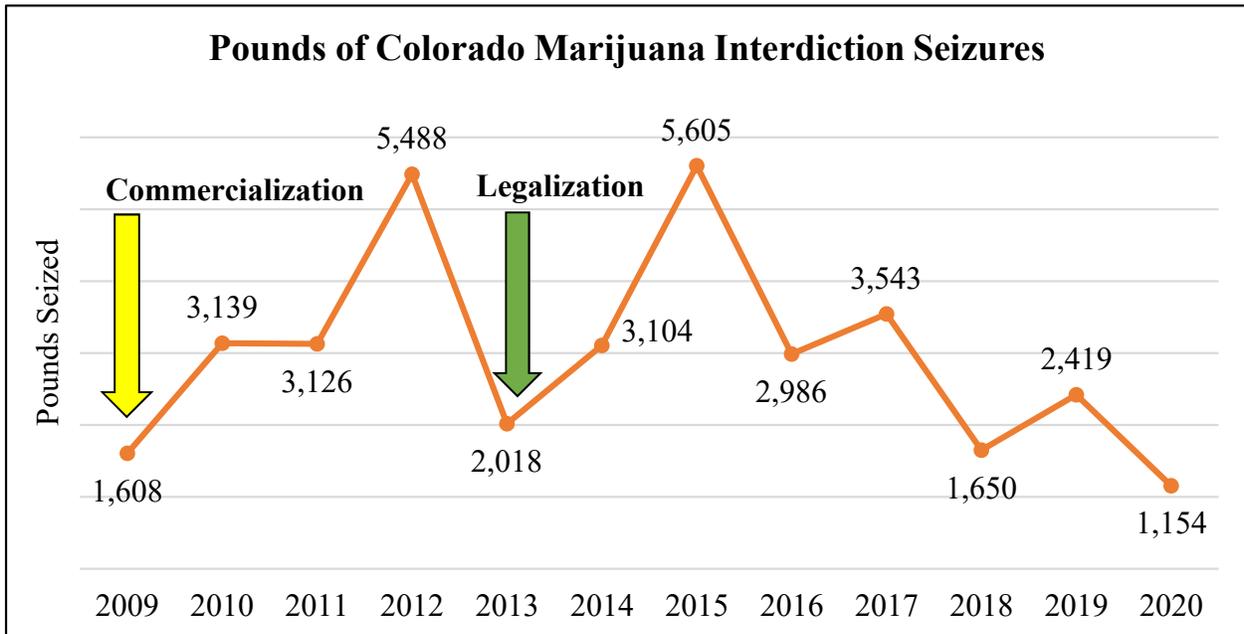
NOTE: The breakdown is more than the 379 total COCCA cases as there can be multiple charges associated with each case.

Highway Interdiction Data

NOTE: The charts below only include cases where Colorado marijuana was actually seized and reported. It is unknown how many Colorado marijuana loads were not detected or, if seized, were not reported. These are roadside interdictions voluntarily reported by state highway patrol to EPIC.



SOURCE: EPIC, National Seizure System, as of July 2021



SOURCE: EPIC, National Seizure System, as of July 2021

Black Market Information

Black-Market Marijuana Continues After Legalization

Despite the legalization of recreational marijuana in Colorado, the black-market marijuana continues to thrive. In 2019, federal and local law enforcement conducted the largest marijuana bust in the history of Colorado- raids across 250 homes and businesses, dozens of arrests, over 80,000 marijuana plants, and nearly \$2.2 million in assets. The base of this operation was buying suburban homes in the Denver Metro area with large, unfinished basements for the cultivation of thousands of plants, operating under the radar in plain sight. Then, the money was laundered through family restaurants by multiple Chinese drug trafficking organizations.

There is difficulty, however, in fully assessing the size of the black market as all the efforts are “underground” and not well known. It has been established by the Drug Enforcement Administration that well-established drug trafficking organizations are able to generate millions of dollars through the sale of up 1,800 pounds of marijuana a year based on 100 plants grown. This problem has resulted in the creation of the Illicit Market Marijuana Team within the Colorado Bureau of Investigations. The solution to combating the black market is split between those who believe law enforcement needs more resources with those who feel greater legalization and lower prices in the legal market could have the most impact.

Source: Tabachnik, S. (2021, June 20). *Black market marijuana grows are popping up faster than law enforcement can take them down. But is legalization the cause?* Denver Post. Retrieved from <https://www.denverpost.com/2021/06/20/black-market-marijuana-colorado-chinese-crime-rings/>

Perceptions from Marijuana Users of “Legal” and “Illegal” Markets

While legalization of recreational marijuana is expected to decrease the black market in these states, this is not always the case. After legalization, the retail price of marijuana decreased by 62% in Colorado from 2014 to 2017. While the prices also dropped in Washington and Oregon, it was a lower decline than Colorado. Some studies have indicated that buyers may be willing to pay a higher price for a legal purchase as well as high quality products. For some buyers though, the pre-existing relationship with their supplier may continue to connect them to the illegal market.

The results of the online survey demonstrated a positive perception of the legal marijuana market in these states by participants. Additionally, researchers found “respondents, including frequent cannabis consumers, perceived legal cannabis to be of equal or greater quality and convenience, and as safer to buy and use than cannabis from illegal sources. The one notable exception was price: legal cannabis products were perceived as more expensive than illegal products, particularly among frequent cannabis users. The prevalence of this belief suggests that price may in fact be a barrier to transitioning to the legal market; however, it is also possible that higher prices may be tolerated given that legal cannabis products may be perceived as higher quality, safer and more convenient to access. However, frequent users may be able to obtain what they perceive as high-quality products at lower prices through established relationships with unauthorized dealers. Price perceptions were generally more favorable in states with a longer time with retail sales: Colorado, Washington, and Oregon” (Fataar et al, 2021).

Source: Fataar, F., Goodman, S., Wadsworth, E., and Hammond, D. (2021). *Consumer perceptions of “legal” and “illegal” cannabis in US states with legal cannabis sales.* Addictive Behaviors, 112, 106563-106569

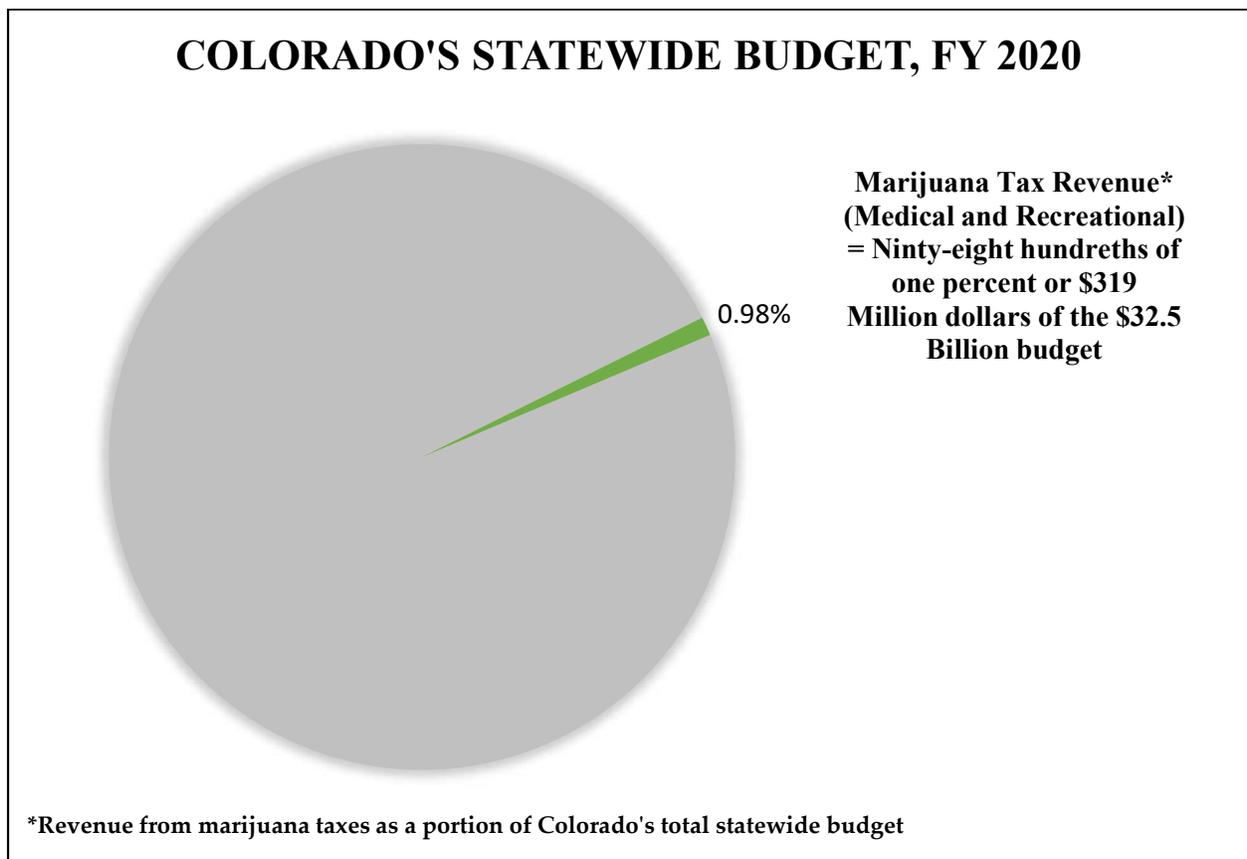
Section V: Societal Impact

Some Findings

- Marijuana tax revenue represent approximately **0.98%** of Colorado’s FY 2020 budget.
- **66%** of local jurisdictions in Colorado have banned medical and recreational marijuana businesses.

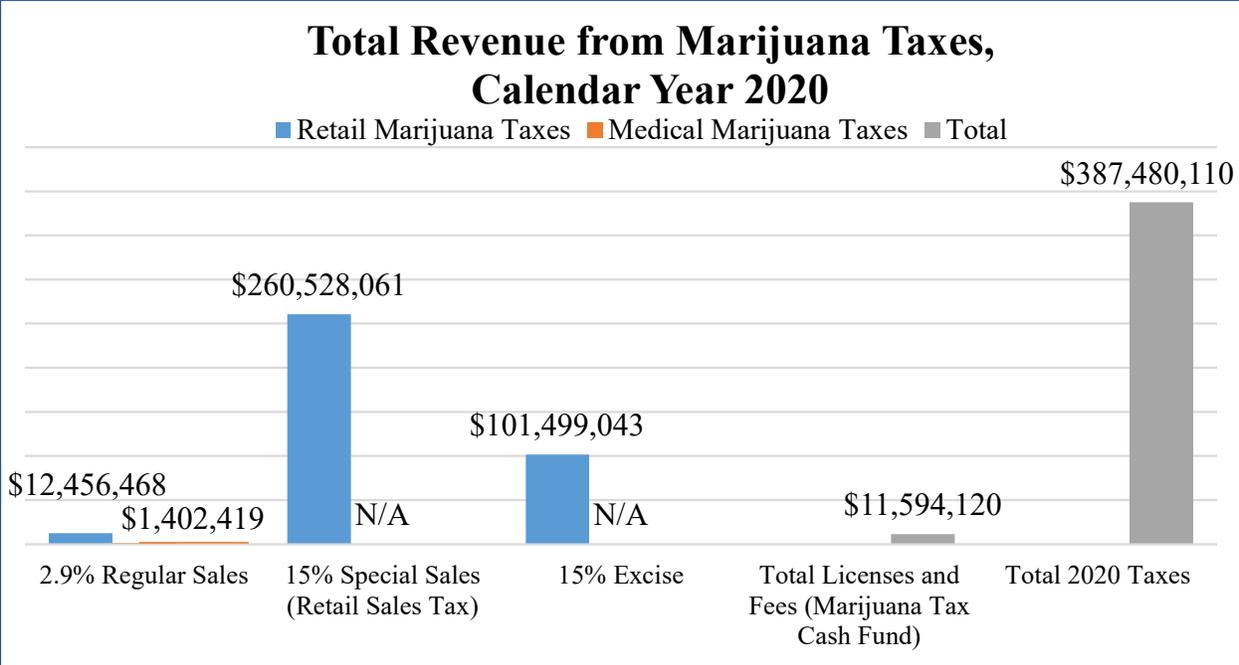
For more detailed marijuana-related crime information, please visit https://cdpsdocs.state.co.us/ors/docs/reports/2021-SB13-283_Rpt.pdf.

Tax Revenue



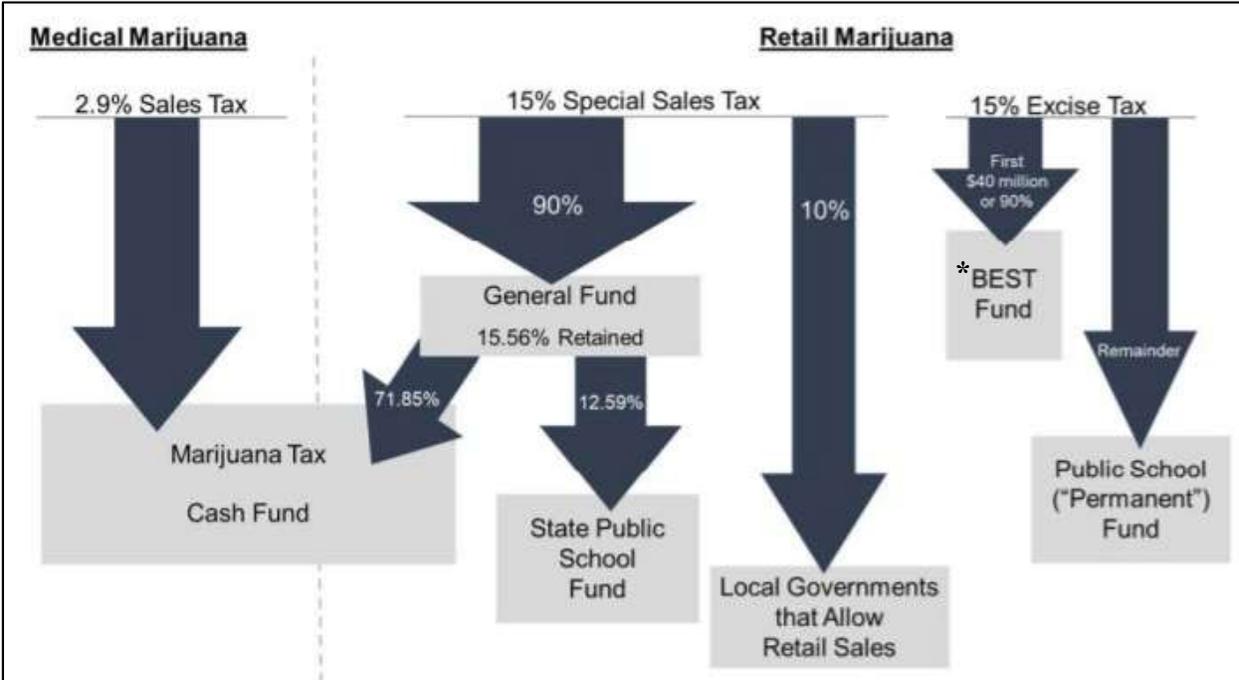
SOURCE: Governor’s Office of State Planning and Budgeting

***NOTE:** Revenue from marijuana taxes as a portion of Colorado's total statewide budget.



SOURCE: Colorado Department of Revenue

NOTE: Figures do not include any city taxes; the state does not assess or collect those taxes. Per §39-26-729, C.R.S., retail marijuana, retail marijuana products, and retail marijuana concentrates are exempt from the 2.9% regular sales tax; however, products that do not contain marijuana (i.e., accessories) are still subject to the 2.9% regular sales tax. Licenses and fees include the following categories: retail marijuana, individual, others, and collections not yet allocated.



SOURCE: Joint Budget Committee Appropriations Report Fiscal Year 2019-2020

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Crime

Marijuana-Related Arrests in Colorado			
	Crimes Against Person	Crimes Against Property	Crimes Against Society
2009	187	426	10,388
2010	172	416	10,026
2011	167	450	10,576
2012	192	441	11,365
2013	45	216	5,358
2014	60	273	5,689
2015	55	253	5,560
2016	69	327	5,126
2017	83	297	4,983
2018	74	310	4,641
2019	70	268	3,704
2020	65	188	2,140

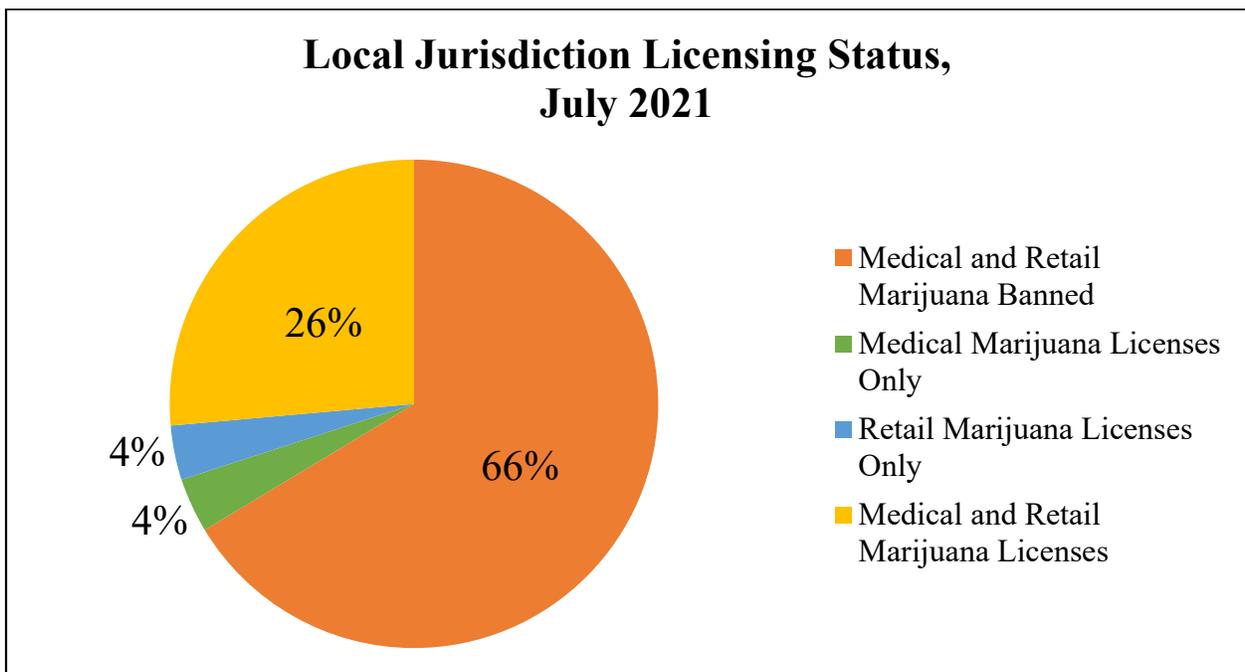
SOURCE: Colorado Bureau of Investigations Crime Statistics

NOTE: In 2020, arrest numbers were impacted by the COVID-19 pandemic's impact of the local, state, and federal judicial systems.

Local Response

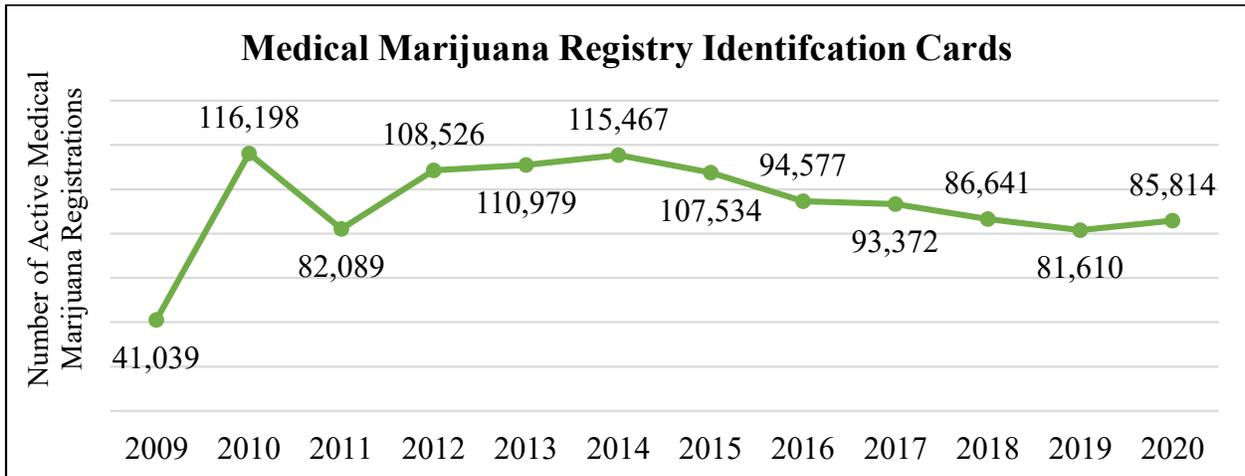
Status of Local Jurisdictions Reporting Marijuana Licensing as of July 12, 2021	
	Number of Jurisdictions
Medical and Retail Marijuana Banned	221
Medical Marijuana Licenses Only	12
Retail Marijuana Licenses Only	12
Medical and Retail Marijuana Licenses	88
Total	333

SOURCE: Colorado Marijuana Enforcement Division



SOURCE: Colorado Marijuana Enforcement Division

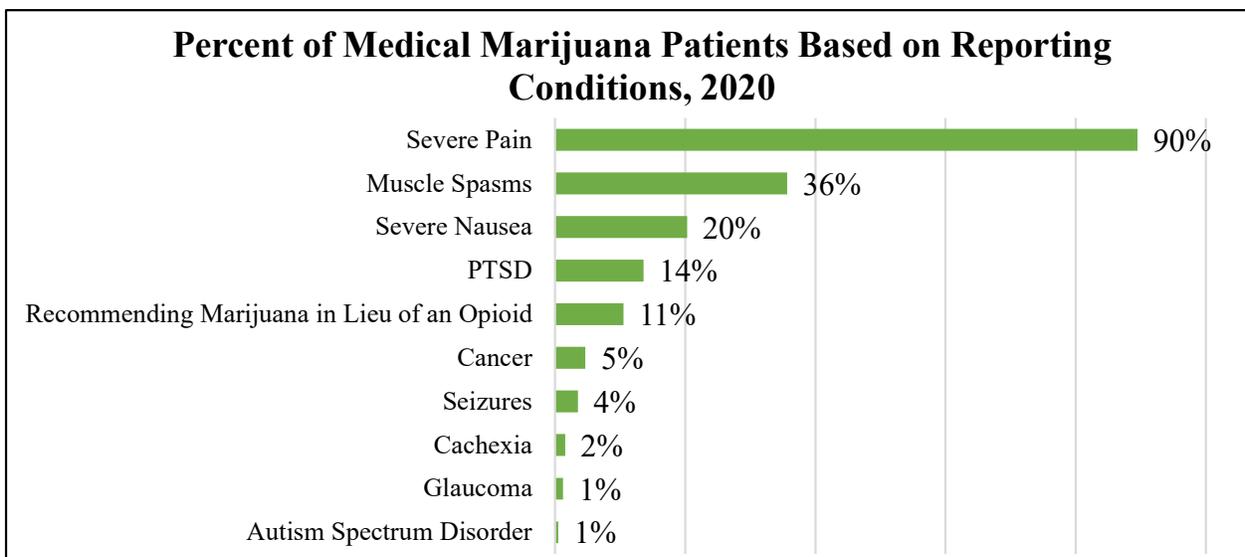
Medical Marijuana Statistics



SOURCE: Colorado Department of Public Health and Environment (CDPHE)

Profile of Colorado Medical Marijuana Cardholders:

- Demographics of cardholder:
 - 61% male with an average age of 41 years
 - 39% female with an average age of 44 years
 - 0.32% between the ages of 0 and 17
 - 4.57% between the ages of 18 and 40 and 22.81% between the ages of 21 and 30
- Top five counties in Colorado- 63.1% of total patients:
 - El Paso County- 28.6%
 - Denver County 13.0%
 - Jefferson County- 9.5%
 - Arapahoe County-7.7%
 - Adams County- 6.3%

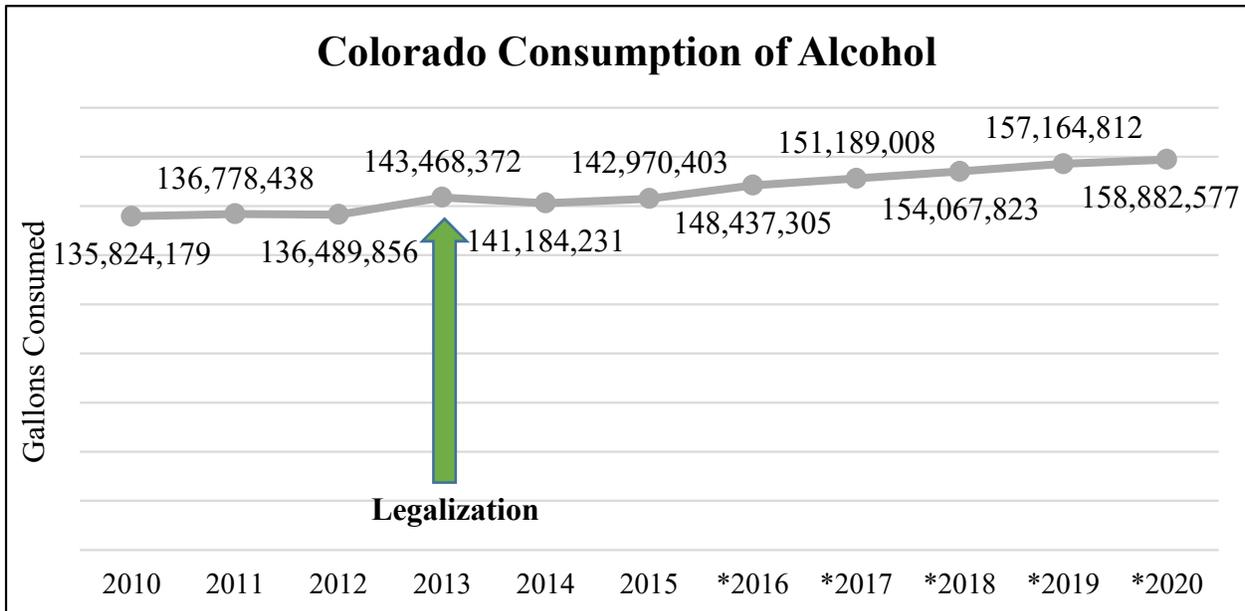


SOURCE: Colorado Department of Public Health and Environment (CDPHE)

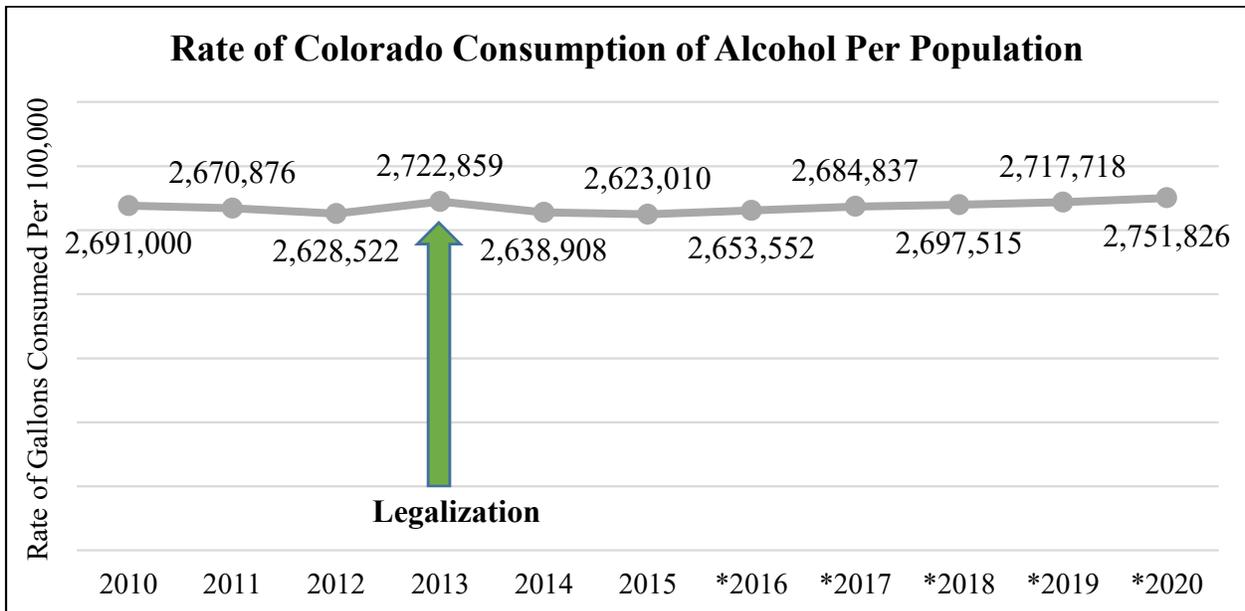
NOTE: Percentages do not add to 100% as some patients report more than one debilitating or disabling medical condition.

Alcohol Consumption

- It has been suggested that legalizing marijuana would reduce alcohol consumption. Thus far that theory is not supported by the data.



SOURCE: Colorado Department of Revenue, Colorado Liquor Excise Tax



SOURCE: Colorado Department of Revenue, Colorado Liquor Excise Tax

***NOTE:** Data from 2009 was not available at this time. Calculations of total gallons consumed and the rate of consumption slightly differed from 2010-2015 compared to 2016-2020.

Societal Impact Information

Recreational Marijuana Dispensaries Impact on Property Values in Washington

A study in Washington was completed to assess the impact of marijuana legalization on property values throughout the state. The authors sought to better understand the local level impacts of the expansion of marijuana businesses in neighborhoods throughout Washington. This study utilized data from property sales and retailers statewide to compare the prices in neighborhoods before and after the opening of a recreational marijuana business. One factor that the authors hypothesize may be the source of the decrease in prices is the perception that dispensaries result in more crime in the area. However, existing evidence is unclear of this relationship.

The study resulted in an estimation that while there was not a statistically significant impact on overall crime reports, nuisance crimes around dispensaries increased but drug-related crimes decreased. “Increased nuisance related crime, therefore, may be one contributing factor to depressed home prices in areas near dispensaries” (Thomas and Tian, 2021). When examining the final results, “a marijuana dispensary decreases property values by 3%–4% for homes within 0.36 miles of the retailer, a decline of about \$10,000-\$15,000 based on the average home values in Washington. These results imply a high willingness to pay to avoid the local negative externalities. [...] While we find limited evidence of a general decrease in overall crime and statistically significant evidence of a decrease in drug-related reports, we estimate that nuisance-related crime reports increase by about 4.2 per 10,000 census tract residents. Moreover, we find evidence that violent crime slightly increases in census tracts adjoining those where dispensaries locate. Our findings suggest that crime risk could be a contributing factor to the negative price impacts of dispensaries, but that is likely only a partial explanation” (Thomas and Tian, 2021).

Source: Thomas, D. and Tian, L. (2021). *Hits from the bong: The impact of recreational marijuana dispensaries on property values*. *Regional Science and Urban Economics*, 87, 103655-103675.

Crime in Colorado and Washington State Post-Legalization

While some believed that crimes, particularly marijuana-related crimes, would decrease after the legalization of recreational marijuana, the preliminary data suggested a significant increase in crime rates. The authors created a study examining the UCR data from 1999 to 2016 in Colorado and Washington at a monthly crime rate compared to control states in which recreational marijuana was not legal. In the results, there was little effect on overall crime rates in Colorado and Washington post-legalization, particularly on violent crimes. However, there was a statistically significant increase in larceny in Colorado immediately after legalization as well as an increase in aggravated assaults, burglary, and overall property crime in Washington. This trend dissipated in recent years and appeared to have been short-lived. Overall, the authors concluded there was “virtually no statistically significant long-term effects of recreational marijuana legalization or retail sales on violent or property crime rates, except for a significant decline of burglary rates in Washington. There were some immediate increases in crime at the point of legalization, but these did not result in long-term effects” (Lu et al, 2021).

Source: Lu, R., Willits, D., Stohr, M., Makin, D., Snyder, J., Lovrich, N., Meize, M., Stanton, D., Wu, G., and Hemmens, C. (2021) *The cannabis effect on crime: time-series analysis of crime in Colorado and Washington state*. *Justice Quarterly*, 38(4), 565-595.

Impact of Marijuana Legalization on Colorado Clearance Rates

One of the arguments in favor of the legalization of marijuana was police resources would be freed up with less marijuana-related crimes. On the other side of the argument, some believed areas around dispensaries would become a hub for crime, both violent and property, due to the large amount of cash associated with these locations. This study examined violent and property crimes from 2000 to 2017 in Colorado and Washington and compared the crime rates to states where marijuana was not legalized. The results indicated that violent crime clearance rates were not affected by the legalization of marijuana in Colorado. Property crime clearance rates were also not impacted in the long-term in Colorado but instead only for one year after legalization. Similar results were found in Washington when these crimes examined in these two categories compared year-to-year. The authors speculate if the legalization of marijuana has shifted the focus from law enforcement to investigating marijuana-related DUI cases for example rather than clearing crimes.

Source: Jorgensen, C. and Harper, A. (2020). *Examining the effects of legalizing marijuana in Colorado and Washington on clearance rates: a quasi-experimental design*. *Journal of Experimental Criminology*, 1-22.

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NEWS



Michigan seeing massive increase in marijuana poisonings with young kids

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Posted at 5:31 AM, Dec 13, 2022 and last updated 8:06 AM, Jan 10, 2023

(WXYZ) — Recreational marijuana has been legal in Michigan since 2018, and cannabis use is up. But, marijuana poisonings are also up, not just in Michigan, but nationwide.

The National Poison Data System tracked a 245% rise in pediatric abuse and misuse of cannabis from 2000 to 2020, with the biggest increase happening from 2017-2020 when cannabis legalization really started to grow.

There are ways to keep kids safe from cannabis. Port Huron resident Dan Richmond uses cannabis for his high-functioning autism and pain from a service injury when he was in the military.

Richmond says he keeps his cannabis in his man cave in a box with a biometric fingerprint lock.

Dr. Varun Vorha, the director of the Michigan Poison and Drug Information Center, says that's a good move. He points to a more than 10-year trend of increasing pediatric exposures to cannabis.

In 2021, his agency received about 445 calls about pediatric marijuana exposures, the largest portion involving edibles and kids 5 and under.

"In 2022, we already surpassed that number up until October. So clearly, it's still occurring. It's still an issue," Vorha said.

Vorha says in addition to keeping cannabis products out of sight and out of reach of children, only use the products when no kids are around. It's easy to get distracted and leave the edibles in plain view.

"That's another big thing with the packaging, right? So, they can look like candy, they can often taste like candy. They're infused in different snack foods," he said.

While edibles are the biggest issue with little kids, vaping is a concern for older children. Vorha says vape products can be highly concentrated.

"So they do run into the risk of toxicity and adverse effects because it doesn't take as much to cause those effects," Vorha said.

Calls to the Michigan Poison and Drug Information Center come from parents, medical professionals and hospitals, but they are voluntary and passive - meaning they only count cases that come to them. So he knows the cases he sees are just a fraction of the true statewide burden.

In most cases of so-called exploratory ingestion, you might see sleepiness, odd behavior even an elevated heart rate.

Keep a close eye on your child for a couple of hours, because edibles are slower to take effect. Never make a child vomit. It could lead to complications like pneumonia.

Richmond says he talks to his kids about cannabis because they'll learn one way or another.

"For them to have the education here first, I think is super important and then to see the right thing be done with storage," Richmond said.

In severe cases, marijuana can lead to difficulty breathing or a loss of consciousness. In those cases, get help right away.

If you have problems, you can visit mipoisonhelp.org or call them at 313-486-0078. They have experts available 24-7 to answer about any type of

toxic substance and you don't have to wait until there is an exposure to get their insight.

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From: [Sheryl Page](#)
To: [Planning Commission \(DG\)](#)
Subject: May 8 agenda item -- SUP #23013 Green Peak (Skymint)
Date: Wednesday, May 3, 2023 7:47:43 PM

May 3, 2023

To: The Meridian Township Planning Commission
From: Sheryl Page, 3888 Raleigh Drive, Okemos
Re: May 8 agenda item -- SUP #23013 Green Peak (Skymint)

The purpose of this communication is to express my opinion that the pending SUP #23013 for Green Peak (dba Skymint) should be delayed. I believe that this petitioner has an outstanding situation to be resolved before they open a business in the Township.

The Detroit News has published a series of articles re: the recent marijuana bribery case in which former public official Rick Johnson and lobbyist Vincent Brown have pleaded guilty. Lobbyist Brian Pierce is scheduled to plead guilty on May 5.

A May 2 article on this subject is titled "**Pot company hands over documents in bribery probe**". In a direct quote from the article - "*Green Peak's entanglement in an ongoing federal investigation into the launch of the marijuana industry in Michigan shines new light on the probe, extending it to one of the biggest current players in the market and revealing how the alleged misdeeds could have benefited those involved.*"

The article goes on (again direct quote from article) -

Green Peak is not identified by name in federal court filings that chronicle the largest public corruption scandal in the state capital in 30 years. Instead, prosecutors refer to "Company C," which sources say is Green Peak. The sources requested anonymity because they were not authorized to speak publicly about the ongoing FBI investigation.

Brown and Pierce provided \$42,000 in payments and other benefits to Johnson to sway his decisions and "help" their clients, including one described in court filings as "Company C," an alias designed to shield the firm from scrutiny because it has not been accused of wrongdoing.

Federal prosecutors have alleged "Company C" received valuable nonpublic information" and assistance with applications from Johnson. State law barred members of the licensing board from having outside communications with applicants.

"Company C" also falsely stated on applications for licensing that it had no "financial relationship" with any board member, according to documents filed by prosecutors in federal court. Few other details about "Company C's" role in the scheme are listed in court records.

I am not accusing the company of illegal activity as that is a matter to be determined by the FBI in its ongoing investigation and the courts. But I do feel that, until there is more clarity on the situation, the company should not be granted the SUP. Green Peak is also in receivership which may impact its ability to operate a viable going concern.

Thank you for your consideration.

Sheryl Page

3888 Raleigh Drive
Okemos



To: Planning Commission

From: Keith Chapman, Assistant Planner

Date: May 1, 2023

Re: Special Use Permit #23011 (Green Peak Industries, Inc.), establish a commercial medical marihuana provisioning center on a vacant parcel located south of Grand River Avenue on Northwind Drive.

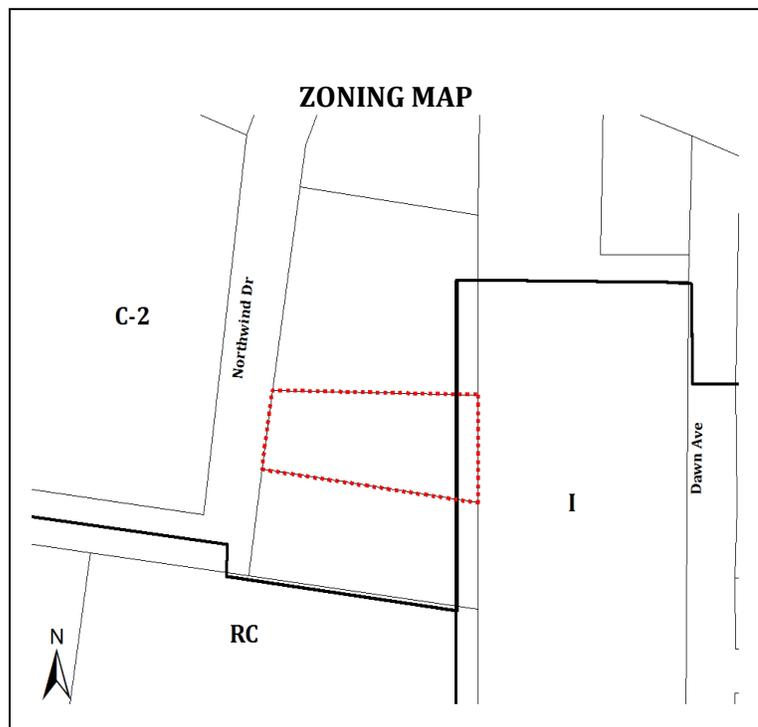
Green Peak Innovations, LLC has applied for a special use permit (SUP) to establish a commercial medical marihuana provisioning center on a vacant parcel located south of Grand River Avenue on Northwind Drive. The applicant has submitted a site plan that shows a proposed 2,700 square foot building. The 0.629-acre project site is zoned C-2 (Commercial). The site is currently vacant.

Sec. 40-30 (e)(3) of the Township Code of Ordinances requires a successful medical marijuana applicant to apply for a special use permit, as provided in Sec. 86-124, within 60 days or issuance of a conditional approval for a medical marijuana facility permit. This SUP application fulfills that requirement and is identical to the SUP application that the Planning Commission reviewed and recommended for approval in 2020 (SUP #19191).

Zoning and Future Land Use

The proposed project is located in the C-2 (Commercial) zoning district. A provisioning center is permitted in the C-1, C-2, C-3 (Commercial), I (Industrial), and RP (Research and Office Park) zoning districts subject to approval of a special use permit reviewed by the Planning Commission and approved by the Township Board.

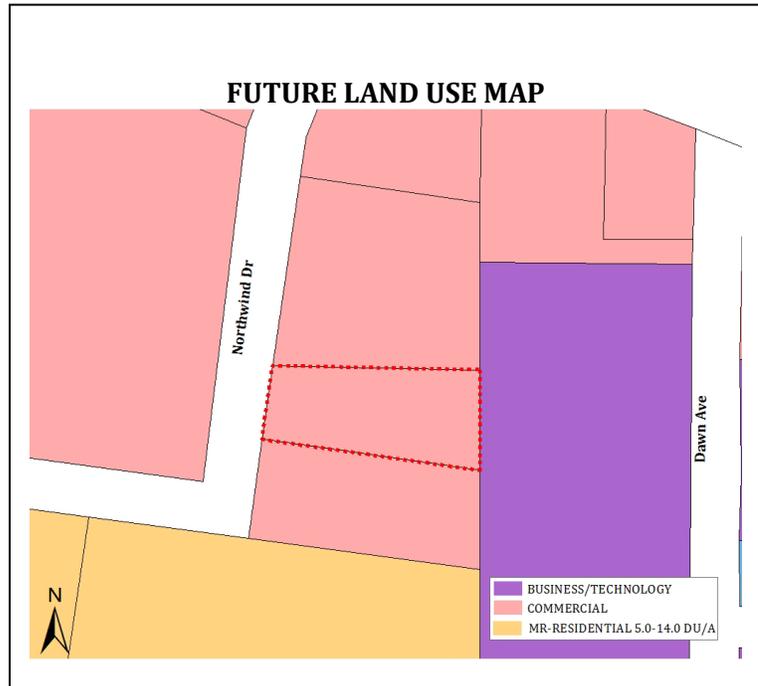
The C-2 district requires a minimum of 100 feet of lot frontage and 4,000 square feet of lot area. The property is 0.629 acres in size (24,042.6 square feet) and has 100 feet of frontage along Northwind Drive.



The 2017 Master Plan designates the subject site as Commercial. This designation applies to the properties to the north, west, and south. To the east the property is designated as Business/Technology.

Parking

The Township Code of Ordinances requires five (minimum) to 5.5 (maximum) parking spaces per 1,000 square feet of gross floor area retail businesses having a gross floor area less than 25,000 square feet. The 2,700 square feet shopping requires a minimum of 14 parking spaces and a maximum of 15 parking spaces. The submitted site plan shows 13 parking spaces provided. One space needs to be added or a variance is required.



Staff Analysis

Applications for special land use permits are reviewed under Sec. 86-126 in the Zoning Ordinance. Based on that review, Staff has the following comments:

1. The Subject Property lies within Medical Marijuana Overlay Area 3 & 4. This has been approved of one of only seven areas in the Township where medical marijuana facilities are allowed. The proposed use conforms with this.
2. The proposed medical marijuana dispensary conforms with the Subject Property's zoning and Future Land Use designations.
3. The material attached to the medical marijuana application, approved on February 1, 2023, detailed the safety and odor control that was being proposed by the Applicant. The safety and odor control systems meet the Township's requirements.
4. The Subject Property is adequately served by water and sewer. An attached traffic study verifies that the existing roads are capable of handling the traffic.

Based on the information provided by the Applicant, Staff has identified no major concerns that would negatively impact surrounding properties or the Township at large while reviewing the proposed Special Use Permit. If the project is approved by the Planning Commission and the Township Board, the applicant will be required to submit for Site Plan Review before work on the project can begin. Site Plan Review is a detailed staff-level analysis of the project which includes reviews of storm water, utilities, landscaping, grading, and other issues to ensure compliance with all applicable ordinances as

Special Use Permit #23013 (Green Peak Industries, Inc.)
Planning Commission (May 8, 2023)
Page 3

well as confirmation of approvals from local agencies such as the Ingham County Drain Commissioner's Office and Road Department.

Planning Commission Options

The Planning Commission has the option to recommend approval, approval with conditions, or denial of Special Use Permit #23013. A resolution will be provided at a future meeting.

Attachments

1. SUP permit application with attachments, dated April 3, 2023 and received by the Township on April 3, 2023.
2. SUP #19191 approval letter dated August 19, 2020.
3. Traffic Engineer email dated March 22, 2023.

**CHARTER TOWNSHIP OF MERIDIAN
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT
5151 MARSH ROAD, OKEMOS, MI 48864
PLANNING DIVISION PHONE: (517) 853-4560, FAX: (517) 853-4095**

SPECIAL USE PERMIT APPLICATION

Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.

Part I

- A. Applicant Green Peak Innovations, Inc
Address of Applicant 10070 Harvest Park, Dimondale, MI 48821
Telephone - Work 651-216-0737 Home _____ Fax _____ Email see below
Interest in property (circle one): Owner _____ Tenant _____ Option _____ Other Rep _____
(Please attach a list of all persons with an ownership interest in the property.)
Email contact: Nathan Kark at nkark@skymintbrands.com
- B. Site address / location / parcel number 33-02-02-127-003 Northwind Dr. Okemos, MI 48864
Legal description (please attach if necessary) _____
Current zoning C-2 Commercial
Use for which permit is requested / project name Medical Marijuana Provisioning Center
Corresponding ordinance number 2019-01, 5-21-2019 (5)
- C. Developer (if different than applicant) _____
Address _____
Telephone – Work _____ Home _____ Fax _____
- D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:
Name Studio [intrigue] Architects
Address 1114 S. Washington Ave. #100
Telephone – Work 517-371-8804 Home _____ Fax 517-371-8805
Email contact: Ken Jones at, kenj@studiointriguearchitects.com
- E. Acreage of all parcels in the project: Gross ± 0.629 Net _____
ACRES
- F. Explain the project and development phases: Construction of new ±2,700.4 S.F. Marijuana provisioning Center
- G. Total number of:
Existing: structures 0 bedrooms _____ offices _____ parking spaces 0 carports _____ garages _____
Proposed: structures 1 bedrooms _____ offices _____ parking spaces 14 carports _____ garages _____
- H. Square footage: existing buildings 0 proposed buildings Total Building Gross ±2,700.4 S.F.
Usable Floor area: existing buildings _____ proposed buildings Interior Gross ±2,556 S.F.
- I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: Owner anticipates a maximum of 13 employees per shift. Hours as dictated by local ordinance.
- J. Existing Recreation: Type _____ Acreage _____
Proposed Recreation: Type _____ Acreage _____
Existing Open Space: Type _____ Acreage _____
Proposed Open Space: Type _____ Acreage _____

- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, **RD, RC, RCC, RN, and CV** and **Group Housing Residential Developments** the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
 2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
 3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
 4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district **RP** requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
 2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste tailings, or unusable by-products.
 3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district **CV** requires the following:
1. A letter of approval from the State Department of Environmental Quality.
 2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
 3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
 4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district **CV** requires the following:
1. A location map including existing topographic data at two-foot interval contours.
 2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
 3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.

Part II

SUP REQUEST STANDARDS
Township Code of Ordinances, Section 86-126

Applications for Special Land Uses will be reviewed with the standards stated below. An application that complies with the standards stated in the Township Ordinance, conditions imposed pursuant to the Ordinance, other applicable Ordinances, and State and Federal statutes will be approved. Your responses to the questions below will assist the Planning Commission in its review of your application.

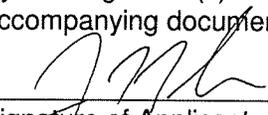
- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

Part III

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes No (Please check one)

By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate



Signature of Applicant

02/13/2020
Date

Joe Neller
Type/Print Name

Fee: _____

Received by/Date: _____

Special Use Permit Application Attachment
Site Plan Requirements Per Section 86-124(c)(4)

A site plan, drawn to a legible scale, containing the following information where applicable:

- a. Boundaries of the subject property.
- b. Total area of the subject property.
- c. Location of all existing and proposed structures.
- d. Approximate location and distance of all structures within 100 feet of the subject property.
- e. Uses of existing and proposed buildings, on the subject site.
- f. Proposed means of vehicular and pedestrian ingress and egress to the subject property.
- g. Public and private roads and streets, rights-of-way, and easements, indicating names and widths, which abut or cross the site.
- h. Existing and proposed parking spaces, and vehicular and pedestrian circulation patterns.
- i. The buildable area of the subject property indicating all required setbacks, yards and open space.
- j. Zoning classification of the subject and adjacent properties.
- k. Existing and proposed fencing, screening, landscaping, and buffers.
- l. Location and sizes of existing utilities including power lines and towers, both above and below the ground.
- m. Amount and location of all impervious surfaces.
- n. The verified boundaries of all natural water features and required setback lines.

SKYMINT™

PREMIUM CANNABIS

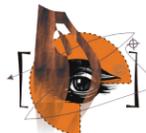
SIDING BASIS OF DESIGN:
CERTAINEED VINYL BOARD
AND BATTEN

DARK BRONZE ALUMINUM
ACCENTS, AWNINGS AND
STOREFRONT



ARTISTIC REPRESENTATION

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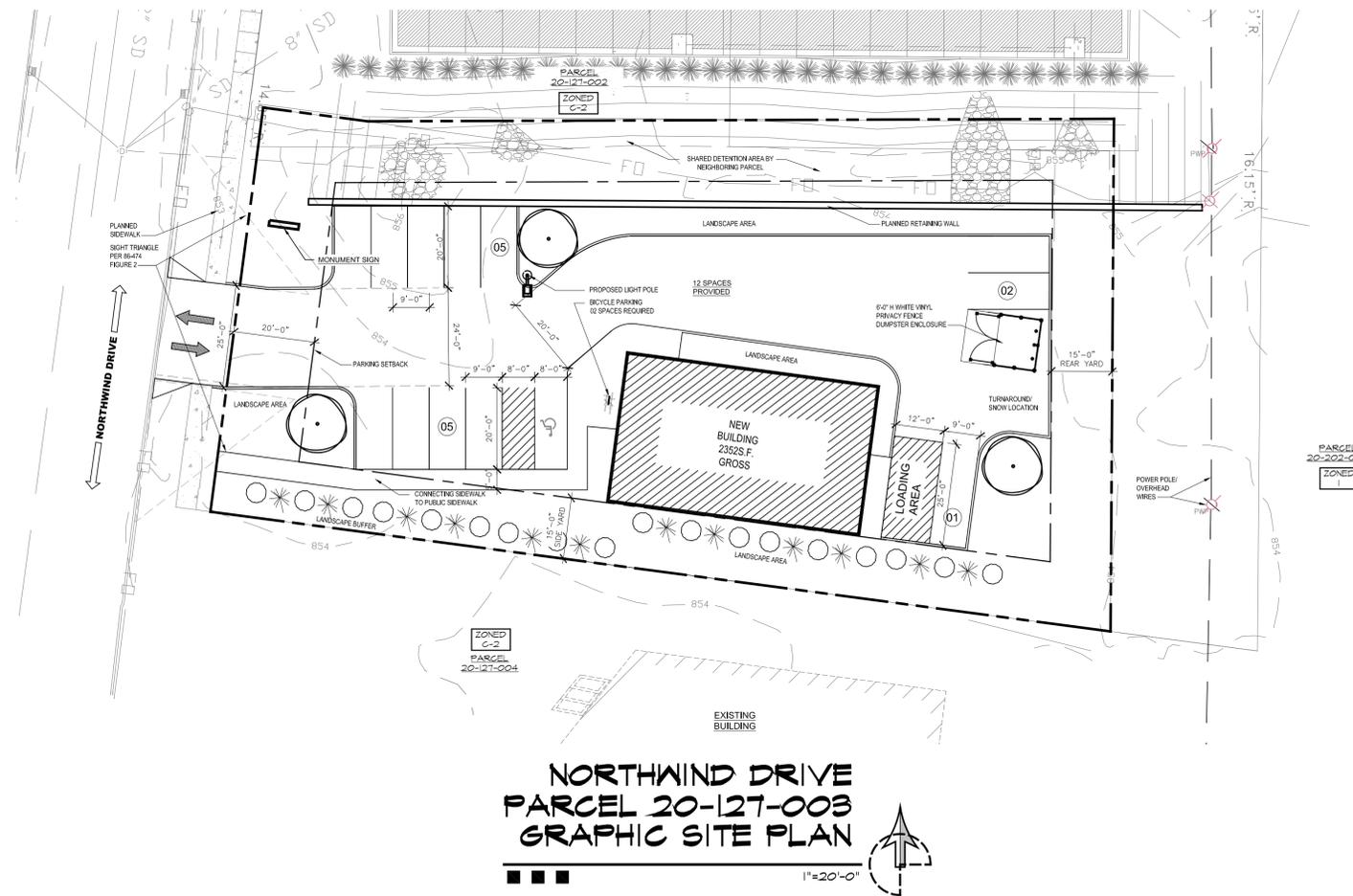


SKYMINT MERIDIAN TWP. SUP SUBMITTAL



SITE LOCATION
PARCEL 20-127-003

PARCEL MAP
N.T.S.



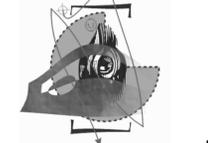
SITE DATA	
ZONING=	C-2 (COMMERCIAL)
PARCEL AREA=	± 0.629 ACRES OR = 24,042.6 S.F.
NEW BUILDING AREA=	± 2,352 S.F.
IMPERVIOUS AREA=	± 12,016 S.F.
(49.1% LOT AREA < 70% ALLOWABLE)	
PARKING REQUIREMENTS:	
RETAIL (NON-SPECIFIC UNDER 25,000 GFA) 5.5 SPACE PER 1,000 GROSS FLOOR AREA MAXIMUM.	
GROSS FLOOR AREA=	± 2,352 S.F.
2,352/1,000=	2.352 X 5.5
	12.936 SPACES PERMITTED
SPACES PROVIDED=	13 SPACES

APPLICANT
GREEN PEAK INNOVATIONS, LLC
10070 HARVEST PARK,
DIMONDALE, MI 48821
517-408-0172

SUP SUBMITTAL
04/03/23

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517.377.8804 PHONE • 517.377.8805 FAX • WWW.STUDIOINTRIGUE.COM



STATE OF MICHIGAN
KENNETH LEROY JONES II
ARCHITECT
No. 1301054003
REGISTERED ARCHITECT

FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

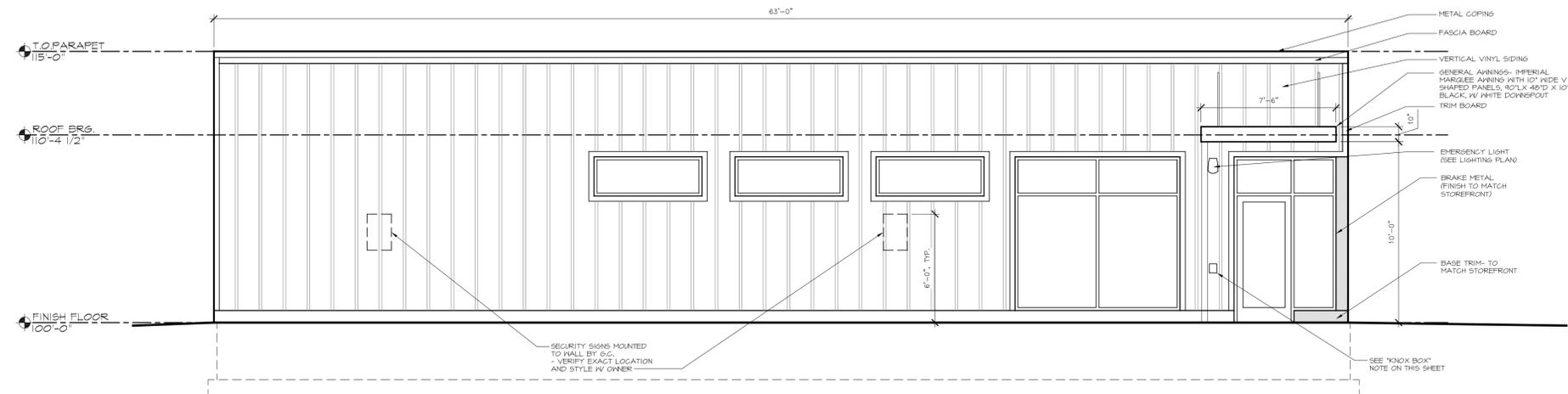
Project
**SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER**
NORTHWIND DR., PARCEL 20-127-003
OKEMOS, MI 48864

Client
GREEN PEAK INNOV.
10070 HARVEST PARK
DIMONDALE, MI 48821

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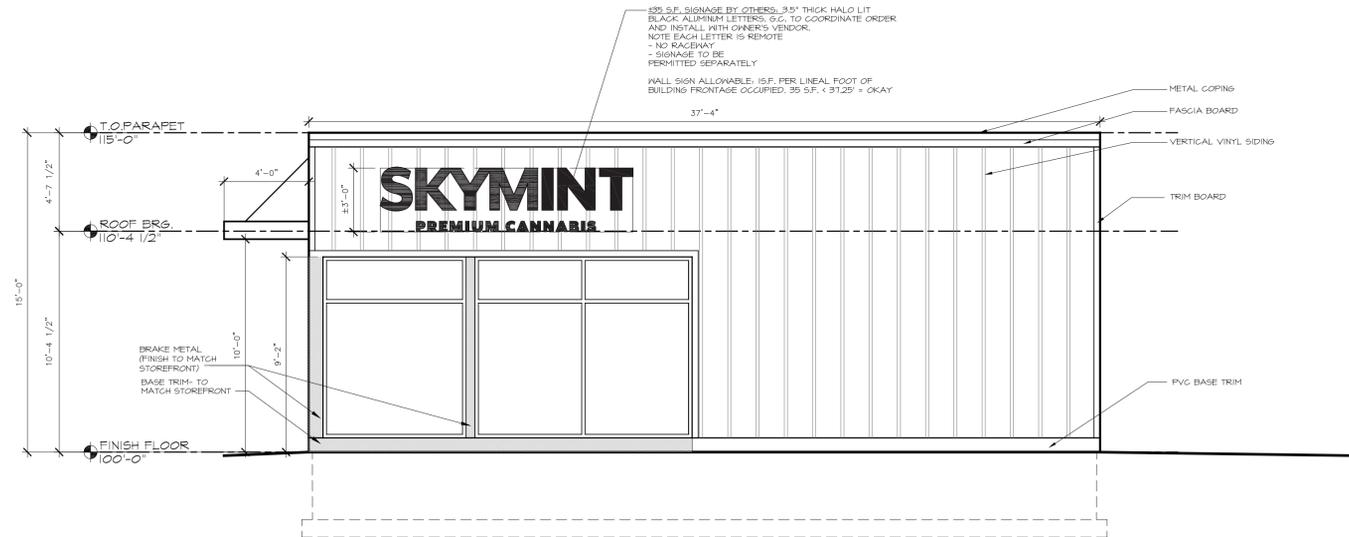
Project Number
19.098

Sheet
C-100



NORTH ELEVATION

1/4" = 1'-0"



EAST ELEVATION

1/4" = 1'-0"

KNOX BOX NOTE:

OWNER'S PREFERRED MANUFACTURER AND MODEL#: KNOXBOX 3200 STANDARD CAPACITY

- G.C. TO VERIFY WITH FIRE MARSHALL IF PREFERRED MODEL IS ACCEPTABLE PRIOR TO ORDERING
- MOUNT AT 5'-0", VERIFY FINAL LOCATION W/ LOCAL FIRE MARSHALL

APPLICANT

GREEN PEAK INNOVATIONS, LLC
10070 HARVEST PARK,
DIMONDALE, MI 48821
517-408-0172

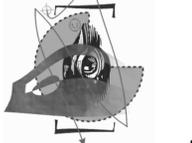
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STATE OF MICHIGAN
KENNETH LEROY JONEST
ARCHITECT
No. 1301054003
LICENSED ARCHITECT

FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

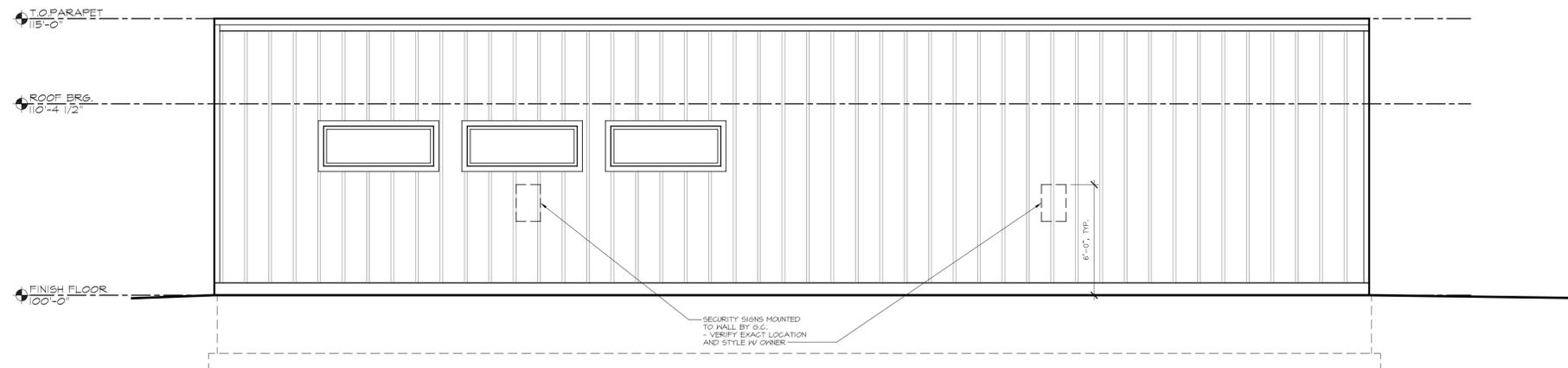
Project
SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER
NORTHWIND DR. PARCEL 20-127-003
OKEMOS, MI 48864

Client
GREEN PEAK INNOV.
10070 HARVEST PARK
DIMONDALE, MI 48821

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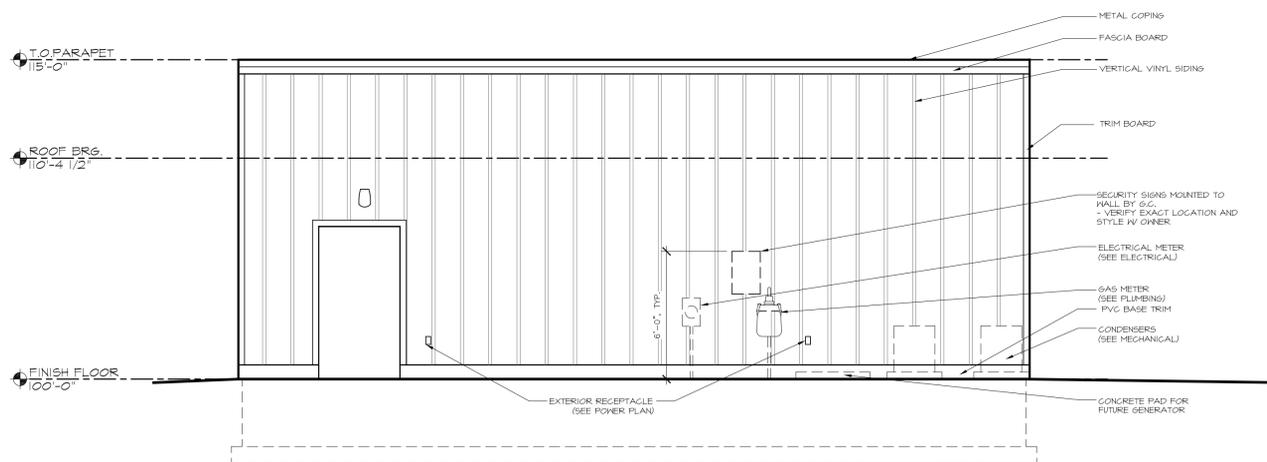
Project Number
19.098

Sheet
A-300



SOUTH ELEVATION

■■■ 1/4" = 1'-0"



WEST ELEVATION

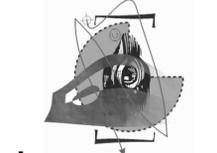
■■■ 1/4" = 1'-0"

APPLICANT
GREEN PEAK INNOVATIONS, LLC
 10070 HARVEST PARK,
 DIMONDALE, MI 48821
 # 517-408-0172

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STATE OF MICHIGAN
 KENNETH LEROY JONES II
 ARCHITECT
 No. 1301054003
 LICENSED ARCHITECT

FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

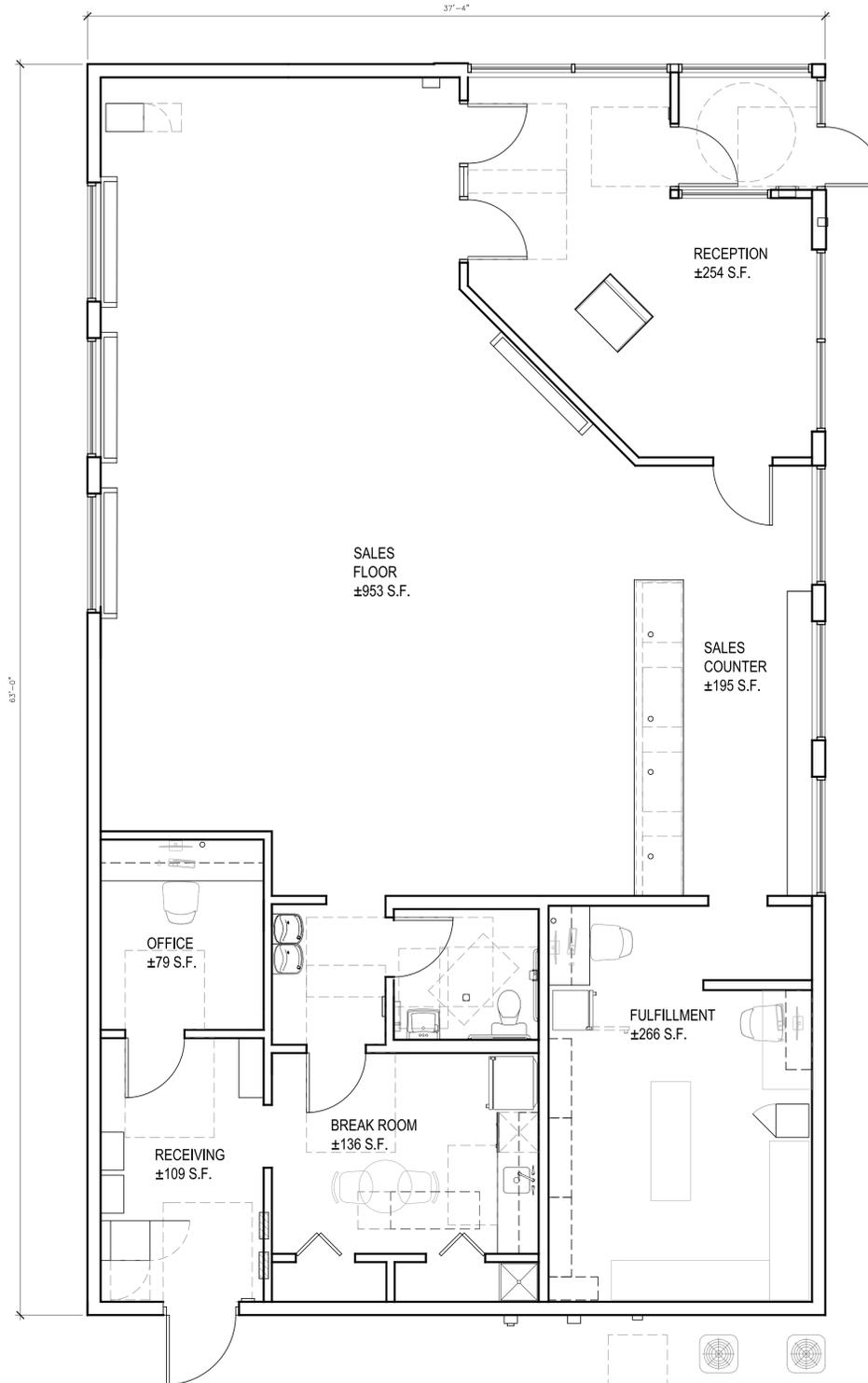
Project
SKYMINT
 MEDICAL MARIJUANA
 PROVISIONING CENTER
 NORTHWIND DR., PARCEL 20-127-003
 OKEMOS, MI 48864

Client
GREEN PEAK INNOV.
 10070 HARVEST PARK
 DIMONDALE, MI 48821

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Project Number
 19.098

Sheet
A-301



GRAPHIC PRELIMINARY FLOOR PLAN

1/4"=1'-0"



APPLICANT

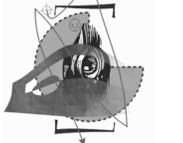
GREEN PEAK INNOVATIONS, LLC
 10070 HARVEST PARK,
 DIMONDALE, MI 48821
 # 517-408-0172

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FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

Project
SKYMINT MEDICAL MARIJUANA PROVISIONING CENTER
 NORTHWIND DR., PARCEL 20-127-003
 OKEMOS, MI 48864

Client
GREEN PEAK INNOV.
 10070 HARVEST PARK
 DIMONDALE, MI 48821

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Project Number
19.098

Sheet
A-100

SKYMINT™

BRANDS

Legal Description

Parcel 20-127-003 & Parcel 20-127-002 Legal Description: MP 6670 MP 6671 MP 6672-1 LOTS 2 & 3 & PART OF LOT 4 DESC. AS BEG. AT NW COR. OF LOT 4 & RUNNING TH S 81 DEG 50' E 117.89 FT. ALONG N'LY LINE OF LOT 4 TO COR. OF CONCRETE BLDG. (BRICK FACE) TH N 88 DEG 55' W 118.8 FT. TO W'LY LINE OF LOT 4 & TH. N 8 DEG 10' E 14.65 FT. TO PT. OF BEG. EXC. PART OF LOT 3 DESC. AS BEG. AT SE COR. OF LOT 3, TH N 1 DEG 05' E 16.15 FT. ALONG E LOT LINE, TH N. 88 DEG 55' W 130 FT. TO INTER- SECT S'LY LOT LINE, TH S 81 DEG 50' E 131 FT. TO PT. OF BEG. NORTHWIND SUBDIVISION.

WARRANTY DEED

The Grantor, **MTC Enterprises of Michigan, Inc.**, a Michigan corporation, whose address is 1135 E. Alward Road, DeWitt, Michigan, 48820;

CONVEYS AND WARRANTS to the Grantee, **Green Peak Industries, Inc.**, a Michigan corporation, whose address is 10070 Harvest Park, Dimondale, Michigan, 48821; the Property situated in the Meridian Township, Ingham County, Michigan, which is described as:

See Exhibit A, Legal Description, attached.

For the full consideration disclosed in the Real Estate Transfer Tax Valuation Affidavit submitted herewith.

Grantor grants to the Grantee the right to make any and all available divisions under section 108 of the land division act, Act 288 of the Public Act of 1967.

If the land being conveyed is unplatted, the following is deemed to be included: "This property may be located within the vicinity of farm land or a farm operation. Generally accepted agricultural and management practices which may generate noise, dust, odors, and other associated conditions may be used and are protected by the Michigan Right to Farm Act."

Subject to encumbrances, easements, reservations and restrictions of record.

Dated October 7, 2021

Signed and Sealed:
MTC Enterprises of Michigan, Inc.



By: Mark C. Schneider
Its: President

{notary on following page}

State of Michigan)
)SS
County of INGHAM)

Acknowledged before me on October 7, 2021, by Mark C. Schneider, President of MTC Enterprises of Michigan, Inc., a Michigan corporation, the Grantor herein, on behalf of said corporation.

KENNETH U. LUCAS
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF INGHAM
My Commission Expires May 26, 2023
Acting in the County of Ingham

Kenneth U. Lucas
Kenneth U. Lucas
Notary Public, Ingham County
Acting in Ingham County, state of Michigan
My commission expires May 26, 2023

Drafted by:
Kenneth U. Lucas, (P-33741)
Oade, Stroud & Kleiman, PC
200 Woodland Pass, PO Box 1296
East Lansing, Michigan 48826-1296
tel. (517) 351-3550
email: KLucas@osklaw.com

Exhibit A
Legal Description

Land located in the Township of Meridian, County of Ingham, State of Michigan, and described as follows:

Parcel 1:

Beginning at the Northwest corner of Lot 2, Northwind, a Subdivision of a part of Sections 17 and 20, Town 4 North, Range 1 West, Meridian Township, Ingham County, Michigan, thence South 81 degrees 50 minutes 00 seconds East 221.55 feet to the Northeast corner of Lot 2; thence along the East plat line South 01 degrees 05 minutes 00 seconds West 205.55 feet; thence North 88 degrees 55 minutes 00 seconds West 248.80 feet to the West line of Lot 4 of Northwind; thence North 08 degrees 10 minutes 00 seconds East 234.65 feet to the point of beginning.

Parcel No. 33-02-02-20-127-002

Parcel 2: Lot 4 of Northwind Subdivision together with that part of Lot 3 of Northwind Subdivision in Sections 17 and 20, Town 4 North, Range 1 West, Meridian Township, Ingham County, Michigan, described as beginning at the Southeast corner of said Lot 3; thence North 01 degree 05 minutes East 16.15 feet along the East lot line; thence North 88 degrees 55 minutes West 130.00 feet to intersect the Southerly lot line; thence South 81 degrees 50 minutes East 131.00 feet to point of beginning, but EXCLUDING that part of Lot 4 of Northwind Subdivision described as: beginning at the Northwest corner of Lot 4 of Northwind Subdivision in Sections 17 and 20, Town 4 North, Range 1 West, Meridian Township, Ingham County, Michigan, and running thence South 81 degrees 50 minutes East 117.89 feet along the Northerly line of Lot 4 to corner of a concrete block building (brick face); thence North 88 degrees 55 minutes West 118.80 feet to the Westerly line of Lot 4; and thence North 08 degrees 10 minutes East 14.65 feet to the point of beginning.

Parcel No. 33-02-02-20-127-003

December 23, 2019

Mr. Kenneth Jones
Studio Intrigue Architects, LLC
1114 South Washington Avenue
Lansing, Michigan 48910

Re: Traffic Impact Analysis — Skymint Provisioning Center, Meridian Township, MI

Dear Mr. Jones:

Progressive AE has completed a review of the current and future traffic operations along M-43 (Grand River Avenue) at the intersection with Northwind Drive adjacent to the proposed marijuana provisioning center being proposed by Skymint. The following sections summarize our findings and recommendations regarding potential measures to address existing and future concerns.

INTRODUCTION

A marijuana provisioning center is being proposed at a site is located on the east side of Northwind Drive, just south of M-43 (Grand River Avenue) in Meridian Township. Figure 1 shows the proposed location of the site. The provisioning center will occupy 3,630 square feet of an existing retail strip center building (existing lighting store) with access driveways to Northwind Drive. The intersection of Northwind Drive with M-43 (Grand River Avenue) is currently signalized. For the purposes of this study, the provisioning center is assumed to be completed and fully operational next year (2020).



Figure 1. Location Map and Study Area

As part of the project approval process, the township has requested a traffic impact study be prepared to quantify the potential impacts the proposed provisioning center may have on the adjacent roadway network. The study includes analyses of the signalized M-43 (Grand River Avenue)/Northwind Drive intersection during the typical morning and afternoon peak hours.

The purpose of this traffic impact study was to analyze the potential impacts of the proposed provisioning center and to identify what physical and/or operational roadway system improvements, if any, may be necessary to mitigate existing or projected background issues, and/or impacts created by this development's traffic.

EXISTING CONDITIONS

The first step in the identification of potential traffic impacts is to determine how well the adjacent streets are operating under current conditions. The existing conditions provide a comparison to subsequent future conditions analyses. This section summarizes the data collection and existing operating conditions analysis procedures.



Northbound Northwind Drive at M-43 (Grand River Avenue)

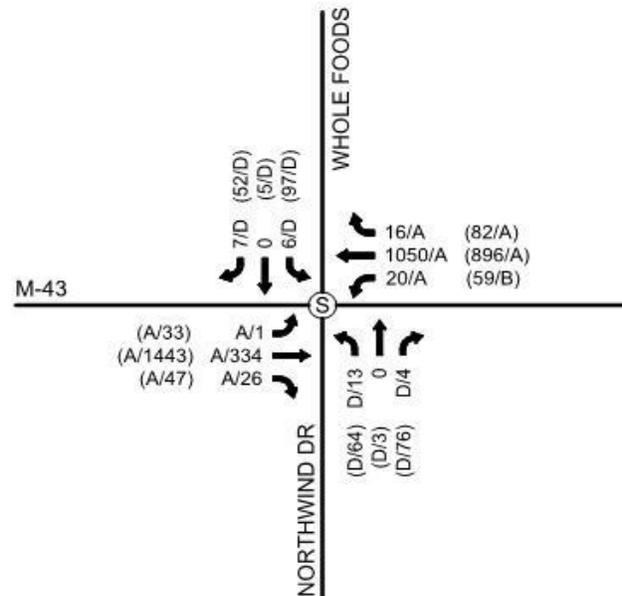
Study Area

The study area includes the signalized intersection of M-43 (Grand River Avenue) with Northwind Drive which is under the operation jurisdiction of the Michigan Department of Transportation (MDOT). The north leg of the intersection forms the driveway to the existing Whole Foods supermarket site. The existing speed limit along M-43 (Grand River Avenue) is 40 mph in the vicinity of the site. All approaches to the intersection include separate left-turn lanes. The eastbound and westbound M-43 (Grand River Avenue) approaches include separate right-turn lanes while the northbound and southbound approaches have a shared through/right-turn lane. The existing signal currently operates as a two-phase signal with a 100-second cycle length during the morning and afternoon peak-hours. Left-turn movements operate as permissive only on all approaches to the intersection.

Data Collection

Existing peak-hour turning movement counts at the M-43 (Grand River Avenue)/Northwind Drive intersection were collected on December 10, 2019. Turning movement counts were performed from 7 a.m. to 9 a.m. and from 4 p.m. to 6 p.m. Detailed printouts of the count report is included in the appendix.

These counts indicated that the weekday peak-hour generally occurs between 7:30–8:30 a.m. and 5:00–6:00 p.m. Figure 2 shows the existing peak-hour volumes at the study area intersections.



LEGEND	
XX (XX)	= AM (PM)
A	= LEVEL-OF-SERVICE
Ⓢ	= SIGNALIZED INTERSECTION
⊥	= STOP-CONTROLLED

Figure 2. Existing Peak-Hour Volumes and LoS

Vehicle Volumes and Capacity Calculations

Intersection "level-of-service" or capacity calculations were completed to evaluate the existing operations of the M-43 (Grand River Avenue)/Northwind Drive intersection. These calculations were completed using techniques outlined in the 2000 Highway Capacity Manual. Synchro® traffic analysis software, based on the Highway Capacity Manual methodologies, was used in the analysis. Levels-of-Service (LoS) at signalized intersections relate to the delay, traffic volumes, and intersection geometry. Levels of Service (LoS) are expressed in a range from "A" to "F", with "A" denoting the best operating conditions. Generally, a LoS "D" is considered the minimum acceptable service level for signalized intersections in most areas, although a LoS "E" or LoS "F" can be deemed as acceptable at times in urban areas or during the peak-hours. Criteria for determining the LoS at signalized intersections is outlined in the appendix of this report.

Results of the level-of-service analyses are shown in Table 1 and in Figure 2. The intersection currently operates at an overall LoS "A" during the morning peak-hour and LoS "B" during the afternoon peak-hour. All individual movements currently operate at LoS "D" or better during both peak-hours. Copies of the Synchro® analyses are included in the appendix.

Table 1. Existing Levels-of-Service and Delay

Intersection/ Movement	Existing Conditions			
	AM		PM	
	LoS	Delay (s)	LoS	Delay (s)
M-43 (Grand River Ave) / Northwind Drive				
Overall	A	3.5	B	10.2
<i>EBL</i>	A	1.4	A	4.4
<i>EBT</i>	A	1.7	A	7.3
<i>EBR</i>	A	1.5	A	3.8
<i>WBL</i>	A	1.5	B	10.4
<i>WBT</i>	A	2.5	A	5.5
<i>WBR</i>	A	1.4	A	3.9
<i>NBL</i>	D	50.0	D	40.7
<i>NBT/R</i>	D	46.3	D	38.5
<i>SBL</i>	D	47.8	D	44.7
<i>SBT/R</i>	D	46.4	D	37.3

Source: Progressive AE, December 2019

FUTURE (2020) CONDITIONS

The purpose of this section is to summarize the anticipated future (2020) traffic conditions within the study area with background traffic growth and the proposed development traffic in place. These analyses provide the before/after comparison of anticipated conditions and help define the timing and applicability of any potential roadway improvements necessary to mitigate the impact of the proposed development.

Background Traffic Growth

The existing peak-hour volumes within the study area were increased by 1.0 percent annually to account for background traffic growth. As the analysis year for this study is 2020 (one year), existing traffic volumes were increased by 1.0 percent.

Proposed Development and Site Access

The proposed marijuana provisioning center will occupy 3,630 square feet of an existing retail strip center building located on the east side of Northwind Drive just south of M-43 (Grand River Avenue). Access to the provisioning center will be via the existing site driveways to Northwind Drive.

Trip Generation

Trip Generation, Tenth Edition, by the Institute of Transportation Engineers (ITE) was used to calculate the anticipated traffic that may be generated by the proposed marijuana provisioning center. Trips were calculated for the typical weekday morning and afternoon peak-hours. While the existing lighting store likely generates some trips during the peak-hours, these trips were not subtracted from the overall trip generation to remain conservative with the analysis. Table 2 shows the typical weekday peak-hour trips anticipated to be generated by the proposed development.

Table 2. Weekday Morning and Afternoon Peak-Hour Trip Generation Summary

Land Use	ITE Code	Size	AM		PM	
			Enter	Exit	Enter	Exit
Marijuana Dispensary	882	3,630 sft	21	17	40	40

Source: Progressive AE, December 2019

Trip Distribution

The directional distribution of the project-generated new trips was based upon existing travel patterns and engineering judgment. The directional distribution to/from the proposed development is expected to be approximately 60 percent to/from the west along M-43 (Grand River Avenue) and 40 percent to from the east along M-43 (Grand River Avenue). While a small portion of the trips to/from the site may be from the south on Northwind Drive, this percentage was assumed to be zero to be conservative and assign all new trips to the signalized intersection at M-43 (Grand River Avenue) and Northwind Drive.

Based upon the anticipated distribution patterns for new trips, the peak-hour development traffic was assigned to the M-43 (Grand River Avenue)/Northwind Drive intersection. Figure 3 shows the total anticipated morning and afternoon peak-hour trips for site-generated traffic upon full completion and occupancy of the proposed site.

The anticipated site trips were added to the existing peak-hour volumes to depict the estimated total future (2020) volumes during the morning and afternoon peak-hours. Figure 4 shows the total anticipated future (2020) volumes including background traffic growth and site-generated traffic.

Future (2020) Capacity Analysis

Intersection level-of-service calculations were completed to evaluate the future (2020) morning and afternoon peak-hour conditions at the M-43 (Grand River Avenue)/Northwind Drive intersection. No improvements or signal timing adjustments were made for this analysis. The results of the level-of-service analyses are shown in Table 3 and Figure 4.

As shown in Table 3 and Figure 4, the intersection is anticipated to continue to operate at an overall LoS "A" during the morning peak-hour and LoS "B" during the afternoon peak-hour. All individual movements are anticipated to continue to operate at LoS "D" or better during the morning and afternoon peak-hours. Copies of the Synchro® analyses are included in the appendix.

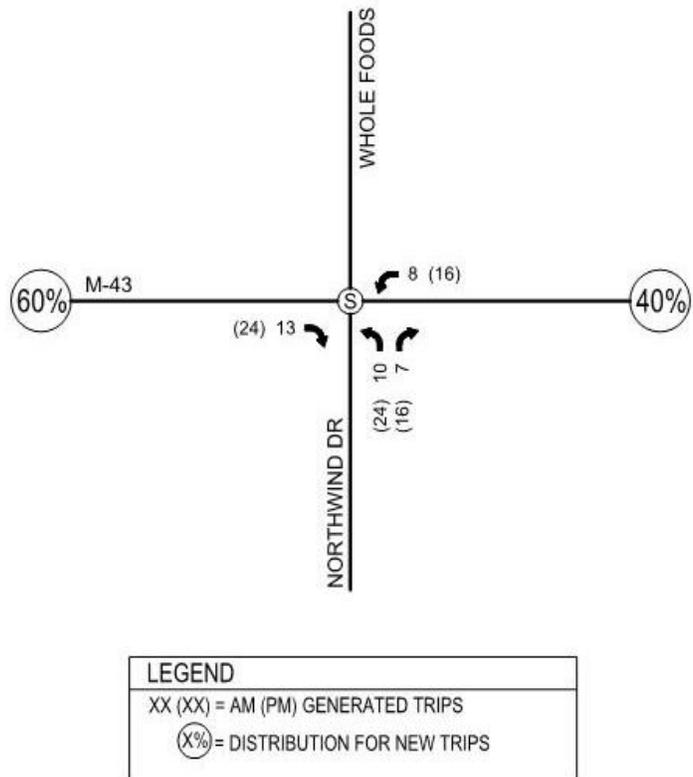


Figure 3. Future (2020) Trip Distribution

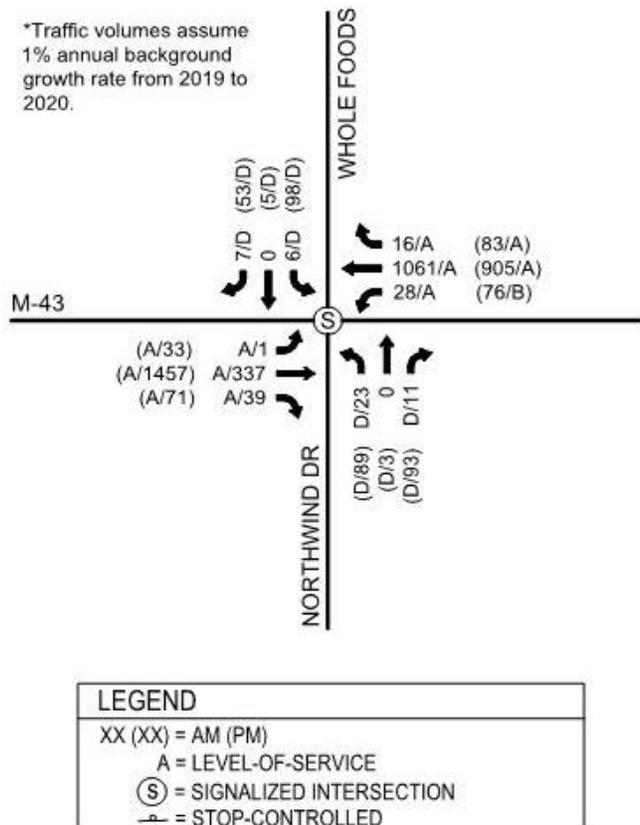


Figure 4. Future (2020) Peak-Hour Volumes and LoS

Table 3. Future (2020) Levels-of-Service and Delay

Intersection/ Movement	Existing Conditions				Future (2020) Conditions			
	AM		PM		AM		PM	
	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)
M-43 (Grand River Ave) / Northwind Drive								
Overall	A	3.5	B	10.2	A	4.6	B	10.9
<i>EBL</i>	A	1.4	A	4.4	A	1.9	A	4.5
<i>EBT</i>	A	1.7	A	7.3	A	2.2	A	7.5
<i>EBR</i>	A	1.5	A	3.8	A	2.0	A	3.9
<i>WBL</i>	A	1.5	B	10.4	A	2.0	B	14.5
<i>WBT</i>	A	2.5	A	5.5	A	3.3	A	5.6
<i>WBR</i>	A	1.4	A	3.9	A	1.9	A	4.0
<i>NBL</i>	D	50.0	D	40.7	D	49.5	D	42.8
<i>NBT/R</i>	D	46.3	D	38.5	D	44.0	D	39.1
<i>SBL</i>	D	47.8	D	44.7	D	45.0	D	45.1
<i>SBT/R</i>	D	46.4	D	37.3	D	44.0	D	37.2

Source: Progressive AE, December 2019

CONCLUSIONS

Based on the analyses performed, the future development of the proposed marijuana provisioning center will have minimal impacts to existing operations within the study area. The findings of this study are as follows:

- The proposed marijuana provisioning center is anticipated to generate 38 (21 entering, 17 exiting) new weekday morning peak-hour trips and 80 (40 entering, 40 exiting) new weekday afternoon peak-hour trips. While the existing lighting store likely generates some trips during the peak-hours, these trips were not subtracted from the overall trip generation to remain conservative with the analysis.
- The M-43 (Grand River Avenue)/Northwind Drive intersection currently operates at an overall LoS "B" or better during the morning and afternoon peak hours. All individual movements operate at LoS "D" or better during both peak hours.
- After the completion of the proposed marijuana provisioning center, the M-43 (Grand River Avenue)/Northwind Drive intersection is anticipated to continue to operate at LoS "B" or better during the morning and afternoon peak-hours. All individual movements are also anticipated to continue to operate at LoS "D" or better during both peak hours.
- The analyses show the existing M-43 (Grand River Avenue)/Northwind Drive signalized intersection has adequate capacity to handle the anticipated traffic from the proposed provisioning center. No improvements or signal timing adjustments at the intersection would be recommended based on the analyses.

Sincerely,



Nicholas D. LaCroix, PE, PTOE
Senior Transportation Engineer



Christopher E. Zull, PE
Transportation Practice Leader

NDL:smg

Enclosures

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Technical Appendix
Skymint Provisioning Center TIS

- **Level of Service Definitions**
- **Glossary**
- **Traffic Count Data**
- **Synchro Analyses Results**

Level of Service Definitions

Signalized Intersections

- Level of Service A:** Describes operations with very low average stopped delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
- Level of Service B:** Describes operations with an average stopped delay in the range of 10.0 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- Level of Service C:** Describes operations with an average stopped delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- Level of Service D:** Describes operations with an average stopped delay in the range of 35.1 to 55.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c (volume/capacity) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
- Level of Service E:** Describes operations with an average stopped delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay in many cases. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
- Level of Service F:** Describes operations with an average stopped delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Level of Service Definitions

Unsignalized Intersections

Level of Service A:	Average delay per vehicles for impeded movements is less than 10 seconds. There is little or no delay with typically low side street and/or main street traffic.
Level of Service B:	Average stopped delays from 10.1 seconds to 15.0 seconds. Short delays, many acceptable gaps in main street traffic stream.
Level of Service C:	Average delay per vehicle ranges from 15.1 to 25.0 seconds. Average traffic delays with frequent gaps in main street traffic.
Level of Service D:	Average delays from 25.1 to 35.0 seconds for impeded movements. Long traffic delays for impeded movements due in part to a limited number of acceptable gaps.
Level of Service E:	Average delays in the 35.1 to 50.0 second range. May experience very long delays for impeded movements with a very small number of acceptable gaps in the traffic stream.
Level of Service F:	Average vehicle delays of over 50.0 seconds. Extreme traffic delays with virtually no acceptable gaps in main street traffic.

Glossary

Approach: A set of lanes accommodating all left-turn, through, and right-turn movements arriving at an intersection from a given direction.

Arterial: Signalized streets that serve primarily through traffic and provide access to abutting properties as a secondary function.

Average Stopped Delay: The total time vehicles are stopped in an intersection approach or lane group during a specified time interval divided by the volume departing from the approach or lane group during the same time period, in seconds per vehicle.

Background Traffic: Traffic volumes that will be on the roadway network without the presence of the proposed development.

Bypass Lane: A one-lane widening on a two-lane roadway that allows through traffic to pass by waiting left-turn traffic.

Capacity: The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

Conflicting Traffic Volume: The volume of traffic which conflicts with a specific movement at an intersection.

Corridor: A lineal study area aligned with a roadway facility in which traffic, land use, right-of-way, environmental, and other factors are evaluated to determine future transportation facility needs.

Cycle: Any complete sequence of traffic signal indications.

Cycle Length: The total time for a traffic signal to complete one cycle.

Design Hour Volume: The traffic volume for the design hour, usually a forecast of the relevant peak hour volume, in vehicles per hour.

Diverted Linked Trips: Trips from the traffic volume on roadways within the vicinity of the generator but which requires a diversion from that roadway to another roadway to gain access to the site.

Driveway Offset: Distance between driveways on opposite sides of a roadway, measured parallel to roadway.

Freeway: A multi-lane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

Gaps (Critical Gap): The median time headway between vehicles in a major traffic stream which will permit side-street vehicles to cross through or merge with the major traffic stream.

Green Time: The actual length of the "green" indication for a given movement at a signalized intersection.

Level of Service: A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Operational Analysis: A use of capacity analysis to determine the prevailing level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions. This analysis can involve a particular location, such as an intersection or a corridor.

Pass-by Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination.

Peak Hour (AM): The one hour period in the morning representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour (PM): The one hour period in the afternoon or evening representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour Factor: The hourly volume during the maximum volume hour of the day divided by four times the peak 15-minute flow within the peak hour; a measure of traffic demand fluctuation within the peak hour.

Phase: The part of the signal cycle allocated to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

Roadway Conditions: Geometric characteristics of a street or highway, including the type of facility, number and width of lanes (by direction), shoulder widths and lateral clearances, design speed, etc.

Service Drive: A roadway (usually private) that provides internal access to two or more uses.

Site Traffic: Existing or projected vehicular traffic generated by the development.

Study Area: The geographic area containing site access points and critical intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development, and should be evaluated.

System Improvements: Added lanes, signal improvements, and other roadway improvements not considered site-related improvements.

Traffic Impact: The adverse impact on intersection Level of Service and/or street and highway safety and operations as determined by the criteria and procedures set forth in this handbook.

Trip (Directional Trip): A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

Trip Distribution: The distribution or assignment of site traffic into site driveways and study area roadways/intersections based upon expected direction of approach and departure.

Unsignalized Intersection: Any intersection not controlled by traffic signals.

Volume: The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

Volume-to-Capacity Ratio (V/C): The ratio of demand flow rate to capacity for a traffic facility.

Traffic Count Data



Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: M-43 at Northwind Dr
Site Code:
Start Date: 12/10/2019
Page No: 1

Turning Movement Data

Start Time	M-43 (Grand River Ave) Eastbound					M-43 (Grand River Ave) Westbound					Northwind Dr Northbound					Whole Foods Drwy Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	52	2	1	54	0	124	3	0	127	8	0	1	0	9	2	0	0	0	2	192
7:15 AM	0	58	1	0	59	3	204	0	0	207	3	0	2	0	5	1	0	0	0	1	272
7:30 AM	0	76	2	0	78	2	277	2	0	281	4	0	2	0	6	1	0	0	0	1	366
7:45 AM	1	89	6	0	96	2	298	4	0	304	3	0	1	1	4	2	0	1	0	3	407
Hourly Total	1	275	11	1	287	7	903	9	0	919	18	0	6	1	24	6	0	1	0	7	1237
8:00 AM	0	78	6	0	84	7	250	8	0	265	1	0	1	0	2	1	0	3	1	4	355
8:15 AM	0	91	12	0	103	9	225	2	0	236	5	0	0	0	5	2	0	3	0	5	349
8:30 AM	2	106	5	0	113	3	216	8	0	227	5	0	2	0	7	3	0	0	0	3	350
8:45 AM	3	90	2	1	95	18	244	6	0	268	4	0	2	0	6	2	0	4	0	6	375
Hourly Total	5	365	25	1	395	37	935	24	0	996	15	0	5	0	20	8	0	10	1	18	1429
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	305	8	0	317	15	205	14	1	234	18	0	21	1	39	26	0	10	1	36	626
4:15 PM	9	295	12	1	316	14	211	14	0	239	13	0	13	1	26	18	1	9	1	28	609
4:30 PM	8	308	5	3	321	13	203	13	0	229	32	1	28	0	61	21	3	10	1	34	645
4:45 PM	11	332	6	0	349	15	191	19	0	225	14	0	15	0	29	16	2	14	1	32	635
Hourly Total	32	1240	31	4	1303	57	810	60	1	927	77	1	77	2	155	81	6	43	4	130	2515
5:00 PM	6	381	11	0	398	9	200	10	0	219	18	0	22	1	40	22	0	17	0	39	696
5:15 PM	5	384	9	1	398	21	242	21	0	284	17	1	16	1	34	25	2	10	0	37	753
5:30 PM	12	355	13	0	380	18	226	22	0	266	14	0	19	0	33	22	2	12	0	36	715
5:45 PM	10	323	14	2	347	11	228	29	0	268	15	2	19	0	36	28	1	13	0	42	693
Hourly Total	33	1443	47	3	1523	59	896	82	0	1037	64	3	76	2	143	97	5	52	0	154	2857
Grand Total	71	3323	114	9	3508	160	3544	175	1	3879	174	4	164	5	342	192	11	106	5	309	8038
Approach %	2.0	94.7	3.2	-	-	4.1	91.4	4.5	-	-	50.9	1.2	48.0	-	-	62.1	3.6	34.3	-	-	-
Total %	0.9	41.3	1.4	-	43.6	2.0	44.1	2.2	-	48.3	2.2	0.0	2.0	-	4.3	2.4	0.1	1.3	-	3.8	-
Lights	70	3265	113	-	3448	159	3487	171	-	3817	173	4	161	-	338	190	11	105	-	306	7909
% Lights	98.6	98.3	99.1	-	98.3	99.4	98.4	97.7	-	98.4	99.4	100.0	98.2	-	98.8	99.0	100.0	99.1	-	99.0	98.4
Mediums	0	52	1	-	53	1	43	3	-	47	0	0	3	-	3	2	0	1	-	3	106
% Mediums	0.0	1.6	0.9	-	1.5	0.6	1.2	1.7	-	1.2	0.0	0.0	1.8	-	0.9	1.0	0.0	0.9	-	1.0	1.3
Articulated Trucks	1	6	0	-	7	0	14	1	-	15	1	0	0	-	1	0	0	0	-	0	23
% Articulated Trucks	1.4	0.2	0.0	-	0.2	0.0	0.4	0.6	-	0.4	0.6	0.0	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	9	-	-	-	-	1	-	-	-	-	5	-	-	-	-	5	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: M-43 at Northwind Dr
Site Code:
Start Date: 12/10/2019
Page No: 2

Turning Movement Peak Hour Data (7:30 AM)

Start Time	M-43 (Grand River Ave) Eastbound					M-43 (Grand River Ave) Westbound					Northwind Dr Northbound					Whole Foods Drwy Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	76	2	0	78	2	277	2	0	281	4	0	2	0	6	1	0	0	0	1	366
7:45 AM	1	89	6	0	96	2	298	4	0	304	3	0	1	1	4	2	0	1	0	3	407
8:00 AM	0	78	6	0	84	7	250	8	0	265	1	0	1	0	2	1	0	3	1	4	355
8:15 AM	0	91	12	0	103	9	225	2	0	236	5	0	0	0	5	2	0	3	0	5	349
Total	1	334	26	0	361	20	1050	16	0	1086	13	0	4	1	17	6	0	7	1	13	1477
Approach %	0.3	92.5	7.2	-	-	1.8	96.7	1.5	-	-	76.5	0.0	23.5	-	-	46.2	0.0	53.8	-	-	-
Total %	0.1	22.6	1.8	-	24.4	1.4	71.1	1.1	-	73.5	0.9	0.0	0.3	-	1.2	0.4	0.0	0.5	-	0.9	-
PHF	0.250	0.918	0.542	-	0.876	0.556	0.881	0.500	-	0.893	0.650	0.000	0.500	-	0.708	0.750	0.000	0.583	-	0.650	0.907
Lights	0	314	25	-	339	20	1036	14	-	1070	12	0	3	-	15	6	0	6	-	12	1436
% Lights	0.0	94.0	96.2	-	93.9	100.0	98.7	87.5	-	98.5	92.3	-	75.0	-	88.2	100.0	-	85.7	-	92.3	97.2
Mediums	0	14	1	-	15	0	9	1	-	10	0	0	1	-	1	0	0	1	-	1	27
% Mediums	0.0	4.2	3.8	-	4.2	0.0	0.9	6.3	-	0.9	0.0	-	25.0	-	5.9	0.0	-	14.3	-	7.7	1.8
Articulated Trucks	1	6	0	-	7	0	5	1	-	6	1	0	0	-	1	0	0	0	-	0	14
% Articulated Trucks	100.0	1.8	0.0	-	1.9	0.0	0.5	6.3	-	0.6	7.7	-	0.0	-	5.9	0.0	-	0.0	-	0.0	0.9
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: M-43 at Northwind Dr
Site Code:
Start Date: 12/10/2019
Page No: 3

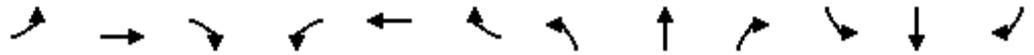
Turning Movement Peak Hour Data (5:00 PM)

Start Time	M-43 (Grand River Ave) Eastbound					M-43 (Grand River Ave) Westbound					Northwind Dr Northbound					Whole Foods Drwy Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 PM	6	381	11	0	398	9	200	10	0	219	18	0	22	1	40	22	0	17	0	39	696
5:15 PM	5	384	9	1	398	21	242	21	0	284	17	1	16	1	34	25	2	10	0	37	753
5:30 PM	12	355	13	0	380	18	226	22	0	266	14	0	19	0	33	22	2	12	0	36	715
5:45 PM	10	323	14	2	347	11	228	29	0	268	15	2	19	0	36	28	1	13	0	42	693
Total	33	1443	47	3	1523	59	896	82	0	1037	64	3	76	2	143	97	5	52	0	154	2857
Approach %	2.2	94.7	3.1	-	-	5.7	86.4	7.9	-	-	44.8	2.1	53.1	-	-	63.0	3.2	33.8	-	-	-
Total %	1.2	50.5	1.6	-	53.3	2.1	31.4	2.9	-	36.3	2.2	0.1	2.7	-	5.0	3.4	0.2	1.8	-	5.4	-
PHF	0.688	0.939	0.839	-	0.957	0.702	0.926	0.707	-	0.913	0.889	0.375	0.864	-	0.894	0.866	0.625	0.765	-	0.917	0.949
Lights	33	1433	47	-	1513	59	886	82	-	1027	64	3	76	-	143	97	5	52	-	154	2837
% Lights	100.0	99.3	100.0	-	99.3	100.0	98.9	100.0	-	99.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	100.0	99.3
Mediums	0	10	0	-	10	0	10	0	-	10	0	0	0	-	0	0	0	0	-	0	20
% Mediums	0.0	0.7	0.0	-	0.7	0.0	1.1	0.0	-	1.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Synchro Analysis Results

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

Skymint - Meridian Twp
 Existing AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑	↗	↙	↑↑	↗	↙	↗		↙	↗	
Traffic Volume (vph)	1	334	26	20	1050	16	13	0	4	6	0	7
Future Volume (vph)	1	334	26	20	1050	16	13	0	4	6	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1702	3406	1490	1767	3539	1548	1612	1442		1671	1495	
Flt Permitted	0.23	1.00	1.00	0.53	1.00	1.00	1.00	1.00		1.00	1.00	
Satd. Flow (perm)	414	3406	1490	979	3539	1548	1696	1442		1759	1495	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.71	0.71	0.71	0.65	0.65	0.65
Adj. Flow (vph)	1	380	30	22	1180	18	18	0	6	9	0	11
RTOR Reduction (vph)	0	0	5	0	0	3	0	6	0	0	11	0
Lane Group Flow (vph)	1	380	25	22	1180	15	18	0	0	9	0	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	12%	12%	12%	8%	8%	8%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	83.2	83.2	83.2	83.2	83.2	83.2	3.8	3.8		3.8	3.8	
Effective Green, g (s)	83.2	83.2	83.2	83.2	83.2	83.2	3.8	3.8		3.8	3.8	
Actuated g/C Ratio	0.83	0.83	0.83	0.83	0.83	0.83	0.04	0.04		0.04	0.04	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	344	2833	1239	814	2944	1287	64	54		66	56	
v/s Ratio Prot		0.11			c0.33			0.00			0.00	
v/s Ratio Perm	0.00		0.02	0.02		0.01	c0.01			0.01		
v/c Ratio	0.00	0.13	0.02	0.03	0.40	0.01	0.28	0.00		0.14	0.01	
Uniform Delay, d1	1.4	1.6	1.4	1.4	2.1	1.4	46.8	46.3		46.5	46.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.1	0.4	0.0	3.3	0.0		1.3	0.1	
Delay (s)	1.4	1.7	1.5	1.5	2.5	1.4	50.0	46.3		47.8	46.4	
Level of Service	A	A	A	A	A	A	D	D		D	D	
Approach Delay (s)		1.7			2.5			49.1			47.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

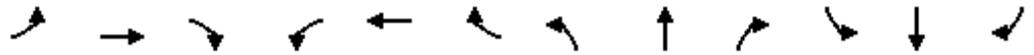
Skymint - Meridian Twp
 Existing PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1443	47	59	896	82	64	3	76	97	5	52
Future Volume (vph)	33	1443	47	59	896	82	64	3	76	97	5	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3574	1560	1786	3574	1599	1800	1625		1805	1615	
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.72	1.00		0.70	1.00	
Satd. Flow (perm)	509	3574	1560	251	3574	1599	1358	1625		1330	1615	
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	35	1519	49	65	985	90	72	3	85	105	5	57
RTOR Reduction (vph)	0	0	13	0	0	24	0	45	0	0	49	0
Lane Group Flow (vph)	35	1519	36	65	985	66	72	43	0	105	13	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	72.9	72.9	72.9	72.9	72.9	72.9	14.1	14.1		14.1	14.1	
Effective Green, g (s)	72.9	72.9	72.9	72.9	72.9	72.9	14.1	14.1		14.1	14.1	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.14	0.14		0.14	0.14	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	371	2605	1137	182	2605	1165	191	229		187	227	
v/s Ratio Prot		c0.42			0.28			0.03			0.01	
v/s Ratio Perm	0.07		0.02	0.26		0.04	0.05			c0.08		
v/c Ratio	0.09	0.58	0.03	0.36	0.38	0.06	0.38	0.19		0.56	0.06	
Uniform Delay, d1	3.9	6.4	3.8	5.0	5.1	3.8	39.0	37.9		40.1	37.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.0	0.1	5.4	0.4	0.1	1.7	0.5		4.6	0.1	
Delay (s)	4.4	7.3	3.8	10.4	5.5	3.9	40.7	38.5		44.7	37.3	
Level of Service	A	A	A	B	A	A	D	D		D	D	
Approach Delay (s)		7.2			5.6			39.4			42.0	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.2				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)				13.0	
Intersection Capacity Utilization			73.1%				ICU Level of Service				D	
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

Skymint - Meridian Twp
 Future (2020) AM Peak



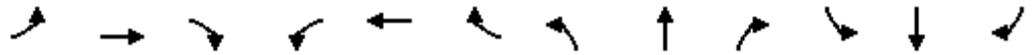
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	1	337	39	28	1061	16	23	0	11	6	0	7
Future Volume (vph)	1	337	39	28	1061	16	23	0	11	6	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1702	3406	1490	1767	3539	1548	1612	1442		1671	1495	
Flt Permitted	0.22	1.00	1.00	0.52	1.00	1.00	0.75	1.00		0.75	1.00	
Satd. Flow (perm)	401	3406	1490	977	3539	1548	1273	1442		1315	1495	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.71	0.71	0.71	0.65	0.65	0.65
Adj. Flow (vph)	1	383	44	31	1192	18	32	0	15	9	0	11
RTOR Reduction (vph)	0	0	8	0	0	3	0	14	0	0	10	0
Lane Group Flow (vph)	1	383	36	31	1192	15	32	1	0	9	1	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	12%	12%	12%	8%	8%	8%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	80.7	80.7	80.7	80.7	80.7	80.7	6.3	6.3		6.3	6.3	
Effective Green, g (s)	80.7	80.7	80.7	80.7	80.7	80.7	6.3	6.3		6.3	6.3	
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.81	0.81	0.06	0.06		0.06	0.06	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	323	2748	1202	788	2855	1249	80	90		82	94	
v/s Ratio Prot		0.11			c0.34			0.00			0.00	
v/s Ratio Perm	0.00		0.02	0.03		0.01	c0.03			0.01		
v/c Ratio	0.00	0.14	0.03	0.04	0.42	0.01	0.40	0.01		0.11	0.01	
Uniform Delay, d1	1.9	2.1	1.9	1.9	2.8	1.9	45.0	43.9		44.2	43.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.1	0.5	0.0	4.4	0.1		0.8	0.0	
Delay (s)	1.9	2.2	2.0	2.0	3.3	1.9	49.5	44.0		45.0	44.0	
Level of Service	A	A	A	A	A	A	D	D		D	D	
Approach Delay (s)		2.2			3.2			47.7			44.4	
Approach LOS		A			A			D			D	

Intersection Summary		
HCM 2000 Control Delay	4.6	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.42	A
Actuated Cycle Length (s)	100.0	Sum of lost time (s)
Intersection Capacity Utilization	48.3%	13.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

Skymint - Meridian Twp
 Future (2020) PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗		↘	↗	
Traffic Volume (vph)	33	1457	71	76	905	83	89	3	93	98	5	53
Future Volume (vph)	33	1457	71	76	905	83	89	3	93	98	5	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3574	1560	1787	3574	1599	1800	1623		1805	1615	
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.72	1.00		0.69	1.00	
Satd. Flow (perm)	502	3574	1560	244	3574	1599	1356	1623		1307	1615	
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	35	1534	75	84	995	91	100	3	104	107	5	58
RTOR Reduction (vph)	0	0	20	0	0	25	0	43	0	0	50	0
Lane Group Flow (vph)	35	1534	55	84	995	66	100	64	0	107	13	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	72.7	72.7	72.7	72.7	72.7	72.7	14.3	14.3		14.3	14.3	
Effective Green, g (s)	72.7	72.7	72.7	72.7	72.7	72.7	14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.14	0.14		0.14	0.14	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	364	2598	1134	177	2598	1162	193	232		186	230	
v/s Ratio Prot		c0.43			0.28			0.04			0.01	
v/s Ratio Perm	0.07		0.03	0.34		0.04	0.07			c0.08		
v/c Ratio	0.10	0.59	0.05	0.47	0.38	0.06	0.52	0.28		0.58	0.06	
Uniform Delay, d1	4.0	6.5	3.9	5.7	5.2	3.9	39.7	38.2		40.0	37.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.0	0.1	8.9	0.4	0.1	3.1	0.9		5.1	0.1	
Delay (s)	4.5	7.5	3.9	14.5	5.6	4.0	42.8	39.1		45.1	37.2	
Level of Service	A	A	A	B	A	A	D	D		D	D	
Approach Delay (s)		7.3			6.1			40.9			42.2	
Approach LOS		A			A			D			D	

Intersection Summary		
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.59	B
Actuated Cycle Length (s)	100.0	Sum of lost time (s)
Intersection Capacity Utilization	77.6%	13.0
Analysis Period (min)	15	ICU Level of Service
		D

c Critical Lane Group

CHARTER TOWNSHIP OF MERIDIAN

Ronald J. Styka
Brett Dreyfus
Phil Deschaine
Frank L. Walsh

Supervisor
Clerk
Treasurer
Manager



Courtney Wisinski
Patricia Herring Jackson
Dan Opsommer
Kathy Ann Sundland

Trustee
Trustee
Trustee
Trustee

August 19, 2020

Green Peak Innovations
ATTN: Joe Neller
10070 Harvest Park
Dimondale, MI 48821

RE: Special Use Permit #19191 (Green Peak Innovations, LLC)

Dear Mr. Neller,

At its meeting on August 18, 2020 the Township Board approved Special Use Permit (SUP) #19191 to construct a commercial medical marihuana provisioning center on an undeveloped parcel (Parcel I.D. #20-127-003) located on the east side of Northwind Drive, south of Grand River Avenue. The SUP was approved subject to the following conditions:

1. Approval is in accordance with the site plan, floor plan, and building elevations prepared by Studio Intrigue Architects dated February 13, 2020.
2. Approval is subject to the applicant receiving approval of a Commercial Medical Marihuana Facility permit by the Director of Community Planning and Development.
3. Approval is subject to the applicant receiving Final Approval for a medical marihuana license from the State of Michigan, Department of Licensing and Regulatory Affairs.
4. Approval is subject to the applicant finalizing the rearrangement of lot lines with the parcel to the north to attain the required 100 feet of lot frontage to develop the parcel.
5. The applicant shall obtain and maintain any and all other applicable permits, licenses, and approvals necessary to operate the proposed commercial medical marihuana provisioning center from the State of Michigan, Township, and any other applicable agencies. Copies of all permits, licenses, and approvals shall be submitted to the Department of Community Planning and Development.
6. Site plan review approval is required to construct the proposed building. The final site plan, building elevations, and landscape plan shall be subject to the approval of the Director of Community Planning and Development.
7. The applicant shall obtain all necessary permits, licenses, and approvals from the Ingham County Road Department, Ingham County Drain Commissioner, Michigan Department of Environment, Great Lakes, and Energy, and the Township, as applicable. Copies of all permits, licenses, and approval letters shall be submitted to the Department of Community Planning and Development.

Special Use Permit #19191 (Green Peak Innovations, LLC)

Northwind Drive

Page 2

8. Utility, grading, and storm drainage plans for the site are subject to the approval of the Director of Public Works and Engineering and Ingham County Drain Commissioner and shall be completed in accordance with the Township Engineering Design and Construction Standards.
9. No grading or land clearing shall take place on the site until the site plan has been approved by the Director of Community Planning and Development and building, grading, and soil erosion and sedimentation control (SESC) permits have been issued for the project.
10. All utility service distribution lines shall be installed underground.
11. Any future building additions or revisions to the site layout will require amendments to Special Use Permit #19191.
12. The final design of the trash and recycling facilities and related enclosures shall be subject to the approval of the Director of Community Planning and Development.
13. Site accessories such as railings, benches, exterior lighting fixtures, and bicycle racks shall be of commercial quality and complement the building design. The final design and location of such accessories shall be subject to the approval of the Director of Community Planning and Development.
14. All mechanical, heating, ventilation, air conditioning, and similar systems shall be screened from view by an opaque structure or landscape materials (if at street level) selected to complement the building. Such screening is subject to the approval of the Director of Community Planning and Development.
15. Sign permits shall be required for any signage proposed on the property.
16. The provisioning center shall remain in compliance with the operational requirements established in Section 40-31 of the Code of Ordinances.
17. The special use permit shall be revoked if the applicant fails to maintain a valid Commercial Medical Marihuana Facility permit from the Township and Facility License from the State of Michigan.

This letter shall act as the Special Use Permit. The special use or construction related to the special use must commence within 24 months after the effective date of the special use permit or the permit shall be void unless an extension is requested in writing prior to the expiration date. One extension may be granted for a period not to exceed 12 months from the expiration date of the special use permit. All construction related to the special use must be completed within 36 months from the effective date of the special use permit unless an extension has been granted. It is your responsibility to comply with the conditions of the special use permit approval. Failure to comply with the conditions of approval shall result in the revocation of the special use permit approval.

Special Use Permit #19191 (Green Peak Innovations, LLC)
Northwind Drive
Page 3

If you have any questions regarding this matter, please contact Principal Planner Peter Menser at (517) 853-4576 or menser@meridian.mi.us.

Sincerely,

Mark Kieselbach
Director of Community Planning and Development

cc: John Heckaman, Chief Building Inspector
Younes Ishraidi, Chief Engineer
Tavis Millerov, Fire Inspector

From: [Keith Chapman](#)
To: [Christopher Zull](#); [Tim Schmitt](#)
Cc: [Nathan Kark](#)
Subject: RE: Skymint Provisioning Center - Northwind Drive
Date: Wednesday, March 22, 2023 2:30:13 PM

Hi Chris,

We are fine with keeping the existing assessment. Thanks for your insight.

-Keith

From: Christopher Zull <zullc@progressiveae.com>
Sent: Wednesday, March 22, 2023 12:38 PM
To: Keith Chapman <chapman@meridian.mi.us>; Tim Schmitt <schmitt@meridian.mi.us>
Cc: Nathan Kark <NKark@skymintbrands.com>
Subject: Skymint Provisioning Center - Northwind Drive

Good afternoon Tim and Keith,

In late 2019, pre-pandemic, we collected data and performed a traffic study for a proposed provisioning center on Northwind Drive, just south of Grand River. Skymint has engaged us again to provide an updated report for the permitting process. Transportation has been dramatically impacted through the pandemic however, many communities have established a new normal and are seeing similar traffic volumes compared to pre-2020.

We would like to get your feedback on an appropriate approach to completing this update. In the past we have typically used MPO growth rates to update studies to current year analysis when needed. Would this approach be acceptable for this update or should we look to collect data and perform the study over again? Since the data was collected prior to 2020 we have seen other communities accept the growth rate approach for these types of updates. I would be happy to discuss this over the phone if that would be preferred.

Thank you for your consideration,
Chris

Christopher Zull, PE
Practice Leader
zullc@progressiveae.com
office 616.988.4867
cell 616.304.5238
progressiveae.com





To: Planning Commission

From: Brian Shorkey, *AICP*, Senior Planner

Date: May 4, 2023

Re: Special Use Permit #23010 (Meridian Township Engineering Department), to construct Phase II of the MSU to Lake Lansing Connector Trail.

The Township Engineering staff has submitted a Special Use Permit (SUP) application for the construction of Phase II of the MSU to Lake Lansing Connector Trail. This segment of the trail is being constructed in the floodplain of the Red Cedar River and thus requires an SUP. A public hearing for this application was held at the Planning Commission's regular meeting on Monday, April 24, 2023. One resident expressed concern about the nearby vernal pools and whether they would be effected during construction. Engineering Staff has confirmed that they know about the vernal pools and will install silt fencing to protect them. The Planning Commission raised no other major concerns and agreed to consider a resolution to approve the special use permit at its next meeting.

This project connects to existing trails on MSU property and is identified on the Meridian Township Pathway/Bicycle Master Plan. Floodwater is not expected to be meaningfully obstructed, but a Letter of Floodplain Amendment (LOMA) will be required prior to site plan approval, as is final approval from EGLE.

Planning Commission Options

The Planning Commission may approve, approve with conditions, or deny the special use permit. A resolution to approve the request is provided. Staff **recommends approval** of Special Use Permit #23010 to construct Phase II of the MSU to Lake Lansing Trail within the floodplain of the Red Cedar River, with the conditions listed in the resolution.

Attachments

1. Resolution to approve.
2. April 24, 2023 meeting packet.

RESOLUTION TO APPROVE

**Special Use Permit #23010
MSU to Lake Lansing Connector Trail Phase II**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 8th day of May, 2022 at 6:30 p.m., Local Time.

PRESENT:

ABSENT:

The following resolution was offered by _____ and supported by _____.

WHEREAS, Township Engineering staff has submitted a request to construct Phase II of the MSU to Lake Lansing Connector Trail from Campus Hill Drive to Okemos Road; and

WHEREAS, easements or land has been acquired for the entire length of the proposed Trail; and

WHEREAS, a special use permit is required to be approved by the Planning Commission for developments in floodplain; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on April 24, 2023, and has reviewed staff material forwarded under a cover memorandum dated April 21, 2023; and

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.

WHEREAS, the proposed project is consistent with the Meridian Township Pathway/Bicycle Master Plan.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby approves Special Use Permit #23010, subject to the following conditions:

1. Prior to site plan approval, a Letter of Floodplain Amendment (LOMA) will be submitted to Planning Staff.
2. Prior to site plan approval, the proposed trail must receive approval from the State's Department of Environment, Great Lakes, and Energy (EGLE)

ADOPTED: YEAS:

NAYS:

STATE OF MICHIGAN)



To: Planning Commission

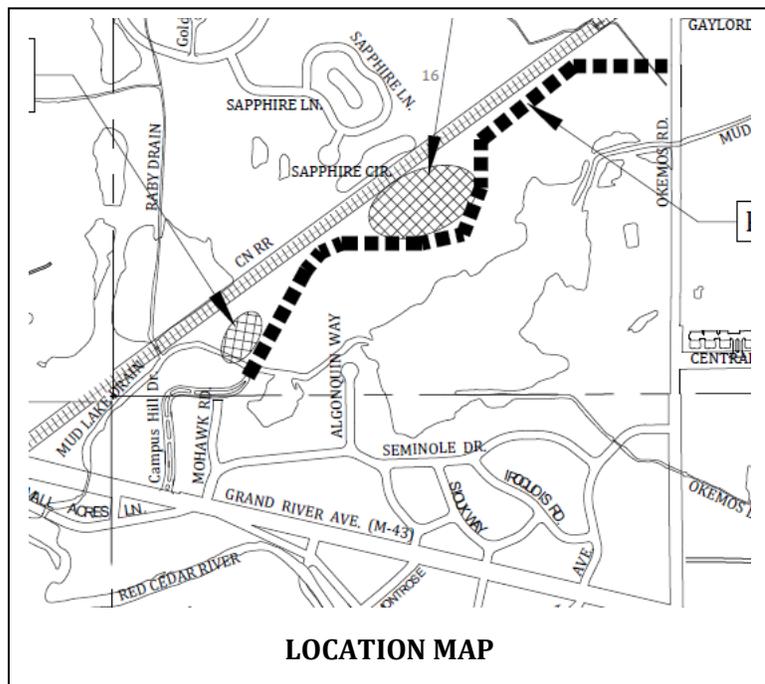
From: Brian Shorkey, Senior Planner

Date: April 21, 2023

Re: Special Use Permit #23010 (Meridian Township Engineering Department), to construct Phase II of the MSU to Lake Lansing Connector Trail.

The Township Engineering staff has submitted a Special Use Permit (SUP) application for the construction of Phase II of the MSU to Lake Lansing Connector Trail. This segment of the trail is being constructed from the end of Campus Hill Drive to the northeast until it intersects with Okemos Road and connects with the existing Township Pathway. The SUP is required because sections of the trail are being constructed in floodplains. No wetlands are affected by Phase II.

The proposed construction is the second phase of a larger, 5.5-mile extension of the Lansing River Trail and will provide immediate benefits to the adjacent properties by creating a direct, safe, and desirable connection to the MSU Campus. Likewise, this connection will allow local non-motorized users to reach across campus to access into both Lansing and East Lansing, benefiting the entire community. The construction is a mix of 10-foot HMA pavement and 14-foot timber construction. Phase II connects Phase I, which received floodplain approval from the Planning Commission in 2022, to the existing Township Pathway on the west side of Okemos Road. This project is identified on the Meridian Township Pathway/Bicycle Master Plan.



Staff Analysis

Section 86-436 – CV District includes regulations for developments in floodplains. Pedestrian and bicycle pathways are allowed as a special use in the CV district when inside of a floodway. As such, the standards for SUPs within the floodway were used. Based on those standards, Staff has the following comments:

Special Use Permit #23010 (Meridian Township Engineering Department)
Planning Commission (April 24, 2023)
Page 2

1. Structures shall not be designed for human habitation and shall have a low flood damage potential.

Comment: The trail is not used for human habitation, so this standard does not apply.

2. Structures, if permitted, shall be constructed and placed on the site so as to offer the minimum obstruction to the flow of floodwaters and whenever possible shall be constructed with the longitudinal axis parallel to the direction of flood flow.

Comment: Floodwater is not meaningfully obstructed due to the improvements. A Letter of Floodplain Amendment (LOMA) will be required prior to site plan approval. In addition, Township Engineering has applied for floodplain approval from the EGLE.

3. No special use permit shall be issued for the development of new structures, the substantial improvement or relocation of old structures, or development of any kind within the floodway area when such development, construction, improvement, or relocation would cause any increase in flood level associated with the base flood elevation.

Comment: Based on the calculations included on the concept plan, no increase in flood level is expected.

4. Excavation and shaping of the floodway shall be conducted in such a manner as to maintain or improve the flow of the base flood elevation. In no case shall the flow or impoundment capacity of the floodway be reduced. Excavation of soil, sand, gravel, and other materials for the sole purpose of providing a compensating excavation in the floodway for the placement of fill in the floodway fringe is prohibited.

Comment: The plans show that the required compensating cut is included and will be constructed at the time of the construction of the trail.

Planning Commission Options

The Planning Commission has the option to approve, approve with conditions, or deny Special Use Permit #23010. A resolution will be provided at a future meeting.

Attachments

1. Special use permit application dated December 12, 2022.
2. Letter of description dated December 9, 2022.
3. Final plan set, prepared by Township Engineering.

**CHARTER TOWNSHIP OF MERIDIAN
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT
5151 MARSH ROAD, OKEMOS, MI 48864
PLANNING DIVISION PHONE: (517) 853-4560, FAX: (517) 853-4095**

SPECIAL USE PERMIT APPLICATION

Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.

Part I

A. Applicant _____
 Address of Applicant _____
 Contact: Work _____ Home _____ Cell _____ Email _____
 Interest in property (check one): Owner Tenant Option Other _____
 (Please attach a list of all persons with an ownership interest in the property.)

B. Site Address / Location / Parcel Number _____
 Legal Description (please attach if necessary) _____
 Use for which permit is requested / Project Name _____
 Corresponding Ordinance Number _____ Current Zoning _____

C. Developer (if different than applicant) _____
 Address _____
 Contact: Work _____ Cell _____ Email _____

D. Architect, Engineer Planner or Surveyor responsible for design of project (if different from applicant):
 Name _____
 Address _____
 Contact: Work _____ Cell _____ Email _____

E. Acreage of all parcels in the project: Gross _____ Net _____

F. Explain the project and development phases: (attach)

G.

<u>Total #</u>	<u>Structures</u>	<u>Bedrooms</u>	<u>Offices</u>	<u>Parking Spaces</u>	<u>Carports</u>	<u>Garages</u>
Existing						
Proposed						

H. Square Footage: Existing Buildings _____ Proposed Buildings _____
 Usable Floor Area: Existing Buildings _____ Proposed Buildings _____

I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: (attach)

J. Existing Recreation: Type _____ Acreage _____
 Proposed Recreation: Type _____ Acreage _____
 Existing Open Space: Type _____ Acreage _____
 Proposed Open Space: Type _____ Acreage _____

K. If Multiple Housing:

Total Acres of Property _____

Acres in Floodplain _____ Percent of Total _____

Acres in Wetland (not in floodplain) _____ Percent of Total _____

Total Dwelling Units _____

Dwelling Unit Mix:

Number of Single Family Detached:	for Rent _____	Condo _____
Number of Duplexes:	for Rent _____	Condo _____
Number of Townhouses:	for Rent _____	Condo _____
Number of Garden Style Apartments:	for Rent _____	Condo _____
Number of Other Dwellings:	for Rent _____	Condo _____

L. The following support materials must be submitted with the application:

1. Nonrefundable Fee.
2. Legal Description of the property.
3. Evidence of fee or other ownership of the property.
4. Site Plan containing the information listed in the attachment to this application.
5. Architectural sketches showing all sides and elevations of the proposed buildings or structures, including the project entrance, as they will appear upon completion. The sketches should be accompanied by material samples or a display board of the proposed exterior materials and colors.
6. A Traffic Study, prepared by a qualified traffic engineer, based on the most current edition of *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation.
 - a. A traffic assessment will be required for the following:
 - 1) New special uses which could, or expansion or change of an existing special use where increase in intensity would, generate between 50 to 99 directional trips during a peak hour of traffic.
 - 2) All other special uses requiring a traffic assessment as specified in the Township Code of Ordinances, Chapter 86, Article IV, Division 2.
 - b. A traffic impact study will be required for the following:
 - 1) New special uses which would, or expansion or change of an existing special use where increase in intensity would, generate over 100 directional trips or more during a peak hour of traffic, or over 750 trips on an average day.
 - 2) All other special uses requiring a traffic assessment as specified in the Township Code of Ordinances, Chapter 86, Article IV, Division 2.
7. Natural features assessment which includes a written description of the anticipated impacts on the natural features at each phase and at project completion that contains the following:
 - a. An inventory of natural features proposed to be retained, removed, or modified. Natural features shall include, but are not limited to, wetlands, significant stands of trees or individual trees greater than 12 inches dbh, floodways, floodplains, waterbodies, identified groundwater vulnerable areas, slopes greater than 20 percent, ravines, and vegetative cover types with potential to sustain significant or endangered wildlife.
 - b. Description of the impacts on natural features.
 - c. Description of any proposed efforts to mitigate any negative impacts.

The natural features assessment may be waived by the Director of Community Planning and Development in certain circumstances.

- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, **RD, RC, RCC, RN, and CV** and **Group Housing Residential Developments** the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
 2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
 3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
 4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district **RP** requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
 2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste tailings, or unusable by-products.
 3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district **CV** requires the following:
1. A letter of approval from the State Department of Environmental Quality.
 2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
 3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
 4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district **CV** requires the following:
1. A location map including existing topographic data at two-foot interval contours.
 2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
 3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.

Part II

**SUP REQUEST STANDARDS
Township Code of Ordinances, Section 86-126**

Applications for Special Land Uses will be reviewed with the standards stated below. An application that complies with the standards stated in the Township Ordinance, conditions imposed pursuant to the Ordinance, other applicable Ordinances, and State and Federal statutes will be approved. Your responses to the questions below will assist the Planning Commission in its review of your application.

- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the long-term needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

Part III

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes No (Please check one)

By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate

Signature of Applicant

Date

Type/Print Name

Fee: _____

Received by/Date: _____

Special Use Permit Application Attachment
Site Plan Requirements Per Section 86-124(c)(4)

A site plan, drawn to a legible scale, containing the following information where applicable:

- a. Boundaries of the subject property.
- b. Total area of the subject property.
- c. Location of all existing and proposed structures.
- d. Approximate location and distance of all structures within 100 feet of the subject property.
- e. Uses of existing and proposed buildings, on the subject site.
- f. Proposed means of vehicular and pedestrian ingress and egress to the subject property.
- g. Public and private roads and streets, rights-of-way, and easements, indicating names and widths, which abut or cross the site.
- h. Existing and proposed parking spaces, and vehicular and pedestrian circulation patterns.
- i. The buildable area of the subject property indicating all required setbacks, yards and open space.
- j. Zoning classification of the subject and adjacent properties.
- k. Existing and proposed fencing, screening, landscaping, and buffers.
- l. Location and sizes of existing utilities including power lines and towers, both above and below the ground.
- m. Amount and location of all impervious surfaces.
- n. The verified boundaries of all natural water features and required setback lines.



Meridian Township
5151 Marsh Road
Okemos, MI 48864

P 517.853.4000
F 517.853.4096

Township Board:

**Patricia Herring
Jackson**
Township Supervisor

Deborah Guthrie
Township Clerk

Phil Deschaine
Township Treasurer

Scott Hendrickson
Township Trustee

Kathy Ann Sundland
Township Trustee

Marna Wilson
Township Trustee

Courtney Wisinski
Township Trustee

Frank L. Walsh
Township Manager

12/9/2022

Mr. Brian Shorkey
Senior Planner
Community Planning & Development
Meridian Township
5151 Marsh Road,
Okemos, MI 48864

Dear Mr. Shorkey:

Subject: MSU to Lake Lansing Connector Trail, Phase II – SUP Application

33-02-02-16-326-003: M16-17-3 COM AT SW COR OF SEC 16- S 88 DEG 54' 30" E 133 FT- N 01 DEG 43' E 152.25 FT TO S'LY R/W LINE OF GTRR- ALONG RR N 55 DEG 11'20" E 500 FT TO POB OF PCL- CONT ALONG SAID RR N 55 DEG 11' 20" E 2622.8 FT TO N-S 1/4 LINE- S 01 DEG 38' W 1414 FT TO N BANK OF MUD LAKE DRAIN- ALONG SAID DRAIN S 71 DEG 58' W 252.9 FT-- S 86 DEG 21' W 550 FT- N 75 DEG W 110 FT- S 60 DEG W 500 FT- S 0 DEG 45' 30" W 213 FT- N 88 DEG 54' 30" W 300 FT- N 150 FT N 30 DEG 31' 24" W 357.81 FT- W 300 FT TO BEG, SEC 16, T4N R1W.

Contact: LuAnn Maisner, Charter Township of Meridian, Parks & Recreation Department
2100 Gaylord C. Smith Ct., Haslett, MI 48840

33-02-02-20-102-004: M20-18 COM @ THE N 1/4 COR SEC 20 -N 01 DEG- 14'W ALONG NS 1/4 LN SEC 17 A DIST OF 113.83 FT TO THE S'LY R/W LN GRAND RIVER AVE -N 63 DEG 36'W ALONG R/W 1421.95 FT TO THE E LN OF SUPERVISORS REPLAT OF LOTS 105 THRU 107 SUPERVISORS PLAT NO 2 -S ALONG SD E LN 589.80 FT TO THE SE COR LOT 107 SD SUB & POB. -S 10 57'10"E 69.86 FT -S 22 DEG 25'05"E 74.30 FT -S 19 DEG 06'40"E 53.64 FT -S 06 DEG 31'50"E 76.24 FT -S 33 DEG 34'10"E 55.24 FT -S 42 DEG W 230 FT -N 48 DEG W 390 FT -N 89 DEG 35'W 410 FT TO A TRAVERSE LN ALNG RED CEDAR RIVER 3 FT FROM WATERS EDGE -N 01 DEG 44'36"E 222.26 FT TO N LN SEC 20 -S 89 DEG 35'E 748.54 FT ON N SEC LN NTO THE POB INCLUDING LANDS BETWEEN TRAVERSE LN & RIVER SEC 20 T4NR1W 6.03 AC M/L

Contact: LuAnn Maisner, Charter Township of Meridian, Parks & Recreation Department
2100 Gaylord C. Smith Ct., Haslett, MI 48840

Part II Responses:

(1) The project is consistent with the intent and purposes of this chapter.

This project will create universal access to these natural areas while both improving safety for non-motorized users and increasing the capacity of the floodplain.

(2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.

This project has long been identified on Meridian Township's Pathway/Bicycle Master Plan. Additionally, it strongly supports the Township's goals of non-motorized transportation, walkability, and recreational opportunities. Moreover, this project will **significantly** enhance the safety for local and regional non-motorized users by moving them off of a state trunkline (M-43/Grand River Ave).

(3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.

The existing areas to be improved are woodlands and will remain so with the proposed trail. This project will create a low-impact addition to this trail system, allowing access to a desirable area which was previously had limited accessibility. Additionally, by increasing the capacity of the floodplain, the community as a whole will benefit.

(4) The project will not adversely affect or be hazardous to existing neighboring uses.

All existing uses will remain the same with this project.

(5) The project will not be detrimental to the economic welfare of surrounding properties or the community.

The proposed trail, the second phase of a larger, 5.5-mile extension of the Lansing River Trail, will provide immediate benefits to the adjacent properties by creating a direct, safe, and desirable connection to the MSU Campus. Likewise, this connection will allow local non-motorized users to reach across campus to access into both Lansing and East Lansing, benefiting the entire community.

(6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.

As enhancement to an existing trail system, the only facilities which are utilized by this project are those for stormwater drainage. By increasing the floodplain capacity this project is increasing the drainage facilities.

(7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the long term needs of the proposed project.

There are no sanitary sewer or potable water systems involved in this project. The stormwater requirements for both the Ingham County Drain Commissioner and the Michigan Department of Energy, Great Lakes, and the Environment are being met. The appropriate permits are being obtained from each agency.

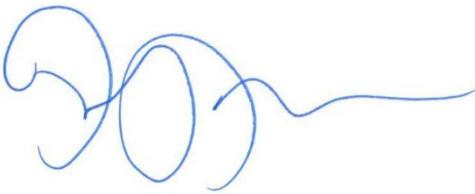
(8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.

This project involves standard construction practices with the minimum necessary equipment. Such practices and equipment are commonplace in the proposed areas and throughout the community.

(9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

This project will have a positive impact on the Township's natural resources by increasing the capacity of the floodplain. Moreover, by supporting the Township's priority of non-motorized transportation, this project strives to reduce the impact of automotive congestion in the community.

Sincerely,



Nyal Nunn, CFM

Senior Project Engineer/DPW

nunn@meridian.mi.us

W 517.853.4468 | F 517.853.4095

5151 Marsh Road | Okemos, MI 48864

meridian.mi.us

MSU TO LAKE LANSING CONNECTOR TRAIL, PHASE II CONSTRUCTION PLANS for MERIDIAN TOWNSHIP INGHAM COUNTY, MICHIGAN



Call 811 before you dig.

PUBLIC UTILITIES

AT&T TELEPHONE
337 N. ABBOTT, RM. 201
EAST LANSING, MI 48823
517.337.3660

CONSUMERS ENERGY GAS
530 W. WILLOW ST. ELECTRIC
P.O. BOX 30162
LANSING, MI 48909
517.373.6100

COMCAST CABLE TV
1070 TROWBRIDGE ROAD
EAST LANSING, MI 48823
517.332.1012

MERIDIAN TOWNSHIP WATER MAINS
5151 MARSH RD. SANITARY SEWER
OKEMOS, MI 48864 PATHWAYS
517.853.4440

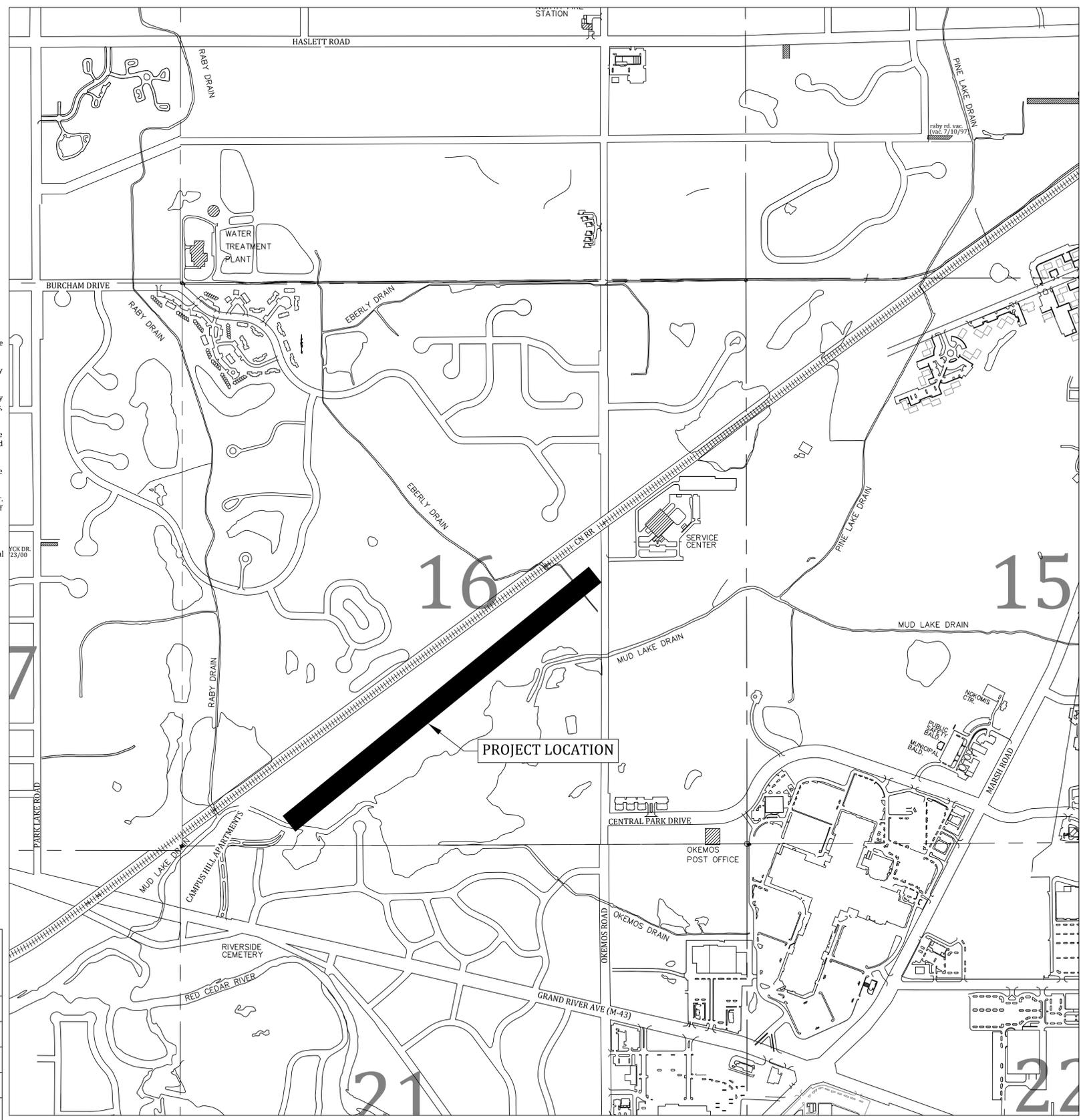
WOLVERINE PIPE LINE PETROLEUM PIPELINE
9105 VALLEYWOOD LANE
PORTAGE, MI 49024-5251
231.323.2491

INGHAM COUNTY DRAIN DRAINS
COMMISSIONER STORM SEWER
707 BUHL ST.
MASON, MI 48854
517.676.8395

INGHAM COUNTY ROAD DEPT PUBLIC ROADS AND
301 BUSH ST. RIGHTS OF WAY
MASON, MI 48854
517.676.9722

SOIL EROSION & SEDIMENTATION CONTROL NOTES

- All soil erosion and sediment control (SESC) work shall conform to the standards and specifications of the Ingham County Drain Commissioner's Office and Meridian Township.
- Daily inspections shall be made by the contractor for effectiveness of SESC measures. Any necessary repairs shall be performed without delay.
- Erosion of any sediment from work on the site shall be contained on-site and not allowed to collect on any off-site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, ponds, and wetlands.
- The Contractor shall apply temporary SESC measures when required and as directed on these plans. The Contractor shall remove temporary measures as soon as permanent stabilization of slopes, ditches, and other changes have been established.
- Staging the work shall be done by the Contractor as directed in these plans and as required to ensure progressive stabilization of disturbed earth.
- Soil erosion control practice shall be established in the early stages of construction by the Contractor. Sedimentation control practices shall be applied as a perimeter defense against any transporting of soil off the site.
- The Contractor shall preserve natural vegetation as much as possible.
- Vegetative stabilization of all disturbed areas shall be established within 15 days of completion of the final grading.



STANDARD CONSTRUCTION NOTES

- The Contractor shall notify the Charter Township of Meridian, Department of Public Works, Office of Engineering 517-853-4440 a minimum of 72 hours prior to the start of construction of public utilities or of construction within the public right-of-way.
- All construction shall conform to the current standards and specifications of the Charter Township of Meridian which are included as part of these plans in effect at the time of construction.
- After the completion of construction of public utilities or construction within public right-of-way, the contractor must request a final inspection. Any punchlist items resulting from the final inspection must be resolved prior to final release and acceptance.
- The existing utilities indicated on the plans are in accordance with available information. It shall be the contractor's obligation to verify the exact location of all existing utilities, which might affect this job.
- The contractor shall notify "MISS DIG" 1-800-482-7171 at least 72 hours prior to the start of construction.
- The contractor shall at all times be aware of inconvenience caused to the abutting property owners and the general public. Where the contractor does not remedy undue inconveniences, the Charter Township of Meridian, upon four hours notice, reserves the right to perform the work and deduct the cost therefore from the money due the contractor.
- A Registered Land Surveyor provided by the contractor at the contractor's expense shall replace all property irons and monuments disturbed or destroyed by the contractor's operations.
- Contractor shall provide Owner and Township Engineer a copy of written permission to use private property for storage of equipment and materials or for his construction operations.
- Trench backfill under existing or proposed roadways, driveways, and parking areas, shall be sand or gravel, placed in 12" layers (maximum) and consolidated to 95% of maximum density as measured by modified proctor unless otherwise noted.
- Trees and shrubs are to be protected during construction and bored where necessary.
- Existing fences shall be removed and restored to their original condition or better where in conflict with construction.
- Driveways, culverts, ditches, drain tile, tile fields, drainage structures, etc., that are disturbed by the contractor's operations shall be immediately restored.
- All established lawn areas disturbed by the contractor's operations shall be resodded with matching sod. All other areas shall be seeded and mulched. Seeding and mulching shall be done in accordance with the General Specifications.
- All ditch slopes shall have established vegetation and be protected from erosion.
- All utility poles in close proximity to construction shall be supported in a manner satisfactory to the utility owner.
- Onsite parking and sanitary facilities shall be provided for construction workers. The facilities shall be constructed and operated (with minimal impact to the surrounding area) to the satisfaction of the Township.

PATHWAY NOTES

- Pathways and sidewalks shall be four (4) inch thick concrete except at driveways where they shall be six (6) inch (residential) or seven (7) inch (commercial) thick concrete.
- Three (3) inches of compacted sand base shall be placed under all pathways and sidewalks.
- All bituminous aprons shall be two and one-half (2½) inches thick, unless otherwise noted.
- Property irons shall be maintained by the Contractor.
- All existing concrete and bituminous to be removed shall be sawcut. All bituminous removal shall be considered incidental to construction.
- All aggregate base material shall be four (4) inches of 22A.
- All tree (less than 6") and shrub removal shall be considered part of subgrade preparation.
- Location of new plant material shall be as directed by the Engineer, and shall be installed in accordance with guidelines established by the A.N.L.A.
- All plant material not marked for removal shall be protected.
- Bituminous drives shall be sawcut 18" on either side of proposed pathway.
- The maximum longitudinal slope is 5% (up to an absolute maximum of 8½% at the direction of the Engineer) and the maximum cross slope is 2%.
- Expansion joints shall be placed at approximately 100' intervals and shall be ½" thick. Contraction joints shall be sawcut to a depth of ¼ of the depth of the concrete.
- All lumber to be pressure treated (Osmose 33 or equal) to 0.4 retention.
- All items not covered under a specific pay item shall be considered incidental.

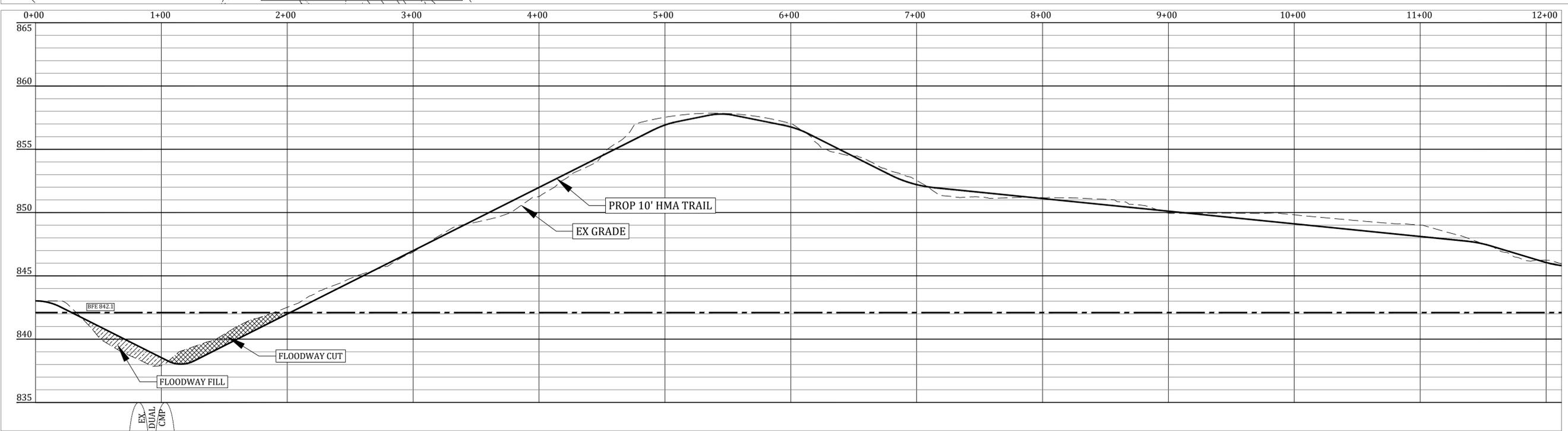
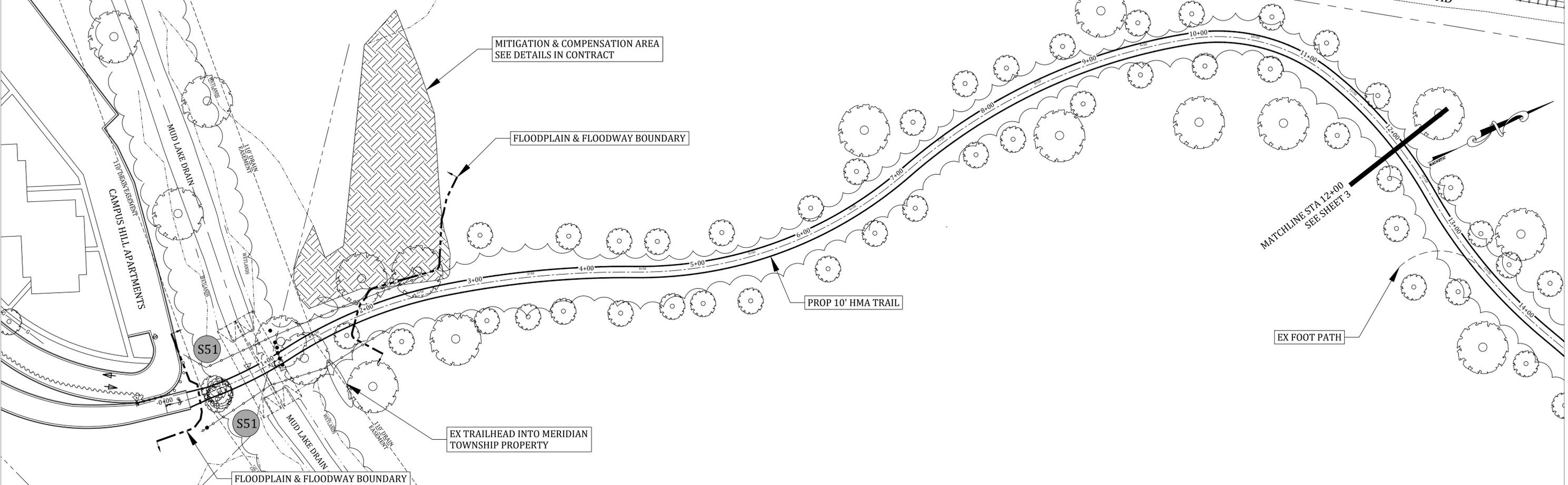
RECOMMENDED CONSTRUCTION SCHEDULING & SEQUENCING

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
INSTALL SESC MEASURES												
PERFORM COMPENSATING CUTS												
ROUGH GRADE FOR TRAIL												
INSTALL HMA TRAIL												
CLEANUP AND RESTORATION												
REMOVE SESC MEASURES												

SHEET INDEX

SHT #	TITLE
1	COVER SHEET
2	0+00 - 12+00
3	12+00 - 24+00
4	24+00 - 36+00
5	36+00 - END
6	PATHWAY DETAIL SHEET

S51 SILT FENCE Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.



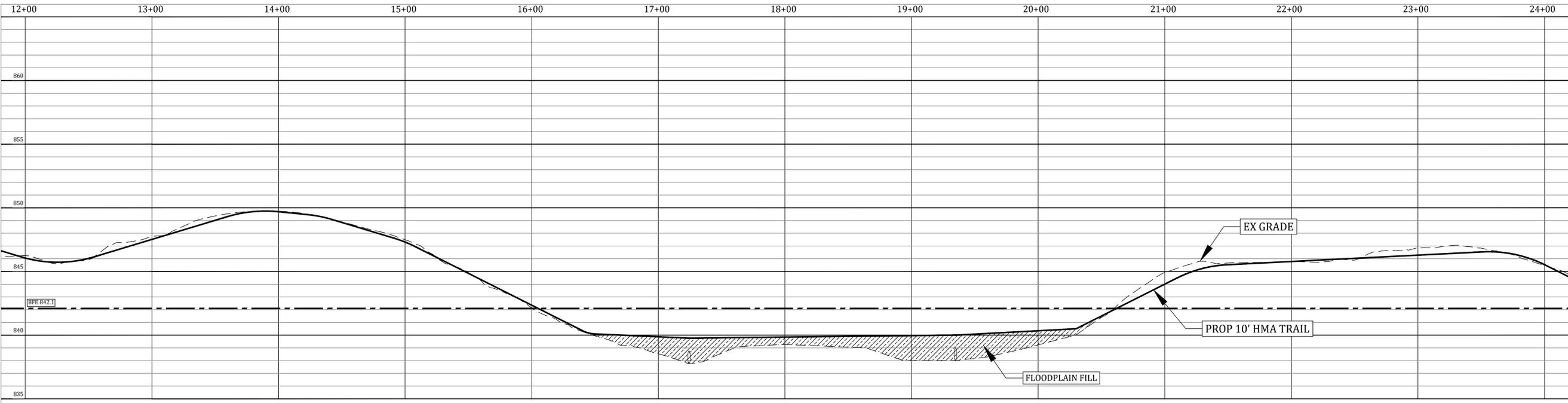
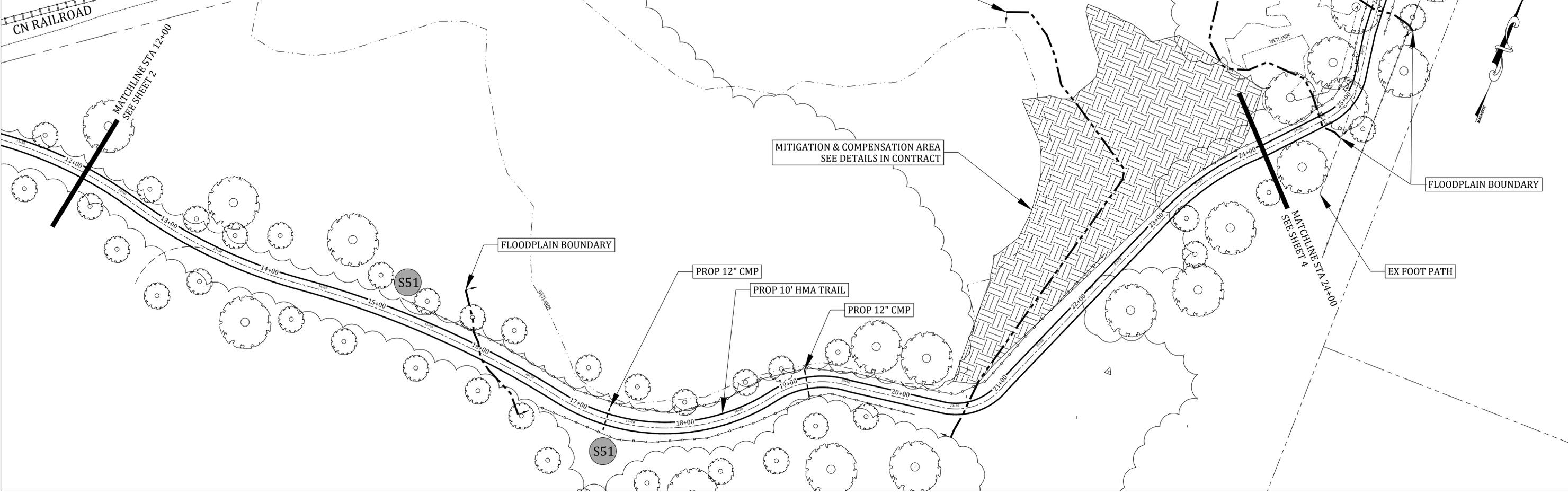
- PINE
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- BUSH
- STUMP
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- SAN. MH
- F.H.
- CATV BOX
- TELE. MH
- U.P. W/ GUY WIRE
- STREET SIGN
- SIGN
- SAN. MH
- STM. MH
- TELE. BOX
- WTR. MH
- CATV MH
- LIGHT
- SITE BORING
- MAILBOX
- P.I.
- C.M.P.
- C.B.
- G.V.
- F.H.
- CATV (COMCAST)
- % OF ROADS
- ELEC. (CONSUMERS)
- GAS (CONSUMERS)
- TELE. (SBC)
- PROPERTY LINE
- R.O.W. (I.C.R.C., MDOT)
- EX. SAN. MAIN
- EX. STM. (I.C.D.C.)
- EX. WTR. MAIN
- PROPOSED SAN.
- PROPOSED STM.
- PROPOSED WTR.
- PROPOSED 7' PATHWAY

Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

Meridian Charter Township Ingham County, Michigan 10' WIDE OFF-ROAD TRAIL		REVISIONS: DATE BY COMMENTS 12.09.22 NN Prelim Plan	
MSU TO LAKE LANSING CONNECTOR TRAIL, PHASE II GRAND RIVER AVE - OKEMOS ROAD STA 0+00 - STA 12+00		SCALE: 1" = 40' HOR 1" = 4' VERT	
DRAWN BY: NN 12.09.22	CHECKED BY: YI	SHEET 2 OF 6	

S51 SILT FENCE Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.



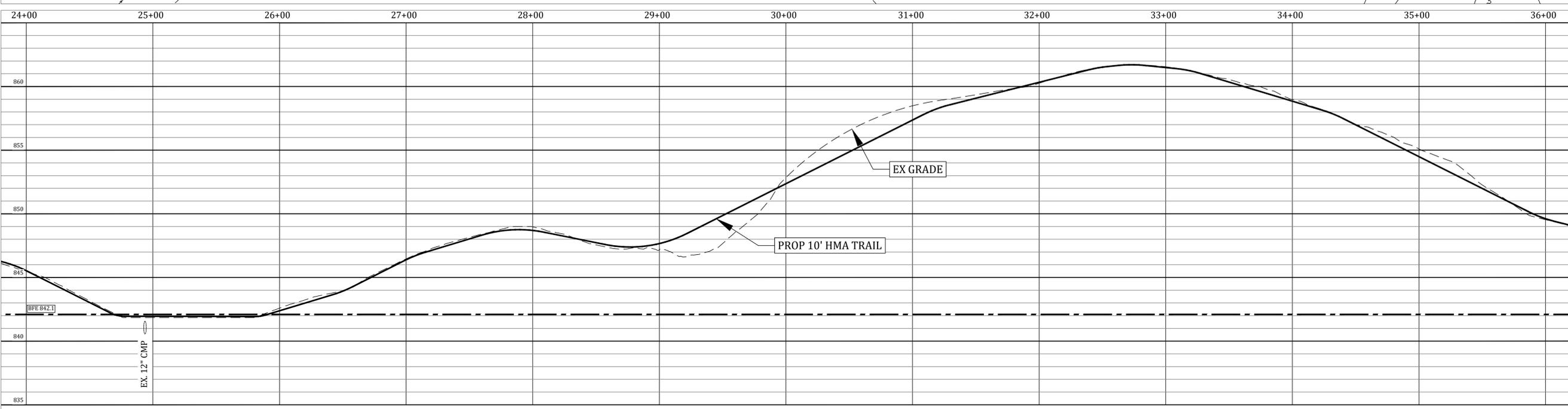
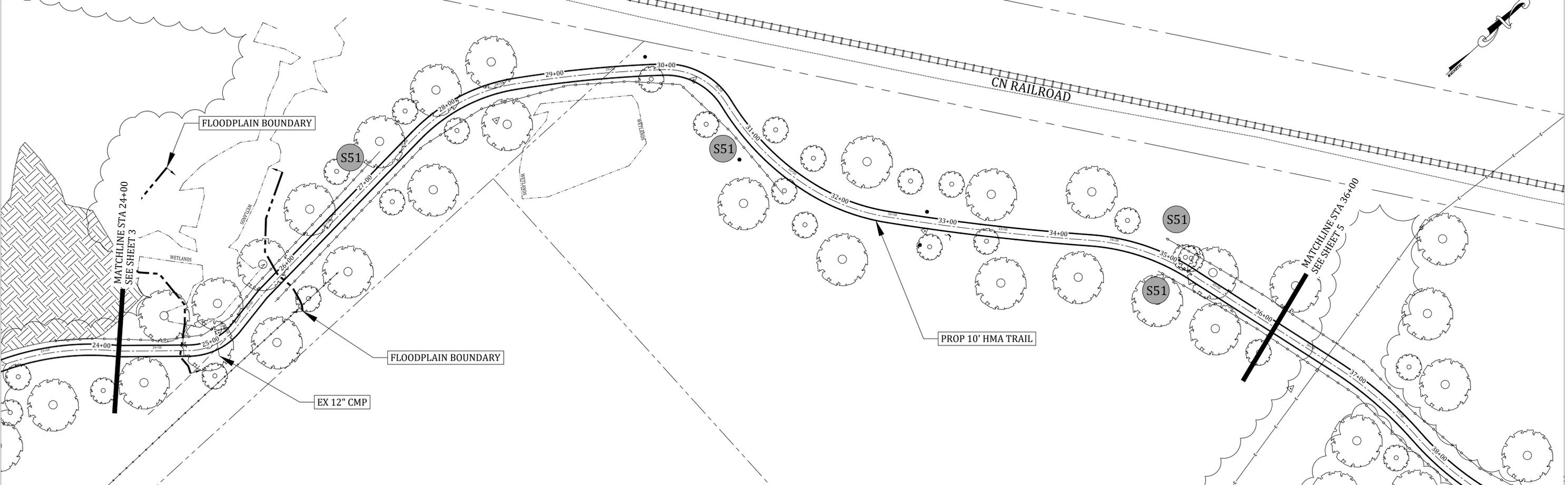
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- TELE. MH
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- TELE. (SBC)
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- EX. STM. (I.C.D.C.)
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- PROPOSED STM.
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Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

Meridian Charter Township Ingham County, Michigan 10' WIDE OFF-ROAD TRAIL		REVISIONS: DATE BY COMMENTS 12.09.22 NN Prelim Plan	
MSU TO LAKE LANSING CONNECTOR TRAIL, PHASE II GRAND RIVER AVE - OKEMOS ROAD STA 12+00 - STA 24+00		SCALE: 1" = 40' HOR 1" = 4' VERT	
DRAWN BY: NN 12.09.22	CHECKED BY: YI	SHEET 3 OF 6	

S51 SILT FENCE Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.



- PINE
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- CATV (COMCAST)
- OF ROADS
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- TELE. (SBC)
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- PROPOSED SAN.
- PROPOSED STM.
- PROPOSED WTR.
- PROPOSED 7' PATHWAY

Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

Meridian Charter Township
 Ingham County, Michigan
10' WIDE OFF-ROAD TRAIL

MSU TO LAKE LANSING CONNECTOR TRAIL, PHASE II
 GRAND RIVER AVE - OKEMOS ROAD
 STA 24+00 - STA 36+00

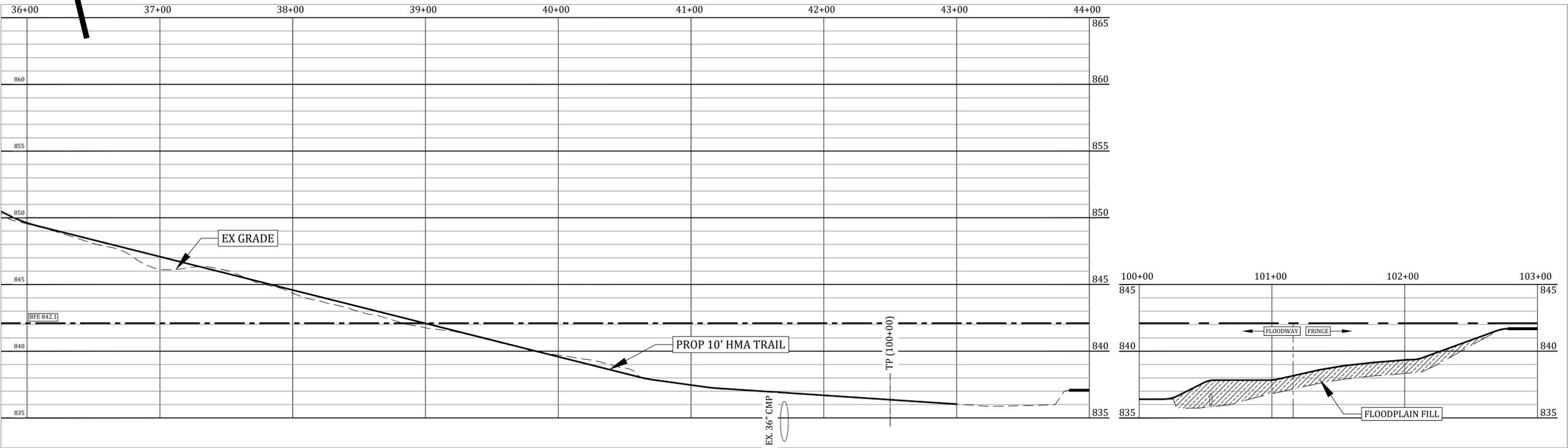
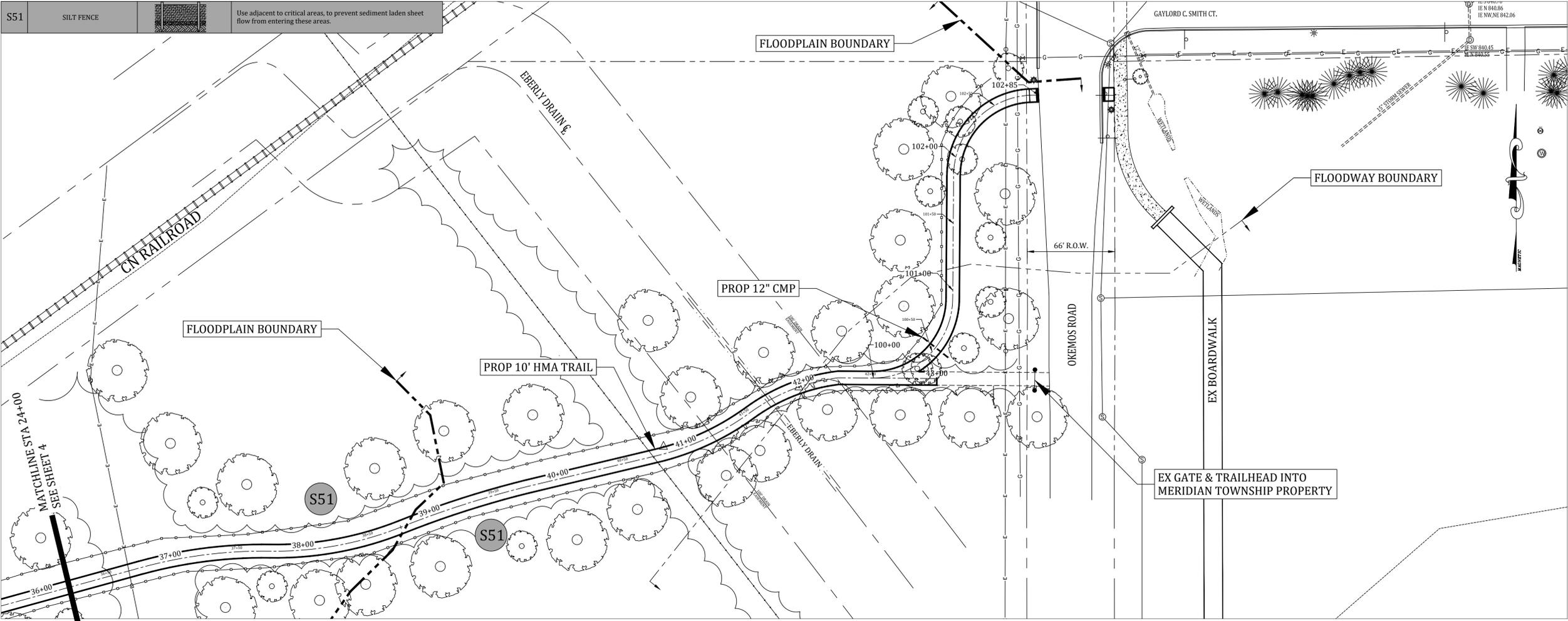
DRAWN BY: NN 12.09.22 CHECKED BY: YI

REVISIONS:		
DATE	BY:	COMMENTS:
12.09.22	NN	Prelim Plan

SCALE:
 1" = 40' HOR
 1" = 4' VERT

SHEET 4 OF 6

S51 SILT FENCE Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.



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Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

**Meridian Charter Township
Ingham County, Michigan**

10' WIDE OFF-ROAD TRAIL

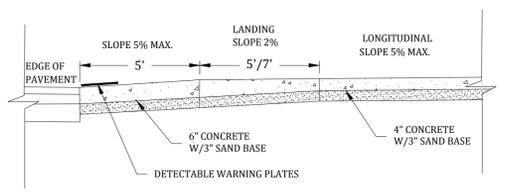
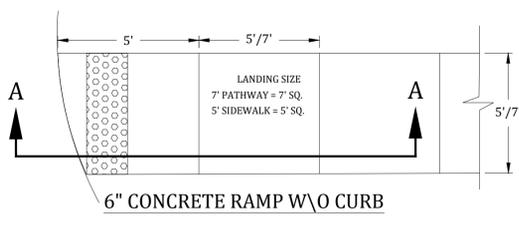
MSU TO LAKE LANSING CONNECTOR TRAIL, PHASE II
GRAND RIVER AVE - OKEMOS ROAD
STA 36+00 - END

DRAWN BY: NN 12.09.22 CHECKED BY: YI

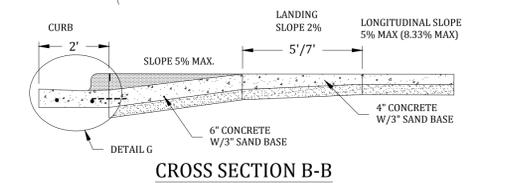
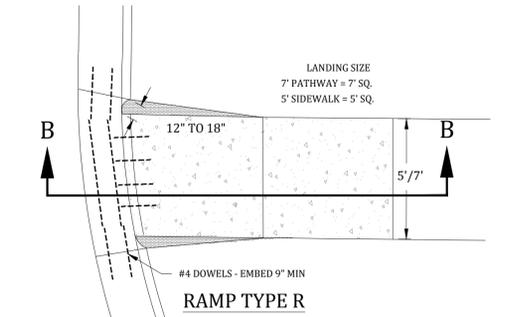
REVISIONS:		
DATE	BY:	COMMENTS:
12.09.22	NN	Prelim Plan

SCALE:
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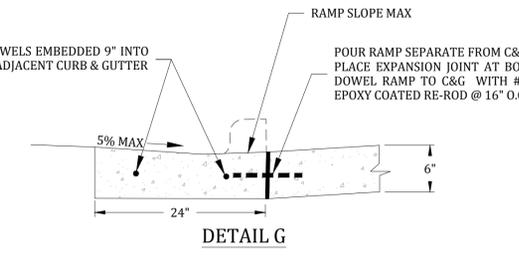
SHEET 5 OF 6



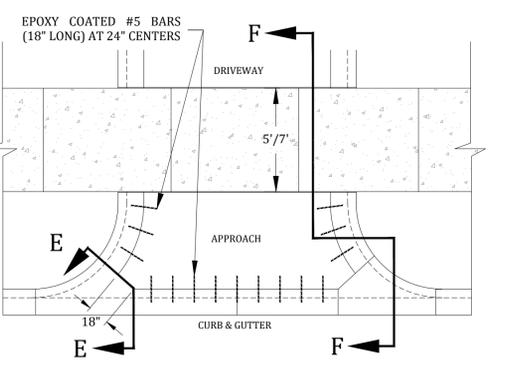
CROSS SECTION A-A



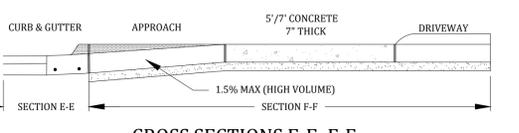
CROSS SECTION B-B



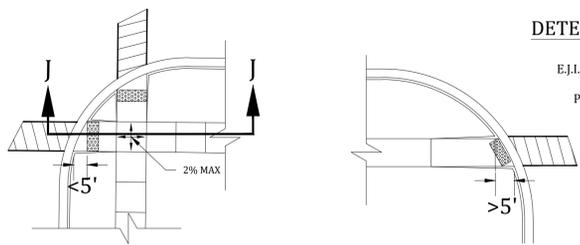
DETAIL G



TYP. COMMERCIAL DRIVEWAY PLAN

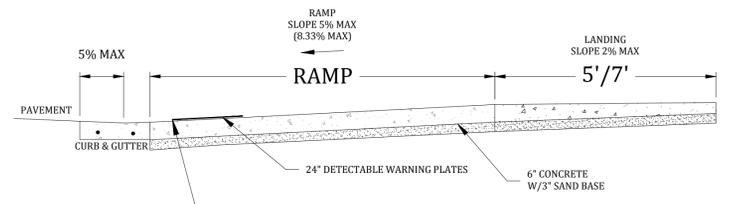


CROSS SECTIONS E-E, F-F



RAMPS LOCATED IN RADIUS

RAMP LOCATED IN RADIUS

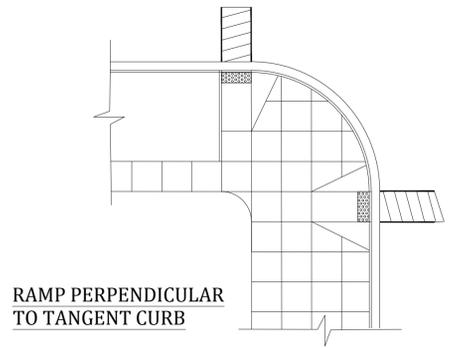


SECTION J-J

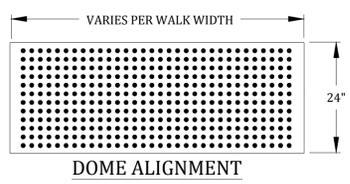
GRADE BREAKS AT THE TOP AND BOTTOM OF PERPENDICULAR CURB RAMPS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL. AT LEAST ONE END OF THE BOTTOM GRADE BREAK SHALL BE AT THE BACK OF CURB.

DETECTABLE WARNING DETAILS

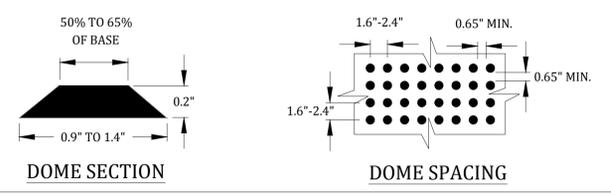
E.J.L.W. 7005 DETECTABLE WARNING PLATE
SIZES AVAILABLE 12", 18" & 24"
PLATES MUST BE ASPHALTIC COATED



RAMP PERPENDICULAR TO TANGENT CURB

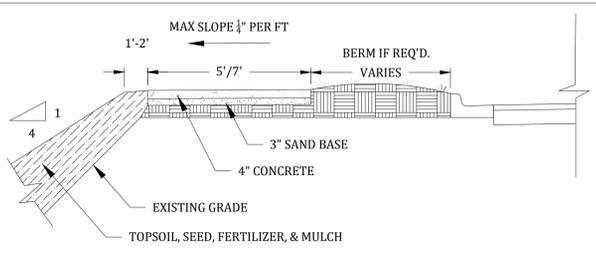


DOMES ALIGNMENT

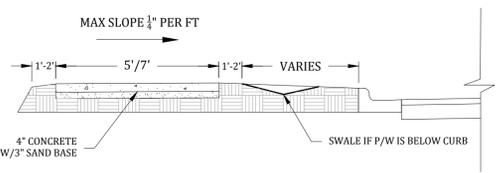


DOMES SECTION

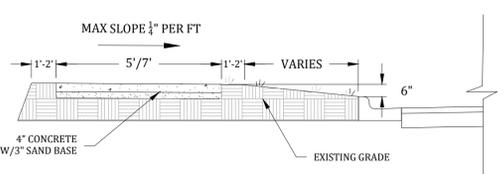
DOMES SPACING



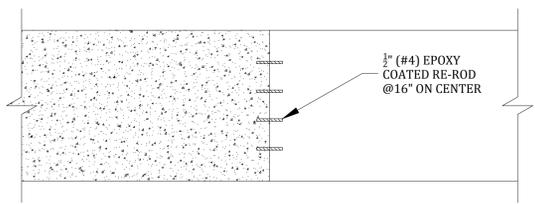
EMBANKMENT & BERM CROSS SECTION



SWALE CROSS SECTION

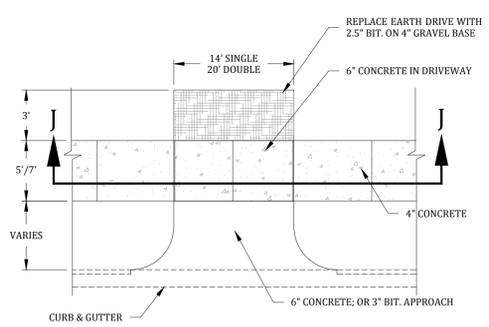


TYPICAL CROSS SECTION

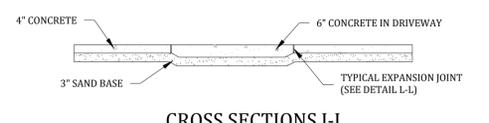


CONCRETE PINNING DETAIL

CROSS SECTION- (NO SCALE)

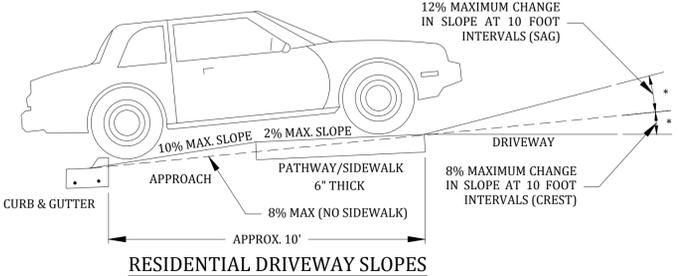


TYP. RESIDENTIAL DRIVEWAY PLAN

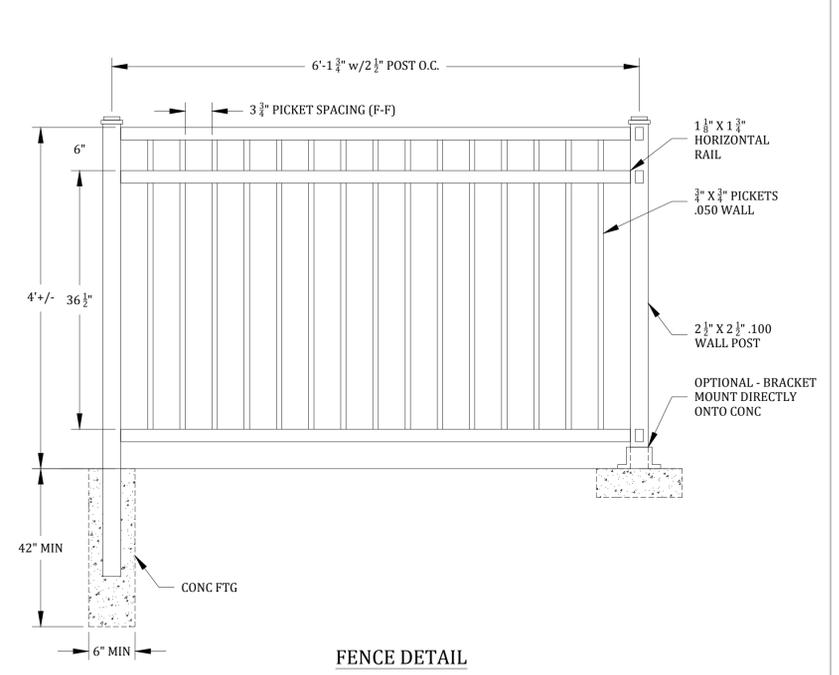


CROSS SECTIONS J-J

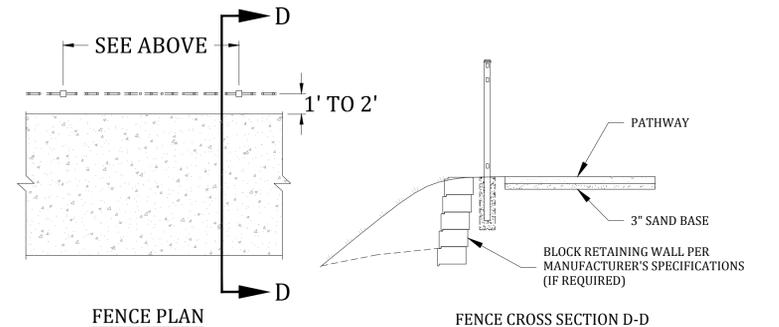
- GENERAL NOTES
1. SIDEWALKS/PATHWAYS SHALL BE 4" THICK CONCRETE EXCEPT AT DRIVEWAYS.
 2. SIDEWALKS/PATHWAYS THRU DRIVES SHALL BE: 6" (RESIDENTIAL); 7" (MULTI-RESIDENTIAL & COMMERCIAL)
 3. 3" OF COMPACTED SAND BASE SHALL BE PLACED UNDER ALL SIDEWALKS/PATHWAYS.
 4. ALL BITUMINOUS APRONS SHALL BE 2 1/2" THICK UNLESS NOTED OTHERWISE
 5. PROPERTY IRONS SHALL BE MAINTAINED BY THE CONTRACTOR.
 6. ALL EXISTING CONCRETE AND BITUMINOUS TO BE REMOVED SHALL BE SAWCUT. ALL CONCRETE AND BITUMINOUS REMOVAL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
 7. ALL AGGREGATE BASE SHALL BE 22A, 4" THICK.
 8. ALL TREE AND BUSH REMOVAL SHALL BE CONSIDERED PART OF SUB-GRADE PREPARATION.
 9. LOCATION OF NEW PLANT MATERIAL SHALL BE AS DIRECTED BY THE ENGINEER, AND SHALL BE INSTALLED IN ACCORDANCE WITH GUIDELINES ESTABLISHED BY THE A.A.O.N.
 10. ALL PLANT MATERIAL NOT MARKED FOR REMOVAL SHALL BE PROTECTED.
 11. BITUMINOUS DRIVES SHALL BE SAWCUT 18" ON EITHER SIDE OF PROPOSED PATHWAY.



RESIDENTIAL DRIVEWAY SLOPES



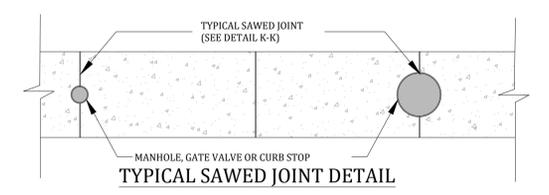
FENCE DETAIL



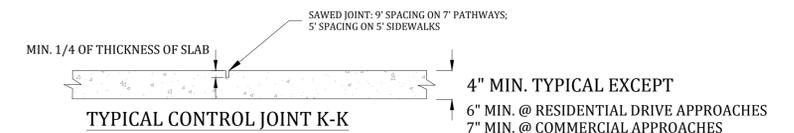
FENCE PLAN

FENCE CROSS SECTION D-D

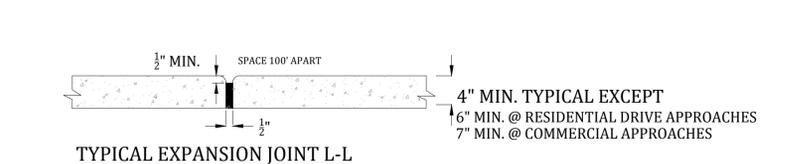
NOTE: FENCE POSTS CAN BE ANCHORED TO THE PATHWAY, THEN PATHWAY MUST BE WIDENED TO EIGHT FEET



TYPICAL SAWED JOINT DETAIL



TYPICAL CONTROL JOINT K-K



TYPICAL EXPANSION JOINT L-L

Meridian Charter Township
Ingham County, Michigan
ENGINEERING

5' SIDEWALK & 7' PATHWAY
DETAIL SHEET

REVISIONS:		
DATE:	BY:	COMMENTS:
04/30/03	JG	ADD REBAR TO CURB & GUTTER
08/01/05	JG	CLARIFY RAMP DETAILS
12/20/06	JG	FENCE POST IN PVC PIPE W/SAND
12/29/08	JG	RAMPS W/ DETECTABLE WARNING PLATES
08/14/09	NN	LANDING CROSS SECTIONS
03/18/16	JG	DOWEL DETAIL FOR NEW/EX CONCRETE
01/22/18	NN	SPEC & DETAIL SHEET OVERHAUL
04/12/19	NN	FENCE & RET. WALL REVISION
12/03/20	NN	FENCE REVISION

SCALE: NONE
DRAWN BY: JG 08/01/05
CHECKED BY: YI 08/01/05

PAGE: 6 OF 6
PAGE: PATHWAY DETAIL SHEET 2021.DWG



To: Planning Commission

From: Brian Shorkey, Senior Planner

Date: May 4, 2023

Re: Special Use Permit #23011 (Haslett Gallery, Inc.), to construct a medical marijuana provisioning center at 2119A Haslett Road, Haslett, MI 48840.

Haslett Holdings Inc. (Applicant) has submitted a Special Use Permit (SUP) application for the construction of a 4,000 square foot medical marijuana provisioning center at 2119A Haslett Road, Haslett, MI 48840 (Subject Property). The Subject Property is approximately 1.92 acres in size and is zoned C-1 - Commercial. A public hearing for this application was held at the Planning Commission's regular meeting on Monday, April 24, 2023. The Planning Commission discussed the application with the Applicant's attorney and agreed to consider a resolution to approve the special use permit at its next meeting.

The Planning Commission raised the question about potential odor concerns and suggested that odor would be mitigated if the marijuana was prepackaged. The Applicant has confirmed that the marijuana is prepackaged and has agreed to this as a condition of approval. In addition, Staff has provided the details of the Applicants odor mitigation system from their marijuana application.

Planning Commission Options

The Planning Commission may approve, approve with conditions, or deny the special use permit. A resolution to approve the request is provided. Staff **recommends approval** of Special Use Permit #23011 for the construction of a medical marijuana provisioning center at 2119A Haslett Road, with the conditions listed in the resolution.

Attachments

1. Resolution to approve SUP #23011.
2. April 24, 2023 meeting packet.

RESOLUTION TO APPROVE

**Special Use Permit #23011
(Haslett Gallery, Inc.)**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 8th day of May, 2023 at 6:30 p.m., Local Time.

PRESENT:

ABSENT:

The following resolution was offered by Commissioner _____ and supported by Commissioner _____.

WHEREAS, Haslett Gallery, Inc. has submitted a request to establish a 1,510 square foot commercial medical marihuana provisioning center in an existing shopping center located at 2119 Haslett Road; and

WHEREAS, the Township Board adopted both zoning and non-zoning ordinances allowing commercial medical marihuana facilities in designated overlay areas throughout the Township at its meeting on May 21, 2019; and

WHEREAS, the zoning ordinance established seven designated areas in the Township where commercial medical marihuana facilities are permitted and identified the zoning districts in which each of the five types of commercial medical marihuana facilities can locate; and

WHEREAS, the non-zoning ordinance established the application process, the facility types allowed, the number of permits, and the general operational standards for the different types of commercial facilities, which include growers, processors, secure transporters, provisioning centers, and safety compliance facilities; and

WHEREAS, the overlay areas adopted by the Township Board allow commercial medical marihuana provisioning centers in the I (Industrial), C-1, C-2, C-3 (Commercial), and RP (Research and Office Park) zoning districts subject to the approval of a special use permit reviewed by the Planning Commission and approved by the Township Board; and

WHEREAS, the subject site is located entirely within Overlay Area 2 and is appropriately zoned C-1 (Commercial), which allows commercial medical marihuana provisioning centers by special use permit; and

WHEREAS, the proposed commercial medical marihuana provisioning center meets the required setbacks from any public or private K-12 school, church, place of worship or other religious facility, library, preschool, or child care center established in Section 40-31 of the Code of Ordinances; and

WHEREAS, the proposed commercial medical marihuana provisioning center will not adversely affect adjacent land uses or the health, safety, and general welfare of the community; and

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.

**Resolution to Approve
SUP #23011 (Haslett Gallery, Inc.)
Page 2**

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Special Use Permit #23011, subject to the following conditions:

1. Approval is in accordance with the site plan prepared by LSG Engineers & Surveyors dated January 3, 2018 (revision date July 29, 2019) and received by the Township on January 10 2023.
2. Approval is in accordance with the floor plan prepared by The Peabody Group Architects & Designers dated April 30, 2020 and received by the Township on January 10 2023.
3. Approval is in accordance with the sign program prepared by the Peabody Group Architects & Designers dated April 30, 2020 and received by the Township on January 10 2023.
4. Approval is subject to the applicant receiving approval of a Commercial Medical Marihuana Facility permit by the Director of Community Planning and Development.
5. Approval is subject to the applicant receiving Final Approval for a medical marihuana license from the State of Michigan, Department of Licensing and Regulatory Affairs.
6. The applicant shall obtain and maintain any and all other applicable permits, licenses, and approvals necessary to operate the proposed commercial medical marihuana provisioning center from the State of Michigan, Township, and any other applicable agencies. Copies of all permits, licenses, and approvals shall be submitted to the Department of Community Planning and Development.
7. Any proposed future expansion, additions, or revisions to the proposed tenant space, building, or site, will require an amendment to Special Use Permit #23011.
8. All applicable conditions from previous approvals for the construction of the shopping center shall remain in effect.
9. A sign permit shall be required to install the proposed tenant wall sign.
10. The provisioning center shall remain in compliance with the operational requirements established in Section 40-31 of the Code of Ordinances.
11. The special use permit shall be revoked if the applicant fails to maintain a valid Commercial Medical Marihuana Facility permit from the Township and Facility License from the State of Michigan.
12. Consistent with the information provided by the Applicant's representative at the Public Hearing on April 24, 2023, all marijuana received shall be prepackaged.

ADOPTED: YEAS:

NAYS:

STATE OF MICHIGAN)

) ss

**Resolution to Approve
SUP #23011 (Haslett Gallery, Inc.)
Page 3**

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Chairperson of the Planning Commission of the Charter Township Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 8th day of May, 2023.

Mark Blumer
Planning Commission Chairperson



To: Planning Commission

From: Brian Shorkey, Senior Planner

Date: April 21, 2023

Re: Special Use Permit #23011 (Herbana), to construct a medical marijuana provisioning center at 2119A Haslett Road, Haslett, MI 48840.

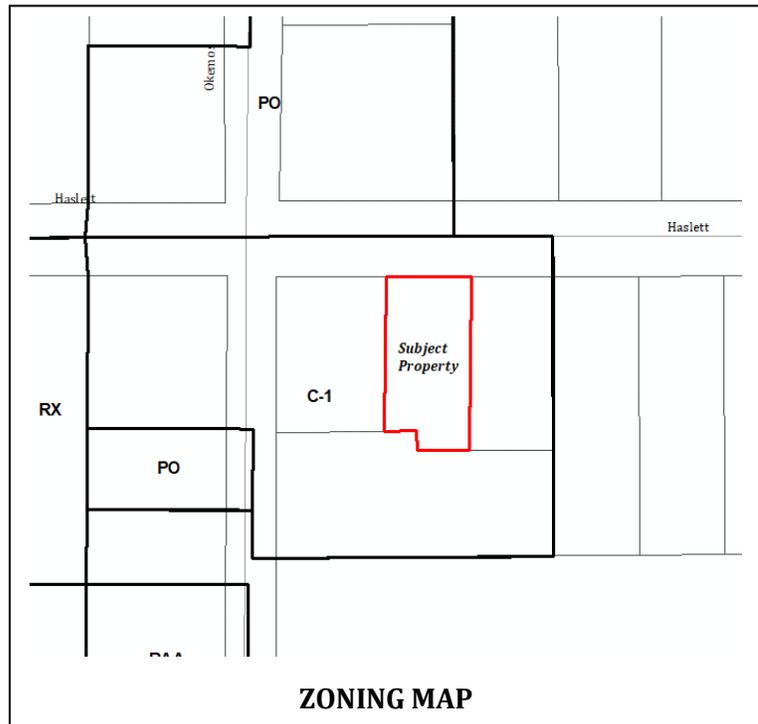
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Sec. 40-30 (e)(3) of the Township Code of Ordinances requires a successful medical marijuana applicant to apply for a special use permit, as provided in Sec. 86-124, within 60 days or issuance of a conditional approval for a medical marijuana facility permit. This SUP application fulfills that requirement and is identical to the SUP application that the Planning Commission reviewed and recommended for approval in 2019 (SUP #19131). Construction started and stopped after SUP #19131 was approved and the approval expired before Covid19 affected the community.

The Applicant is planning on finishing the remodel to the existing suite on the commercial strip on the southeast corner of Haslett and Okemos Roads.

Zoning and Future Land Use

The Subject Property is located in the C-1 – Commercial zoning district. The same zoning designation applies to the adjacent properties and the west, east, and south. The property to the north is zoned PO – Professional Office. The property to the east of the commercial strip center is zoned RR – Rural Residential.



**Special Use Permit #23011 (Herbana)
Planning Commission (April 24, 2023)
Page 2**

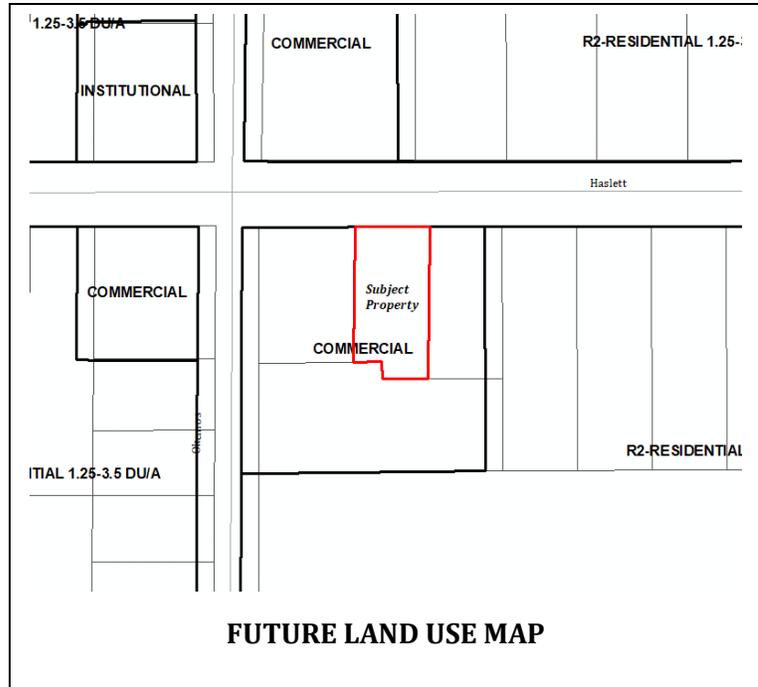
The 2017 Master Plan designates the subject site as Commercial. This designation applies to the properties adjacent to the north, west, and south. The remainder of the strip center is designated as Commercial as well, but the property adjacent to the strip center to the east is designated as R2 - Residential.

Staff Analysis

Applications for special land use permits are reviewed under Sec. 86-126 in the Zoning Ordinance. Based on that review, Staff has the following comments:

1. The Subject Property lies within Medical Marijuana Overlay Area 2. This has been approved of one of only seven areas in the Township where medical marijuana facilities are allowed. The proposed use conforms with this.
2. The proposed medical marijuana dispensary conforms with the Subject Property's zoning and Future Land Use designations.
3. The material attached to the medical marijuana application, approved on January 23, 2023, detailed the safety and odor control that was being proposed by the Applicant. The safety and odor control systems meet the Township's requirements.
4. The Subject Property is adequately served by water and sewer. An attached traffic assessment verifies that the existing roads are capable of handling the traffic and no traffic study is required.
5. A sign plan was submitted as required by Sec. 40-30. The proposed signage meets the requirements of the Township sign ordinance.

Based on the information provided by the Applicant, Staff has identified no major concerns that would negatively impact surrounding properties or the Township at large while reviewing the proposed Special Use Permit. If the project is approved by the Planning Commission and the Township Board, the applicant will be required to submit for Site Plan Review before work on the project can begin. Site Plan Review is a detailed staff-level analysis of the project which includes reviews of storm water, utilities, landscaping, grading, and other issues to ensure compliance with all applicable ordinances as well as confirmation of approvals from local agencies such as the Ingham County Drain Commissioner's Office and Road Department.



Planning Commission Options

The Planning Commission has the option to recommend approval, approval with conditions, or denial of Special Use Permit #23011. A resolution will be provided at a future meeting.

Attachments

1. SUP permit application with attachments, dated March 20, 2023 and received by the Township on March 20, 2023.
2. Sign permit and attached sign plan, dated March 20, 2023 and received by the Township on March 20, 2023.

**CHARTER TOWNSHIP OF MERIDIAN
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT
5151 MARSH ROAD, OKEMOS, MI 48864
PLANNING DIVISION PHONE: (517) 853-4560, FAX: (517) 853-4095**

SPECIAL USE PERMIT APPLICATION

Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.

Part I

- A. Applicant Haslett Gallery Inc.
 Address of Applicant 106 N. Fourth Ave. Ste. 302 Ann Arbor, MI 48104
 Telephone - Work 734.474.5881 Home _____ Fax _____ Email james@arborholdings.com
 Interest in property (circle one): Owner _____ Tenant _____ Option _____ Other _____
 (Please attach a list of all persons with an ownership interest in the property.)
- B. Site address / location / parcel number 2119A Haslett Rd. Haslett, MI 48840
 Legal description (please attach if necessary) Please see Attached Site Plan - Attachment A
 Current zoning C-1 Commercial
 Use for which permit is requested / project name Medical Marhuana Provisioning Center
 Corresponding ordinance number Charter Township Of Meridian, Code of Ordiances, Chapter 40
- C. Developer (if different than applicant) N/A
 Address _____
 Telephone – Work _____ Home _____ Fax _____
- D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:
 Name LSG Engineers & Surveyors, INC.
 Address 3135 Pine Tree Road, Suite D, Lansing MI 48911
 Telephone – Work 517.393.2902 Home _____ Fax 517.393.2608
- E. Acreage of all parcels in the project: Gross 1.92 Net 1.92
- F. Explain the project and development phases: This project encompasses doing a slight renovation on a current 1,510 sq ft suite located in the 16,617 sq ft building in order to open a licensed medical marihuana provisioning center.
- G. Total number of: The answers to G and H encompass the entire building and site
 Existing: structures 1 bedrooms 0 offices 7 parking spaces 87 carports 0 garages 0 Type text here
 Proposed: structures 0 bedrooms 0 offices 0 parking spaces 0 carports 0 garages 0
- H. Square footage: existing buildings 16,617 proposed buildings 0
 Usable Floor area: existing buildings 16,617 proposed buildings N/A
- I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: Please see Attached Employment chart - Attachment B
- J. Existing Recreation: Type N/A Acreage 0
 Proposed Recreation: Type N/A Acreage 0
 Existing Open Space: Type Green Area Acreage .36
 Proposed Open Space: Type N/A Acreage 0

- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, **RD, RC, RCC, RN, and CV** and **Group Housing Residential Developments** the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
 2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
 3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
 4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district **RP** requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
 2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste tailings, or unusable by-products.
 3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district **CV** requires the following:
1. A letter of approval from the State Department of Environmental Quality.
 2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
 3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
 4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district **CV** requires the following:
1. A location map including existing topographic data at two-foot interval contours.
 2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
 3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.

Part II

SUP REQUEST STANDARDS

PLEASE see Attachment G

PLEASE see Attachment G

Township Code of Ordinances, Section 86-126

Applications for Special Land Uses will be reviewed with the standards stated below. An application that complies with the standards stated in the Township Ordinance, conditions imposed pursuant to the Ordinance, other applicable Ordinances, and State and Federal statutes will be approved. Your responses to the questions below will assist the Planning Commission in its review of your application.

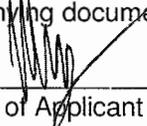
- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

Part III

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes No (Please check one)

By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate



 Signature of Applicant
 James Daly

3/20/23

 Date

Type/Print Name

Fee: _____

Received by/Date: _____

Special Use Permit Application Attachment
Site Plan Requirements Per Section 86-124(c)(4)

Please see Attachment A

A site plan, drawn to a legible scale, containing the following information where applicable:

- a. Boundaries of the subject property.
- b. Total area of the subject property.
- c. Location of all existing and proposed structures.
- d. Approximate location and distance of all structures within 100 feet of the subject property.
- e. Uses of existing and proposed buildings, on the subject site.
- f. Proposed means of vehicular and pedestrian ingress and egress to the subject property.
- g. Public and private roads and streets, rights-of-way, and easements, indicating names and widths, which abut or cross the site.
- h. Existing and proposed parking spaces, and vehicular and pedestrian circulation patterns.
- i. The buildable area of the subject property indicating all required setbacks, yards and open space.
- j. Zoning classification of the subject and adjacent properties.
- k. Existing and proposed fencing, screening, landscaping, and buffers.
- l. Location and sizes of existing utilities including power lines and towers, both above and below the ground.
- m. Amount and location of all impervious surfaces.
- n. The verified boundaries of all natural water features and required setback lines.

VII. Odor Mitigation

Odor mitigation is a serious concern, and an area we view as a minimum ante to play as part of being a good member of our community. Our approach to odor mitigation has the advantages of being dead simple, reliable, and proven.

We use a simple 3-prong approach to prevent, contain, and eliminate odors.

1) **Prevent odor and odor producing activities from ever entering the building.**

Marihuana odors come almost exclusively from bulk marihuana products and related handling/packaging activities. We intend to operate this provisioning center “pre-packaged”, meaning all materials entering the facility will already be sealed in airtight packaging and portioned for sales. This method eliminates +99% of odors before they ever occur and it’s an operating model that we’re uniquely positioned to accommodate.

Right now, there are virtually no state licensed growers who are offering pre-packaged marihuana flower. While this may change in the future, and a provisioning center licensee could choose to restrict their purchasing to only pre-packaged growers, we can deliver on pre-packaged inventory today. Because we’re a “vertically integrated” cannabis operator (holding the state’s first Processor license), we are able to source medicine in bulk from any licensed grower and pre-package it for retail sales off-site at our processing facility.

2) **Contain minor odors to specific areas and enclosures.**

We take additional steps to contain inadvertent odors. Some of them are very simple, like vacuum sealing packaged concentrates, which occasionally have trace residue on the packaging.

Most importantly, rather than trying to seal building areas up air tight (which fails for the most obvious reason: doors throughout the facility need to be opened frequently), we utilize positive and negative room pressure gradients to contain trace odors to specific interior areas of the building. These pressure gradients are created as part of the HVAC design and controls, and we would note that they are nearly imperceptible but highly effective.

3) **Eliminate trace odors with carbon filtration.**

As a final precaution, the HVAC design places in-line activated carbon filtration at key points, with a particular emphasis on the exhaust.

To ensure the entire system is operating correctly, a manager walks the exterior of the building twice each day to verify there are no detectible odors.

Our commitment and approaches to odor mitigation have been thoroughly proven. We use them every day at our existing facilities. One of those is a historic building built in 1847 located in the heart of downtown Ann Arbor. It’s a challenging structure for odor controls, yet thousands of pedestrians walk within 5’ of the building every day. We have never had an odor complaint at any of our facilities since they began operating over two years ago.

Attachment A

LEGAL DESCRIPTION:

PARCEL A (TAX ID 33-02-09-427-026)
 LOT 42 AND LOT 43, EXCEPT THE SOUTH 156 FEET,
 PLEASANT ACRES, AS RECORDED IN LIBER 13 OF PLATS,
 PAGE 50, INGHAM COUNTY RECORDS

PARCEL B (TAX ID 33-02-09-427-027)
 LOT 44, EXCEPT THE WEST 45 FEET OF THE SOUTH 156'
 AND EXCEPT THE EAST 70 FEET OF THE SOUTH 129.5 FEET,
 PLEASANT ACRES, AS RECORDED IN LIBER 13 OF PLATS,
 PAGE 50, INGHAM COUNTY RECORDS

PARCEL C (TAX ID 33-02-09-427-028)
 LOT 45, EXCEPT THE SOUTH 129.5 FEET, PLEASANT ACRES,
 AS RECORDED IN LIBER 13 OF PLATS, PAGE 50, INGHAM
 COUNTY RECORDS

GENERAL NOTES:

- 1) A current Title Commitment and Schedule B Section II Supportive Documentation has not been furnished. The effect of easements upon this parcel, other than indicated, are unknown.
- 2) Base drawing information obtained from LSG Project No. 00.1236, dated January 22, 2003.
- 3) The location of certain improvements, including sidewalks along Haslett Road and Okemos Road and general revisions are the result of Google Earth aerial imagery and field observations.
- 4) Per internet search, there are no public or private K-12 schools within 1,000 feet or any known churches, places of worship or other religious facilities, libraries, preschools, or licensed childcare centers within 500 feet of the subject property.

SITE DATA

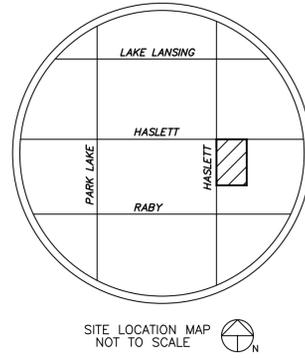
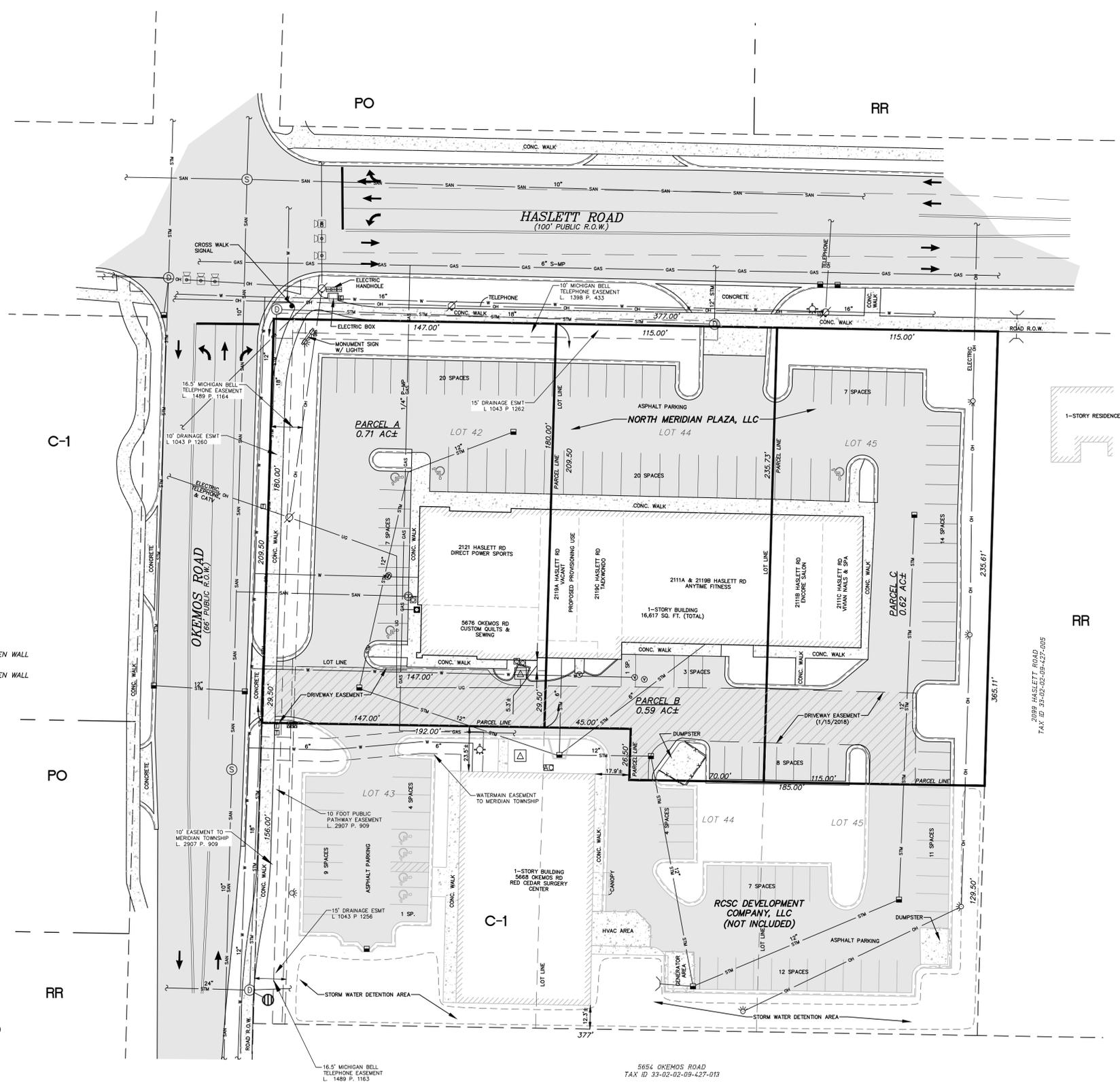
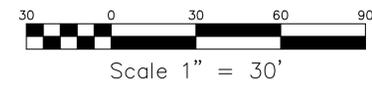
TOTAL SITE AREA: 1.92 AC / 83,804 SQ. FT.

PARKING PROVIDED:
 REGULAR SPACES: 83 SPACES
 ADA SPACES: 4 SPACES
 TOTAL PROVIDED: 87 SPACES

SETBACKS: FRONT: 100'
 REAR: 50' WHERE ADJACENT TO RESIDENTIAL
 35' ADJACENT TO RESIDENTIAL W/ SCREEN WALL
 SIDE: 50' WHERE ADJACENT TO RESIDENTIAL
 35' ADJACENT TO RESIDENTIAL W/ SCREEN WALL
 15,330 SQ. FT. / 0.36 AC

OPEN SPACE: 67,954 SQ. FT. / 1.56 ACRES

ZONING CLASSIFICATION: C-1



LEGEND:

- ⊕ = STORM MANHOLE
- ⊕ = CATCHBASIN
- STM — = STORM LINE
- ⊕ = SANITARY MANHOLE
- SAN — = SANITARY EASEMENT
- ⊕ = SANITARY LINE
- ⊕ = ELECTRIC MANHOLE
- ⊕ = UTILITY POLE
- OH — = GUY WIRE
- OH — = OVERHEAD UTILITY LINE
- UG — = UNDERGROUND UTILITY LINE
- ⊕ = TRANSFORMER
- ⊕ = AC-UNIT
- ⊕ = TELEPHONE MANHOLE
- ⊕ = ROOF DRAIN
- ⊕ = TELEPHONE PEDESTAL
- ⊕ = ELECTRIC PEDESTAL
- ⊕ = ELECTRIC METER
- ⊕ = LIGHT POLE
- ⊕ = SIGN
- ⊕ = MONUMENT SIGN
- ⊕ = WATER MANHOLE
- ⊕ = WELL
- ⊕ = WATER LINE
- ⊕ = WATER VALVE
- ⊕ = FIRE HYDRANT
- ⊕ = MONITORING WELL
- ⊕ = GAS METER
- ⊕ = GAS VALVE
- ⊕ = GAS LINE
- X — X — = FENCE LINE
- ⊕ = DECIDUOUS TREE
- ⊕ = CONIFEROUS TREE
- ⊕ = CURB AND GUTTER
- ⊕ = TREE LINE
- ⊕ = SET IRON & CAP #31603
- ⊕ = FOUND IRON AS NOTED
- ⊕ = SECTION CORNER
- ⊕ = DISTANCE NOT TO SCALE
- ⊕ = YARDBASIN
- ⊕ = POST INDICATOR VALVE
- ⊕ = WALL HYDRANT
- ⊕ = MAIL BOX
- ⊕ = SATELLITE DISH
- ⊕ = ASPHALT
- ⊕ = CONCRETE
- ⊕ = RECORDED
- ⊕ = MEASURED

DATE	DESCRIPTION	REVISIONS
11/13/2019	SUP SITE PLAN	
7/29/2019	ADDED EASEMENTS AT HASLETT & OKEMOS ROADS, PARKING LOT LIGHT POLES AND GENERAL REVISIONS	
7/22/2019	FIELD UPDATE	
1/18/2019	ADDED DRIVEWAY EASEMENT	
1/12/2018	REVISED PARCEL LINES	

LSG
 Engineers & Surveyors

DOUGLAS K. RICHARDSON
 PROFESSIONAL SURVEYOR
 No. 31603

3135 PINE TREE ROAD
 SUITE D
 LANSING, MI 48911
 PH. (517) 393-2902
 FAX (517) 393-2608
 www.lsg-es.com

HASLETT GALLERY, INC.
 106 N 4TH AVENUE
 ANN ARBOR, MICHIGAN 48104

SUP SITE PLAN
 OF
MERIDIAN PLAZA
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MI

MISS DIG
 811
 Know what's below.
 Call before you dig.

FILE	SUP.dwg
FIELD WORK	N/A
DRAWN BY	WSF
CHECKED BY	DKR
DATE OF PARCEL SURVEY	8/11/2017
SCALE	1" = 30'
HOR.	N/A
VERT.	N/A
PROJECT NO.	2003
SHEET NO.	1 OF 1

FILE: L:\2003 (SOUTH MERIDIAN PLAZA, HASLETT)\2019 SUP SITE PLAN\SUP.DWG - PLOT DATE: 11/15/2019 8:49 AM BY: Joseph Lev SCALE: 1:1

Attachment B

Attachment B – Employment and Hours of Operation

Employment

Due to our currently operating provisioning center, HG has a comprehensive understanding of staffing needs at this location. The table below shows average daily staffing along with total staff anticipated. HG will not be working in shifts, however staffing needs will be different depending on the time of day. Finally, HG anticipates hiring full, rather than part, time employees for all positions.

Position	FTE's			Avg. Total Staff
	Avg. Daily Staffing	Morning/Afternoon Shift	Afternoon/Evening Shift	
C-Level Executives	1	0-1	0-1	2
Managers	2	1	1-2	4
Consultants	4	2	4	8
Receptionists	1.5	1	2	2
Total	8.5	5	9	16

Hours of Operation

HG will operate from 8 am to 5 pm weekdays, and limited hours on weekends.

Day of Week	Hours of Operation
Monday	9:00 am to 8:00 pm
Tuesday	9:00 am to 8:00 pm
Wednesday	9:00 am to 8:00 pm
Thursday	9:00 am to 8:00 pm
Friday	9:00 am to 8:00 pm
Saturday	9:00 am to 8:00 pm
Sunday	9:00 am to 8:00 pm

Attachment C

LEASE AGREEMENT

THIS LEASE, is made this ___1st___ day of ___September___ 2018, by and between **North Meridian Plaza LLC**, a Michigan Limited Liability Company (hereafter referred to as "Landlord") and **Meridian RE Ventures LLC**, a Michigan Limited Liability Company (hereafter referred to as "Tenant")

WITNESSETH:

ARTICLE 1 - LEASED PREMISES

SECTION 1.01 LEASED PREMISES: Landlord, in consideration of the rents to be paid and the covenants to be performed by Tenant, does hereby demise and lease unto Tenant, and Tenant hereby leases from Landlord, subject to all the terms and conditions of this Lease including the Rules and Regulations in Exhibit C and all other reasonable rules and regulations as prescribed from time to time by Landlord, those certain premises described in Section 2.01 and 2.02, and shown on the floor plan marked Exhibit "A" attached hereto and made a part hereof (the "Leased Premises") together with the right to used in common with others entitled thereto, the Common Areas (as hereinafter defined). The term "Property" as used herein refers to the development commonly known by the "Property Names" and located at the "Property Address" specified in Section 2.01 together with the land on which the development is situated and any other improvements now or hereafter located thereon. The term "Building" as used herein refers to the building containing the Leased Premises.

ARTICLE 2 - BASIC LEASE PROVISIONS

The Section in this Article 2 that furnish data to be incorporated in other Sections of this Lease shall be deemed part of the context of this Lease when considered together with the further definitions, explanations and provisions of the applicable Sections in this Lease.

- SECTION 2.01 LOCATION of LEASED PREMISES:**
Property Address: 2119 Haslett Rd, Haslett MI 48840
Municipality: Meridian Township
Suite Address: A
- SECTION 2.02 LEASED AREA:** 1600 square feet (approximate measurement)
- SECTION 2.03 LEASE TERM:** 6 Years
- SECTION 2.04 COMMENCEMENT DATE:** December 1st 2018
- SECTION 2.05 EXPIRATION DATE:** November 31st 2023
- SECTION 2.06 RENEWAL OPTION:** 3 - 5 Year options. Provided the Tenant has not been in any material default at any time during the Lease' the Tenant shall have the option to renew this Lease upon written notifications to Landlord at least 180 days prior to the expiration of the preceding lease period for three (3) additional five (5) year terms upon the same terms and conditions, except for a 3% annual increase in rent.
- SECTION 2.07 MINIMUM BASE RENT:** \$ 4,000.00 per month / \$ 48,000.00 annually with 3% annual increases.
- | | | |
|--------------------|-------------------------|--------------|
| 2 nd yr | \$ 4,120.00 per month / | \$ 49,440.00 |
| 3 rd yr | \$ 4,243.60 per month / | \$ 50,923.20 |
| 4 th yr | \$ 4,370.90 per month / | \$ 52,450.90 |
| 5 th yr | \$ 4,502.03 per month / | \$ 54,024.42 |
| 6 th yr | \$ 4,637.09 per month / | \$ 55,645.15 |
- SECTION 2.08 CONSUMER PRICE INDEX ADJUSTMENT:** N/A
- SECTION 2.09 UTILITIES:** Upon Possession of the Premises. Tenant shall pay all utilities used or consumed in the Leased Premises or furnished thereto.
- SECTION 2.10 JANITORIAL:** Tenant shall, at Tenant's sole cost and expense, self-clean the Leased Premises.

SECTION 2.11 **NET CHARGES:** Tenant shall pay Tenant's proportionate share of the "Net Charges" defined in Article 6, which include, without limitation: real estate taxes, insurance, common area utilities and common area maintenance. **Net charges are estimated at \$4.00 PSF for a total of \$ 533.33 per month in addition to the base rent.**

SECTION 2.12 **SECURITY DEPOSIT:** \$ 4,000.00

SECTION 2.13 **PERMITTED USE:** Properly licensed cannabis facility as approved by the State of Michigan and Meridian Township for a medical marihuana provisioning center and/or recreational use contemplated by Initiated Law 1 of 2018 The Michigan Regulation and Taxation of Marihuana Act (MRTMA) but not for processing, growing or storage for transport as contemplated by the MRTMA or Act 281 of 2016 (Medical Marihuana Facilities Licensing Act).

SECTION 2.14 **TENANT'S INSURANCE:** The limits of liability under the insurance required to be carried by Tenant shall not be less than One Million Dollars (\$1,000,000.00) Combined Single Limit for both bodily injury and property damage for each occurrence.

SECTION 2.15 **RENT CHECK PAYEE:** All rent and other payments required to be made by Tenant to Landlord shall be made payable to the order of: North Meridian Plaza LLC Automatic withdrawals starting on January 1, 2019

SECTION 2.16 **ADDRESS FOR PAYMENTS and NOTICES:**

A. Landlord copies to:

1. North Meridian Plaza LLC
c/o Luigi G. & Irene L. Baldino
1812 N. College Rd Mason, MI 48854

B. Tenant copies to:

1. Meridian RE Ventures LLC
c/o James F. Daly
201 S 1st St Apt 701
Ann Arbor, MI 48104

2. Benjamin D. Joffe PLLC
106 N. Fourth Ave. Ste. 302
Ann Arbor, MI 48104

SECTION 3.01 **ARTICLE 3 - SPECIAL LEASE PROVISIONS**

CANCELATION OF LEASE BY TENANT: If the Tenant, within 18 months of the "Commencement Date" which is defined as December 1, 2018, is unable to procure the proper approvals, permits, licenses or other necessities in order to conduct a cannabis provisioning center, he shall have the option to cancel and terminate the lease at any time during the 18 months, including all covenants, obligations, and promises contained therein, with no other penalties, upon providing written notice and proof of denial to the Landlord.

ARTICLE 4 - TERM and POSSESSION

SECTION 4.01 **TERM:** The term of this Lease shall be the period of time specified in Section 2.03 (the "Original Term"), commencing on the date specified in Section 2.04 (the "Commencement Date") and ending on the date specified in Section 2.05 (the "Expiration Date"). As used in this Lease, "Lease Term" shall include the Original Term and any renewal or extension thereof.

SECTION 4.02 **TENANT IMPROVEMENTS:** Landlord agrees, at Tenant's cost and expense, that Tenant may perform and complete the Tenant Improvements, if any, in the Leased Premises as set generally forth in Exhibit B subject to, i) architectural plans showing all contemplated work

Handwritten signature and initials in the bottom right corner of the page.

which shall be subject to Landlord's approval which shall not be unreasonably be withheld; and, ii) Tenant obtaining all governmental approvals for the work. Approval of plans and obtaining of permits is not a condition precedent to the effectiveness of this Lease. Said approvals, permits and construction activity is the sole and exclusive responsibility of Tenant.

SECTION 4.03 **TENANT'S ACCEPTANCE OF THE LEASED PREMISES:** Except for those Tenant Improvements, if any, set forth in Exhibit B of this Lease, Tenant hereby accepts the Lease Premises in the present "AS IS" condition, with all faults and defects; provided, however, if Tenant discovers a latent defect at any time during the Lease Term, then Tenant shall notify Landlord, in writing, of such defect, and Landlord shall cause same to be repaired. Should such defect be the result of action or inaction on the part of Tenant, Tenant's agents or assigns, all such costs of repair shall be borne by Tenant. Tenant's taking possession of the Leased Premises shall be conclusive evidence as against Tenant that the Leased Premises were in satisfactory condition when Tenant took possession.

SECTION 4.04 **SURRENDER of the PREMISES:** Upon the expiration or other termination of this Lease, or upon the exercise by Landlord of its right to re-enter the Leased Premises without terminating this Lease, Tenant shall immediately surrender the Leased Premises to Landlord together with all alterations, improvements, additions, fixtures and appurtenances thereto, in broom-clean condition and in good order, condition and repair (ordinary wear and tear excepted), failing which Landlord may restore the Leased Premises to such condition at Tenant's expense. Tenant shall also surrender all keys to the Leased Premises to Landlord at the place then established for the payment of rent. Upon or prior to the expiration or other termination of this Lease or of Landlord taking possession of the Leased Premises, Tenant shall remove Tenant's equipment, furniture, trade fixtures and all other items of property on the Leased Premises (including all exterior and interior signs) not belonging to landlord. Tenant shall, at Tenant's expense, promptly repair any damage caused by any such removal, and shall restore the Leased Premises to the condition existing prior to the installation of the items so removed. If Tenant shall fail or refuse to remove any such property from the Leased Premises pursuant to this Section, Tenant shall be conclusively presumed to have abandoned the same, and title thereto shall thereupon pass to Landlord without any cost to Landlord either by set off, credit, allowance or otherwise, and Landlord may, at Landlord's option, accept title to such property, and, whether or not Landlord accepts such title, Landlord may at Tenant's expense (i) remove the same or any part in any manner that Landlord shall choose, repairing any damage caused by such removal, and (ii) store, destroy or otherwise disposed the same without incurring liability to Tenant or any other person.

SECTION 4.05 **HOLDING OVER:** Should Tenant or any party claiming under Tenant hold over and retain possession of the Leased Premises or any part thereof after the expiration or termination of this Lease or of Tenant's right of possession, whether by lapse of time or otherwise, such holding over shall not be deemed to extend the Lease Term or renew this Lease, and such holding over shall be an unlawful detainer and such parties shall be subject to immediate eviction and removal. On the first day of each month or portion thereof for which Tenant hold over, Tenant shall pay to Landlord as liquidated damages, a sum equal to 125% of the Minimum Base Rent in effect for the last full month of the Lease term, and Tenant shall also pay all cost incurred and damages sustained by Landlord, whether direct or consequential, on account of such holding over. At the option of Landlord, expressed in written notice to Tenant and not otherwise, such holding over shall constitutes a tenancy from month to month on the terms and Tenant shall vacate and surrender the Lease Premises to Landlord upon Tenant being given effect for the last full month of Lease Term and Tenant shall vacate and surrender the Lease Premises to Landlord upon Tenant being given thirty (30) days prior written notice from Landlord to vacate. Notwithstanding the foregoing provision, no holding over by Tenant or acceptance of rent by Landlord after such expiration or termination shall operate to extend or renew this Lease. The foregoing provisions of this Section are in addition to and do not affect Landlord's right of re-entry or any other rights of Landlord hereunder or as otherwise provided by law.

ARTICLE 5 - RENT

SECTION 5.01 **PAYMENT of RENT:** The term "rent as used in this Lease shall mean and include all Minimum Base Rent, Additional Rent and all other payments required under this Lease. Tenant shall pay to Landlord as Minimum Base Rent for the Leased Premises the total sum specified in Section 2.07, payable in consecutive monthly installments as specified in

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Section 2.07. The monthly installments of Minimum Base Rent shall be paid, in advance, in lawful money of the United States of America, without any prior demand therefore and without any deduction or setoff whatsoever, on the Commencement Date and continuing thereafter on or before the first day of each and every calendar month during the Lease Term. All rent shall be paid by Tenant to Landlord payable to the order of the payee specified in Section 2.16 and delivered or mailed to Landlord at the address specified in Section 2.17 A, or any other address and payee Landlord may specify from time to time by written notice to Tenant. If the Commencement Date of this Lease shall be other than the first day of a calendar month or the Expiration Date of this Lease shall be a day other than the first day of a calendar month, then the monthly rent for such first or last fractional month shall be prorated on the basis of the number of days during the month this Lease is in effect in relation to the total number of days in such month.

SECTION 5.02 ADDITIONAL RENT: "Additional Rent" includes all other sums of money or other charges of whatever nature required to be paid by Tenant under this Lease, including the Exhibits hereto, together with all interest and charges which may be added for nonpayment or late payment of rent: and shall, unless some other pattern of payment is specified in writing by Landlord, be due and payable upon demand without any deductions or setoff whatsoever, at the place where Minimum Base Rent is payable.

SECTION 5.03 LATE CHARGES: In the event Tenant fails to pay any rent or any other sum or charge required to be paid by Tenant to Landlord under this Lease within five (5) days after the same is due, the amount unpaid shall be subject to a late payment charge in each instance equal to the greater of (i) One Hundred Dollars and 00/100 (\$100.00), or (ii) five percent (5%) of the unpaid amount. This obligation to pay late charges shall neither excuse nor cure any default and will exist in addition to and not in place of any and all other rights and remedies provided under this Lease or at law. Further, there shall be a \$25.00 charge for any check returned to Landlord unpaid for any reason and Tenant shall thereafter pay the rent only with money orders, bank cashier's checks or certified checks.

SECTION 5.04 HABITUAL LATE PAYMENT: Habitual Late Payment of rent or other charges due hereunder shall constitute a breach of this Lease by Tenant. Such a breach shall be adequate grounds from termination of this Lease by Landlord, at Landlord's option. Landlord's right to terminate pursuant to this section shall not be construed as limiting Landlord's rights under any other Section of this Lease. "Habitual Late Payment" is hereby defined as three (3) or more instances of failure by Tenant to pay its rent or other charges due hereunder in full within five (5) days after the same is due within a 12 month period. These instances need not necessarily be consecutive. Landlord's decision to terminate pursuant to this section shall be a remedy supplementary to Landlord's remedies under Section 5.03 and not an election between the two Sections. Landlord's forbearing from exercising its rights pursuant to this Section shall not be deemed to be a waiver and Landlord may invoke its rights at any time thereafter at Landlord's sole discretion.

ARTICLE 6 - RECOVERY of EXPENSES

SECTION 6.01 TENANT'S PROPORTIONATE SHARE: Whenever used in this Lease, "proportionate share" shall (unless otherwise defined) mean the fraction (expressed as a percentage) determined from time to time by dividing the number of square feet of leasable space in the Leased Premises by the total number of square feet of leasable space in the Property. Tenant's proportionate share as determined by Landlord is subject to change from time to time as the total leasable space the Property increases or decreases due to additions or subtractions thereto, reconfiguration of walls, remeasurement of otherwise provided, however, the computation of Tenant's obligation for any charge or expense shall be based on Tenant's proportionate share on the date of said computation and any fluctuations in Tenant's proportionate share prior to or after the date of said computation shall have no bearing on Tenant's obligation therefore. If any part of the Property is separately billed and the expense relating thereto is paid directly by the occupant thereof, then such part of the Property shall be excluded from computation of Tenant's proportionate share. Tenant's proportionate share is 10%.

SECTION 6.02 PAYMENT of TENANT'S PROPORTIONATE SHARE: Tenant shall pay to Landlord as Additional Rent for the Lease Premises Tenant's proportionate share of the expenses specified in the Article 6 (the "Net Charges"), in advance, in an amount estimated by Landlord, payable in consecutive monthly installments beginning on the Commencement

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Date and continuing thereafter on or before the first day of each and every calendar month during the Lease Term (which includes all renewal and extension periods). Landlord shall notify Tenant in writing of Landlord's estimate, that shall break down all components, of Tenant's monthly installments due hereunder. After each calendar year-end and upon receipt of all applicable bills attributable to such calendar year during the Lease Term, Landlord shall furnish Tenant with a written statement of the actual amount of Tenant's Proportionate share for such year. Tenant shall have the right to request and review all bills and other components of the proportionate share payments. If the total amount paid by Tenant under this Section for any calendar year during the Lease Term is less than the actual amount due from Tenant for such year as shown on such statement, Tenant shall pay to Landlord such deficiency upon demand therefore by landlord; and, if the total amount paid by Tenant hereunder for any such calendar year shall exceed such actual amount due from Tenant for such calendar year, such excess shall be credited against payments hereunder next due, or if no payments are next due, refunded to Tenant. All amount of Additional Rent payable pursuant to this Section shall be payable in the manner set forth in Section 5.01. For the calendar years in which this Lease commences and terminates, the provisions of the Section shall apply and Tenant's proportionate share for such years shall be prorated on the basis of the number of days during the calendar year this Lease was in effect in relation to the total number of days in such year. Landlord's and Tenant's obligations under this Section shall survive the expiration or termination of this Lease.

SECTION 6.03 TAXES: Tenant agrees to pay to Landlord as Additional Rent in the manner set forth in Section 6.02, Tenant's proportionate share of all general and special taxes and assessments, which have been or may be levied or assessed by any lawful authority, against the land and improvements that presently and/or at any time compromise the Property (as defined in Section 1.01). In the event Landlord is required under any mortgage or land contract covering the Property to escrow real estate taxes, Landlord may, but shall not be obligated to, use the required escrow amount as a basis for Landlord's estimate of the monthly installment due from Tenant hereunder. If any part of the Property is separately assessed and the real estate taxes and assessments relating thereto are paid directly by the occupant thereof, then such part of the Property shall be excluded from the computation of Tenants proportionate share. Tenant shall further pay as Additional Rent all rental or rental used taxes related to the Lease Premises assessed by any governmental authority whether measured by Tenant's gross rental payments or otherwise, and whether charged against Tenant or Landlord (but not including income or franchise taxes or any other taxes imposed upon or measured by Landlord's net income, profits or net worth unless the same shall be imposed in lieu of real estates taxes).

SECTION 6.04 INSURANCE: Tenant agrees to pay to Landlord as Additional Rent in the manner set forth in Section 6.02, Tenant's proportionate share of all insurance premiums charged to Landlord for any and all insurance covering the Property of which the Leased Premises are a part, including the Common Areas. Such insurance may include, but not be limited to, liability, property damage, fire, extended coverage, flood, rent loss, malicious mischief, vandalism, and any other casualty and liability insurance.

SECTION 6.05 COMMON AREA UTILITIES: Tenant agrees to pay to Landlord as Additional Rent in the manner set forth in Section 6.02, Tenant's proportionate share of all charges for gas, electricity, water, sewer and any other utility service used or consumed in the Common Areas or furnished thereto.

SECTION 6.06 COMMON AREA MAINTENANCE: Tenant agrees to pay to Landlord as additional Rent in the manner set forth in Section 6.02, Tenants proportionate share of Common Area Maintenance including but not limited to management & administrative fees, snow removal, landscaping, grounds, parking lot repair, and trash removal.

ARTICLE 7 - USE and OCCUPANCY

SECTION 7.01 PURPOSE and USE: Tenant shall use and occupy the Leased Premises, at all times during the Lease Term, solely and exclusively for the purpose set forth in Section 2.13 and shall not used the Leased Premises for any other purpose except with the prior written consent of Landlord.

SECTION 7.02 COMMON AREAS: The term "Common Areas", as used in the Lease, refers to the areas of the Property designed and intended for used in common by all Tenants of the Property and their respective employees, agents, customers, visitors, invitees and others, and

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includes, by ways of illustration and not limitation: vehicle parking areas and driveways; sidewalks; delivery areas; landscaped areas; and other areas as may be designed by Landlord as part of the Common Areas of the Property. Tenant shall have the non-exclusive right, in common with others, to the use of the Common Areas, subject to rules and regulations as may be adopted by Landlord including those set forth in this Article 7 and Exhibit "C" of this Lease.

SECTION 7.03

TENANT USE COVENANTS: In connection with Tenant's use of the Leased Premises, Tenant agrees to do the following:

A. Tenant shall not commit or permit any waste or damage to or deface the Leased Premises.

B. If any governmental license or permit shall be required for the proper and lawful conduct of Tenant's business or other activity carried on in the Leased Premises or if failure to procure such a license or permit might or would in any way affect Landlord or the Property, then Tenant at Tenant's expense shall duly procure and thereafter maintain such license or permit and make the same available to Landlord for inspection. Tenant at Tenant's expense shall at all times comply with the requirements of each such license or permit.

C. Tenant shall not use or permit the Leased Premises to be used for any unlawful, , or immoral purpose or act, under local or state laws, nor will Tenant sell or permit to be sold or stored therein any controlled substances except those customarily used in the course of Tenant's business as permitted by local or state law. Tenant shall not sell or consume or allow the sale or consumption of alcoholic beverages on the Leased Premises, unless the same is included in the Permitted Use and appropriate licenses and insurance coverage has been secured.

D. Tenant shall, at Tenant's expense, at all times comply with and obey all laws, regulations and orders of any governmental local or state authority or agency, and keep and maintain the Leased Premises in a clean, sanitary and safe condition in accordance with the laws of the State of Michigan and in accordance with all directions, rules and regulations of the health officer, fire marshal, building inspector or other proper officials of the governmental agencies having jurisdiction.

E. Tenant shall not allow any loitering or gathering in the Common Areas by any of Tenant's visitors, invitees, customers, employees, agents and any other person(s) whose presence at the Property is due to Tenant's occupancy thereof. Tenant agrees not to advertise for laborers giving an address at the Property or Leased Premises.

F. Tenant shall not inscribe, paint, affix or display any signs, advertisements or notices on the Building or Property, except for such Tenant identification information as Landlord permits by prior written approval. Landlord may remove any and all such matter or signs placed in violation hereof, without notice to Tenant and at Tenant's expense.

G. Tenant shall not overload the floors in the Leased Premises. Safes, equipment and other bulky or heavy articles shall be moved into or out of the Leased Premises only with the prior written consent of Landlord, and then only in the manner and at such time as Landlord may direct. Safes and other heavy articles shall be placed by Tenant only in such places and in a manner as shall be first specified by Landlord, and Tenant shall be liable for and save Landlord harmless from any damage to the Building or Property, or property of other Tenants, or others, or injuries sustained by any person whomsoever, caused by or resulting from the moving of such articles in or out of the Leased Premises or from the Leased Premises or from overloading a floor.

H. Tenant shall not use the Leased Premises, or allow the Leased Premises to be used, for any purpose or in any manner which would, in Landlord's opinion, invalidate any policy of insurance now or hereafter carried on the Property or increase the rate of premiums payable on any such insurance policy. Should Tenant fail to comply with this covenant, Landlord may, at its option, require Tenant to stop engaging in such activity or to reimburse Landlord, as Additional Rent, for any increase in premiums charged during the Lease Term on the insurance carried by Landlord on the Leased Premises and attributable to the used being made of the Leased Premises by Tenant, but such payment shall not constitute in any

manner a waiver by Landlord of Landlord's rights to enforce all of the covenants and provisions of this Lease.

I. Tenant shall not do or permit anything to be done in or about the Leased Premises or Common Areas which will in any way create nuisance or disturbance, or obstruct, annoy, injure or interfere with the rights of any other Tenants or occupants of the Property or surrounding buildings, or those having business with them. Tenant shall not make, or permit to be made, in the Leased Premises or in the Common Areas, any unseemly or disturbing noises, vibrations or odors emanating from the Leased Premises, or require Tenant to make such modifications as Landlord considers to be reasonably necessary; the cost of all such modifications shall be entirely borne by Tenant, and Tenant shall reimburse Landlord for the same (or any portion thereof paid by Landlord) as Additional Rent. Such modifications may include, but are not limited to, soundproofing walls and ceilings, and improving or altering the ventilation/exhaust system.

SECTION 7.04 LANDLORD'S RIGHTS REGARDING USE: In addition to the rights specified elsewhere in this Lease, Landlord shall have the following rights regarding the used of the Leased Premises or the Common Areas by Tenant, Tenant's employees, agents, customers, visitors and invitees, each of which may be exercised without notice or liability to Tenant:

A. Landlord may install such signs, advertisements, notice or Tenant identification as Landlord shall deem necessary or proper anywhere on the Property, including on or near Tenant access doors, but not on the storefront doors or windows of the Leased Premises.

B. Landlord shall approve or disapprove, prior to installation, all types of drapes, shades and other window coverings used in the Leased Premises, and my control all internal lighting and signs that may be visible from outside the Leased Premises.

C. Landlord is currently in litigation involving a separate unit and tenant of the Property. Upon resolution of this litigation and subject to terms that would not violate any resolution, Landlord will prepare and sign an addendum granting Tenant the exclusive right to conduct a cannabis business on or in the Property.]

D. Landlord shall have the right to control the Common Areas in such manner as Landlord deems necessary or proper, including by way of illustration and not limitation, the right to do the following: to police the Common Areas and exclude or expel any peddler, solicitor or loud and unruly person from the Property any other person who creates a disturbance or nuisance; utilize the Common Areas for carnival type shows, rides and entertainment, outdoor shows, displays, automobile and other product shows, sale of Christmas trees, the leasing of kiosks or such other uses which in Landlord's judgment tend to attract the public; change or reduce the area, level, location, size and arrangement of parking areas and other Common Areas and facilities; restrict parking by tenants, their officers, agents and employees to parking areas designated by Landlord; to closed all or any portion of the Common Areas to such extent as may, in the opinion of Landlord's counsel, be legally sufficient to prevent a dedication thereof or the accrual of any rights to any person or the public therein; to erect improvements or buildings on parking areas and other Common Areas; require all persons entering or leaving the Property to identify themselves and their business therein; close or limit access to the Property or any part thereof, including building entrances/exits, corridors, and elevators, during times of emergency or repairs; and to do and perform such other acts in and to the Common Areas as, in the used of good business judgment, Landlord shall determine to be advisable to improve the convenience and use thereof by tenants of the Property, their officers, agents, employees and customers; provided that no such changes shall deny or materially interfere with reasonable visibility of, ingress to egress from the Lease Premises.

ARTICLE 8 - ACCESS by LANDLORD

SECTION 8.01 ACCESS by LANDLORD: Landlord, Landlord's employees and agents, and any mortgagee or other secured party of the Property shall have the right to enter any part of the Leased Premises at all reasonable times within the regulations surrounding a marihuana facility, with notice, for the purposes of examining or inspecting the same, showing the same to prospective purchasers, mortgagees or Tenants and making such repairs, alterations, additions or improvements to the Leased Premises or the Building as Landlord may deem necessary or desirable, provided, however, in each instance Tenant shall be given no less than 24 hour prior notice, but notice need not be given in the event of any

emergency while keeping within the regulations surrounding a marihuana facility. If representatives of Tenant shall not be present to open and permit such entry into the Leased Premises at any time when such entry is necessary or permitted hereunder, Landlord and Landlord's employees and agents may enter the Leased Premises by means of a master or passkey or otherwise while keeping within the regulations surrounding a marihuana facility. Landlord shall incur no liability to Tenant for such entry, nor shall such entry constitute an eviction of Tenant or a termination of this Lease, or entitle Tenant to any abatement of rent therefore unless damages arise out of Landlord neglect including a breach of the regulations surrounding a marihuana facility. Landlord shall be allowed to take all materials into and upon the Leased Premises that may be required to make said repairs, alterations, additions or improvements without in any being deemed or held guilty of an eviction of Tenant; and the rent stipulated to be paid in no way abate while good faith, necessary and timely repairs, alterations, additions or improvements are getting made: nor shall Tenants be entitled to maintain a setoff or counter claim for damages against Landlord by reason of loss or interruption to Tenant's business because of the performance of any such good faith, necessary and timely work as long as such work being done is within the regulations surrounding a marihuana facility. All such work shall be done during ordinary working hours, or if any such work is, at the request of Tenant, to be done during any other hours, Tenant shall pay for any extra cost incurred because of such request. Landlord's right to exhibit, show or advertise the Leased Premises for Lease is continuously reserved at all times during the Lease Term, and during the two (2) months prior to the expiration of the Lease Term, or earlier if the Leased Premises are vacated or abandoned, Landlord may place interior window "For Lease" signs upon the Leased Premises, which signs Tenant shall permit to remain thereon without molestation.

ARTICLE 9 - UTILITIES and OTHER SERVICES

- SECTION 9.01** **UTILITY SERVICE:** Tenant shall be solely responsible for and promptly pay when due all charges for heat, air-conditioning, gas, electricity, water, sewer and any other utility service used or consumed in the Leased Premises or furnished thereto. In the event separate bills are not obtainable for any such expense, tenant shall pay Tenant's proportionate share of such charges and expenses (subject to adjustment based on any extraordinary use or disproportionate consumption of any utility by any Tenant) to Landlord as Additional Rent. Tenant's obligation to pay for such utilities shall commence as of the date on which possession of the Leased Premises is delivered to Tenant without regard to any free rent period or formal commencement date of the Lease. In the Event such charges are not paid when due, Landlord shall have the right to pay same, which amount to paid is hereby declared to be Additional Rent due on demand. At all Tenant's used of electric current shall never exceed the capacity of the feeders to the Building or the risers or wiring installation. If Landlord determines that the electricity used by Tenant exceeds the designed load capacity of the Building's electrical system or is in any way incompatible therewith, then Landlord shall have the right to make such modifications (at Tenant's sole cost and expense) to the electrical system or other parts of the Property or Leased Premises, or to require Tenant to make such modifications to Tenant's machines and equipments, as Landlord considers to be reasonably necessary. The cost of any such modifications shall be borne by Tenant, and Tenant shall reimburse Landlord for the same (or any portion thereof paid by Landlord) as Additional Rent.
- SECTION 9.02** **TELEPHONE:** Tenant shall be solely responsible for making all arrangements for the hookup and installation of Tenant's telephone lines, telephones and telephone equipment, and for the payment of all costs and expenses related thereto.
- SECTION 9.03** **JANITORIAL:** Responsibility for janitorial service in the Leased Premises is set forth in Section 2.10. Notwithstanding the janitorial services, if any, provided by Landlord, Tenant shall, at Tenant's sole cost and expense, do whatever else is prudent and necessary to keep the Leased Premises orderly, neat, safe, clean and free from rubbish and dirt at all times. All trash and rubbish shall be disposed of only in areas so designated by Landlord. If Tenant fails to keep the Leased Premises in the aforesaid condition, Landlord may enter upon and clean the Leased Premises and have all rubbish, dirt, trash and garbage removed, in which event Tenant agrees to pay all charges incurred by Landlord as Additional Rent plus fifteen percent (15%) of the cost thereof to reimburse Landlord for all overhead and other costs or expenses arising from the involvement of Landlord or Landlord's agents with such work.



- SECTION 9.04** **INTERRUPTION of SERVICES:** Landlord shall not be liable for damages nor shall the rent be abated for failure or delay in furnishing utility or janitorial service when such failure or delay is caused by necessary repairs or casualty whatsoever or by the act or default of the Tenant or other parties; or by any caused beyond the control of Landlord; nor shall Landlord be liable for the any unauthorized acts of Landlord's employees. Such failure or delay in furnishing utility or janitorial service whether supplied by Landlord or Tenant, shall not be construed as an act of eviction against the Tenant by Landlord, nor shall such failure or delay in any way operate as a release from the prompt and punctual performance of Tenant's agreements hereunder.
- SECTION 9.05** **LIGHTING:** Tenant shall replace and maintain, at Tenant's sole cost and expense, all electric light bulbs, fluorescent tubes, ballasts, starters and all other items related to the electrical lighting in the Leased Premises and shall be liable for any damage from overloading of any of the lighting circuits leading to or in the Leased Premises.
- SECTION 9.06** **ADDITIONAL SERVICE:** If Tenant used or requests any utilities or services (including janitorial service, if applicable) in frequency, scope, quality or quantity substantially greater than those which Landlord determines are normally required by other tenants in the Property for general retail or office used, then Landlord shall used reasonable efforts to attempt to furnish Tenant with such additional utilities or services, the costs therefore shall be borne by Tenant, and Tenant shall reimburse Landlord for the same as Additional Rent.

ARTICLE 10 - MAINTENANCE: TENANT ALTERATIONS and FIXTURES

- SECTION 10.01** **LANDLORD'S OBLIGATION for MAINTENANCE:** Landlord shall, at Landlord's expense, make or cause to be made all necessary repairs to the exterior walls, foundation, and roof of the Property, and maintain the same in good condition and repair. Landlord shall not be required to commence any such repair until ten (10) days after written notice from Tenant that the same is necessary. If any of the aforesaid work is made necessary by the acts, omissions, negligence, misuse, or default of Tenant or Tenant's employees, agents, customers, contractors, licensees, visitors or invitees, then the cost of such repairs shall be borne by tenant; Landlord shall have no obligation to Tenant for interference with Tenant's business arising from the making of any repairs, alterations or improvements in or to any portion of the Property or the Leased Premises or in or to any fixtures, appurtenances and equipment therein or thereon. Landlord shall perform the repairs in a timely and workmanlike manner. The provisions of this Section shall not apply in the case of damage or destruction by fire or other casualty or a taking under Condemnation, in which events the obligations of Landlord shall be controlled by the Sections of this Lease dealing therewith.
- SECTION 10.02** **TENANT'S OBLIGATION for MAINTENANCE:** Tenant shall, at Tenant's sole cost and expense, keep and maintain the Leased Premises in good order, condition and repair at all times during the Lease Term, and Tenant shall promptly and adequately repair all damage to the Leased Premises and repair or replace all damaged or broken fixtures and appurtenances, including, without limitation: Interior surfaces of demising walls; non-demising walls and partitions; wall covering/paint on all walls; all doors, door glass, locks and frames, including exterior doors to the Leased Premises; window and plate glass, window moldings and frames; lighting; fire sprinkler and detection system; all plumbing and sewage facilities within the Leased Premise; water heater that exclusively serves the Leased Premises; floors, carpet and other floor covering; ceilings (except water damage caused from roof problems); appliances; equipment; heating and cooling equipment; and all other fixtures and appurtenances within the Leased Premises, subject to the approval, rules, regulations and requests of Landlord, and under Landlord's supervision if Landlord so elects, and within any reasonable period of time specified by Landlord, provided, however, Tenant shall not be responsible for damage to the Leased Premises caused by Building defects for which Landlord is obligated to repair pursuant to Section 10.01 and Section 4.03, or costs to exceed \$2,500 for any single instance involving any one of the above named items.

If said HVAC unit malfunctions or otherwise requires maintenance or repair, Tenant shall notify Landlord immediately and Landlord shall promptly arrange for the performance of the required work. Landlord shall utilize all applicable warranties in arranging for said HVAC maintenance and repair work performed on the HVAC unit. Tenant shall pay for an annual inspection and cleaning of the HVAC unit that exclusively serves the Leased Premises and for any repairs. Tenant shall pay for the repair of any roof leaks around or

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in the vicinity of any roof penetrations made to the Leased Premises because of Tenant's occupancy thereof. The outside areas immediately adjoining the Leased Premises, including, but not limited to, the sidewalk, shall be kept clean and free from snow, ice, dirt, stains and rubbish by Tenant, at Tenant's expense, to the satisfaction of Landlord. Tenant, at Tenant's expense, shall install and maintain fire extinguisher and other fire protection and detection devices as may be required from time to time by any agency having jurisdiction thereof and by the insurance underwriters insuring the Building in which the Leased Premises are located.

If Tenant does not promptly commence and thereafter diligently make the repairs, replacements and maintenance, Landlord may, upon ten (10) days prior written notice to Tenant (except that Landlord shall not be required to give Tenant notice or an opportunity to make such repairs, replacements or maintenance in the event of an emergency while keeping within the regulations surrounding a marijuana facility), but need not, make such repairs, replacements and maintenance, and Tenant shall pay to Landlord as Additional Rent the cost thereof plus fifteen percent (15%) of the cost thereof to reimburse Landlord for all overhead, general conditions, fees and other costs or expenses arising from involvement of Landlord or Landlord's agents with such work. Landlord may enter the leased Premises at all reasonable times to make such repairs while keeping within the regulations surrounding a marijuana facility, alterations, improvements and additions to the Leased Premises or to the Building or to any equipment located in the Building as Landlord shall desire or deem necessary or as Landlord may be required to do by governmental authority or court order or decree. No such entry or repairs by Landlord with reasonable notice (except in the event of an emergency, in which event no notice shall be required) shall be deemed or construed to constitute an eviction of Tenant or a termination of this Lease, or entitle Tenant to any abatement of rent therefore. Upon expiration of this Lease or upon termination as a result of other provisions in this Lease, Tenant shall yield and deliver the Leased Premises to Landlord in broom-clean condition and in good order, condition and repair (ordinary wear and tear excepted).

SECTION 10.03

ALTERATIONS by TENANT: Tenant shall not make or cause to be made any alterations, additions or improvements to the Leased Premises, or install or cause to be installed any exterior signs, floor covering, interior or exterior lighting, plumbing fixtures, shades, canopies or awnings, or make any changes to the mechanical, electrical or sprinkler systems without the prior written approval of Landlord. Such approval will not be unreasonably withheld. Tenant shall present to Landlord plans and specifications for such work at the time approval is sought. If Landlord allows Tenant to make any such alterations, additions or improvements, Tenant shall, at Tenant's sole cost and expense, make the same in accordance with all applicable laws and building codes, in a good and workmanlike manner and in quality equal to or better than the original construction of the Building and shall comply with such requirements as Landlord considers necessary or desirable, including without limitation, requirements as to the manner in which and the times at which such work shall be done, the contractor or subcontractors to be selected to perform such work and the adequacy of insurance coverage for liability and workman's compensation. Tenant shall promptly pay all costs attributable to such alterations and improvements, and promptly repair any damage to the Leased Premises, Building or Property caused by virtue of any such alterations or improvements. Tenant shall be responsible for and shall pay to Landlord as Additional Rent, the entire amount of any real estate taxes attributable to any alterations, additions or improvements made by Tenant pursuant to this Section. All alterations, additions and improvements to the Leased Premises shall become a part of the Building and the property of Landlord, and shall not be removed by Tenant. Tenant shall be solely responsible for all the repair and maintenance of, related to or made necessary by Tenant's alterations, additions or improvements.

SECTION 10.04

TRADE FIXTURES: Tenant shall not cause any equipment or trade fixtures to be affixed or attached to the Leased Premises without the prior written consent of Landlord. Any trade fixtures installed on the Leased Premises by Tenant at Tenant's expense, such as movable partitions, equipment, counters, shelving, showcases, mirrors and the like, may (provided Tenant is not then in default), and shall, at the request of Landlord, be removed on the expiration or earlier termination of this Lease. Tenant shall bear the cost of such removal, and Tenant shall repair at Tenant's own expense any and all damage to the Leased Premises, Building and Property resulting from such removal. If Tenant fails to remove any and all such trade fixtures from the Leased Premises on the expiration or earlier termination of this Lease, all such trade fixtures shall become the property of Landlord

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unless Landlord elects to require their removal, in which case, said trade fixtures shall be removed at Tenant's expense and all damage resulting from such removal shall be repaired at Tenant's expense.

SECTION 10.05 **SIGNS:** Tenant is required, at Tenant's expense, to place a sign on the exterior of the Leased Premises, provided, however, all interior signs visible from outside the Leased Premises and all exterior signs shall be subject to the prior written approval of Landlord, and shall be in compliance with all applicable laws and ordinances. Tenant shall, at Tenant's expense, maintain in good condition and repair any such sign. Tenant agrees to hold Landlord harmless from any loss, cost, or damage, and to repair any damage to the Property, resulting from the erection, maintenance, existence, or removal of Tenant's signs. Prior to vacating the Leased Premises, Tenant agrees, at Tenant's sole cost and expense, to remove all signs and repair all damage caused by such removal.

ARTICLE 11 - LIENS

SECTION 11.01 **LIENS:** If, because of any act or omission of Tenant or any person claiming by, through, or under Tenant, any mechanic's lien or other lien shall be filed against the Leased Premises or the Property or against other property of Landlord (whether or not such lien is valid or enforceable as such), Tenant shall, at Tenant's expense, cause the same to be discharged of record within ten (10) days after the date of filing thereof, and shall also indemnify Landlord and hold Landlord harmless from any and all claims, losses, damages, judgments, settlements, costs and expenses (including attorneys' fees) resulting therefrom or by reason thereof. Landlord may, but shall not be obligated to, pay the claim upon which such lien is based so as to have such lien released of record; and, if Landlord does so, then Tenant shall pay to Landlord, as Additional Rent, the amount of such claim, plus all costs and expenses incurred in connection therewith (including attorneys' fees).

ARTICLE 12 – TENANT'S TAXES; LOSS and DAMAGE; INDEMNIFICATION

SECTION 12.01 **TENANT'S TAXES:** Tenant shall pay before delinquency any and all taxes, assessments, fees or charges, including any sales, gross income, rental, business occupation or other taxes, levied or imposed upon Tenant's business operations in the Leased Premises and any personal property or similar taxes levied or imposed upon Tenant's trade fixtures, leasehold improvements or personal property located within the Leased Premises. In the event any such taxes, assessments, fees or charges are charged to the account of, or are levied or imposed upon the property of Landlord, Tenant shall reimburse Landlord for the same as Additional Rent.

SECTION 12.02 **LOSS and DAMAGE:** All property of Tenant, or others, kept upon or in the Leased Premises shall be so kept or stored at the sole risk of Tenant, and Tenant shall hold Landlord harmless from any claims arising out of damages to the same, including subrogation claims by Tenant's insurance carrier(s), unless such damage shall be caused by willful neglect on the part of Landlord. Landlord shall not be liable for any damage either to person or property sustained by Tenant or other persons, or for damage of loss suffered by the business or occupation of Tenant or arising from any acts or neglect of other Tenants or occupants of the Property or of other persons, or from bursting, stoppage, overflowing or leaking of water, sewer, gas or steam pipes, or from the heating or plumbing fixtures, or from electric wires, or from gas or odors, or caused in any other manner whatsoever except in the case of willful neglect on the part of Landlord.

ARTICLE 13 - INSURANCE

SECTION 13.01 **REQUIRED TENANT INSURANCE COVERAGE:** Tenant shall carry and maintain, at all times during the Lease Term, at Tenant's sole cost and expense, comprehensive public liability insurance, including property damage or destruction, insuring Landlord and Tenant against liability for injury to persons or property occurring in or about the Leased Premises or arising out of the tenancy, use, maintenance, or occupancy of the Leased Premises. The limits of liability under such insurance shall not be less than the coverage specified in Section 2.15, and said limits shall be increased and additional risks insured from time to time as reasonably requested by Landlord or any mortgagee or other secured party of the Leased Premises. Such insurance policy or policies shall name Landlord and any other parties in interest designated by Landlord as additional insured, and shall provide that the policies may not be canceled or changed without first giving interest designated by Landlord as additional insured, and shall provide that the policies may not be canceled or

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changed without first giving Landlord at least thirty (30) days prior written notice. The insurance shall be issued by one or more insurance companies acceptable to Landlord, and Tenant shall, prior to the Commencement Date of this Lease, furnish Landlord with Certificates of Insurance evidencing such coverage, together with evidence of the payment of all premiums therefore, and Tenant shall, within thirty (30) days prior to the expiration of any such insurance, deliver Certificates of Insurance evidencing the renewal or replacement of such insurance together with evidence of the payment of all premiums therefore. Should Tenant fail to carry such insurance or fail to furnish Landlord with such Certificates of Insurance or evidence of premium payment after request to do so, then in any of said events, Landlord, at Landlord's option, but with no obligation to do so, may, procure such insurance and collect the cost thereof from Tenant as Additional Rent. Tenant indemnifies and holds harmless Landlord's agents, and the property of Landlord from any and all damage, claims, suits, demands, and actions resulting from the Leased Premises of Tenant's occupancy or use thereof, irrespective of insurance coverage.

SECTION 13.02 WAIVER of SUBROGATION: Each party does hereby remise, release, and discharge the other party hereto, and any officer, agent, employee or representative of such party, of and from any liability whatsoever hereafter arising from, loss damage or injury caused by fire or other casualty for which insurance (permitting waiver of liability and containing a waiver of subrogation) is carried by the injured party at the time of such loss, damage or injury to the extent of any recovery by the insured party under such insurance.

ARTICLE 14 - FIRE or OTHER CASUALTY

SECTION 14.01 DESTRUCTION of LEASED PREMISES: If the Leased Premises are totally or partially damaged or destroyed by fire or other casualty or occurrence covered by insurance, the damage shall be repaired and the Leased Premises restored to the same condition immediately before such damage or destruction, by Landlord at Landlord's expense to the extent of insurance recovery; provided, however, in the event (i) such damage results from a cause not insured, or (ii) the cost of repair or restoration exceeds the amount of insurance proceeds received by Landlord and available for restoration of the Leased Premises, Landlord may elect to either repair/restore the Leased Premises or to terminate this Lease upon giving notice of such election in writing to Tenant within sixty (60) days after the occurrence of the event causing the damage. If Landlord terminates this lease under this section, and the Special Use is still connected to the property, Tenant shall have a right of first refusal to lease any newly constructed premises, of a comparable space to its current leased space. Tenant shall maintain this right of first refusal under this section for the earlier of 1) the remainder of the time the Special Use remains with the property or, 2) the expiration of this Lease.

If Landlord elects to rebuild, Landlord shall rebuild within 120 days after the casualty (subject to causes of the type set forth in Section 21.03 and delays in the adjustment of insurance) only that part of the Leased Premises originally provided by Landlord at Landlord's expense, and Landlord shall have no responsibility to rebuild or restore any portion of the Leased Premises constructed by Tenant at Tenant's expense. If Landlord is required or elects to repair or rebuild the Leased Premises as herein provided, Tenant shall, at Tenant's expense, repair or replace Tenant's merchandise, trade fixtures, furnishings and equipment in a manner and to at least a condition equal to that prior to the damage or destruction, provided, however, Tenant may terminate this Lease if Landlord fails to rebuild the Leased Premises within 120 days after the casualty (subject to causes of the type set forth in Section 21.03 and delays in the adjustment of insurance). The rent herein provided shall abate (i) entirely if the entire Leased Premises are untenable, or (ii) prorated for the portion rendered untenable if only a part is untenable, until the same shall be restored to a Tenable condition; provided, however, if Tenant shall fail to adjust Tenant's own insurance or to remove Tenant's damaged goods, wares, equipment or property within a reasonable time and as a result thereof the repairing and restoration is delayed, there shall be no abatement of rental during the period of such resulting delay, and provided further that there shall be no abatement of rental if such fire or other cause damaging or destroying the Leased Premises shall result from the negligence or willful act of Tenant, or Tenant's agents, employees, or invitees.

SECTION 14.02 DESTRUCTION of PROPERTY: In the event that fifty percent (50%) or more of the leasable area of the Property is damaged or destroyed by fire or other cause, notwithstanding that the Leased Premises may be unaffected by such fire or other cause, Landlord may terminate this Lease by giving Tenant thirty (30) days prior written notice

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of Landlord's election to terminate, which notice shall be given within the first sixty (60) days following the date of said fire or other cause. If Landlord terminates this lease under this section, and the Special Use is still connected to the property, Tenant shall have a right of first refusal to lease any newly constructed premises, of a comparable space to its current leased space. Tenant shall maintain this right of first refusal under this section for the earlier of 1) the remainder of the time the Special Use remains with the property

ARTICLE 15 - CONDEMNATION

SECTION 15.01 TOTAL CONDEMNATION of PREMISES: If the whole of the Leased Premises shall be taken or condemned either permanently or temporarily for any public or quasi-public use or purpose by any competent authority in appropriation proceedings or by any right of eminent domain or by agreement or conveyance in lieu thereof (each of the foregoing being hereinafter referred to as "Condemnation"), this Lease shall terminate as of the date possession shall be taken by such authority, and Tenant shall pay rent and perform all of Tenant's other obligations under this Lease up to such date with a proportionate refund by Landlord of any rent which shall have been paid in advance for periods subsequent to such date. Tenant shall receive a proportionate share of any condemnation award to the Landlord that considers the value of Tenant's ongoing business in the basis for award.

SECTION 15.02 PARTIAL CONDEMNATION of PREMISES: If less than all but more than twenty-five percent (25%) of the leasable space in the Leased Premises is taken by Condemnation, of if (regardless of the percentage of leasable space in the Leases Premises which is taken) the Leases Premises or the remainder thereof can not be used or Tenant's continued use or occupancy for Tenant's business, then in either such event Tenant shall have the right to terminate this Lease upon notice to the Landlord within sixty (60) days after possession is taken by such Condemnation. If this Lease is so terminated, it shall terminate as of the date possession shall be so taken, and Tenant shall pay rent and perform all other of Tenant's obligations under this Lease up to such date with a proportionate refund by Landlord of any rent which shall have been paid in advance for periods subsequent to such date, and thereafter the Minimum Base Rent shall be reduced in direct proportion to the amount of leasable space of the Leased Premises taken and the computation of all other amounts due from Tenant shall likewise be adjusted, and Landlord agrees, at Landlord's cost and expense, as soon as reasonably possible to restore the remainder of the Leased Premises to a complete unit of similar quality and character's existed prior to such taking (to the extent possible); provided that Landlord shall not be required to expend more on such restoration than an amount equal to the condemnation award received by Landlord (less all expenses, costs and legal fees incurred by Landlord in connection with such award and less the portion of the award reasonably determined by Landlord to be attributable to any unimproved vacant land taken) multiplied by a fraction the numerator of which is the number of leasable space in the Leased Premises so taken and the denominator of which is the number of square feet of leasable space in the Property so taken.

ARTICLE 16 - ASSIGNMENT and SUBLETTING; ENCUMBRANCE

SECTION 16.01 ASSIGNMENT and SUBLETTING: Tenant may not assign this Lease or sublet the Leased Premises or any part thereof without written consent of the Landlord which shall not be unreasonably withheld. In the event of a permitted assignment or subletting, Tenant shall nevertheless at all times remain fully responsible and liable for the payment of rent and the performance and observance of all obligations of Tenant under the terms, conditions and convenience of this Lease unless the Landlord also approves all guarantors of the assignee or sub-tenant in which event Tenant would be released from liability and obligations under the Lease. The approval of the guarantors shall be based upon guarantors having a net worth and liquidity sufficient to pay all obligations under the Lease as they come due over the entire term of the Lease in the same manner a commercial lender would require for an equivalent obligation. The consent of Landlord to any one assignment or sublease pursuant hereto shall not be deemed to be a waiver of the provision of this Section with respect to any subsequent assignment of sublease. No assignment or subletting of the Leased Premises of any part thereof shall be binding upon Landlord unless such assignee or subtenant shall deliver to Landlord an instrument (in recordable form, if requested) containing an agreement of assumption of all of Tenant's obligations under this Lease. The assignee or sub-lessee shall be required to make all payments to Landlord and Landlord shall thereafter, in a prompt manner, remit to Tenant any amounts that may be due Tenant. Tenant, shall, concurrently with the execution and delivery of any such permitted assignment or sublease, deliver a duplicate original thereof to Landlord. A change in the



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beneficial or record ownership of any class of capital stock of Tenant, a transfer of partnership interests of the beneficial interest in Tenant, and a sale of substantially all of Tenant's assets to one purchaser, shall all be treated as and deemed to be an event to assignment of this Lease within the foregoing provisions of this Section, if the effect of same shall be to result in a change of management or control of Tenant. Landlord has retained the prior right of consent to proposed assignment or sublease for several substantial business and equity reasons which were as an inducement to Landlord to lease to Tenant.

Landlord may refuse, for good and reasonable business reasons, to give its consent to any proposed assignment or sublease for any reason, including, but not limited to Landlord's determination that Landlord's interest in the Lease or the Leased Premises would be adversely affect by: (i) the financial condition, credit worthiness or business reputation of the Proposed assignee or subtenant, (ii) the proposed use of the Leased Premises by, or business of, the proposed assignee or subtenant, and (iii) the ability and likelihood of the proposed assignee or subtenant to pay all rents and other amount due hereunder.

SECTION 16.02 **ENCUMBRANCE:** Neither this Lease nor the Lease Term shall be mortgaged, pledged or encumbered by Tenant, nor shall Tenant mortgage, pledge or encumber the interest of Tenant in and to any sublease of the Leased Premises or the rental payable hereunder, without the prior written consent of Landlord, which consent may be granted or withheld in the sole discretion of Landlord, and Tenant shall not allow or permit any transfer of this Lease or any interest hereunder by operation of law. Any such mortgage, pledge, encumbrance, sublease or assignment made in violation of this Section shall be void. The voluntary or there surrender of this Lease by Tenant, or a mutual cancellation thereof, shall not work a merger and shall at the option of Landlord terminate all other existing franchises, concessions, licenses, permits, subleases, sub-tenancies, departmental operating arrangements or the like, or may at the option of Landlord operate as an assignment to Landlord of the same.

ARTICLE 17 - TRANSFERS by LANDLORD

SECTION 17.01 **SALE and CONVEYANCE of the PROPERTY :** Landlord shall have the right to sell and convey the Property at any time during the Lease Term, subject only to the rights of Tenant hereunder; and such sale conveyance shall operate to release Landlord from liability hereunder after the date of such conveyance as provided in Section 18.05.

SECTION 17.02 **SUBORDINATION:** Tenant's rights under this Lease are and shall always be subordinate to the operation and effect of any mortgage, deed of trust, land contract, ground lease or master lease now or hereafter placed by Landlord upon or governing the Property (which includes the tract of land described herein, or any part or parts thereof. This clause shall be self-operative, and no further instrument of subordination shall be required. Tenant agrees that upon the request of Landlord, any mortgagee, trustee or other secured party, Tenant shall execute whatever instruments may be required to confirm the subordination of this Lease. Notwithstanding the foregoing, no default by Landlord under any such mortgage, deed of trust, land contract, ground lease or master lease shall affect Tenant's right hereunder so long as Tenant is not in default under this Lease. In exchange for such subordination all mortgages, now or hereafter placed on Landlord's interest in the Premises and on the land on which the Premises are a part or upon any buildings hereafter placed upon the land of which the leased Premises form a part, the mortgagee will agree not to disturb or otherwise terminate the Tenant's leasehold interest provided the Tenant is not in default under the Lease beyond applicable cure periods. The refusal of a mortgagee to provide a non-disturbance or non-termination agreement shall not be considered a default under this Lease. However, if mortgagee elects to declare a default of its mortgage, Landlord shall have 120 days following the declaration of default to cure said default or obtain a discharge of the mortgage.

SECTION 17.03 **ATTORNMENT:** In the event any proceedings are brought for the foreclosure of, or in the event of the conveyance by deed in lieu of foreclosure of, or in the event of exercise of the power of sale under, any mortgage or land contract made by Landlord covering the Leased Premises, Tenant hereby attorns to and covenants and agrees to execute an instrument in writing reasonably satisfactory to the new owner whereby Tenant attorns to such successor in interest and recognizes such successor as the Landlord under this Lease.

SECTION 17.04 **ESTOPPEL CERTIFICATE:** Tenant shall, within ten (10) days following receipt of a written request from Landlord, execute, acknowledge and deliver to Landlord or to any lender, purchaser, prospective purchaser, or other party designated by Landlord, a written statement certifying (if true), including without limitation, the following: (a) that Tenant is in full and complete possession of the Leased Premises, such possession having been delivered by Landlord and accepted by Tenant; (b) that any improvements required to be furnished by Landlord by the terms of this Lease have been completed in all respects to the satisfaction of Tenant; (c) that this Lease is in full force and effect and has not been amended, modified, supplemented or superseded except as specifically noted; (d) that there is not existing default on the part of Landlord in the performance of any covenant, agreement or condition contained in the Lease to be performed by Landlord; (e) that Tenant does not have any actual or pending claim against Landlord; (f) that no rents or other charges have been prepaid by Tenant; (g) that the addressee of said certificate may rely on the representations therein made by Tenant; and (h) certifying as to the dates of commencement and termination of the Lease Term, the date on which rents commence to accrue under this Lease, and the date through which rents and other charges hereunder have been paid. Tenant's failure to deliver such statement within such period shall be an event of default by Tenant under this Lease and shall be conclusive evidence that (i) this Lease is in full force and effect and unmodified, (ii) that there are no uncured defaults in Landlord's performance hereunder, and (iii) that not more than one month's rent has been paid in advance; and Tenant shall be estopped from asserting any defaults known to Tenant at that date.

SECTION 17.05 **MODIFICATION of LEASE:** If any lender requires that certain modifications be made to this Lease, which modifications will not require Tenant to pay any additional amounts or otherwise change materially the rights or obligations of Tenant hereunder, Tenant shall, upon Landlord's request, execute appropriate instruments affecting such modifications.

ARTICLE 18 - DEFAULTS and REMEDIES

SECTION 18.01 **DEFAULTS by TENANT:** The occurrence of any one or more of the following events shall be a default under and breach of this Lease by Tenant:

A. Tenant (i) fails to pay, within ten (10) days after the same is due, any monthly installment of Minimum Base Rent or any other amount due Landlord from Tenant as Additional Rent, rent or otherwise.; (ii) Tenant fails to pay its rent or other charges due hereunder in full within ten (10) days after the same is due (these instances need not necessarily be consecutive).

B. Tenant fails to perform or observe any term, condition, covenant or obligation required to be performed or observed by Tenant under this Lease for a period of thirty (30) days after notice thereof from Landlord; provided, however, that if the term, condition covenant or obligation to be performed by Tenant is of such nature that the same can not reasonably be performed within such thirty-day period, such default shall be deemed to have been cured if Tenant commences such performance within said thirty-day period and thereafter diligently undertakes to complete the same and does so complete the required action within a reasonable time not to exceed ninety (90) days after said notice.

C. Tenant abandons the Leased Premises for any period during the Lease Term; or fails to take possession of the Leased Premises when possession is tendered by landlord; or fails to submit plans or other information necessary for Landlord to complete the Tenant Improvements set forth in Exhibit "B".

D. A trustee or receiver is appointed to take possession of substantially all of Tenant's assets in, on or about the Leased Premises or of Tenant's interest in this Lease; or Tenant makes an assignment for the benefit of creditors; or substantially all of Tenant's assets in, on or about the Leased Premises or Tenant's interest in this Lease are attached or levied under execution.

E. A petition in bankruptcy, insolvency, or for reorganization or arrangement is filed by or against Tenant pursuant to any federal or state statute.

F. Any forfeiture, civil asset forfeiture or similar proceeding becomes imminent or is commenced by any governmental entity against the property of Tenant or Landlord which

is based upon or arises out of the activities of the Tenant, in which event the Landlord is entitled to immediate possession of Leased Premises.

SECTION 18.02 **REMEDIES of LANDLORD:** Upon the occurrence of any event of default set forth in Section 18.01, Landlord shall have the following rights and remedies, in addition to those allowed by law, any one or more of which may be exercised without further notice or to demand upon Tenant:

A. Landlord may apply the Security Deposit or re-enter the Leased Premises and cure any default to Tenant, in which event Tenant shall reimburse Landlord as Additional Rent for any costs and expenses which Landlord may incur to cure such default; and Landlord shall not be liable to Tenant for any loss or damage which Tenant may sustain by reason of Landlord's action, regardless of whether caused by Landlord's negligence or otherwise.

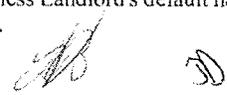
B. Landlord may sue for injunctive relief or to recover damages for any loss resulting from Tenant's default.

C. 1. Landlord may terminate this Lease as of the date of such default, in which event (i) neither Tenant nor any person claiming under or through Tenant shall thereafter be entitled to possession of the Leased Premises, and Tenant shall immediately thereafter surrender the Leased Premises to Landlord; (ii) Landlord may re-enter the Leased Premises and dispossess Tenant or any other occupants of the Leased Premises by any means permitted by law, and may remove their effects, without prejudice to any other remedy which Landlord may have for possession or arrearages in rent; and (iii) notwithstanding the termination of this Lease, Landlord may declare all rent which would have been due under this Lease for the balance of the Lease Term to be immediately due and payable, whereupon Tenant shall be obligated to pay the same to Landlord, together with all loss or damage which Landlord may sustain by reason of such termination, it being expressly understood and agreed that the liabilities and remedies specified in the Subsection C.1. of Section 18.02 shall survive the termination of this Lease; or

2. Landlord may, without terminating this Lease, re-enter the Leased Premises and re-let all or any part of the Leased Premises for a term different from that which would otherwise have constituted the balance of the Lease Term and for rent and on terms and conditions different from those contained herein, whereupon Tenant shall be obligated to pay to Landlord as liquidated damages the difference between the rent provided herein and that provided for in any lease covering a subsequent re-letting of the Leased Premises, for the period which would otherwise have constituted the balance of the Lease Term, together with all of Landlord's reasonable costs and expenses for preparing the Leased Premises for re-letting, including all repairs, tenant finish improvements, brokers' and attorneys' fees, and all loss or damage which Landlord may sustain by reason of such re-entry and re-letting. Re-entry or taking possession of the Leased Premises by Landlord pursuant to this Subsection C.2. of Section 18.02 shall not be construed as an election to terminate this Lease unless written notice of such intention is given to Tenant or decreed by a court of competent jurisdiction. Notwithstanding any re-letting without termination by Landlord because of Tenant default, Landlord may at any time after such re-letting elect to terminate this Lease for such default.

SECTION 18.03 **CUMULATIVE REMEDIES:** All rights and remedies of Landlord shall be cumulative, and none shall be exclusive of any other rights or remedies allowed by law, in equity, by statute, or by the terms of this Lease.

SECTION 18.04 **LANDLORD DEFAULT and TENANT'S REMEDIES:** It shall be a default under and breach of this Lease by Landlord if Landlord shall fail to perform or observe any term, condition, covenant or obligation required to be performed or observed by Landlord under this Lease for a period of thirty (30) days after notice thereof from Tenant; provided, however, that if the term, condition, covenant or obligation to be performed by Landlord is of such nature that the same cannot reasonably be performed within such thirty-day period, such default shall be deemed to have been cured if Landlord commences such performance within said thirty-day period and thereafter diligently undertakes to complete the same. Upon the occurrence of any such default, Tenant may sue for injunctive relief or to recover damages for any loss resulting from the breach, but Tenant shall not be entitled to terminate this Lease or withhold or abate any rent due hereunder, unless Landlord's default has caused an injury, interruption, or diminution of Tenants business.



- SECTION 18.05** **LIMITATION of LANDLORD'S LIABILITY:** In the event of a sale or transfer of such interest (except a mortgage or other transfer as security for a debt), the "Landlord" named herein, or, in the case of a subsequent transfer, the transferor, shall, after the date of such transfer as security for a debt), the "Landlord" named herein, or in the case of subsequent transfer, the transfer, shall, after the date of such transfer, be automatically released from all personal liability for the performance or observance of any term, condition, covenant or obligation required to be performed or observed by Landlord hereunder; and the transferee shall be deemed to have assumed all of such terms, conditions, covenants and obligations.
- SECTION 18.06** **LEGAL EXPENSES:** In the event a party defaults in the performance or observance of any of the terms, conditions, covenants or obligation contained in this Lease and the other party employs attorneys to enforce all or any part of this Lease, the prevailing party shall be entitled to recover all reasonable and necessary costs and attorney fees incurred directly or indirectly, arising out of said default. Said costs and attorney fees include but are not limited to pre or post litigation and collection efforts post litigation. The definition of "prevailing party" is the same definition used by the Michigan Court Rules when determining the obligation for paying costs.
- SECTION 18.07** **PAYMENTS AFTER TERMINATION:** No payment of money by Tenant to Landlord after the termination of this Lease, in any manner, or after the giving of any notice by Landlord to Tenant, shall reinstate, continue or extend the terms of this Lease or affect any notice given to Tenant prior to the payment of such money, it being agreed that after the service of notice or the commencement of a suit to after final judgment granting Landlord possession of the Leased Premises, Landlord may receive and collect any sums of rent due or any other sums of money due under the terms of this Lease, and the payment of such sums of money, whether as rent or otherwise, shall not waive said notice or in any manner affect any pending suite and judgment therefore obtained.

ARTICLE 19 -TENANT'S RIGHT TO RELOCATE

- SECTION 19.01** **TENANT'S OBLIGATION TO RELOCATE:** If the space at 2121 Haslett Rd. Haslett MI 48840 ("2121 Haslett") should become available for rental as a result of a termination of the Lease for 2121 Haslett Rd in a manner acceptable to Landlord in its sole and exclusive discretion, and available for occupancy during the period in which Tenant is leasing the space at 2119 Haslett, Rd. Haslett MI 48840 ("2119 Haslett"), Tenant is obligated to rent 2121 Haslett on the same terms and conditions as for 2119 Haslett, with rents, net charges, and proportionate share, increased in proportion to the increase in the leased area. The parties stipulate and agree 2121 Haslett is 3,200 square feet. Tenant's rent, net charges, and proportionate share for 2121 Haslett is agreed to as being twenty percent. Landlord shall give 30 days written notice of 2121 Haslett becoming available and upon the expiration of said 30 days, Tenant's obligation to pay rent and all other charges for 2121 Haslett shall commence, irrespective of whether Tenant has taken occupancy of 2121 Haslett.
- SECTION 19.02** **MONTH TO MONTH RENTAL OF 2119 HASLETT.** Should Tenant become obligated to rent 2121 Haslett pursuant to Section 19.01, Tenant may continue to rent 2119 Haslett consistent with the terms of this Lease on a month to month basis and Tenant may terminate its obligations for 2119 Haslett by giving 60 days written notice to Landlord and actually vacating during said 60 day period. Failure to vacate within said 60 days shall result in a continuation of the lease obligations for 2119 Haslett until another 60 notice is given and said property is vacated within said 60 day period.
- SECTION 19.03** **BUILD OUT OF 2121 HASLETT.** In the event Tenant rents 2121 Haslett, it shall be the obligation of Tenant to perform, at its cost, all build out of 2121 Haslett subject to the obligations and limitations contained in this Lease.
- SECTION 19.04** **INTENTION OF THE PARTIES.** It is the intention of the parties that should Tenant relocate or expand into 2121 Haslett from 2119 Haslett, except as specifically modified by this Article 19, that all terms, rights and obligations of all types and nature set forth in this Lease shall be equally applicable to both locations with the exception that rental, Net Charges and any other financial obligation will be adjusted to reflect the property actually rented by Tenant whether that be 2119 Haslett, 2121 Haslett or both locations.



ARTICLE 20 - HAZARDOUS MATERIALS

SECTION 20.01

HAZARDOUS MATERIALS: Tenant shall not use, maintain or allow the use or maintenance of the Leased Premises or any part thereof to treat, store, generate, transfer, dispose of, release, convey or recover hazardous, toxic or infectious waste on or about the Leased Premises; provided, however, any toxic material lawfully permitted and generally recognized as necessary and appropriate for the permitted use set forth in Section 2.13 may be stored and used on the Leased Premises so long as (i) such storage and use is in the ordinary course of Tenant's business permitted under this Lease; (ii) such storage and use is performed in compliance with all applicable Laws and in compliance with the highest standards prevailing in the industry for the storage and use of such materials; (iii) Tenant delivers prior written notice to Landlord of the identity of and information regarding such materials as Landlord may require; and (iv) Landlord consents thereto.

Hazardous, toxic or infectious waste shall mean any solid, liquid or infectious waste, substance or emission or any combination thereof which may (i) cause or significantly contribute to an increase in mortality or in serious illness, (ii) pose the risk of a substantial present or potential hazard to human health, to the environment or otherwise to animal or plant life, or (iii) any substances of which the manufacture, use, treatment, storage, transportation, or disposal is regulated by any Laws, and shall include without limitation hazardous substances and materials described in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended; the Resource Conservation and Recovery Act; the Toxic Substances Control Act; the Federal Water Pollution Control Act; the Clean Air Act; the Michigan Water Resources Commission Act; and any other applicable federal, state or local Laws.

Tenant shall immediately notify Landlord of the presence or suspected presence of any hazardous, toxic or infectious waste on or about the Leased Premise and shall deliver to Landlord any notice received by Tenant relating thereto. Tenant shall promptly supply to Landlord a copy of the reports of any environmental audit or investigation undertaken on the Leased Premises, all notices, demands, inquiries or claims received from any person or entity as a result of contamination from hazardous substances alleged to be on or emanating from the Leased Premises, and any reports or applications for licenses, permits, or approvals affecting the Leased Premises submitted by or on behalf of Tenant to any environmental regulatory agency. Landlord and its agents shall have the right to immediately enter upon the Leased Premises to remedy any contamination found thereon. In exercising its rights herein, Landlord shall use reasonable efforts to minimize interference with Tenant's business but such entry shall not constitute an eviction of Tenant, in whole or in part, and Landlord shall not be liable for any interference, loss, or damage to Tenant's property or business caused thereby. If any lender or governmental agency shall ever require testing to ascertain whether there has been a release of hazardous materials, then the reasonable costs thereof shall be reimbursed by Tenant to Landlord upon demand as Additional Rent if such requirement arose in whole or in part because of Tenant's use of the Leased Premises.

Tenant shall indemnify and hold Landlord harmless from any and all claims, judgments, penalties, fines, loss, liability, costs, damages, expenses, attorneys' fees and any other charges incurred by Landlord in connection with any breach by Tenant of Tenant's obligations under this Section (including, without limitation, the cost of redemption, investigation, monitoring, removal, or restoration required). The convenience and obligations of Tenant hereunder, including Tenant's indemnification of Landlord hereunder, shall survive the expiration or earlier termination of this Lease.

ARTICLE 21 - MISCELLANEOUS GENERAL PROVISIONS

SECTION 21.01

NOTICES: Any notice required or permitted to be given under this Lease or by law shall be deemed to have been given if it is written and delivered in person, or mailed by first class U. S. mail with postage prepaid, and shall be addressed (a) if to Landlord, at the address specified in Section 2.17 A or at such other address as Landlord shall designate by written notice, and (b) if to Tenant, at the address specified in Section 2.17B or at the Leased Premises (if different from the address specified in Section 2.17B) or at such other address as Tenant shall designate by written notice, and notice need be sent to only one Tenant if Tenant is more than one person. All mailed notices shall be effective when mailed.



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- SECTION 21.02 **QUIET ENJOYMENT:** Upon payment by Tenant of the rents herein provided and upon the observance and performance of all the convenience, terms and conditions on Tenant's part to be observed and performed, Tenant shall peaceably and quietly hold and enjoy the Leased Premises for the term herein stipulated without hindrance or interruption by Landlord or any other person or persons lawfully or equitably claiming by, through or under Landlord, subject nevertheless to the terms and conditions of this Lease and any mortgages or other matters to which this Lease is subordinate.
- SECTION 21.03 **EXCUSE OF PERFORMANCE:** In the event that either party hereto shall be delayed or hindered in or prevented from the performance of any act required hereunder by reason of strikes, lockouts, labor troubles, inability to procure materials, adverse weather conditions, failure of power or other utility, restrictive governmental laws or regulations, riots, civil disturbances, picketing, demonstrations, insurrection, war or other reason of a like nature not the fault of the party delayed in performing work or doing acts required under the terms of this Lease, then performance of such act shall be excused for the period of the delay and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay. The party entitled to such extension hereunder shall give written notice as soon as possible to the other party hereto of its claim of right to such extension and the reason(s) therefore. Provided however, the provisions of this Section shall not operate to excuse Tenant from prompt payment of Minimum Base Rent, Additional Rent or any other payments required by the terms of this Lease.
- SECTION 21.04 **Deleted.**
- SECTION 21.05 **LAW:** This Lease shall be governed by and construed pursuant to the laws of the State of Michigan.
- SECTION 21.06 **TIME:** Time is of the essence of this Lease, and all provisions herein relating thereto shall be strictly construed.
- SECTION 21.07 **PARTIAL INVALIDITY:** If any provision of this Lease or the application thereof to any person or circumstances shall to any extent be invalid or unenforceable, the remainder of this Lease shall not be affected thereby and each provision of this Lease shall be valid and enforceable to the fullest extent permitted by law.
- SECTION 21.08 **RELATIONSHIP BETWEEN LANDLORD and TENANT:** Nothing contained herein shall be deemed or construed by the parties hereto, nor by any third party, as creating the relationship of principal and agent or of partnership or of joint venture between the parties hereto, it being understood and agreed that neither the computation of rent nor any other provision contained herein nor any of the acts of the parties herein shall be deemed to create any relationship between the parties hereto other than the relationship of Landlord and Tenant.
- SECTION 21.09 **HEADINGS and NUMBERS:** The article, section and subsection headings and numbers appearing in this Lease are inserted only as a matter of convenience and in no way define, limit, construe or describe the scope or intent of such Sections of this Lease nor in any way affect this Lease.
- SECTION 21.10 **MEASUREMENT of LEASED AREA:** The square footage specified in Section 2.02 is an approximate measurement and is not intended to be exact precise, and is measured from the exterior face of exterior walls and the center line of any demising walls shared in common with other tenants, and includes any interior construction or equipment and all vertical penetrations located within the Leased Premises, including, but not limited to, stairways, elevators, vertical ducts and columns.
- SECTION 21.11 **USE of PRONOUNS:** The words "Landlord" and "Tenant" as used herein shall include the plural as well as the singular, and the masculine gender shall include the feminine and neuter genders.
- SECTION 21.12 **SUCCESSORS and ASSIGNS:** All of the terms, conditions and covenants to be observed and performed by the parties hereto shall be applicable to and binding upon their several heirs, executors administrators, successors, legal representatives, and, except as otherwise provided in this Lease, their assigns.



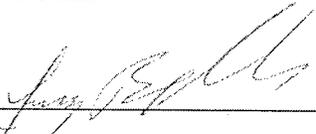
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- SECTION 21.13** **JOINT and SEVERAL LIABILITY:** If this Lease is executed on behalf of Tenant by more than one person, then the liability of the persons so signing shall be joint and several, and a judgment entered against one shall be no bar to an action against the others.
- SECTION 21.14** **SURVIVAL:** Any provision of this Lease which obligates the Landlord or Tenant to pay an amount or perform an obligation before the commencement of the Lease Term or after the expiration of the Lease Term shall be binding and enforceable notwithstanding that payment or performance is within the Lease Term, and the same shall survive.
- SECTION 21.15** **CORPORATE AUTHORITY:** If the Tenant or co-Tenant hereunder is a corporation, each individual executing this Lease on behalf of said corporation represents and warrants that he/she is duly authorized to execute and deliver this Lease on behalf of said corporation in accordance with a duly adopted resolution of the Board of Directors of said corporation, and that this Lease is binding upon said corporation. Said corporation shall, within sixty (60) days after execution of this Lease, deliver to Landlord a certified copy of a resolution of the Board of Directors of said corporation authorizing or ratifying the execution of this Lease, and all of said directors shall be current elected directors duly authorized to authorize said corporation's entry into this Lease.
- SECTION 21.16** **RULES and REGULATIONS:** Tenant agrees to comply with and observe all of the Rules and Regulations established by Landlord attached hereto as Exhibit "C" and hereby made a part of this Lease, and as amended by Landlord from time to time. Landlord reserves the right to make such other further and reasonable rules and regulations as, in Landlord's judgment, may be necessary or desirable for the operation and management of the Leased Premises and Property, and all such rules and regulations and all amendments thereto shall become a part of this Lease at such time as they are prescribed or issued by Landlord. Tenant shall comply with all rules and regulations, except for those which contradict or abrogate any right or privilege herein expressly granted to Tenant. Tenant's failure to keep and observe said rules and regulations within thirty (30) days after written notice to Tenant specifying the nature of such failure shall constitute a breach of the terms of this Lease in the manner as if the same were contained herein as covenants.
- SECTION 21.17** **EXAMINATION of LEASE:** The submission of this Lease for examination does not constitute a reservation of or option for the Leased Premises and this Lease shall become effective as a lease only upon execution and delivery thereof by Landlord and Tenant.
- SECTION 21.18** **ENTIRE AGREEMENT:** This Lease and the Exhibits attached hereto and forming a part hereof, set forth all the covenants, promises, agreements, conditions and understandings between Landlord and Tenant and there are no covenants, promises, agreements, conditions or understandings, either oral or written, between Landlord and Tenant other than are herein set forth. No prior agreement, understanding or representation pertaining to any matter covered or mentioned in the Lease shall be effective for any purpose. No alteration, amendment, change or addition to this Lease shall be binding upon Landlord or Tenant unless reduced to writing and signed by each party.

IN WITNESS WHEREOF, the parties hereto have caused this Lease to be executed by their respective duly authorized representatives as of the day and year first above written.

LANDLORD:

TENANT:



 By: _____
 Its: _____



 By: James D. Daly
 Its: Member

EXHIBIT "A"

FLOOR PLAN



EXHIBIT "B"

TENANT IMPROVEMENTS

EXHIBIT "C"

RULES and REGULATIONS

1. The sidewalks, doorways, passages, vestibules, corridors or halls shall not be obstructed or used for any purpose other than ingress and egress. Tenant shall not go upon the roof of the Building without Landlord's prior written consent.
2. No awnings, canopy or other projections shall be attached to the outside walls of the Building. No curtains, blinds, shades or screens shall be attached to or hung in, or used in connection with, any window or door of the Leased Premises without Landlord's prior written approval. All electric light fixtures within the Leased Premises must be of a quality, type, design and bulb color approved by Landlord. Neither the interior nor the exterior of any windows shall be coated or otherwise sun-screened without the prior written consent of Landlord.
3. No sign, picture, advertisement, notice, "For Rent" signs, flags, barber poles, statuary or any advertising device of any kind whatever may be displayed by Tenant outside the Leased Premises, or within the Leased Premises, without Landlord's prior express written approval. All signs must comply with the regulations and ordinances of the local governmental unit having jurisdiction over such items. All necessary permits, licenses, inspection fees, or any costs whatsoever in connection therewith shall be at Tenant's sole expense. Landlord may remove any and all such matter, materials, appliances and signs placed in violation hereof with notice to Tenant and at Tenant's expense. Any newspaper, magazine or other advertising done from the Leased Premises or referring to the Leased Premises which, in the opinion of Landlord, is objectionable, shall be immediately discontinued upon notice from Landlord. Tenant shall hold Landlord harmless from any injury to person or property resulting from Tenant's erection, maintenance or removal of Tenant's sign(s).
4. No additional locks or bolts of any kind shall be placed upon any of the doors or windows of the Leased Premises or Building, nor shall any changes be made in existing locks or the mechanism thereof other than those changes that Tenant must make in order to comply with rules and regulations surrounding his business. If any such changes result in a change to the mechanism to open a lock or mechanism, Tenant will supply Landlord with the ability (in the form of a key, code, key card, etc.) to access the premises and those locked areas immediately upon making any such change. Tenant, upon termination of this Lease, shall surrender or deliver to Landlord all keys to the Leased Premises, the Building, storage rooms and restrooms, which were furnished to or are in the possession of Tenant or Tenant's agents, employees or other permitted by Tenant to occupy the Leased Premises. In the event of the loss of keys, Tenant shall pay to Landlord the cost of replacing the same or of changing the lock or locks opened by such lost key(s).
5. Sinks, toilets, urinals, water fountains and other plumbing fixtures shall not be used for any purpose other than those for which they were constructed, and no sweepings, rubbish, rags, or other substances shall be thrown therein. All damages resulting from any misuse of the fixtures shall be borne by the tenant who caused the same.
6. Tenant shall not install any radio or television antenna, loudspeaker or other similar device on the roof, exterior walls of the Building or anywhere outside the Leased Premises without the prior written consent of Landlord. Any devices so installed without such written consent shall be subject to removal without notice at any time.
7. No animals or birds of any kind shall be brought into or kept in or about the Leased Premises or Property.
8. The Leased Premises shall not be used for manufacturing or for the storage of merchandise except as such storage and/or manufacturing may be incidental to the permitted use of the Leased Premises. Tenant shall not occupy or permit any portion of the Leased Premises to be occupied for the manufacture or sale of liquor, narcotics (other than those narcotics that Tenant maintains a proper licensing, permitting and/or certification to possess), or tobacco in any form, or as a classroom or school, or as an employment bureau without the express prior written consent of Landlord. The Leased Premises shall not be used for lodging



or sleeping or for any immoral, illegal or unsafe purpose, or for any business or activity other than the permitted use specified in this Lease.

9. Unless by express permission from Landlord, all doors to be kept closed at all times except when in actual used for entrance to or exit from the Leased Premises.
10. Tenant shall not at any time bring or keep upon the Leased Premises any inflammable, combustible or explosive fluid, chemical or substance.
11. Landlord reserves the right to exclude from the Building all safes, freight or other heavy and bulky articles.
12. Landlord shall have the right to prohibit any advertising by Tenant which, in Landlord's opinion tends to impair the reputation of the Property or its desirability as an office or retail location, and upon written notice from Landlord, Tenant shall refrain from or discontinue such advertising.
13. All equipment of any electrical or mechanical nature shall be placed by Tenant in the Leased Premises in settings which will, to the maximum extent possible, absorb or prevent any vibration, noise and annoyance.
14. Tenant shall not use or install any method of heating or air-conditioning other than that supplied by Landlord, without Landlord's prior written consent.
15. The scheduling of Tenant move-ins and move-outs shall be subject to the reasonable discretion of Landlord.
16. Landlord and Landlord's agents may retain a passkey to the Leased Premises and shall have the right to enter the Leased Premises at any and all times, while keeping within the regulations surrounding a marihuana facility, for the purpose of inspecting, serving, repairing and examining the same and for all other purposes provided in the Lease with 24 hour notice in a non-emergency situation.
17. Landlord reserves the right to select the name of the Property and the buildings therein, and to make such change or changes of name as Landlord any deem appropriate from time to time, and Tenant shall not refer to the Property by any name other than (i) the names as selected by Landlord, or (ii) the postal address approved by the United States Post Office. Tenant shall not used the name of the Property in any respect other than as an address of Tenant's business in the Property without the prior written consent of Landlord.
18. Landlord may direct the use of all pest extermination and scavenger contractors at such intervals in the Leased Premises as Landlord may require after consulting with Tenant and ensuring that such work will not lead to damage of Tenant's inventory or interruption in its business, and such work shall be at Tenant's expense if the pest problem is determined to have been caused by Tenant.
19. Tenant and Tenant's employees shall park their cars only in those portions of the parking area designated for the purpose by Landlord.
20. Tenant shall keep the Leased Premises at a temperature sufficiently high to prevent freezing of water in pipes and fixtures.
21. All loading and unloading of merchandise, rubbish, supplies and materials and delivery of same to the Leased Premises shall be made only through such entry ways and at such times as Landlord shall designate. In its use of the loading areas, Tenant shall not obstruct or permit the obstruction of said loading areas and at not time shall Tenant park vehicles therein except for loading and unloading.
22. Except with the prior consent of Landlord, Tenant shall not sell or permit the sale of merchandise or services on the Property outside the Leased Premises, including any adjacent sidewalks.

Handwritten signatures and initials in the bottom right corner of the page.

23. Landlord may waive any one or more of these Rules and Regulations for the benefit of any particular tenant or tenant, but no such waiver by Landlord shall be construed as a waiver of these Rules and Regulations in favor of any other tenant or tenants nor prevent Landlord from thereafter enforcing any such Rules and Regulations against any or all of the tenants in the Building.
24. Wherever the word "Tenant" occurs in these Rules and Regulations, it is understood and agreed that it shall mean Tenant's subtenants, assignees or any of Tenant's servants, employees, agents, customers, invitees, visitors or licensees.
25. These Rules and Regulations are in addition to and shall not be construed in any way to modify, alter or amend in whole or in part, the terms, covenants, agreements and conditions of the Lease.
26. Landlord reserves the right to make such other and further rules and regulations as in Landlord's judgment may from time to time be necessary and proper, and upon delivery of notice thereof to Tenant, such rules shall become binding upon the parties hereto.

In the event any violation of any of the above Rules and Regulations continues after five (5) days following notice to Tenant of such violation, beginning on such fifth day Tenant shall, in addition to any and all other remedies of Landlord provided in this Lease for default by Tenant, liquidated damages of Fifty Dollars (\$50.00) per day for each such violation for each day such violation continues.

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EXHIBIT D

Guaranty

In consideration of and as an inducement for the execution of a certain Lease dated September 12th, 2019 (the "Lease"), between North Meridian Plaza, as Landlord ("Landlord"), and Meridian PE Plaza, as Tenant ("Tenant"), the undersigned, James Daly (hereinafter collectively referred to as the "Guarantor"), irrevocably guarantee; the Landlord the full and prompt payment when due and at all times thereafter of all Base Rent, Additional Rent (as defined in the Lease), Operating Costs and Taxes (as defined in the Lease), and liabilities of every nature and kind, now or hereafter owing from Tenant to Landlord, pursuant to said Lease and all interest and late charges thereon (the "Indebtedness"), Guarantor further guarantees the full and timely performance and observance of all the covenants, terms, conditions and agreements that Tenant, its successors and assigns must perform pursuant to the Lease (the "Obligations"). The term "Lease" as used in this Guaranty shall include the Lease and all renewals, extensions, addenda, amendments and modifications thereof.

Guarantor guarantees that if Tenant, its successors or assigns shall for any reason default under the Lease, including in the payment of Base Rent, Additional Rent, Operating Costs and Taxes, late charges, or the performance of Obligations, Guarantor shall forthwith, without further action by Landlord against Tenant, pay such Base Rent, Additional Rent, late charges or indebtedness and arrears thereof to Landlord, and faithfully perform and fulfill all Obligations of Tenant. Guarantor further guarantees to pay Landlord all damages, including, without limitation, all attorneys' fees and expenses that may arise in consequence of any default by Tenant, its successors or assigns under the Lease, and/or by the enforcement of this Guaranty.

Without affecting Guarantor's obligations to Landlord hereunder, Guarantor consents that Landlord may, in its sole discretion and without notice to Guarantor, renew, extend or modify the Lease at any time. Guarantor waives: (a) notice of acceptance of this Guaranty by Landlord; and (b) notice of presentment, demand for payment, protest, or of action of any nature on any default under the Lease, including the right to require Landlord to sue or otherwise to enforce payment of Base Rent, Additional Rent, Operating Costs and Taxes, late charges or Indebtedness or the performance of Obligations under the Lease.

All of the Landlord's rights and remedies under the Lease and/or under this Guaranty are intended to be distinct, separate and cumulative, and no such right or remedy therein or herein mentioned, whether exercised by Landlord or not, is intended to be in exclusion or a waiver of any of the others. This Guaranty represents the entire agreement between Guarantor and Landlord with respect to the subject matter hereof and can only be modified, waived or terminated by a writing signed by Landlord. This Guaranty shall be construed according to the laws of the State of Michigan that are applied to guarantees made and to be performed in that State.

If the Guarantor is more than one person, the liability of the undersigned hereunder is joint and several. This Guaranty shall be binding upon the Guarantor, the Guarantor's heirs, executors, administrators, legal representatives, successors and assigns, and shall inure to the benefit of Landlord, its successors and assigns.

THE UNDERSIGNED ACKNOWLEDGES HAVING READ ALL OF THE PROVISIONS OF THIS GUARANTY.

WITNESS

GUARANTOR(S):

 _____ James Daly

OPTION TO SUBLEASE

This option agreement (Agreement) is made on August 7, 2019, by Haslett Gallery Inc., located at 106 N. Fourth Ave. Ste. 302 Ann Arbor, MI 48104 (Sublessee), and Meridian RE Ventures LLC located at 106 N. Fourth Ave. Ste. 302 Ann Arbor, MI 48104 (Sublessor), for the purpose of providing an option to Sublessee to lease the real property located at 2119 Haslett Rd., Haslett MI 48840 (the Premises), from Sublessor, on the terms and conditions set forth below.

1. **Term of the option.** The option created by this Agreement shall stay in effect for one year from the date of execution upon which it shall automatically terminate unless it has been exercised by Sublessee as required by this Agreement.
2. **Exercise of the option.** At any time during the term of this Agreement, Sublessee may exercise this option by delivering to Sublessor, personally or by certified mail (return receipt requested), written notice of the exercise of the option. The exercise of the option shall be effective when Sublessor receives the written notice.
3. **Consideration.** Concurrently with the signing of this Agreement, Sublessee has paid Sublessor One Dollars (\$1.00) as consideration for the option. If Sublessee exercises the option, this amount shall be applied to the first rental payment (or payments) to come due under the lease.
4. **Lease terms.** Five (5) Years
5. **Title.** Sublessor warrants that it has a Lease to the Premises and is able to sublease the Premises to Sublessee and provide Sublessee with quiet enjoyment of the Premises during the term of the lease.
6. **Condition of Premises.** Sublessor makes no warranties regarding the condition of the Premises. The Sublessee shall be solely responsible for doing any investigation and due diligence it wishes of the Premises before entering into a lease. If the Sublessee exercises its option to lease the Premises it shall be in "as is" condition without warranty or representation from the Sublessor.
7. **Form of Lease.** Lease shall be prepared using the Sublessor's form of lease.

8. Possession Date. Upon written notice from Sublessee that Sublessor has received approval from Meridian Township for use as a medical marijuana provisioning center.

9. Security Deposit. Sublessee shall pay to Sublessor, upon execution of the Lease Agreement a security deposit equal to the combined amount of the last and first months' rental amounts.

10. Taxes and assessments. Sublessor shall pay all taxes and assessments on the Premises that are billed or become a lien before or as of the closing date. Sublessee shall pay all real property taxes and assessments that arise after the closing date.

11. Tenant Improvements. The Tenant shall not make any alterations, additions or improvements to said Premises without the Landlord's written consent, and all alterations, additions or improvements made by the Tenant upon the Premises, except moveable office furniture and trade fixtures put in at the expense of the Tenant, shall be the property of the Landlord, and shall remain upon and be surrendered with the Premises at the termination of this lease, without molestation or injury.

12. Default. Any breach in the timely performance of any obligation in this Agreement shall constitute a default, entitling the party not in default to rescind this Agreement and to pursue any other legal and equitable remedies that are available under Michigan law. Time is of the essence in the performance of the provisions of this Agreement. If Sublessor fails to meet its obligations under this Agreement, Sublessee may demand the return of the consideration and pursue any legal and equitable remedies that are available to Sublessee, including, but not limited to, the recovery of damages and specific performance of this Agreement. If the transaction contemplated by this Agreement does not close because a condition of this Agreement is not met, without the fault of Sublessor or Sublessee, Sublessor shall return the consideration to Sublessee and neither party shall have any further obligations under this Agreement.

13. Eminent domain. Sublessor shall notify Sublessee within two days after receiving notice that the Premises or any portion of the Premises are to be taken or are threatened to be taken through the exercise of eminent domain. On receiving notice from Sublessor, Sublessee shall have the right to terminate this Agreement and have any payments made under this Agreement returned to Sublessee. If Sublessee elects to terminate this Agreement, all proceeds of the taking shall become Sublessor's property. If Sublessee elects to exercise the option, the proceeds of the taking shall be paid to the Sublessor and Sublessee in accordance with their respective interests in the Premises.

14. Entire agreement. This Agreement contains the entire agreement of the parties regarding its subject matter. All prior and contemporaneous negotiations are merged into the terms of this Agreement. This Agreement may be modified only by a written document signed by the parties to this Agreement.

15. Successors and assigns. This Agreement binds and benefits the parties and their successors and assigns. Either party may assign its rights under this Agreement.

16. **Legal fees.** If either party brings an action against the other to enforce this Agreement, the party in whose favor a final judgment is entered shall be entitled to recover court costs and reasonable attorney fees from the other party.

17. **Notices.** All notices required under this Agreement shall be in writing. A notice shall be complete when it is delivered personally to the other party or two business days after it is mailed to the other party by certified mail, with a return receipt requested, at the address shown above or at a subsequent address given by the party under this notice provision.

18. **Jurisdiction and venue.** This Agreement shall be governed by and interpreted and construed in accordance with the laws of the state of Michigan and venue for any disputes shall lie in Washtenaw County, Michigan.

19. **Time of the essence.** Time is of the essence in this Agreement.

20. **Effective date.** The parties have caused this Agreement to be signed, and it shall be effective as of the day and year first above written.

21. **Recording.** Either party may record this document.

SUBLESSEE
Haslett Gallery Inc.

By: _____
James F. Daly
Its: President

SUBLESSOR
Meridian RE Ventures LLC

By: _____
James F. Daly
Its: Member/Manager

Drafted by: Benjamin D. Joffe
106 N. Fourth Ave. Ste.302
Ann Arbor, MI 48104

Return to: Haslett Gallery Inc.
c/o Benjamin D. Joffe PLLC
106 N. Fourth Ave. Ste.302
Ann Arbor, MI 48104

Attachment D

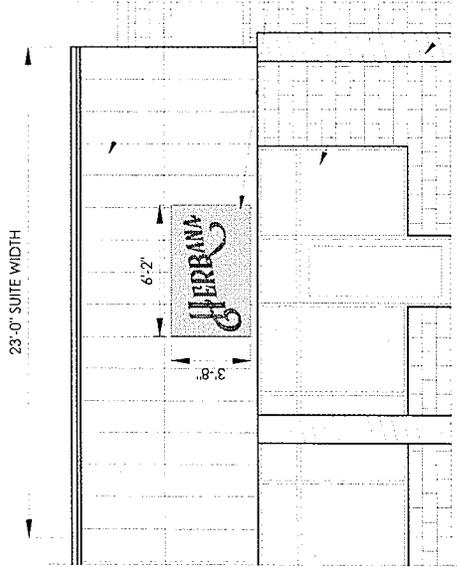
Haslett Gallery, Inc.

2119 Haslett Road., Suite 'A' - Signage



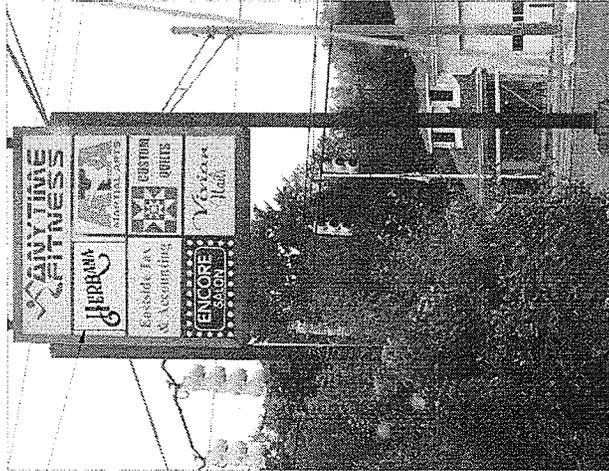
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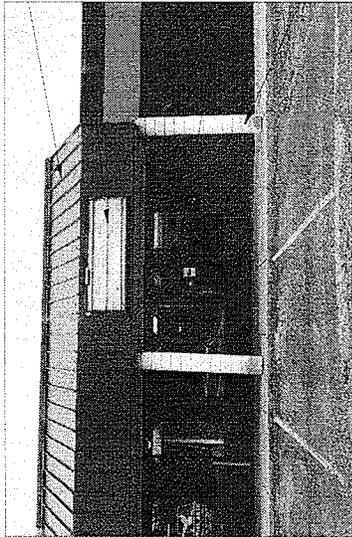


Building Elevation

- EXISTING METAL FACADE TO REMAIN.
- ILLUMINATED SIGN TO REPLACE EXISTING AT BUILDING FACADE. SIGN NOT TO EXCEED 23 SO FT.
- NEW INSERT WITHIN EXISTING STREET STREET POLE SIGN.
- EXISTING STOREFRONT TO REMAIN.
- EXISTING COLUMNS TO REMAIN.
- EXISTING METAL FACADE TO REMAIN.
- ILLUMINATED SIGN TO REPLACE EXISTING.
- EXISTING STOREFRONT TO REMAIN
- EXISTING COLUMNS TO REMAIN.



Street Pole Sign



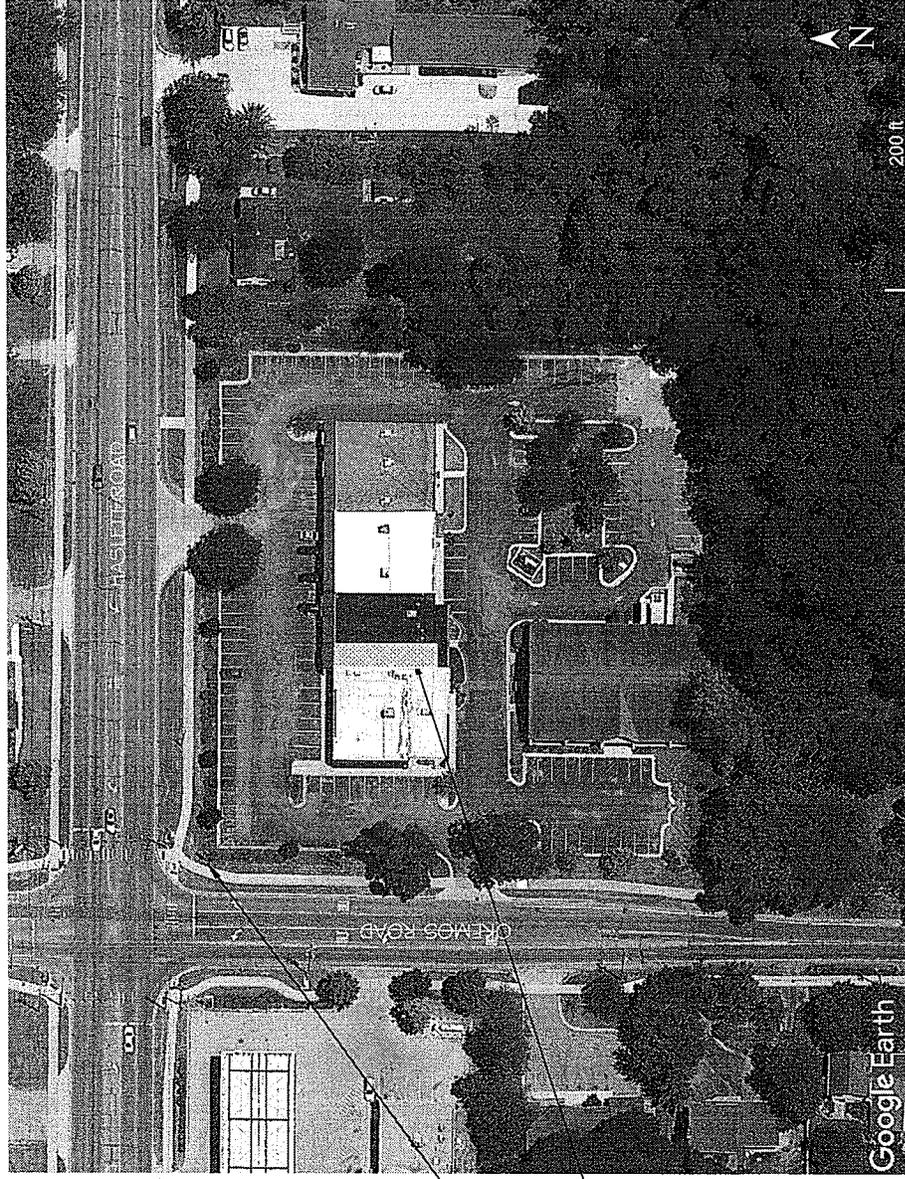
Partial Building Facade

Haslett Gallery, Inc.
2119 Haslett Road., Suite 'A'



4740 Marsh Road
Okemos, Michigan 48864
Phone: (517) 349-0902
Cell: (586) 243-5945

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LOCATION OF EXISTING POLE SIGN

LOCATION OF LEASE SPACE WITHIN EXISTING
RETAIL CENTER.

SITE OVERVIEW

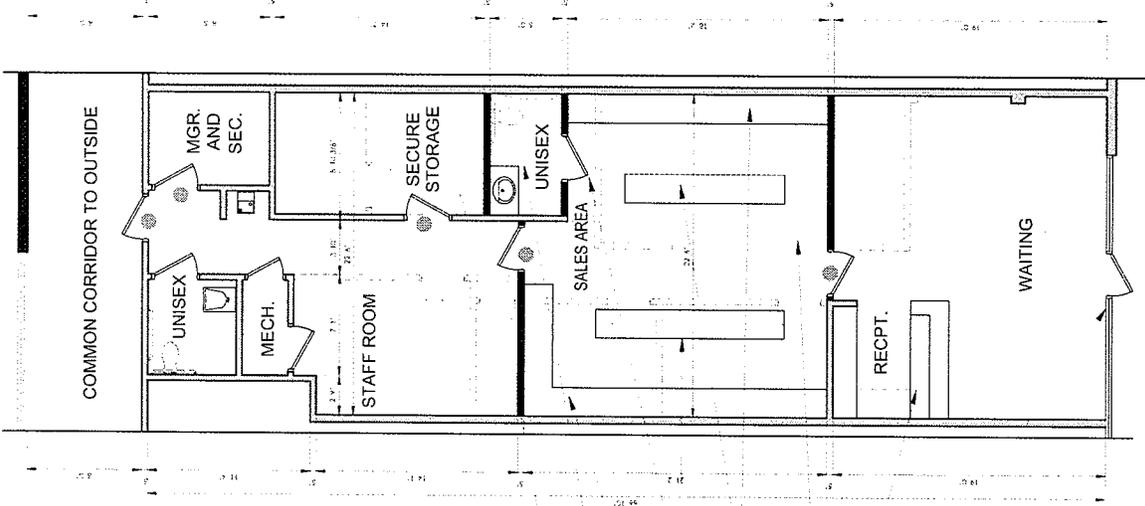
Haslett Gallery, Inc.

2119 Haslett Road., Suite 'A'



4740 Marsh Road
 Okemos, Michigan 48864
 Phone: (517) 349-0902
 Cell: (686) 243-5945

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RESTRICTED ACCESS AREAS
 HEATED ACCESS AREAS
 PATENT ACCESS AREAS

ASBESTOS REMEDIATION, WITH DRINKING WATER LOCATIONS, 100'

ASBESTOS REMEDIATION, DRINKING WATER REQUIRED PERIODICLY TO LOCATIONS.

LOW CAPACITY FOR DISPLAY AND TRANSACTION PURPOSES.

LOW SOUND LOUVER DOOR SET IN D.V. DOOR FRAME, WATER EIGHTING.

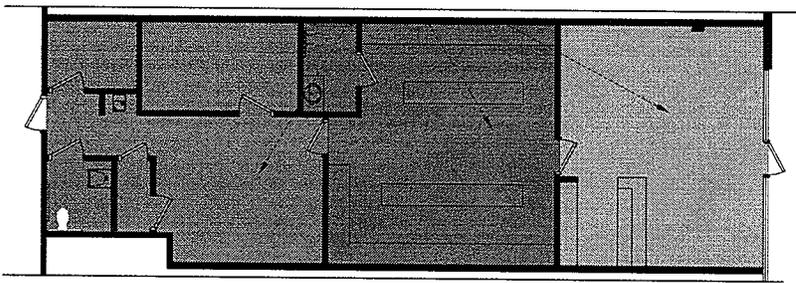
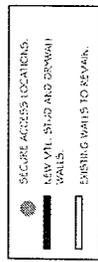
LOW CAPACITY FOR DISPLAY AND TRANSACTION PURPOSES.

DRINKING WATER DISPENSERS AND OTHER ITEMS TO BE REMOVED OR MODIFIED.

EXISTING RECEPTION COUNTER TO REMAIN, YOUNG AS DEMICED.

EXISTING PARTITION GLASS FOR OPACITY FINISH.

FLOOR PLAN
 SCALE: 1/8" = 1'-0"



GENERAL PROJECT DATA
 BUILDING DESCRIPTION: ASSISTING CLASS OFFICE BUILDING WITH COMPARTMENTALIZED BUILDING TO BE REDESIGNED TO AUTOMATIC FIRE SUPPRESSION SYSTEM.
 ZONING: C-2
 OCCUPANCY TYPE: B-2
 OCCUPANCY TYPE: V (APPLICABLE)
 BUILDING AREA:
 PROVISIONING CENTER (NET GROUP V)
 TOTAL FLOOR SPACE AREA: INSIDE FINISHES WALLS PER CODE: 13,100 SQ. FT.
 TOTAL NET BUILDABLE: 13,100 SQ. FT. = 1,359 SQ. FT.
 BUILDING HEIGHT: ONE STORY AND 1/2' +/-
 OCCUPANT LOAD: 65 PER 100 SQ. FT. PER IBC 103
 OTHER AREAS: 359 / 300 = 1.19 PERSONS
 TOTAL OCCUPANT LOAD = 16 PERSONS

Attachment E

Traffic Engineering Associates, Inc.

517/627-6028 FAX: 517/627-6040

PO Box 100
Saranac, Michigan 48881

Mr. James Daly
Haslett Gallery INC
106 N 4th Ave Suite 302
Ann Arbor, MI 48104

November 21, 2019

Dear Mr. Daly:

Traffic Engineering Associates, Inc. (TEA) conducted a trip generation comparison for the proposed Marijuana Dispensary which will be located at 2119 Haslett Road, Unit A, Meridian Charter Township, Ingham County, Michigan.

PROJECT DESCRIPTION

The proposed Marijuana Dispensary will be using an existing 1,510 square foot building that was previously occupied by a State Farm Insurance agent.

TRAFFIC ANALYSIS

For this analysis, trip generation rates were derived from the ITE TRIP GENERATION MANUAL (10th edition). The ITE trip generation rates for Marijuana Dispensary (Land Use Code 882) were selected as representing the proposed 1,510 square foot building. The ITE description of Marijuana Dispensary is as follows:

A marijuana dispensary is a standalone facility where cannabis is sold to patients or consumers in a legal manner.

It is projected that the proposed land use would generate 16 vehicle trips during the AM peak hour, 33 vehicle trips during the PM peak hour, and a weekday (24-hour) total of 382 vehicle trips.

Proposed Vehicle Trips

Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday
		In	Out	Total	In	Out	Total	
Marijuana Dispensary, Land Use Code 882	1,510 Sq. ft.	9	7	16	16	17	33	382



FINDINGS

In accordance with the guidelines set forth in "Evaluating Traffic Impact Studies, A Recommended Practice for Michigan Communities," sponsored by the Tri-County Regional Planning Commission and the Michigan Department of Transportation, if a proposed site is expected to generate at least 100 directional trips during the peak hour or at least 750 trips during an average day, a traffic impact statement is required. If the traffic generated by the site is expected to be between 50 and 99 directional trips during a peak hour, a traffic impact assessment shall be required.

Using the "Evaluating Traffic Impact Studies, A Recommended Practice for Michigan Communities" guideline, neither a traffic assessment nor a traffic impact statement would be required for this development based on projected volumes.

If you have any questions, please write or call.

Sincerely,



Heather L. Zull, PE



Attachment F

Attachment F – Natural Features Assessment

7a. There will be no changes to the natural features on the parcel. Due to this circumstance this question is not applicable to this application. Natural features are also included on the site plan

7b. There will be no changes to the natural features on the parcel and therefore there will be no impacts on the natural features.

7c. There will be no changes to the natural features on the parcel and no mitigation will need to take place to shield the natural features

Attachment G

Attachment G – SUP Request Standards

1. A provisioning center at the proposed location aligns with the intent and purposes of Meridian Township Code of Ordinances Chapter 86. Among the Chapter 86 listed and applicable purposes to this project are fostering "harmonious relationships among land uses" , and promote stability of the townships commercial areas; this project does both. The project is a consumer facing business which anticipates interactions with customers can take around 10 minutes, similar to those interaction times that are taking place at other nearby businesses including salons, professional services, and targeted retail establishments. This project is the exact same type of land use as the current retailers in this area and its addition will promote stability in the area by adding an anchor type consumer serving business to the corner mall. Finally, the planning commission and township board have endorsed the location by including this parcel as part of the medical marihuana overlay district.
2. The project is consistent with the Meridian Master Plan. The project is in a commercially zoned parcel of a Mixed-Use Core Area with multiple types of available transportation. It promotes pedestrian use a it is situated on the Haslett Road bike lane (road diets) portion with an existing pedestrian pathway. There is also public transit located on the adjacent roadway. This project, along with the surrounding businesses, is accessible by foot and vehicular traffic, which will help create a small community of consumer facing businesses for the nearby residents of the municipality.
3. This will have no change on the existing or intended character of the general vicinity because the project contains minimal changes to the parcel's currently constructed building. It is appropriate to conclude that the area's essential character will remain unchanged.
4. The project will compliment existing neighboring uses. The project includes a small consumer facing business consistent with those types of organizations in the immediate vicinity. The project also includes a robust surveillance system addressing the interior and exterior of the project. The addition of exterior surveillance cameras results in additional security for surrounding organizations and a potential resource for local authorities. Finally, the project also includes odor mitigation elements to make sure there is no potential nuisance to the surrounding neighbors. *See Legalizing Marijuana Could Give Michigan Home Values A Boost, available at <https://www.forbes.com/sites/aiyyale/2018/12/06/legalizing-marijuana-could-give-michigan-home-values-a-boost/#17ac9d5140e4> and Contact High: The External Effects of Retail Marijuna Establishments on House Prices, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2885017*
5. This project will likely increase the economic welfare of the surrounding properties and community. They type of project contemplated for this parcel has been shown to

increase property prices of neighboring and closely situated parcels. Additionally, the existence of a type of business that has never been in the current property will increase adjacent business opportunities for new customers that would not ordinarily visit the area.

6. The public facilities adequately serve the current buildings on the parcel as there is little to no change in the intensity of the use. There is little to no-change in the building presented in the project and therefore the building will continue to be adequately served by the public facilities.
7. The public sanitation facilities adequately serve the current buildings on the parcel. There is little to no-change in the parcel presented in the project and therefore the parcel will continue to be adequately served by the public sanitation facilities.
8. This project will not affect the general welfare of those individuals and entities close to, or adjacent, to the proposed facility. There is currently no, and due to the lack of changes there will not be, any uses, activities, processes, materials, and equipment or conditions of the operation. Specifically, there will be no packaging on site, this activity is the number 1 cause of odor and by not doing such on site, we can anticipate no odor. However, the organization will continue to put other odor mitigating procedures in place, including placing carbon air filters and maintaining negative air pressure in the facility.
9. This project will have limited to zero impact on the surrounding areas due to the minimal changes to the premises as espoused in this application.



SIGN PERMIT APPLICATION
CHARTER TOWNSHIP OF MERIDIAN
5151 MARSH ROAD, OKEMOS, MI 48864-1198
BUILDING DIVISION PHONE: (517) 853-4500 FAX: (517)853-4095
meridian.mi.us

PLEASE PRINT

Site Address/Location		Zoning District
Applicant (If different than Contractor)		
Address of Applicant		
Telephone	Fax	Email
Contractor		Contractor License #
Address of Contractor		
Telephone	Fax	Email

Type of Sign	Number of Signs	New	or	Replacement of Existing
<input type="checkbox"/> Freestanding	_____	___		___
<input type="checkbox"/> Wall	_____	___		___
<input type="checkbox"/> Other (describe)	_____	___		___

The following materials must be submitted with the application:

- A drawing of the sign to scale showing dimensions and total square footage.
- A drawing of the support structure (base) and footing to scale showing dimensions & total height including the sign.
- A site plan to scale showing location of freestanding sign and setbacks.
- Building elevation to scale showing location of wall sign and lineal dimension of the building or tenant space
- Permit fee \$ _____ **FEE RECEIVED \$ _____ RECEIPT # _____ DATE _____**

I agree this application is only for the work described and does not grant permission for additional or related work which requires separate permits. I understand the permit may become null and void if work is not started within 180 days, or if work is suspended or abandoned for a period of 180 days at any time after work has commenced; and that I am responsible for assuring all required inspections are requested in conformance with the applicable code.

I hereby certify that the proposed work is authorized by the owner, and that I am authorized by the owner to make this application as his authorized agent. I agree to comply to all applicable laws of the State of Michigan and the local jurisdiction. All information provided on the permit application and accompanying documentation is to the best of my knowledge true and accurate.

Applicant/Contractor Signature _____ Date 3/20/23

Federal I.D Number _____ Insurance Name/Policy Number _____

FOR OFFICE USE ONLY

<input type="checkbox"/> Existing Sign <input type="checkbox"/> Conforming <input type="checkbox"/> Non Conforming If Non Conforming Assessed Value of Sign \$ _____	<input type="checkbox"/> Proposed Sign <input type="checkbox"/> Conforming <input type="checkbox"/> Non Conforming Variance Granted/Date _____
Application <input type="checkbox"/> Approved <input type="checkbox"/> Denied Building Official _____	Date Approved: _____ Permit Number _____

NOTE: Separate application must be completed for Electrical permit.

This is not a permit and does not authorize any sign(s) to be installed or any other work or construction associated with this application until a permit has been issued.

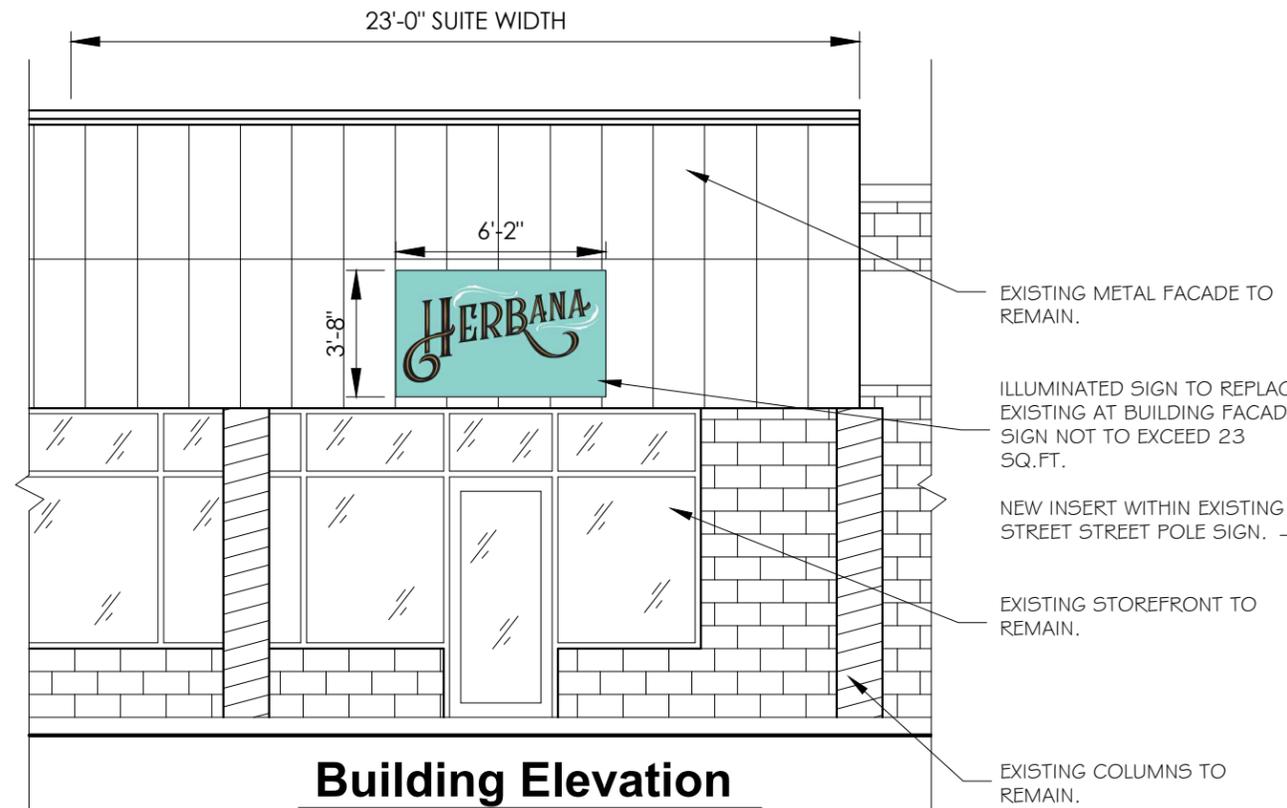
Meridian RE Ventures

2119 Haslett Road., Suite 'A' - Signage



4740 Marsh Road
Okemos, Michigan 48864
Phone: (517) 349-0902
Cell: (586) 243-5945

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Building Elevation



Partial Building Facade



Street Pole Sign



To: Members of Planning Commission

**From: Timothy R. Schmitt, AICP
Community Planning and Development Director**

Date: May 2, 2023

Re: Master Plan Update – Build Out Analysis

One of the main items that Staff is ‘adding’ to the Master Plan during our 2022/2023 update is a build out analysis. This is a high level review of the vacant property in the Township and its development potential, under current circumstances. This helps us in a number of ways, including planning for utilities and discussing potential future developments that may have other vacant property nearby. It also helps guide other discussions, such as corridor plans that may come up, if there is a great deal of vacant land in a specific corridor.

The most important thing to point out right now is that this is the first step in really creating a robust data set for the Township’s use. At this time, we’ve simply taken the Assessing database, exported the properties marked as vacant in their system, and applied a factor of 75% to the acreage, to account for utility needs, wetlands, odd shaped parcels, etc. To start, we’ve applied this across the board, but as part of the work between master plan updates, we expect to further build this database out to take into account, in more granular detail, specific conditions of specific parcels that will have a negative impact on their development potential. What the data tells us right now is this:

- There are approximately 375 residentially zoned parcels that are of a reasonable enough size to accommodate at least one dwelling unit. These parcels represent the potential for 3,441 dwelling units, at 75% gross acreage. Staff believes this number is very much on the high end for potential development, as there are a number of larger parcels that have substantial wetlands that will lower their development potential.
- Of those 3,441 dwelling units, 998 of them have already been approved by the Township. This includes projects such as Newton Point and Grand Reserve, but also individual lots that are vacant in dozens of subdivisions throughout the Township.
- There are 87 residentially zoned parcels that are extremely small (under 6,000 square feet), but are theoretically buildable, adding 87 units and bringing the overall total to **3,528 units**.
- There are 58 commercially zoned parcels that are not taken into account in this analysis. Going forward, Staff will be looking into the viability of these parcels for mixed use projects versus straight commercial development and how many potential units that could add.
- Lastly, there are 620 parcels that are currently owned by homeowners’ associations, churches, schools, Meridian Township, utilities, and other tax exempt organizations that are vacant or are otherwise used by the tax exempt organization. These parcels are not included in any way in the build out discussion, as there is no expectation of development.

As this is new data, Staff wanted to present it early to the Planning Commission for any comments or thoughts the Commissioners might have. As mentioned previously, we expect to further refine this data going forward, including:

- Determining more specifically what the gross acreage for development is on the parcels greater than one acre.
- Understanding what potential residential density can or should come out of the commercially zoned parcels that are currently vacant.
- Using this and other data to begin cleaning up our split zoned parcels throughout the township.



To: Members of Planning Commission

From: Brian Shorkey, AICP, Senior Planner

Date: May 4, 2023

Re: Project Report

The Planning Commission has asked Staff to compile a list of ongoing projects. As of May 2023, the following projects are under construction, under site plan review, or have been submitted as a new application:

Under Construction

<u>Name</u>	<u>Location</u>	<u>Date Approved</u>	<u>Description</u>	<u>Status</u>
1. Sanctuary III	North of Robins Way	March 15, 2022	7 SFR Homes	Site plan under review
2. Hulett Road	Hulett Road	August 4, 2022	5 SFR Homes	Site plan under review
3. Copper Creek 3 & 4	Haslett Road, east of Green Road	August 5, 2019	38 SFR	Awaiting building permits
4. American House	SW Corner of Haslett Road and Marsh Road	August 5, 2020	Mixed Use w/ 132 MFR	Under construction
5. Elevation Phase 3	North of Jolly Road, West of Jolly Oak	December 28, 2021	66 MFR	Almost built out
6. Newton Pointe	6276 Newton Road	February 24, 2022	Mixed Use w/ 105 MFR & 14 SFR	2023 construction
7. Woodward Way	Sirhal Drive	October 29, 2021	49 MFR	
8. Commons Church	4720 Marsh Road	August 9, 2022	Expanded Parking Lot	Under construction
9. Singh	1954 Saginaw	June 25, 2018	Convert garage to SFR, 5 MFR	Under construction
10. Trader Joe's	2755 Grand River	April 22, 2022	Trader Joe's retail	Under construction

Page 2

11. Radmoor Montessori	2745 Mount Hope	April 11, 2022	Building addition	Awaiting building permits
12. MSU to Lake Lansing Trail, Phase 1 (SUP)	West end of Red Cedar River	December 12, 2022	Township trail	Under construction

Under Site Plan Review

<u>Name</u>	<u>Location</u>	<u>Date Approved</u>	<u>Description</u>	<u>Status</u>
1. Village of Okemos	Downtown Okemos	October 6, 2022 (MUPUD)	206 MFR	First round of comments
2. Haslett Village	SW Corner of Haslett Road and Marsh Road	July 26, 2019 (MUPUD)	290 MFR	Waiting for plan
3. Silverleaf Phase 1	West Bennett Road	February 28, 2022 (SUP)	25 SFR	First round of comments
4. Consumers CU	2763 Grand River	N/A	Credit Union	Finalized
5. Grand Reserve (SUP)	Central Park Drive & Powell Road	115-unit MFR and SFR development		Under Site Plan review
6. City Limits	2120 M-78	N/A	Redevelopment	Under Site Plan review
7. Elevation Phase 4	North of Jolly Road, West of Jolly Oak		MUPUD Amendment	Public hearing 3/30/2023
8. Schultz Vet Clinic	2806 Bennet Road	4/24/2023	Vet clinic expansion	Waiting for plan
9. Tidal Wave Auto Spa	4880 Okemos Road	3/13/2023	New auto wash	Public meeting 5/12/2023
10. Work of Christ	1502 River Terrace Drive	4/10/2023	Conversion of home to religious office	Under Site Plan review

New Applications

<u>Name</u>	<u>Location</u>	<u>Description</u>	<u>Status</u>
1. MSU to Lake Lansing Trail, Phase 2 (SUP)	Park Lake Road to Okemos Road	Township trail	Public hearing 4/24/2023
2. Schultz Vet Clinic	2806 Bennett Road	SUP Amendment	Public hearing 4/10/2023
3. Herbana	2119A Haslett Road	SUP for Dispensary	Public hearing 4/24/2023
4. Skymint	Northwind Drive	SUP for Dispensary	Public hearing 5/8/2023