

Exhibit F

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Sharmi Shah
ATTORNEY AT LAW, A PLC

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San Jose, CA 95110
(408) 459-8120

VIA EMAIL to Pham-GallardoS@co.monterey.ca.us
and SpencerC@co.monterey.ca.us

June 6, 2019

Ms. Son Pham-Gallardo
Mr. Craig Spencer
Monterey County Resource Management Agency
1441 Schilling Place
2nd Floor
Salinas, CA 93901

Monterey County Planning Services
1441 Schilling Place
Salinas, CA 93901

Re: Carmel Valley Original, Inc. (PLN170336)

Dear Ms. Pham-Gallardo and Mr. Spencer:

I represent Carmel Valley Original, Inc. I am writing to you regarding Carmel Valley Original, Inc.'s proposed plan to open a cannabis retail facility at 299 River Road, Salinas, California. The principals of Carmel Valley Original, Inc. are Angela Mann, Larry Mann, and Anthony Lane. The principals chose 299 River Road in accordance with the Monterey County Code of Ordinances and State law. The location is properly located in a Light Commercial zone. The property is not located within a six hundred (600) foot radius of a school providing instruction in kindergarten or any grades 1 through 12, a child care center, a youth center, a playground, or a drug recovery facility. The property is not located within one thousand five hundred (1,500) feet of another approved retail facility.

I understand that some people have expressed concerns about Carmel Valley Original, Inc. opening a cannabis retail facility at 299 River Road. In the following letter and enclosures, I hope to address and alleviate these concerns as Carmel Valley Original, Inc. and its principals genuinely want to work with the surrounding community.

Parking and Traffic

One issue raised has been that the premises lacks sufficient parking and that the existing parking lot could cause issues regarding the stream of traffic on River Road. To address these concerns, Carmel Valley Original, Inc. retained the services of Larry Hall at Pinnacle Traffic Engineering. Enclosed herein as **Exhibit A** is Mr. Hall's report.

Ms. Son Pham-Gallardo
Mr. Craig Spencer
Re: Carmel Valley Original, Inc. (PLN170336)
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Page Two

Based upon the recommendations of Mr. Hall, on-site parking will be provided for 14 vehicles (2 spaces will be allocated for the existing residential dwelling and the remaining 12 will be available for customer parking). Mr. Hall conducted an analysis of the property and determine that this will be sufficient on-site parking for our retail cannabis facility.

Further, access to and from the parking lot will be provided via the existing two-way driveway on River Road. Mr. Hall also address concerns raised about the ability of vehicles to maneuver in and out of the parking lot and in and out of River Road. Based upon his studies, Mr. Hall did not find that either issue would pose a problem to the safety of the retail facility's customers and other drivers.

In addition, the Company is agreeable to purchasing and installing a "Rectangular Rapid Flashing Beacon" at the existing crosswalk on River Road to help slow down traffic coming down the hill. (See attached photo as **Exhibit B**),

Safety & Lighting

Another concern raised about this project is that of safety and lighting. These two issues are related as, one of the primary methods of deterring criminal activity is the appropriate use of exterior lighting. We have updated our Security Plan (**Exhibit C**) to include the measures we will be taking to ensure the security of the premises, our customers and employees. In addition to these measures, our property has a residence on-site. This residence will be occupied the General Manager of our retail facility. Enclosed herein is as **Exhibit D** is the executed lease. As a result of the General Manager residing onsite, we will have someone on-site 24 hours a day, 7 days a week who is available to address any security issues.

Also enclosed herein as **Exhibit E** are several articles that discuss how criminal activity near cannabis businesses is actually rare and as **Exhibit F** a letter from an immediate neighbor supporting the opening of a retail cannabis facility at 299 River Rd.

Odor Management

Lastly, a concern has been raised is in regard to odors that may result from the retail facility. An Odor Management Plan (**Exhibit G**) has been prepared outlining how Carmel Valley Original, Inc. will work to reduce odors and provide neighbors with a contact number if they should have any concerns regarding odors.

Sincerely,



Sharmi Shah, Esq.

Enclosures
cc: client

EXHIBIT A

PINNACLE TRAFFIC ENGINEERING

831 C Street

Hollister, California 95023

(831) 638-9260 • PinnacleTE.com

May 9, 2019

Mr. Anthony Lane
299 River Road
Salinas, CA 93908

RE: River Road Dispensary Project; Monterey County, California
Trip Generation Analysis Update

Dear Mr. Lane,

Per your request, Pinnacle Traffic Engineering (PTE) has prepared an update to the original trip generation analysis (dated Nov. 27, 2018). The update includes a revision to the project site trip generation estimates and presents an evaluation of parking and access. The revised trip generation estimates are based on data provided on the project site plan prepared by Michael James Martin (a copy is attached). The revised trip generation estimates also reflect specific data for the proposed marijuana dispensary use (not included in the original trip generation analysis). The evaluation of parking and access is provided in response to comments received at the public meeting.

The project site is located on the north side of River Road in the unincorporated area south of the City of Salinas. The project site is currently occupied by a small structure (299 River Road) and a single family residential dwelling (297 River Road). The project includes a minor modification to the existing small structure (1,284 SF). The existing structure modifications are being completed to accommodate a new marijuana dispensary. The weekday hours of operation will be 10:00 AM to 7:00 PM. On-site parking will be provided for 14 vehicles (2 spaces allocated for the existing residential dwelling). Access will continue to be provided via the existing two-way driveway on River Road. The scope of the project site trip generation analysis was based on consultation with County staff.

Project Site Trip Generation Estimates

The previous use for the existing structure to be remodeled was a convenience market. Therefore, it was deemed appropriate to derive the project site trip generation estimates for the previous and proposed uses to quantify the “net” change in trip generation attributable to the proposed project. The project trip generation estimates have been derived using data in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). It’s noted that the data in the ITE Trip Generation Manual also indicates that a convenience market will only attract up to about 8% of the

traffic from an adjacent street during the PM peak hour. Based on the County’s 2018 traffic count data and the size of the existing structure (1,284 SF), the previous convenience market use more than likely would only attract at the most 55 trips from River Road during the PM peak hour (690 vehicles per hour during the PM peak hour x 0.08). Therefore, the ITE trip rates for the convenience market use were adjusted to reflect the actual traffic volumes on River Road and the existing structure size (multiplied the ITE rates by 0.873 = 55 PM peak hour trips / 63 PM peak hour trips). The ITE trip generation rates are provided in Table 1.

Table 1 - ITE Trip Generation Rates

ITE Code - Land Use	Unit	Number of Vehicle Trips per Unit				
		AM Peak Hour		PM Peak Hour		Daily
		In	Out	In	Out	
#851 - Convenience Market Adjusted Trip Rates, (a)	1,000 SF	31.27 (27.30)	31.27 (27.30)	25.05 (21.87)	24.06 (21.00)	762.28 (665.47)
#882 - Marijuana Dispensary	1,000 SF	5.85	4.59	10.92	10.91	252.70

(a) Based on adjustment for local traffic volumes on River Road

Data in the ITE Trip Generation Handbook indicates that a significant portion of retail related trips are “pass-by” and/or “diverted-link” type trips coming from traffic already on the adjacent street system. Based on the ITE data, the “pass-by” trips attracted to the previous convenience market could account for 30-35% of the total trips. Therefore, the project site trip generation estimates associated with the previous convenience market use also account for a 30% pass-by trip reduction (70% of total trips would be considered single purpose primary trips). The pass-by trip reduction was not applied to the proposed dispensary use since it will be a unique specialty retail use. The project site trip generation estimates for the previous and proposed uses are presented in Table 2.

Table 2 - Project Site Trip Generation Estimates

Project Component	Number of Vehicle Trips				
	AM Peak Hour		PM Peak Hour		Daily
	In	Out	In	Out	
<u>Previous Use:</u> Convenience Market - 1,284 SF (30% Pass-By Trip Reduction)	35 (-11)	35 (-11)	28 (-8)	27 (-8)	854 (-256)
Primary Single-Purpose Trips:	24	24	20	19	598
<u>Proposed Project Use:</u> Marijuana Dispensary - 1,284 SF (a)	0	0	14	14	324
“Net” Change in Trips (Proposed - Previous):	-24	-24	-6	-5	-274

(a) Not open before 10:00 AM on weekdays.

The data in Table 2 indicates that the proposed project (marijuana dispensary) will generate a total of approximately 324 daily trips (two-way trip ends), with 28 vehicle trips during the PM peak hour (14 in & 14 out). The data also demonstrates that the previous convenience market generated more daily and peak hour traffic than the proposed marijuana dispensary. Therefore, since the proposed use will generate fewer peak hour trips than the previous use it's concluded that the proposed project will not significantly impact local peak hour traffic operations.

As discussed in the original trip generation analysis, the proposed project is subject to the applicable development fees. The County's fee schedule is provided in the Monterey Countywide Traffic Impact Fee Nexus Study (Zone 3: Greater Salinas). The project's regional development fee is based on the schedule in the TAMC Regional Development Impact Fee Program Nexus Study Update 2018 and current "Regional Development Impact Fees" spreadsheet. Payment of the development fees provides mitigation for any potential long-term impacts related to local development. Both the Countywide and TAMC fee are based on the size of the proposed marijuana dispensary (1,284 SF). A summary of the project's development fee estimates is provided in Table 3. A copy of the TAMC fee estimate spreadsheet is attached.

Table 3 - Project Development Fee Estimates

Development Fee	Project's Fee Estimates
Monterey "Countywide" Fee (a)	\$4,422.10
TAMC "Regional" Fee	\$6,018.11
Total Development Fees:	\$10,440.21

(a) Countywide fee (\$3,444 / 1,000 SF)

The total Countywide and TAMC regional development fee estimate is \$10,440.21. However, as demonstrated in Table 2 the proposed marijuana dispensary use will generate less traffic than the previous convenience market. Therefore, if the County allows a credit for the previous use the project development fee requirement would not apply. The project applicant should discuss any appropriate credit for the previous use with County staff.

Evaluation of Parking

As previously stated, on-site parking will be provided for 14 vehicles. The Monterey County Parking Ordinance (21.58.040) requires 2 parking spaces per residential dwelling unit and 1 parking space per 250 SF for general retail. Therefore, the proposed project is required to provide at least 8 spaces for off-street parking (2 plus 1,284 SF / 250). The ITE Parking Generation Manual (5th Edition) includes specific data for a marijuana dispensary use. The ITE data indicates that the average parking generation rate is 7.19 spaces per 1,000 SF. Based on the ITE data, the project would be required to provide 10 spaces (1,284 SF x 7.19) for the proposed marijuana use. The project proposes 12 parking stalls for the marijuana use.

May 9, 2019

Page 4 of 4

Concerns were expressed at the public meeting regarding the ability of vehicles to maneuver on-site and avoid having to back out on to River Road to exit the project site. To address this issue a simulation was conducted to represent a vehicle exiting the front and rear parking areas on-site. The parking simulation was performed using the AutoTurn software and a standard passenger car design vehicle from the “A Policy on Geometric Design of Highways and Streets” published by the American Association of State Highway and Transportation Officials (AASHTO). The standard passenger car design vehicle is representative of a large 4-door sedan and exceeds the size of many current sedans and pickup trucks. The parking simulation is attached with the design vehicle profile shown in the lower left corner of the site plan. The parking simulation demonstrates that a vehicle will be able to back out of a parking space in the front and rear parking areas, maneuver the vehicle and exit the project site going forward.

Evaluation of Access

Concerns were also expressed at the public meeting regarding the deceleration and acceleration of vehicles accessing the project site. River Road adjacent to the project site has a single 12’ travel lane in each direction, a 6-7’ shoulder on the north side, and is posted with a 45 miles per hour (mph) speed limit. Based on the project site location, it’s anticipated that the majority of traffic will be oriented to and from the west. The peak hour volume of traffic estimated to enter the site from the westbound lane and the peak hour volume on River Road are well below the standard warrant criteria for a full width right turn lane (less than 60 right turn vehicles per hour) or right turn deceleration taper (less than 30 right turn vehicles per hour). The westbound shoulder will provide an area for partial deceleration when approaching the project driveway. The shoulder will also provide an area for partial acceleration when vehicles exit the project site and wish to enter the westbound lane on River Road.

Please contact my office with any questions regarding the updated trip generation analysis.

Pinnacle Traffic Engineering





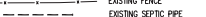








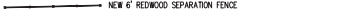
Larry D. Hail, CE, TE, PTOE
President



ldh:msw

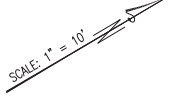
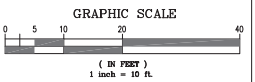
- Attachments: Project Site Plan
- TAMC Development Fee Estimates
- Parking Simulation Exhibit

- SYMBOL KEY**
-  NEW STAMPED CONCRETE PAVING
 -  NEW PERMEABLE (PERVIOUS) INTERLOCKING PAVERS
 -  EXISTING AC
 -  PROPERTY LINE
 -  EXISTING FENCE
 -  EXISTING SEPTIC PIPE
 -  REPLACEMENT SEPTIC SEEPAGE PIT

-  4" DIA SOLID PVC DRAIN PIPE TO DISPERSAL TRENCH
-  4" DIA PERF. PVC UNDER PAVER DRAIN PIPE TO SOLID PIPE COLLECTOR
-  105.5 SPOT GRADE
-  NEW 6" REDWOOD SEPARATION FENCE
-  NATURAL NATIVE GRASSES

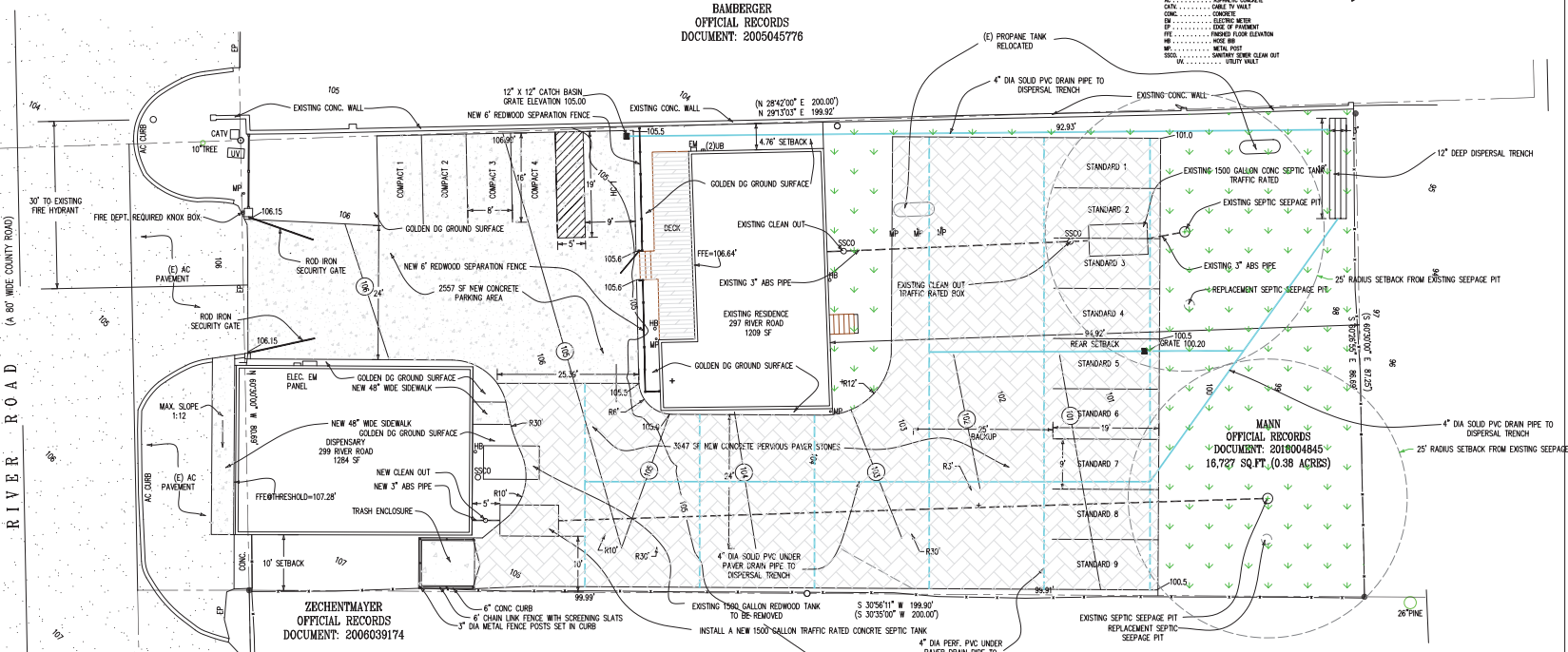
- INFORMATION LEGEND**
1. GENERAL PLAN LAND USE: F/40 D
 2. ZONING DESIGNATION: LIGHT COMMERCIAL (LC)
 3. AREAS
 - EXISTING HOUSE: 1209 SF
 - EXISTING COMMERCIAL BUILDING: 1284 SF
 - TOTAL BUILDING AREA: 2493 SF
 - PARCEL AREA: 16,552 SF
 - FLOOR AREA RATIO (FAR) = 15%
 - GRADING VOLUME: 0 CY
 5. TREE REMOVAL: NO TREES TO BE REMOVED
 6. IMPERVIOUS COVERAGE: SEE STORMWATER DRAINAGE CALCULATIONS AND ASSUMPTIONS, BELOW.
 7. REQUIRED AND PROPOSED PARKING COUNTS: SEE PARKING, BELOW.
 8. WATER SERVICE: CAL. AM.
 9. SEWER DISPOSAL: EXISTING ON SITE SEPTIC SYSTEMS.
 10. WETLANDS, STREAMS, CREEKS, NONE
 11. LANDSCAPING - NATURAL GRASSES, NO SIGNIFICANT LANDSCAPING, NO IRRIGATION.

- NOTES**
1. BOUNDARY LOCATIONS SHOWN HEREIN WERE DETERMINED WITH THE BENEFIT OF A REAL SURVEY OPERATOR'S RECORD DATA. A RECORD OF SURVEY WILL BE FILED WITH THE COUNTY OF MERCED AFTER THE BOUNDARY RESULTS.
 2. DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF.
 3. THIS PROPERTY MAY BE AFFECTED BY EASEMENTS THAT ARE NOT SHOWN ON THIS MAP.
 4. CONTOUR INTERVAL = 1 FOOT.
 5. ELEVATIONS SHOWN ARE BASED ON MSL-88 DATUM. THE RECORDING IS A RED PLOTTED BRASS DATA. ELEVATION = 55.30'.
 6. Ø INDICATES A ROUND 1" IRON PIPE NOT TAPPED.
 7. ○ INDICATES A 6\" data-bbox="645 270 735 285"/>



**BAMBERGER
OFFICIAL RECORDS
DOCUMENT: 2005045776**

- LEGEND**
- EXISTING LINE
 - AC ASPHALT TO CONCRETE
 - CA CURE TO TRACT
 - CC CONCRETE
 - EM EXISTING METRE
 - EP EDGE OF PAVEMENT
 - FF FINISHED FLOOR ELEVATION
 - HP HOSE END
 - MP METAL POST
 - SSO SANITARY SEWER CLEAN OUT
 - STREET LIGHT



STORMWATER DRAINAGE CALCULATIONS AND ASSUMPTIONS

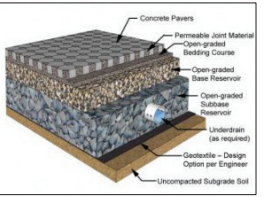
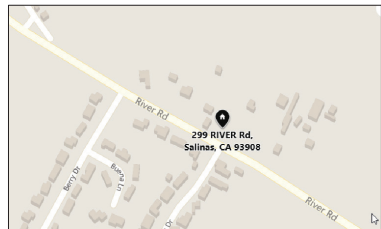
1. PRE-DEVELOPMENT CONDITIONS: EXISTING HOUSE AND COMMERCIAL BUILDING ROOF AREA = 2493 SF. EXISTING CONNECTED IN-COURT PAVED AREA = 2557 SF. TOTAL IMPERVIOUS AREA = 0.12 ACRES. EXISTING PERVIOUS LANDSCAPING AREA = 0.38 ACRES.
 2. POST-DEVELOPMENT CONDITIONS: EXISTING HOUSE AND COMMERCIAL BUILDING ROOF AREA = 2493 SF. NEW CONCRETE PARKING AREA = 2557 SF. TOTAL IMPERVIOUS AREA = 0.12 ACRES. NEW PERVIOUS LANDSCAPING AREA = 0.38 ACRES. TOTAL PERVIOUS AREA = 0.38 ACRES.
- PRECEDENCE PRIORITY = POST-DEVELOPMENT RAINFALL.
- ADJUST C = 10 MIN
ADJUST IMPERVIOUS C COEFFICIENT = .90
ADJUST PERVIOUS C COEFFICIENT = .30
OVERALL C = $[(.90)(.12)] + [(.30)(.38)] = .47$
For 25 year storm - peak 25.1 = 1.10(26) = 82 inches/year
Channel .30 inches/year for 2 year 1 hour storm event
Q_{avg} = Q_{peak} = Q_A = 4.97(40.50) = 11 CFS
- NO RETENTION OR RETENTION REQUIRED
- COLLECT ALL STORM WATER FROM ROOF TO OUTLET/DOWNSPOUT SYSTEM THEN TO DISPERSION TRENCH AT REAR OF PROPERTY.
- COLLECT ALL STORM WATER FROM CONCRETE PARKING AREA TO CATCH BASIN THEN TO DISPERSION TRENCH AREA AT REAR OF PROPERTY.
- COLLECT ALL STORM WATER COLLECTED UNDER PERVIOUS PAVERS TO DISPERSION TRENCH AT REAR OF PROPERTY.

PARKING

- REQUIRED PARKING: RESIDENCE 2 130 SF / 1 PER 250 SF = 5.16 = 6 ADA REQUIRED AC = 4 TOTAL REQUIRED 9 PARKING SPACES
- ACTUAL INSTALLED PARKING SPACES: 9 STANDARD 1 1 HC 4 COMPACT 4 TOTAL 14 PARKING SPACES

SEPTIC SYSTEMS

- EXISTING SEPTIC SYSTEMS: RESIDENCE 2 1300 GALLON REDWOOD SEPTIC TANK CONNECTED TO EXISTING 3\" data-bbox="510 735 575 885"/>
- FUTURE REPLACEMENT EFFLUENT DISPOSAL SYSTEM: 1. REPLACE EXISTING SEPTIC PIT WITH NEW 6\" data-bbox="510 735 575 885"/>
- FUTURE REPLACEMENT SEPTIC SYSTEMS TO BE ALTERNATIVE OWTS TYPE, WITH THE INSTALLATION OF NEW SEEPAGE PITS IN LIEU OF SEPTIC TRENCHES. ALTERNATIVE OWTS SYSTEMS REQUIRE A DEED RESTRICTION TO BE RECORDED ON THE PROPERTY. THIS NOTIFICATION SHALL RUN WITH THE LAND AND WILL ACT AS CONSTRUCTIVE NOTICE TO PRESENT AND FUTURE OWNERS THAT THE PROPERTY WILL REQUIRE AN ONGOING ANNUAL ALTERNATIVE ONSITE WASTEWATER TREATMENT SYSTEM. PROPERTY OWNER TO OBTAIN THE PROPERTY'S DEED AND LEGAL PROPERTY DESCRIPTION (GRANT DEED) FROM THE RECORDER'S OFFICE AND SUBMIT TO THE ENVIRONMENTAL HEALTH DEPARTMENT TO PREPARE DEED RESTRICTION.



**River Road
Dispensary**

299 River Road
Salinas
California
139-061-003-000

DATE: 12 November 2018

REVISIONS:

**Site Plan
Drainage Plan
Septic Plan
Parking Plan**

SCALE: 1" = 10'

DRAWN BY:

CHECKED BY:

JOB NO.:

SHEET NO. C-1

The scale drawings, verify dimensions measurements and data of building or site before and quantities to scale.

The use of these plans and specifications is restricted to the original site for which they were prepared.

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Michael James Martin Engineering

Regional Development Impact Fees

River Road Marijuana Dispensary (April 18, 2019)

Fee Calculation Worksheet

Last updated October 1, 2018

Project Name:

Date:

Select the Benefit Zone:	GREATER SALINAS
Select the Agency:	County of Monterey

Select the Land Use Type:	Fee Schedule	Enter the # of Units	Fees
1 Specialty Retail Center	\$4.69	1,284	\$6,018.11
2	\$0.00		\$0.00
3	\$0.00		\$0.00
4	\$0.00		\$0.00
5	\$0.00		\$0.00
Calculate by Fee per Trip (Only use for appeals):	\$346		\$0.00
Subtotal:			\$6,018.11
Apply discount:		0.00%	\$0.00
Apply credits:			\$0.00
Total Regional Fee:			\$6,018.11

SYMBOL KEY

- NEW STAFFED CONCRETE PAVING
NEW PERMEABLE (PERMACO) INTERLOCKING PAVERS
EXISTING AC
PROPERTY LINE
EXISTING FENCE
EXISTING SEPTIC PIPE
REPLACEMENT SEPTIC SEPARATE PIT

INFORMATION LEGEND

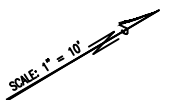
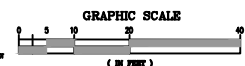
- 1. GENERAL PLAN LAND USES: F/A/D
2. ZONING DESIGNATION: LIGHT COMMERCIAL (LC)
3. AGENCIES:
EXISTING HOUSE: 1200 SF
EXISTING COMMERCIAL BUILDING: 1284 SF
TOTAL BUILDING AREA: 2484 SF
PARCEL AREA: 16,727 SF
FLOOR AREA RATIO (FAR): 1.48
4. GRADING VOLUME: 0 CY
5. TREE REMOVAL: NO TREES TO BE REMOVED
6. IRRIGATION COVERAGE: SEE STORMWATER DRAINAGE CALCULATIONS AND ASSUMPTIONS, BELOW
7. REQUIRED AND PROPOSED PARKING COUNTS: SEE PARKING, BELOW
8. TRUCK SERVICES: CALL J&B
9. SEWER DISPOSAL: EXISTING ON SITE SEPTIC SYSTEM
10. RETAINAGE SYSTEMS: SEE GEOTECH
11. LANDSCAPING - NATURAL GRASSES, NO SIGNIFICANT LANDSCAPING OR IRRIGATION

NOTES

- 1. EXISTING EXTERIOR WALLS SHALL BE REINFORCED AND THE FOUNDATION SHALL BE REINFORCED TO SUPPORT A WEIGHT OF 1000 PSF. THE EXISTING FOUNDATION SHALL BE REINFORCED TO SUPPORT A WEIGHT OF 1000 PSF AND EXISTING FOUNDATION SHALL BE REINFORCED TO SUPPORT A WEIGHT OF 1000 PSF.
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LEGEND

- EXISTING CONCRETE WALL
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EXISTING CONCRETE WALL



BAMBERGER OFFICIAL RECORDS DOCUMENT: 2006045776

(C) PROPRIETARY MATERIAL

MJM Michael James Martin Civil Engineering 400 Foam Street, Suite 200B Monterey, California, 93940 Office 831.601.9818

River Road Dispensary

299 River Road Salinas California 139-061-003-000

DATE: 12 November 2018

REVISIONS:

Site Plan Drainage Plan Septic Plan Parking Plan

SCALE: 1" = 10'

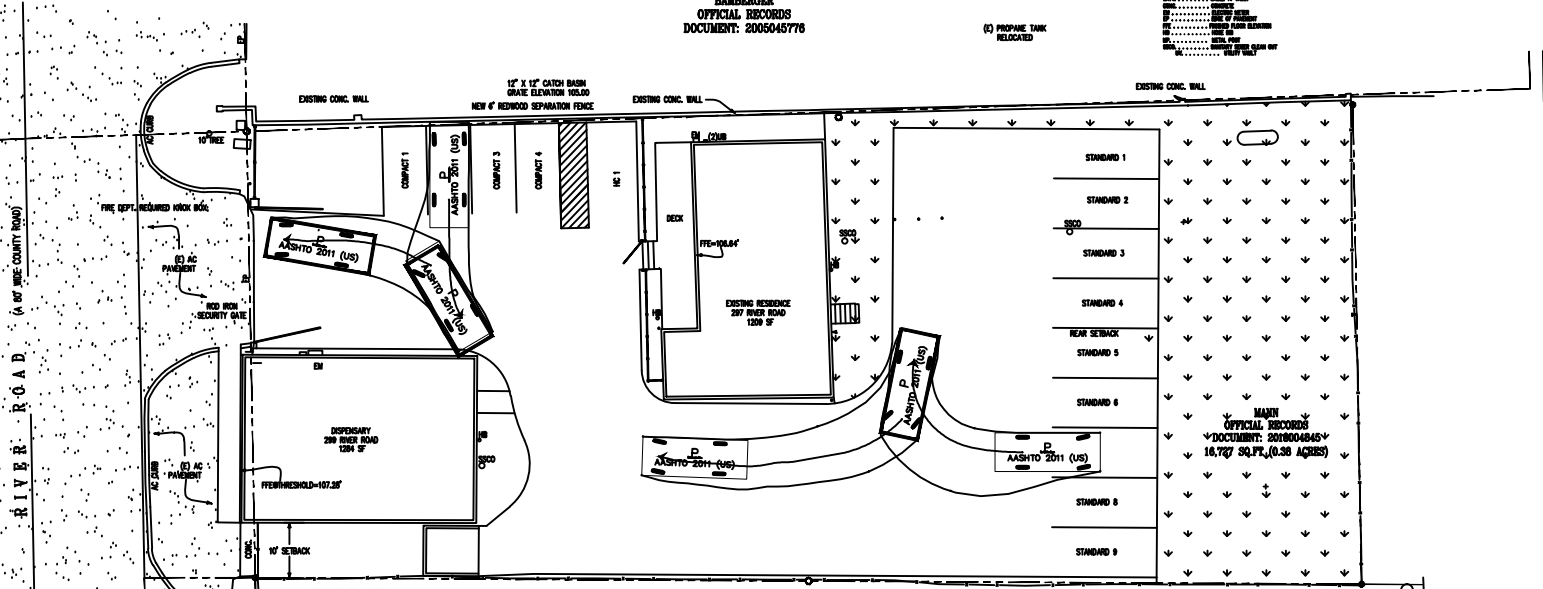
DRAWN BY:

CHECKED BY:

JOB NO.:

SHEET NO. C-1

Do not scale drawings. Verify dimensions measurements and data by fielding in the field. Report quantities to M&M. The use of these plans and specifications is restricted to the project and for which they were prepared. All drawings and written material appearing hereon are the original and copyrighted work of MJM and the same may not be duplicated, copied or distributed without the written consent of MJM. Michael James Martin Engineering



SECHENTMAYER OFFICIAL RECORDS DOCUMENT: 2006039174

STORMWATER DRAINAGE CALCULATIONS AND ASSUMPTIONS

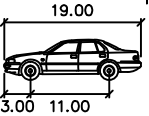
- 1. PRE-DEVELOPMENT CONDITIONS: EXISTING BUILDING ROOF AREA = 2484 SF. EXISTING DRIVE AND DRIVEWAY ROOF AREA = 200 SF. TOTAL ROOF AREA = 2684 SF. EXISTING IMPERVIOUS AREA = 2684 SF. EXISTING PERMEABLE (LANDSCAPING) AREA = 0.50 ACRES.
2. POST-DEVELOPMENT CONDITIONS: EXISTING BUILDING ROOF AREA = 2484 SF. EXISTING DRIVE AND DRIVEWAY ROOF AREA = 200 SF. TOTAL ROOF AREA = 2684 SF. EXISTING IMPERVIOUS AREA = 2684 SF. EXISTING PERMEABLE (LANDSCAPING) AREA = 0.50 ACRES.
3. EXISTING PERMEABLE (LANDSCAPING) AREA = 0.50 ACRES.
4. EXISTING PERMEABLE (LANDSCAPING) AREA = 0.50 ACRES.
5. EXISTING PERMEABLE (LANDSCAPING) AREA = 0.50 ACRES.

PARKING

- 1. REQUIRED PARKING: 1200 SPACES.
2. PROVIDED PARKING: 1200 SPACES.
3. ACTUAL PROVIDED PARKING SPACES: 1200 SPACES.

SEPTIC SYSTEMS

- 1. EXISTING EXTERIOR WALLS SHALL BE REINFORCED AND THE FOUNDATION SHALL BE REINFORCED TO SUPPORT A WEIGHT OF 1000 PSF.
2. THE EXISTING WALL SHALL BE REINFORCED TO SUPPORT A WEIGHT OF 1000 PSF AND EXISTING FOUNDATION SHALL BE REINFORCED TO SUPPORT A WEIGHT OF 1000 PSF.
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- P feet
Width : 7.00
Track : 6.00
Lock to Lock Time : 6.0
Steering Angle : 31.6

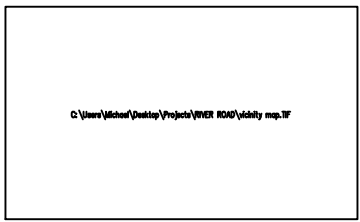


EXHIBIT B



EXHIBIT C

Title of SOP: Security

Original: Yes __ No x Revision: Yes x No __ Revision No.: One (1)

Related SOPs:

Administration 8.00

Introduction:

We understand that security is of paramount importance. We are keenly aware of the added security challenges that an operation of this nature faces, and we have taken extensive measures to have professionally-vetted policies, procedures, and systems in place to provide comprehensive protection, not only for our cannabis facility, but also for our employees, customers, and the surrounding public. Our security will meet or exceed the requirements of Monterey County.

The security and safety of the Cannabis Business’s customers, staff, and surrounding public is crucial to the operational goal of providing cannabis within a safe and healthy environment.

Responsibility:

We will, at all times, have one or more designated Manager(s), sometimes referred to On-Site Designated Representatives, as the Cannabis Business’s agent in charge of security.

The On-Site Designated Representative will have oversight responsibility for the implementation of this Security Plan. As the person responsible for implementation, the On-Site Designated Representative also will serve as a liaison with law enforcement, as may be required.

Our Security Plan is divided into two components: Facility Security and Operations Security.

The preventive measures adopted in these components will minimize our security exposure; protect the public, our customers, and our staff. We also are confident that, should there be any breach of security, our comprehensive response capabilities will ensure the incident is quickly detected, contained, and resolved at the appropriate response level.

Purpose:

The purpose of this standard operating procedure is to establish and maintain security requirements in and around the retail facility. This plan addresses and meets the requirements of the Monterey County Code of Ordinances, the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA), California Code of Regulations Title 3, Division 8, Chapter 1; Title 16, Division 42; and Title 17, Division 1, Chapter 13, and any other state and local laws as applicable.

FACILITY SECURITY

The security at the facility is designed to reduce the likelihood of security breaches and to trigger an immediate response in the event of a breach. In addition, it is designed to control access to the Cannabis Business by limiting it to authorized and properly identified personnel.

The facility security will include:

Limited Hours

We understand that the State regulations allow retailers to sell and deliver cannabis goods between the hours of 6:00 a.m. Pacific Time and 10:00 p.m. Pacific Time. We further understand that the *Monterey County Code of Ordinances* allows Cannabis Businesses to be open from 8:00 AM to 8:00 PM. To comply with the laws and regulations of the State and City, our retail premises will be open from 10:00 A.M. to 7:00 P.M. on Monday – Friday and 10:00 A.M. to 6:00 PM on Saturday. The facility will be closed to the public on Sundays.

Limited Access to Each Facility

We will prevent access to the by unauthorized personnel and protect the physical safety of employees by, among other things:

1. Establishing physical barriers to secure perimeter access and all points of entry into the facility (such as locking primary entrances with commercial-grade, non-residential door locks, providing fencing and cast-iron electronic gates around the grounds, driveway, and any secondary entrances including windows, roofs, or ventilation systems);
2. Installing a security alarm system to notify and record incident(s) where physical barriers have been breached;
3. Establishing an identification and sign-in/sign-out procedure for authorized personnel, suppliers, and/or visitors;
4. Maintaining the premises such that visibility and security monitoring of the premises is possible; and
5. Establishing procedures for the investigation of suspicious activities.

Restricted access area(s) will be identified by the posting of a sign that shall be a minimum of 12" x 12" and that states "Do Not Enter – Restricted Access Area – Access Restricted to Authorized Personnel Only" in lettering no smaller than one inch in height.

Camera and Recording System

The facility will be equipped with, and at all times be monitored by, a web-based closed-circuit television for security purposes. The camera and recording system will be of adequate quality, color rendition and resolution to allow the ready identification of any individual committing a crime anywhere on or adjacent to the Cannabis Business's premises. The system will be fully functional 24 hours 7 days a week.

We will have a complete digital video surveillance system with a minimum camera resolution of 1280 × 720 pixels. The video surveillance system will be able to effectively and clearly record images of the area under surveillance. The surveillance system will record continuously 24 hours per day and at a minimum of 15 frames per second.

All recording and monitoring equipment will be located in secure rooms or areas of the premises in an access-controlled environment.

All surveillance recordings will be kept on the licensee's recording device for a minimum of ninety (90) days¹.

To the extent reasonably possible, all video surveillance cameras will be installed in a manner that prevents intentional obstruction, tampering with, and/or disabling.

Areas that will be recorded on the video surveillance system include, but are not limited to, the following:

1. Areas where cannabis or cannabis products are weighed, packed, stored, quarantined, loaded and/or unloaded for transportation, prepared, or moved within the premises;
2. Limited-access areas;
3. Security rooms;
4. Areas containing surveillance-system storage devices, in which case, at least one camera will record the access points to such an area; and
5. The interior and exterior of all entrances and exits to the premises.

The video recordings will display the current date and time of recorded events. Time is to be measured in accordance with the U.S. National Institute Standards and Technology standards. The displayed date and time will not significantly obstruct the view of recorded images.

Electronic Back-Up

We will secure and back up electronic records in a manner that prevents unauthorized access and that ensures the integrity of the records is maintained.

¹ The recordings of the monitoring will be maintained for a period ninety (90) days even though the *Monterey County Code of Ordinances* requires thirty (30) days of recordings.

Centrally monitored Fire and Burglar Alarm System

The facility will comply with all local fire code requirements.

The facility will have a centrally monitored fire and burglar alarm system. This system will be fully functional at all times and prior to processing or cultivating cannabis at the Cannabis Business facility, should that occur. At a minimum, this alarm will cover the perimeter of the Cannabis Business and will focus on those areas where cannabis is stored, packaged and/or dispensed.

This alarm system will be monitored by a professional alarm company, at all times.

These alarm systems will be routinely inspected to ensure that they are functioning properly.

A duress alarm, panic button and alarm, holdup alarm or after hours intrusion detection alarm that by design and purpose will directly or indirectly notify, the law enforcement agency having primary jurisdiction.

Exterior Lighting and Public Exposure

Statistics show that crimes are less likely to occur in well-lit areas, because a well-lighted property is an excellent deterrent against criminals. Security lighting is one of the most practical and effective ways to prevent crime in or around commercial facilities.

The main objectives of our security lighting system are to illuminate dark areas and detect and recognize movement in the protected area. The best vision with outdoor lighting is obtained from downward directed and shielded security lighting that is constantly on, supplemented with instant-on lighting triggered by motion detectors.

Exterior lighting at the facility and parking area lighting for the facility will be balanced and will not result in a glare on adjoining properties, will complement the security systems described above to ensure that all areas of the Cannabis Business are visible, and will provide increased lighting at all entrances to the facility. The exterior lighting will be turned on from dusk to dawn.

No cannabis or any product containing cannabis, or paraphernalia will be visible from the exterior of the facility.

Storage of Cannabis and Records

The Cannabis Business will maintain, at the facility, a fireproof safe for the storage of all records and documents.

A large secure safe room for cannabis and cannabis products will be steel-plated and located in the back of the dispensary for authorized employee accessibility and away from customer access. When the dispensary is closed, all cannabis and currency will be stored in a secure locked safe room and in a manner as to prevent diversion, theft or loss.

Ingress and Egress, and Access

The facility has a front and rear entrance and exit. We will secure the perimeter of the facility to prevent unauthorized intrusion.

Bulletproof glass will replace normal glass for both the front door and all windows which will provide additional protection for employees.

Where required, windows and roof hatches of the facility will be secured from the inside with bars or other approved measures so as to prevent unauthorized entry. If used, the bars will be equipped with latches that may be released quickly from the inside to allow an exit in the event of an emergency.

Exterior doors to the facility will remain locked from the outside to prevent an unauthorized ingress to the facility. Ingress will be allowed by means of a remote release operated from within the Cannabis Business. In all cases, doors will remain operable from the inside to allow egress without the use of a key or special knowledge. Access-controlled egress doors will comply with all applicable laws.

Movement within the facility will be tightly controlled and regulated. Customers will enter the facility through the Cannabis Business's front entrance into a safety area/lobby. Entry into the areas where cannabis is kept must be authorized. Customers must provide proper documentation in order to safety area/lobby and enter into the retail area of the facility. Customers are not allowed into any area other than the retail area unless accompanied by an employee of the Cannabis Business.

Third parties, other than customers and licensed distributors, may, from time to time, have legitimate reasons to visit our facility; such persons: may include: law enforcement, political officials, government administrators, medical, health, and social service professionals, and the media. All such third parties, other than law enforcement or City agents, may only enter the restricted areas of the Cannabis Business if management has approved their visit. An electronic daily log will be maintained of dispensary agents with access to the safe room and knowledge of the access code or combination.

During business hours, licensed distributors will not enter the facility through the public entrance or exit.

We will maintain a log of all authorized individuals who are not employees who enter the limited-access area. These logs will be made available upon request. We will not receive consideration or compensation for permitting an individual to enter the limited-access area.

Identification Badges

All agents, officers, or other persons acting for or employed by the Cannabis Business will display a laminated or plastic-coated identification badge issued by the licensee at all times while engaging in commercial cannabis activity. The identification badge shall, at a minimum, include the

Cannabis Business s "doing business as" name and license number, the employee's first name, an employee number exclusively assigned to that employee for identification purposes, and a color photograph of the employee that clearly shows the full front of the employee's face and that is at least 1 inch in width and 1.5 inches in height.

While at the Cannabis Business' premises or location, each owner, manager, and individual member or person engaged in the dispensing of cannabis will, at all times while engaged in the duties of his or her position for the Cannabis Business, wear in plain sight, on his or her person and at chest level.

Identification badges will remain at the Cannabis Business' premises when not in use. Owners, managers, and individual members or persons participating in the dispensing of cannabis will not take identification badges home or off- premises, except in the case of traveling off-premises on official business of the Cannabis Business.

No Weapons

No person will be allowed to be in possession of any firearm while in the facility, without having first obtained a license from the appropriate state or local agency authorizing the person to be in possession of such firearms. Persons in possession of a firearm while on the premises of the Cannabis Business must provide the Chief of Police, ten (10) days before bringing the firearm onto the Premises, with the following:

1. A copy of the license issued to the person by the appropriate state or local agency authorizing him or her to possess such firearms;
2. A copy of his or her law enforcement identification (if he or she is employed by a law enforcement agency); and
3. A copy of his or her California Driver's license or California Identification Card.
4. Other information as requested.

OPERATIONS SECURITY

Incident Management and Emergency Response Plan

We understand that smooth operations require well-laid contingency plans and a staff well trained in their execution. We have developed an Emergency Response Plan submitted herewith. The Emergency Response Plan includes contingencies for non-security related emergencies such as medical emergencies, bomb threats, fires, explosions, chemical release, and weather-related disasters to ensure an appropriate and orderly response. This will prevent non-security related emergencies from becoming aggravated security emergencies as well.

Emergency procedures and emergency contact numbers will be provided in writing to all employees and made available in the Cannabis Business.

We will also develop a comprehensive set of guidelines for dealing with security threats. All staff will be trained in these procedures to ensure they are adequately prepared for emergencies.

Preparedness means all employees will:

- Know how to assess emerging situations to determine the type and level of threats they may pose;
- Know how to respond to different kinds of security threats;
- Know which types of situations warrant the activation of panic buttons; and
- Know how to proceed when a security alarm goes off or a panic button has been activated.

If a security breach is found to constitute an actual emergency, authorities will be notified as required. We will then follow the emergency response procedures we will establish in cooperation with local law enforcement authorities for smoothly bringing the situation under their control.

Procedures will be revised and updated as necessary and will be reviewed at least once every twelve (12) months. We will invite local law enforcement to offer their input on up-to-date security threat analysis and contingency planning.

Training

Security and emergency response training is only part of the training that will be required for all employees. Training will also cover:

1. Cannabis laws
2. Health and safety hazards;
3. Hazards presented by all solvents or chemicals used at the licensed premises as described in the material safety data sheet for each solvent or chemical;
4. Emergency procedures;
5. Security procedures;
6. Record keeping requirements; and
7. Training requirements.
8. An overview of the process and standard operating procedure(s);
9. Quality control procedures;
10. Hazard analysis and control procedures as appropriate;
11. Proper and safe usage of equipment or machinery (if applicable);
12. Safe work practices applicable to an employee's job tasks, including appropriate use of any necessary safety or sanitary equipment;
13. Cleaning and maintenance requirements;
14. Emergency operations, including shutdown; and
15. The Cannabis Business will ensure that all personnel receive annual refresher training to cover, at minimum, the topics listed in this section. This annual refresher training will be completed within twelve (12) months of the previous training completion date. The Cannabis Business will maintain a record which contains at minimum:
 - a. A list of all personnel at the premises, including at minimum, name and job duties of each.
 - b. Documentation of training topics and dates of training completion for all personnel
 - c. Training topics and dates of refresher training completion for all personnel.

- d. The signature of the individual personnel and the licensee verifying receipt and understanding of each training or refresher training completed by the personnel.
 - e. Any official documentation attesting to the successful completion of required training by personnel.
16. Any additional information reasonably related to an employee's job duties.

The Cannabis Business may assign responsibility for the training of individual personnel to supervisory personnel. Assigned supervisory personnel will have the education, training, or experience (or a combination thereof) necessary to ensure the production of clean and safe cannabis products by all personnel. The designated training personnel will sign and date a document on an annual basis attesting that he or she has received and understands all information and training provided in the training program. This documentation will be maintained as part of the record requirements.

Liaising with Community and Local Law Enforcement

Local law enforcement and neighbors in close proximity to our facility will have the name of one or more contact persons on our staff that they can notify, day or night, in case there is a problem impacting them or that they feel may impact us.

We will periodically reach out to neighbors to ensure that there are no unreported problems of this sort.

We also will reach out to local law enforcement to develop a professional working relationship and a coherent contingency plan for incidents that require a law enforcement involvement at our facility. Local law enforcement officials will be invited to the site, to discuss and evaluate potential security risks, vulnerabilities, and to assist in the development or enhancement of our current security program.

Incident Log

The Cannabis Business will maintain an incident log for a period of not less than five (5) years with reports of incidents that triggered an event.

Suspicious Activity and Loitering

Staff will be trained to identify and respond appropriately to all levels of suspicious activity. Loitering will not be tolerated. Customers will be advised of our no loitering policy.

Closing Procedures

After the cessation of business each day our closing procedures require that the security alarms be set. At the close of each business day, our personnel will insure that:

1. All exterior doors and interior rooms are locked,
2. All cannabis to be dispensed is secured in the safe; and

3. That the security alarms are set.

Preventing Theft & Non-Diversion

We will prevent against theft or loss of cannabis and cannabis products by, among other things:

1. Establishing an inventory system to track cannabis material and the personnel responsible for processing it throughout the manufacturing process;
2. Limiting access of personnel within the premises to those areas necessary to complete job duties, and to those time-frames specifically scheduled for completion of job duties;
3. Supervising tasks or processes with high potential for diversion (including the loading and unloading of cannabis);
4. Providing designated areas in which personnel may store and access personal items.
5. Any personnel that are involved in theft or diversion will be terminated
6. Any personnel that are aware of in theft or diversion will be required to report the incident to Management.
7. All cannabis, while growing, will be accessible only to authorized persons.
8. At the time of each sale, we will verify the status of each customer
9. We will maintain all records as may be required by law;
10. We will exclude those who are caught diverting cannabis

We will notify the Monterey County Sheriff's Office and the licensing authority within 24 hours after discovering any of the following:

1. Significant discrepancies identified during inventory;
2. Diversion, theft, loss, or any criminal activity involving the dispensary or any agent or employee of the retailer;
3. The loss or unauthorized alteration of records related to cannabis, patients, or retailer's employees or agents; or
4. Any other breach of security.

On-Site Consumption Prohibited

We will not permit the consumption of cannabis at the facilities in any form. Customers and employees will be advised that consumption of cannabis onsite is prohibited. Any person found to be in violation of the non-consumption policy will be terminated (if an employee) or excluded from the facility (if a customer).

SECURITY PERSONNEL

A minimum of one (1) Security Personnel/Security Guard will be present and on duty at the Cannabis Business's retail premises during its hours of operation.

The Cannabis Business's Security Personnel and documentation of the proper certification of those personnel by the State will be maintained at the site as required by law. The Cannabis Business's

Security Personnel will be provided by licensed operator and all such personnel shall be a private security officer of higher level.

The Security Personnel/Security Guard will provide security inside the facility, along the outside perimeter of the Premises, at parking sites immediately adjacent to the facility and used by customers of the Cannabis Business, and at sidewalks adjacent to the facility.

Security personnel will perform security functions and keep records of having performed routine regular inspections of all security systems, barriers, gates, doors, and locks, immediately reporting any malfunctioning or compromised security feature to the Security Manager. Any incidents qualifying as irregular or suspicious will be handled immediately.

The Cannabis Business will employ Security Personnel subject to the following requirements:

Registered Status

All Security Personnel will register and maintain valid registration status with the state of California's Department of Consumer Affairs. At no time will be any Security Personnel registered with the State at any level that is less than that of a proprietary private security officer. Proof of application and registration for all Security Personnel will be maintained by the Cannabis Business and will consist of copies of all relevant documentation including application forms, receipts for application fees and live scan fees, and actual proof of registration.

Security Identification Badge

While on duty, all Security Personnel will have a nameplate containing the Security Personnel's full name and the word "SECURITY" printed in bold, capital letters. The nameplate will be exhibited prominently on the clothing, at chest level, and will be visible and easily read at all times. The nameplate will be a minimum of two inches (2") high and four inches (4") wide, with the required information printed in capital letters, at least three-fourths inches ($\frac{3}{4}$ ") high and in a contrasting color. As an alternative to a nameplate, the Security Personnel's name and the word "SECURITY" may be embroidered on the Security Personnel's outermost garment with the required information meeting the above specifications and located at chest level.

EXHIBIT D

CARMEL VALLEY INVESTMENT PROPERTIES LLC

COMMERCIAL LEASE

THIS LEASE is entered into between Carmel Valley Investment Properties LLC, a California Limited Liability Company, hereinafter referred to as "Landlord" and ANGEL KOWATSCH, hereinafter referred to as "Tenant". In consideration of the mutual covenants and agreements herein contained, the parties hereto agree as follows:

**ARTICLE 1
SUMMARY OF BASIC LEASE INFORMATION**

- 1.1. **DATE OF LEASE:** January 1st, 2019. (Effective Date). This Lease is a binding obligation to lease the Premises as of the Effective Date. Possession shall be provided on January 1st 2019, the "Commencement Date".
- 1.2. **PREMISES AND BUILDING:** An area known as 297 River Road, Salinas CA 93908 and comprising approximately 1400 square feet (agreed as approximation only) is hereinafter referred to as "Premises".
- 1.3. **LEASE TERM:** Commencing on the Commencement Date and terminating January 1st, 2020 subject to any Options and/or extensions of term as set for in the Rider to Lease attached to this Lease.
- 1.4. **BASIC RENT:** TWENTY FIVE THOUSAND TWO HUNDRED DOLLARS AND payable in (12) equal monthly installments of TWO THOUSAND ONE HUNDRED DOLLARS (\$2,100.00) per month as further set forth in section 5.1.
- 1.5. **ADDITIONAL EXPENSES:** Tenant is direct responsible for their share of electric, waste and water expenses as set forth in section 5.5 in the Lease.
- 1.6. **RECEIVED ON SIGNING OF LEASE AND OCCUPANCY:** First month payment (January 2019) is required only
- 1.7. **USE:** Family living residence.

1.8. **ADDRESSES FOR NOTICE:**

LANDLORD:

Carmel Valley Investment Properties LLC
9 Del Fino Place, Ste 208
Carmel Valley, CA. 93924
Tel: 831-710-1961

TENANT

Angel Kowatsch
297 River Road
Salinas, CA. 93908
email: wingz4angel@gmail.com



**ARTICLE II
PREMISES**

- 2.1 **PREMISES:** Landlord hereby leases to Tenant and Tenant hereby hires and takes from Landlord, for the term, at the rental, and upon the conditions hereinafter set forth, the Premises. Tenant has had ample access to the Premises prior to the signing of the Lease, is aware of the condition and location thereof, and accepts the Premises AS IS both as to condition and size. The size of the leased premises is approximately 1400 square feet (agreed as approximation only)
- 2.2 **QUIET ENJOYMENT:** The Landlord covenants and agrees that the Tenant on paying the rent and performing the covenants contained herein shall and may peaceably and quietly hold and enjoy the Premises for the term of this Lease.
- 2.3 **SUBORDINATION:** This Lease is, and shall always be, subordinate and subject at all times to, any mortgage or deed of trust which is now or may at any time be made covering the Building in which the Premises are located or any part thereof an Tenant agrees to execute and deliver any instrument, without cost, which may be deemed necessary to further effect the subordination of this Lease to any such mortgage, hypothecation and/deed of trust.
- 2.4 **TENANT:** Tenant jointly and severally liable for all of the duties and obligations of this Lease.

**ARTICLE III
USE**

- 3.1 **PERMITTED USE:** The Premises are to be used solely for living space for Tenant's personal use and related activities. No other use shall be allowed without the prior written consent of Landlord.
- 3.2 **PROHIBITED USE:** Tenant shall not do anything which will in any way would increase the risk of fire or water damage to the premises. Tenant shall not store any items outside the Premises without landlords approval. Tenant shall not allow the Premises to be used for any improper, immoral, unlawful, or objectionable purpose.
- 3.3 **SIGNS:** Tenant shall not permit any signs, advertisements, or notices to be displayed, inscribed upon or affixed on any part of the outside or inside of the Premises, except of such size, color, and style as Landlord may approve.

ARTICLE IV



TERM

- 4.1 **TERM OF MONTHS:** The term of this Lease shall be for a period of TWELVE (12) MONTHS, commencing on the Commencement date and expiring, unless sooner terminated, on January 1st, 2020.
- 4.2 **SURRENDER OF PREMISES:** Tenant agrees to surrender the Premises at termination of the tenancy in the same condition Tenant received it initially except for normal and reasonable wear and tear or damage caused by the act of God.
- 4.3 **NOTICE OF SURRENDER:** Tenant shall, at least sixty (60) days before the last day of the term hereof give to Landlord a written notice of intention to surrender the Premises on that date, but nothing contained herein shall be construed as an extension of the term hereof or as consent of Landlord to any holding over by Tenant.
- 4.4 **HOLDING OVER:** If Tenant holds possession of the Premises after the term of this lease, Tenant shall, at the option of Landlord, to be exercised by Landlord's giving written notice to Tenant and not otherwise, become a Tenant from month-to-month upon the terms and conditions herein specified, so far as applicable, at ONE HUNDRED and TEN PERCENT (110%) as that of the last month of the term, or any extension thereof, payable in advance, in lawful money, and shall continue to be such Tenant until thirty (30) days after Tenant shall have given to Landlord or Landlord shall have given to Tenant a written notice of intention to terminate such monthly tenancy. Further, Basic Rent for Holding Over during a period not agreed to in writing by Landlord shall be at one and a half times (150%) the Basic Rent charged for the period immediately preceding such Holding Over without permission.
- 4.5 **QUITCLAIM DEED:** Upon the expiration or earlier termination of this Lease, Tenant agrees, upon Landlord's demand, to deliver a quitclaim deed in favor of Landlord releasing its interest in the Premises.

ARTICLE V RENTS AND UTILITIES

- 5.1 **BASIC RENT:** Tenant agrees to and shall pay to Landlord as basic annual rent for the leases Premises ("Basic Rent"), TWENTY FIVE THOUSAND TWO HUNDRED DOLLARS AND payable in (12) equal monthly installments of TWO THOUSAND ONE HUNDRED DOLLARS (\$2,100.00) per month via ACH collect pay set up with Landlord. Rent shall be pro-rated for any partial month at the inception or termination of the Lease. If the Basic Rent is ever suspended or resumed after suspension in any particular month, the amount of basic rent due for either such month will be calculated likewise on a prorate basis counting only the number of days in either month under consideration and a related deduction will be made from the rent. All payments received by Landlord from Tenant shall be applied to the oldest payment obligations owed by Tenant to Landlord. No designation by Tenant, either in a separate writing or on a check or money order, shall modify this clause or have any force or effect.
- 5.2 **LATE CHARGE:** Should Basic Rent and or Additional Rent as defined below be more than five (5) days late, a late fee of six percent (6%) of the overdue sum shall be due and payable to Landlord which Tenant has agreed is a fair and reasonable sum to compensate Landlord for processing such late payment and the costs incurred by Landlord because of such delinquency. Neither assessment of such charge, or acceptance thereof, shall constitute a waiver by Landlord of Tenant's default with respect to the overdue amount; nor prevent Landlord from exercising any of its rights and remedies granted under this Lease. Nothing contained in this section shall be deemed to condone, authorize, sanction, or grant to Tenant a right to make late payments for any sums due Landlord under this Lease not to change the date due by choosing an alternate date of payment.
- 5.3 **COST OF LIVING INCREASE:** Beginning on the first anniversary of the Lease in which the Consumer Price Index, All Items, published by the Bureau of labor Statistics of the U.S. Department of Labor shows a rise of



the cost of living index for San Francisco/Oakland over the level of such cost of living index last published prior to the commencement of the initial term of the Lease, the Tenant shall pay to the Landlord as additional rent, such percentage of the Basic Rent due for the following year, or portion thereof, if there are less than twelve (12) months remaining in the initial term or any extension or renewal thereof, as is proportionate to the rise in such index from its level from the last such published index preceding the end of such twelve (12) month period. The first such installment shall be due and payable on the first day of the month following written notice to Tenant by Landlord of the amount of such additional rent and continue on the first day of each successive month thereafter until all such additional rent is paid. If said index ceases to be published annually, the most similar index published by any agency of the United States or by the State of California or its subdivisions shall be substituted. Regardless of the Index used, the increase of each year of the term shall be bound to be not less than 4% nor greater than 6% based on the prior twelve month period. Failure to provide prior notice of the increase of any given period shall not constitute a waiver by Landlord of the additional sums due however no late fee shall be imposed upon the rent portion attributable to the increase if such notice is not received by Tenant. Last Month's rent paid on the Commencement of this Lease shall be increased to reflect the then current rent in subsequent years of the Lease Term. These increases shall apply to any extension of Term by way of exercise of any option, extension of term or any other extended period of the lease Term. The failure of Landlord to notify Tenant of any increase due shall not serve to waive Landlord's right to the amount due because of such, but no interest shall be due on the increase amount for any date prior to such notice.

- 5.4 **UTILITIES:** All utilities are to be paid for by the Tenant. The landlord shall not be responsible for any utility charges
- 5.5 **PREMISES RELATED TAXES:** The taxes referred to in this section relate to Tenant's property and use of the Premises and not to landlord's real property tax obligation. During the term of this Lease, and renewals or extensions hereof, Tenant shall, as further consideration for this Lease:
- 5.5.1 Pay and discharge all taxes, general and special assessments and other charges of every description which during the term of this Lease may be levied on or assessed against the Premises and all interests therein and all improvements and other property thereon, whether belonging to Landlord or to Tenant, or to which either of them may become liable in relation thereto.
- 5.5.2 Protect and hold harmless Landlord and the leased Premises from liability for any and all such taxes, assessments, and charges, together with any interest, penalties, or other sums thereby imposed, and from any sale or other proceeding to enforce payment thereof.
- 5.5.3 Should Tenant fail to pay such taxes, assessments, or charges or fail to give written notice of any payment thereof as herein provided at least fifteen (15) days prior to the time the same becomes delinquent, Landlord may, at its option, at any time within or after such fifteen (15) day period, pay such taxes, assessments, or charges, together with all penalties and interest which may have been added thereto by reason of Tenant's delinquency or default, and may likewise redeem the leased Premises, or any part thereof, or the buildings or improvements situated thereon, from any tax sale or sales. Any such amounts so paid by Landlord shall become immediately due and payable as rent by Tenant to Landlord, together with interest thereon at the rate of ten percent (10%) per annum from the date of payment by Landlord until paid by Tenant. Any such payment by Landlord shall not be deemed to be a waiver of any other rights, which Landlord may have under the provisions of this Lease, or as provided by law.
- 5.6 **SECURITY DEPOSIT:** Landlord has waived the normal required security deposit.
- 5.7 **PARKING:** Landlord maintains the right to use all available parking spaces in and around the premises for public use of the planned retail dispensary. Landlord will allocate two vehicle parking spaces for tenant accommodations.

**ARTICLE VI
IMPROVEMENTS AND REPAIRS**

6.1 **TENANT IMPROVEMENTS:** Tenant is solely responsible for any furniture, fixtures and equipment it wishes to bring onto the Premises and accepts the Premises in their present condition. Should Tenant desire to make any improvements to the Premises which (i) are structural; and/or (ii) have a fair market value cost in excess of TWO THOUSAND DOLLARS (\$2,000.00) ("Tenant's Work") Tenant shall prepare plans and specifications for Tenant's Work, which shall be approved by Landlord, at Landlord's sole discretion, prior to commencement of construction. Landlord and Tenant agree that it is in best interests of both parties that the Building be maintained to a uniform theme and standard high quality and that only the Landlord is able to monitor these standards throughout the Building. Tenant shall perform tenant's Work in accordance with the plans and specifications approved by Landlord, and Tenant shall have sole responsibility to arrange for and pay the cost of all items included as part of Tenant's Work. All leasehold improvements shall become at once part of the Premises and belong to Landlord; provided, however, that upon the request of Landlord, such Leasehold Improvements shall be removed by Tenant on termination of this Lease at Tenant's sole cost and expense, and Tenant shall repair all damage caused by such removal. Tenant shall give Landlord five (5) days' notice before commencing construction at the Premises. Before starting any such work Tenant shall:

6.1.1 Obtain all required licenses and permits;

6.1.2 Deliver to Landlord a statement of the names of all contractors and subcontractors and the estimated cost of all labor and material to be furnished by them and to be approved by Landlord consistent with this section 6.1;

6.1.3 Cause Tenant's contractors to carry worker's compensation insurance covering all the contractors' and subcontractors' employees, and public liability insurance with limits reasonably acceptable to Landlord and insuring Landlord and Tenant as well as the contractors; and

6.1.4 Upon Landlord's written request, to deliver to Landlord certificates of all insurance, providing that insurance may not be canceled without thirty (30) day's prior written notice to Landlord. Landlord shall have the right during the Term to increase the minimum liability limits specified above, to meet changed circumstances. At all times Tenant shall keep the Premises free from and clear of mechanics' liens.

6.2 **REPAIRS:** Tenant shall maintain the Premises in good condition and repair. Any and all repairs to the Premises for which Tenant is responsible shall be done: i) with Landlord's prior written approval; ii) at the cost of Tenant; and, iii) shall be the property of Landlord, and shall remain upon and be surrendered with the Premises. However, at Landlord's option, Tenant shall, at its expense, when surrendering the Premises remove from the Premises all improvements installed in the Premises by or at the cost of Tenant. Tenant shall pay for all damage or injury done to the Premises by Tenant, or by any person who may be in or upon the Premises with the onset of Tenant. Tenant expressly and fully waives its rights under Sections 1941, 1941.1, 1942 and 1942.5 of the California Civil Code (or successor statutes) with respect to any condition, which renders the Premises untenable. By way of example, Tenant is solely responsible for the light fixtures and all electrical and/or plumbing within the Premises as well as any heating and/or air conditioning systems, if any, as these are located within the Premises only. Landlord's duties of repair and restoration shall extend only to those portions of the Premises under Landlord's casualty insurance and shall be limited to the amount of proceeds received from such insurance, and Landlord shall not be responsible for any loss, damage or destruction to Tenant's leasehold improvements, furniture, fixtures, equipment inventory or other Tenant owned improvements on the Premises.



- 6.3 **MECHANIC'S LIENS.** The Tenant shall not suffer or permit any mechanic's or material men's liens to be filed neither against the fee of the real property of which the Premises form a part nor against the Tenant's leasehold interest in the premises. Landlord shall have the right to all reasonable times to post and keep posted on the Premises any notices, which it deems necessary for protection from such liens. If any such liens are so filed, Landlord, at its election, may pay and satisfy the same and, in such event, the sums so paid by the Landlord, with the interest at the rate of ten percent (10%) per annum from the date of payment, shall be deemed to be additional rent due and payable by the Tenant at once without notice or demand.

ARTICLE VIII INDEMNITY AND INSURANCE

- 8.1 **INDEMNIFICATION OF LANDLORD BY TENANT:** Landlord shall not be liable for any damage, liability and/or any claim of any kind or for any damage or injury to persons or property during the term of this Lease from any cause whatsoever by reason of the use, occupation, and enjoyment of the Premises by Tenant or any person thereon or holding under Tenant. Tenant jointly and severally will defend, indemnify and save harmless Landlord, Landlord's employees, members, shareholder, directors, officers, partners, affiliates, agents, successors, family members and heirs from all liability whatsoever on account of any such damage or injury and from all liens, claims, and demands arising out of the use of any building upon the Premises, and its facilities or any repairs or alterations which Tenant may make upon the Premises.
- 8.2 **INDEMNIFICATION OF TENANT BY LANDLORD:** Tenant shall not be liable for any damage or liability of any kind whatsoever or for any damage or injury to persons or property caused by the sole negligence of Landlord, or by any person acting under Landlord, and Landlord will indemnify and save harmless Tenant from all such liability whatsoever on account of such damage or injury so long as such is not related to losses insured, or required to be insured, by Tenant.
- 8.3 **TENANT'S INSURANCE:** Tenant shall carry and maintain during the entire term of this Lease, or any renewal or extension hereof, at Tenant's sole cost and expense, the following types of insurance in the amounts specified and in the form hereinafter provided for:
- 8.3.1 Broad form comprehensive public **liability insurance with limits of not less than One Million Dollars (\$1,000,000)** insuring against any and all liability of Tenant with respect to the Premises or arising out of the maintenance, use of occupancy thereof, and **property damage liability insurance with a limit of not less than Five Hundred Thousand (500,000) each accident.**
- 8.3.2 A policy or policies of fire insurance and water damage insurance to the extent of at least one hundred percent (100%) of the full insurable value of the Premises and of Tenant's improvements, fixtures, equipment and merchandise. Such insurance to include vandalism and malicious mischief endorsements. The proceeds from any such policy shall be used first by Tenant for the restoration or Tenant's leasehold improvements, and second for the replacement of fixtures, furniture, equipment and inventory.
- 8.3.3 A policy which includes plate glass insurance.
- 8.3.4 All policies of insurance shall be issued in the names of Tenant and Landlord and for the mutual and joint benefit and protection of the parties, and executed copies of such policies of insurance or certificates thereof, together with copies of all premium notices and receipts for payment thereof, shall be delivered to Landlord within one (1) week of their receipt by Tenant.
- 8.3.5 Tenant's obligations to insure under this article may be provided by appropriate amendment, rider, or endorsement on any blanket policy or policies carried by them respectively which otherwise fulfill the above requirements.



8.3.6 Each of the policies provided for in this section shall provide that the policy (s) shall not be canceled or altered without thirty (30) days' prior written notice to the Landlord.

8.3.7 All the insurance required of Tenant under this Lease shall be a) issued by insurance companies authorized to do business in the State of California with a financial rating of at least an A plus 3A status as reported in the most recent edition of Best Insurance Reports; and v) be issued as a primary policy.

8.3.8 If Tenant at any time during the term hereof should fail to secure or maintain the foregoing insurance, landlord shall be permitted to obtain such insurance in the Tenant's name or as the agent of Tenant and shall be compensated by Tenant for the cost of the insurance premiums. The Tenant shall pay Landlord interest on paid insurance premiums at the rate of ten percent (10%) per annum computed from the date written notice is received that the premiums have been paid.

8.4 **WAIVER OF SUBROGATION:** Any insurance carried by either party with respect to the Premises or occurrences related to them shall, if the other party so requests, include a clause or endorsement denying to the insurer rights of subrogation against the other party to the extent rights have been waived by the insured prior to the occurrence of the loss. Each party, notwithstanding any provisions on this Lease to the contrary, waives any right of recovery against the other for injury or loss due to hazards covered by insurance containing such a clause or endorsement to the extent of the injury of the loss covered.

ARTICLE IX ASSIGNMENT

9.1 **ASSIGNMENT:** Tenant shall not have the right to assign, mortgage, or hypothecate this Lease, or any interest therein, or permit the use of the Premises by any person or persons other than Tenant and Tenant's employees, or sublet the Premises, or any part thereof, without the written consent of landlord, at Landlord's sole discretion: nor shall this Lease or any interest therein, be assignable by operation of law without the written consent of landlord, at Landlord's sole discretion. Consent to such assignment or subletting shall not operate as a waiver of the necessity for consent to any subsequent assignment or subletting, and the terms of such consent shall be bedding upon any person holding by, under, or through Tenant.

9.1.1 Any such assignment or subletting without such consent shall be void, and shall, at the option of Landlord, terminate this Lease. In the event that the premises are leased to more than one Tenant, this Lease shall automatically transfer to the survivor or survivors, in the event of death of one Tenant.

9.1.2 Upon any assignment, with approval of Landlord as provided above, the assignee of such leasehold interest shall be bound by and be liable for the performance of all of the provisions of this Lease to be performed by Tenant from and after the effective date of such assignment, transfer, or conveyance, nor shall Tenant be relieved of any obligations hereunder because of such approval. In the case of any subsequent assignment, transfer, or conveyance of the leasehold title on the part of the then subtenant to any subsequent assignee the assignee of such leasehold interest, as well, shall be bound by and be liable for the performance of all of the provisions of this Lease.

9.2 **LIMITED RIGHT WITH LANDLORD PERMISSION:** Notwithstanding the above, Tenant shall have the right to assign this Lease to an entity which is registered in California and in which Tenant and/or its parent company has a majority in interest and control and Landlord shall agree thereto so long as such assignment does not diminish Landlord's rights and benefits under this Lease.

ARTICLE X HAZARDOUS MATERIAL



- 10.1 **NO USE OF HAZARDOUS MATERIAL:** Tenant shall not cause or permit any Hazardous Material, as defined in section 10.5, to be generated, brought onto, used, stored, or disposed of in or about the Premises or the Building by Tenant or its agents, employees, contractors, sub Tenants, or invitees, except for limited quantities of standard office and janitorial supplies containing chemicals categorized as Hazardous Material. Tenant shall: (a) Use, store, and dispose of all such Hazardous Material in strict compliance with all applicable statutes, ordinances, and regulations in effect during the Lease Term that relate to public health and safety and protection of the environment (Environmental Laws), including those Environmental Laws identified in section 10.5; and b) Comply at all times during the Lease Term with all Environmental Laws.
- 10.2 **NOTICE OF RELEASE OR INVESTIGATION:** If, during the Lease Term (including any extensions), Tenant becomes aware of (a) any actual or threatened release of any Hazardous material on, under, or about the Premises or the Building or (b) any inquiry, investigation, proceeding, or claim by any government agency or other person regarding the presence of Hazardous Material on, under, or about the Premises or the Building, Tenant shall give landlord written notice of the release or investigation within five (5) days after learning of it and shall simultaneously furnish to Landlord copies of any claims, notices of violation, reports, or other writings received by Tenant that concern the release or investigation.
- 10.3 **INDEMNIFICATION:** Tenant shall, at Tenant's sole expense and with counsel reasonably acceptable to landlord, indemnify, defend, and hold harmless Landlord and Landlord's shareholders, directors, officers, employees, partners, affiliates, agents, successors, and assigns with respect to all losses arising out of or resulting from the release of any Hazardous Material in or about the Premises or the Building, or the violation of any Environmental Law, by Tenant or Tenant's agents, assignees, sub Tenants, contractors, or invitees. This indemnification applies whether or not the concentrations of any such Hazardous Material is material, the concentrations exceed state or federal maximum contaminant or action levels, or any governmental agency has issued a cleanup order. This indemnification includes: (a) Losses attributable to diminution in the value of the Premises or the Building; (b) Loss or restriction of use of rentable space in the Building; (c) Adverse effect on the marketing of any space in the Building; and, (d) all other liabilities, obligations, penalties, finds, claims, actions (including remedial or enforcement actions of any kind and administrative or judicial proceeding, orders, or judgments), damages (including consequential and punitive damages), and costs (including attorney, consultant, and expert fees and expenses) resulting from the release or violation. This indemnification shall survive the expiration or termination of this Lease.
- 10.4 **REMEDIAITON OBLIGATIONS:** If the presence of any Hazardous Material brought onto the Premises or the Building by Tenant or Tenant's employees, agents, contractors, or invitees results in contamination of the Building, Tenant shall promptly take all necessary actions to remove or remediate such Hazardous Materials, whether or not they are present at concentrations exceeding stage or federal maximum concentration or action levels, or any governmental agency has issued a cleanup order, at Tenant's sole expense, to return the Premises or the Building to the condition that existed before the introduction of such Hazardous Material. Tenant shall first obtain Landlord's approval of the proposed removal or remedial action. This provision does not limit the indemnification obligation set forth in section 10.3.
- 10.5 **DEFINITION OF "HAZARDOUS MATERIAL":** As used in this Article X, the term "Hazardous Material" shall mean any hazardous or toxic substance, material, or waste at any concentration that is or becomes regulated by the United States, the State of California, or any local government authority having jurisdiction over the Building. Hazardous material includes, by way of example, but not by way of limitation, any "hazardous substance," as that term is defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 United States Code sections 9601-9675); and, the Resource Conservation and Recovery Act of 1976 (RCRA) (42 United States Code sections 6901-6992k)
- 10.6 **MOLD PREVENTION:** Tenant agrees to maintain the Premises in a manner that prevents the occurrence of an infestation of mold, mildew, microbial growths, and any associated mycotoxin (Mold) in the Premises.

To the maximum extent permitted by law, Tenant agrees to indemnify, defend, and hold harmless Landlord Parties from and against any and all claims, demands, liabilities, judgments, actions, damages, causes of action or otherwise, in any manner related to the presence in the Premises or the Building of Mold that was caused or contributed to by Tenant in any manner whatsoever, and regardless of whether Landlord's active or passive negligence (so long as not gross negligence) contributed to such presence.

ARTICLE XI DEFAULT

- 11.1 **ACTS CONSTITUTING TENANT'S DEFAULT:** any and all of the following actions by Tenant shall constitute a default of this Lease:
- 11.1.1 Use of the Premises for any purpose other than as authorized in this Lease; or
 - 11.1.2 Failure to pay rent or any other sums owing when due; or,
 - 11.1.3 Failure to pay taxes, assessments, insurance premiums, liens, claims, or other charges; or
 - 11.1.4 abandonment of or vacating Premises: or
 - 11.1.5 Failure to make such repairs to the Premises as Tenant is bound hereunder to make; or
 - 11.1.6 Committing waste on the Premises; or
 - 11.1.7 Maintaining, committing, or permitting the maintenance or commissions of a nuisance on the Premises: or
 - 11.1.8 Use of the Premises for any unlawful purpose, whether or not such purpose is in addition to or in lieu of the uses herein limited; or
 - 11.1.9 Assignment of the Premises (except as permitted herein), either voluntarily or by operation of law, whether by judgment, execution, death, or any other means, without written consent of Landlord: or
 - 11.1.10 Filing by Tenant or any other person of a voluntary or involuntary petition in bankruptcy or an arrangement by or against Tenant; the adjudication of Tenant as a bankrupt or insolvent; the appointment of a receiver of the business or of the assets of Tenant, except a receiver appointed at the instance or request of Landlord; the general the federal or any other assignment by Tenant for the benefit of is creditors.
 - 11.1.11 A failure in the performance of any of the terms, covenants, and conditions of this Leave
- 11.2 **REMEDIES UPON TENANT'S DEFAULT:** Should default be made by Tenant and continue for five (5) days after written notice form Landlord in the payment of any portion of the rent, taxes, or other charges when due, or should default be made, and continue for then (10) days after written notice from Landlord specifying such default in the performance of any of the other covenants or obligations on the part of Tenant to be kept or performed, then Landlord or Landlord's agent or attorney shall have the option to do any or all of the following, provided that no such remedy shall be affected or action taken or remedy pursued until the expiration of such additional period, if any, as may be reasonably necessity to remedy the non- monetary default if it is of such character as to required more than then (10) days to remedy:
- 11.2.1 To collect by suit or otherwise:



11.2.1.1 the worth at the time of award of the unpaid rent, which had, been earned at the time of termination;

11.2.1.2 The worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided;

11.2.1.3 the worth at the time of award of the amount by which the unpaid rent for the balance of the term after the time of award exceeds the amount of such rental loss for such period that Tenant proves could be reasonably avoided, and,

11.2.1.4 Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform his obligation.

11.2.1.5 The "worth at the time of award" of the amounts referred to in the immediately preceding paragraph is computed by discounting such amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of award plus one percent (1%).

11.2.2 Landlord may re-let the Premises prior to the time of award for breach of this Lease by tenant in an effort to mitigate damages on behalf of Tenant.

11.2.3 Immediately re-enter and remove all persons and property from the Premises, storing said personal property in a public warehouse or elsewhere at the cost of, and for the account of, the Tenant. In such instance, the Lease may be terminated at Landlord's discretion. However, no such re-entry or taking possession of the leased Premises by Landlord shall be construed as an election on its party to terminate this Lease, without Landlord's express written notice of termination to Tenant.

11.2.4 To Collect by suit or otherwise each installment of rent or other sum as it becomes due hereunder, or to enforce by suit or otherwise any other term or provision hereof on the part of Tenant required to be kept or performed, it being specifically agreed that all unpaid installments of rent or other sums shall bear interest at the highest legal rate from the due date hereof until paid

11.2.5 Terminate this Lease, in which event Tenant agrees to immediately surrender possession of the Premises and to pay to Landlord, in addition to any other remedy Landlord may have, all damages Landlord may incur by reason of his default, including the cost of recovering the Premises.

11.2.6 Should Landlord elect to re-enter, as herein provided, or should Landlord take possession pursuant to legal proceeding or pursuant to any notice provided for by law, Landlord may either terminate this Lease or may re-let said Premises or any part thereof as the agent and for the account of the Tenant, either in Landlord's name or otherwise, upon such terms and conditions and for such period (whether longer than the balance of the term hereof or not) as Landlord may deem advisable, either with or without any equipment or fixtures that may be situated thereon or therein, in which event the rents received on any such re-letting and collecting, including necessary renovation and alteration of the Premises and reasonable attorney's fees, and any real estate commission actual paid and, thereafter, toward payment of all sums so or to become due to Landlord hereunder, and if a sufficient sum shall not be thus realized to pay such rent and other charges, Tenant shall pay to Landlord monthly any deficiency, and Landlord may sue therefore as each monthly deficiency shall rise; such monthly deficiencies shall be paid punctually when due, as herein provided, notwithstanding the fact that Landlord may have received in previous months rental in excess of the monthly rental herein stipulated, and notwithstanding the fact that Landlord may thereafter receive monthly rental in excess of the monthly payment specified during subsequent months.

11.2.7 all the above remedies of Landlord upon default by Tenant are cumulative, unless otherwise so expressed, and are in addition to, and not by way of limitation of, all other remedies provided under the law or in equity.'

- 11.3 **LANLORD'S DEFAULT:** Should default be made by landlord pertaining to any material duty and/or obligation imposed by this Lease, and continue for thirty (300 days after written notice from Tenant specifying such material default, then, and only in such event, Tenant or Tenant's agent or attorney may at Tenant's option terminate this lease forthwith by written notice to Landlord; provided, however, that no such termination shall be effected or action taken or remedy pursued until the expiration of such additional period, if any as may be reasonably necessary to remedy the default if it is of such character as to require more than thirty (300 days to remedy Rent shall be abated if the event of default renders the Premises unsuitable for Tenant's use for the period of suspension of such use as to be reasonable determined by the parties.
- 11.4 **TENANT RIGHT TO REMEDY LANDLORD'S DEFAULT:** Tenant shall have the right after thirty (30) days written notice to Landlord (but shall not be obligated) to correct or remedy any default upon the part of Landlord under any material provision of this Lease, and landlord agrees that, in the event Tenant shall correct or remedy any such default, Landlord shall pay to Tenant the reasonable cost thereof, and limited to one month's rental, upon demand.
- 11.5 **REMOVAL OF PROPERTY:** Tenant hereby irrevocably appoints Landlord agent and attorney-in-fact of tenant to enter upon the Premises in the event of default by Tenant in the payment of any rent herein reserved, or in the performance of any material term, covenant, or condition herein contained to be kept or performed by Tenant, and to remove any and all furniture an personal property whatsoever situated upon the Premises, and to place such property in storage for the account of and at the expense of Tenant. In the event that Tenant shall not pay the cost of storing any such property after the property has been stored for a period of ninety (90) days or more, Landlord may sell any or all of such property at public or private sale, in such manner and at such times and places as Landlord in its sole discretion may deem proper, without notice to Tenant or any demand upon Tenant for the payment of nay part of such charges or the removal of any of such property, and shall apply the proceeds of such sale first to the cost and expenses of such sale, including reasonable attorney's fees actually incurred; second, to the payment of the costs of or charges for storing any such property; third, to the payment of any other sums of money which may then or thereafter be due to the Landlord from Tenant under any of the terms thereof; and, fourth, the balance, if any , to Tenant.
- 11.6 **WAIVER OF BREACH:** Landlord's failure to take advantage of any default or breach on covenant on the part of Tenant shall not be, or be construed as a waiver thereof, nor shall any custom or practice which may grow up between the parties in the course of administering this instrument be construed to waive or to lessen the right of Landlord to insist upon the performance by Tenant of any term, covenant, or condition hereof, or to exercise any rights given it on account of any such default. A waiver of a particular beach or default shall not be deemed a waiver of the same or any other subsequent breach or default. The acceptance of rent hereunder shall not be, or be construed to be, a waiver of any term, covenant, or condition of this Lease.
- 11.7 **DEMAND FOR RENT:** In the event that Tenant shall be in default, beyond the appropriate cure period in the payment of any rents provided for in this Lease Tenant waives the making by Landlord of any demand for rent prior to the commencement of any action in ejectment or unlawful detainer or to obtain possession of the Premises.

**ARTICLE XII
INSPECTION AND NOTICES**



- 12.1 **INSPECTION:** Tenant shall permit Landlord and its agents to enter and upon the Premises at all reasonable times for the purpose of inspecting the same, or for the purpose of protecting owners' reversions, or to make alterations or additions to the Premises or to any other portion of the building in which the Premises are situated, or for maintaining any service provided by Landlord to Tenant hereunder, including window cleaning and janitor service, without any rebate of rent to Tenant for any loss of occupancy or quiet enjoyment of the Premises, or damage, injury, or inconvenience, thereby occasioned, and will permit Landlord at any time within sixty (60) days prior to the expiration of this Lease to bring upon the Premises, for purposes of inspection or display, prospective Tenants thereof Landlord shall use its best efforts to minimize disturbance to Tenant's Premises and operation in connection with such entry and provide reasonable advance notice so long as the inspection is not pursuant to an emergency situation.
- 12.2 **NOTICES:** Any notice, demand, or communication under, or in connection with, this Lease or required by law shall be in writing and shall be served upon the parties by personal service, or in lieu of personal service shall be deemed served when deposited in the United States mail, postage prepaid, first class, registered or certified, return receipt requested, addressed to the addresses set forth in section 1.8 of Basic Terms above. A party may change such address by notifying the other party as provided herein as to such new address as Tenant or Landlord may desire used and which address shall continue as the address until further notice hereunder.

ARTICLE XIII GENERAL PROVISIONS

- 13.1 **COVENANTS:** It is mutually agreed that the letting hereunder is made upon and subject to the terms, covenants, and conditions of this Lease, and that Landlord and Tenant covenant as a material part of the consideration for this Lease to keep and perform each and all of said terms, covenants and conditions by them respectively to be kept or performed, and that this Lease is made upon the condition of such performance.
- 13.2 **PROVISIONS DEEMED COVENANTS AND CONDITIONS:** The parties hereto agree that all provisions hereof are to be construed as covenants and conditions as though the words importing such covenants and conditions were used in each instance and that all of the provisions hereof shall bind and insure to the benefit of the parties hereto and their respective heirs, legal representatives, successors and assigns.
- 13.3 **TIME OF ESSENCE:** Time is of the essence in the performance of each provision of this Lease.
- 13.4 **CULULATIVE REMEDIES:** The specified remedies to which Landlord may resort under the terms of this Lease are cumulative and not intended to be exclusive of any other remedies afforded by law. The waiver of the performance of any covenant, term and condition of this Lease by Landlord shall not be construed as a waiver of any subsequent breach of the same covenant, term and condition.
- 13.5 **LAWFUL MONEY:** All payments due Landlord shall be paid in lawful money of the United States. If any payment made by check, money order and/or draft is returned to Landlord due to non-sufficient funds, or otherwise, Landlord shall have the right to require Tenant to make subsequent payment sin cash or by cashier's check or certified check.
- 13.6 **NO ACCORD OAND SATISFACTION:** No payment by Tenant, or receipt by Landlord, of a lesser amount than the amount of funds then due Landlord hereunder, shall be deemed to be other than on account of the funds then due; nor shall nay endorsement or statement on any check or any letter accompanying any check or payment be deemed an Accord and satisfaction and Landlord may accept such check or payment without prejudice to landlord's right to recover the balance of such amount due or pursue any other remedy provided in this Lease or at law.



- 13.7 **NO LIGHT, AIR, OR VIEW EASEMENT:** Any diminution or shutting off light, air, or view by any structure which may be erected on lands adjacent to the Premises shall in no way affect this Lease or impose any liability on Landlord.
- 13.8 **INTEREST ON MONEY DUE:** Any sums accruing to Landlord under the provisions of this Lease which shall not be paid within due shall bear interest at the rate of ten percent (10%) per annum from the date written notice specifying such non-payment is served upon the defaulting party until paid.
- 13.9 **INVALIDITY:** If any term, covenant, condition or provision of this Lease is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.
- 13.10 **ATTORNEY'S FEES:** In the event that either party hereto shall commence any legal action or proceeding, including and action for declaratory relief, against the other by reason of the alleged failure of the other to perform or keep any term, covenant or condition of this Lease by him to be performed or kept, the party prevailing in said action or proceeding shall be entitled to recover, in addition to his court costs, and attorney's fee to be fixed by the court, and such recovery shall include court costs and attorney's fees on appeal, if any. As used herein, "the party prevailing" means the party in whose favor final judgment is rendered.
- 13.11 **AGENCY:** Nothing contained in this Lease shall be deemed or construed by the parties hereto or by any third person to create the relationship of principal and agent or of partnership or of joint venture or of any other association other than Landlord and Tenant.
- 13.12 **EXTENSIONS:** All references to the term of this Lease shall include any extensions of such term.
- 13.13 **CAPTIONS/GENDER:** The captions of Articles of this Lease are for reference only and are not to be construed in any way as a part of this Lease. The words "Landlord" and "Tenant" as used in this Lease shall include the masculine and feminine and if there is more than one Landlord and/or Tenant they shall include the plural form.
- 13.14 **AMENDMENTS:** This Lease may be amended at any time and from time to time, but nay amendment must be in writing and signed by each party.
- 13.15 **COUNTERPARTS:** The parties may execute this Lease in two or more counterparts, which shall, in the aggregate, be signed by all the parties. Each counterpart shall be deemed an original instrument as against any party who has signed it.
- 13.16 **GOVERNING LAW:** This Lease is executed and intended to be performed in the State of California, and the laws of that State shall governs its interpretation and effect.
- 13.17 **SUCCESSORS:** This Lease shall be binding on and insure to the benefit of the respective successors, assigns, and personal representatives of the parties, except to the extent of any contrary provision in this Lease.
- 13.18 **ENTIRE AGREEMENT:** This Lease contains the entire agreement of the parties relating to the rights granted and obligations assumed in this instrument. Any oral representation or modification concerning tis instrument shall be of no force of effect unless contained in a subsequent written modification signed by the party to be charged. This Lease represents a legal, binding obligation. Tenant has been advised to have this document reviewed by its financial and legal counsel prior to signature hereon. In signing this Lease, Tenant is not relying on any oral Representation of Landlord and any broker/agent as to the lease of the Premises.



- 13.19 **EXECUTION:** The parties have executed this Lease at the place and on the date specified immediately above their respective signatures.
- 13.20 **LANDLORD KEYS:** Tenant shall be provided with keys to the Premises at the Commencement Date. Should, for any reason whatsoever, Tenant change the locks to the Premises, Tenant shall, within 24 hours of such change, provide Landlord with a set of the new keys to the Premises at Tenant's sole cost. The US Postal Service provides keys to the mailbox designated to Tenant's Suite. Landlord does not own the mailbox or have any access to the boxes assigned to the office suites. Tenant is solely responsible for obtaining a key.
- 13.21 **ESTOPPEL CERTIFICATES:** Within ten (10) days after a written request by Landlord, Tenant shall execute and deliver to Landlord an estoppel certificate in the form presented by Landlord, indicating in the certificate any exceptions to the statements contained therein and that may exist at that time.
- 13.22 **ATTORNTMENT:** Tenant covenants and agrees to at torn to the transferee of Landlord's interest in the Real Property and/or Building if requested to do so by Landlord.
- 13.23 **MODIFICATIONS REQUIRED BY LANDLORD'S LENDER:** If any lender of Landlord or ground Landlord of the Real Property requires a modification of this Lease that will not increase Tenant's cost or expense or materially or adversely change Tenant's rights and obligations, this Lease shall Be so modified and Tenant shall execute whatever documents are required and deliver them to Landlord within then (10) days after the request
- 13.24 **NO RECORDING:** Neither this Lease nor any memorandum, affidavit, or other writing relating to this Lease may be recorded by Tenant or anyone action through, under, or on behalf of Tenant. Recordation in violation of this provision constitutes an act of default by Tenant. On request by Landlord or any lender or ground Landlord, Tenant shall execute a short form of Lease for recordation, containing (among other customary provisions) the names of the parties and a description of the Premises and the Lease Term. Tenant shall execute, acknowledge before a notary public, and deliver that form to Landlord within then (10) days after the request.
- 13.25 **MEDIATION/ARBITRATION:** Disputes relating to those provisions of this lease which do not relate to the payment of Basic Rent and other monetary sums due Landlord, shall, in the first instance, be subject to mediation. The parties shall each select on mediator, and the two of them shall select a third mediator. Thereafter all three shall hear and determine the dispute. The parties agree to share equally in the mediation cost.
- 13.26 **SALE OF THE BUILDING:** In the event of a sale or conveyance by Landlord of the Building the same shall operate to release Landlord from any future liability upon any of the terms, duties, and obligations of Landlord under this Lease and Tenant agrees to look solely to Landlord's successor in interest to fulfill Landlord's obligations under the Lease. At Landlord's sole option, the sale shall be subject only to the term remaining under the initial term of the Lease, or the option term if such term has already begun at the time of such sale. In the alternative, and should there be a fully executed Purchase and Sale Agreement for the Building any time after the initial twelve (12) months under the Lease Landlord, at Landlord's sole option, may upon payment to Tenant of FIVE THOUSAND DOLLARS (\$5,000.00) ask Tenant to leave on one hundred and twenty (120) days' notice.
- 13.27 **LIABILITY OF LANDLORD:** Except as otherwise provided in this Lease or applicable law, for any breach of this Lease the liability of Landlord (including all persons and entities that comprise Landlord, and any successor landlord) and any recourse by Tenant against Landlord shall be limited to the interest of Landlord and Landlord's successors in interest in and to the Building and Real Property. On behalf of itself and all persons claiming by, or under Tenant. Tenant expressly waives and release Landlord from any personal liability for breach of this Lease.

- 13.28 **TRANSFER OF LANDLORD'S INTEREST:** Landlord has the right to transfer all or part of its interest in the Building and Real Property and in this Lease. On such a transfer, landlord shall automatically be released from all liability accruing under this Lease, and Tenant shall look solely to that transferee for the performance of Landlord's obligations under this Lease after the date of transfer. Landlord may assign its interest in this Lease to a mortgage lender as additional security. This assignment shall not release Landlord from its obligations under this Lease, and Tenant shall continue to look to Landlord for the performance of its obligations under this Lease.
- 13.29 **JOINT AND SEVERAL OBLIGATIONS OF TENANT:** If more than one individual or entity comprises Tenant, the obligations imposed on each individual or entity that comprises tenant under this lease shall be joint and several.
- 13.30 **SECURITY INTEREST:** Tenant hereby grants to Landlord a security interest in all furniture, fixtures, and inventory on or about the Premises for the purpose of securing Tenant's performance under this Lease. Tenant agrees to execute all documents required to perfect Landlord's security interest, including by example, but not by way of limitation, any instruments required by the Uniform Commercial Code.
- 13.31 **REAL ESTATE BROKERS:** Tenant acknowledges and agrees that any real estate broker (s) involved in the negotiation of this Lease is acting on behalf of Tenant who shall be solely responsible for any and all sums due such broker.
- 13.32 **SUBMISSION OF LEASE:** Submission of this document for examination or signature by the parties does not constitute an option or offer to lease the Premises on the terms in this document or a reservation of the Premises in favor of Tenant. This document is not effective as a lease or otherwise until executed and delivered by both the Landlord and Tenant.

Effective January 1st, 2019 at 299 River Road, Monterey County, California

LANDLORD: CARMEL VALLEY INVEST PROPERTIES LLC.

DATE: Jan 1, 2019

By: Angela R. Mann
ANGELA MANN, DIRECTOR

TENANT: ANGEL KOWATSCH

DATE: JAN 1, 2019

By: Angel Kowatsch
ANGEL KOWATSCH

AK

EXHIBIT E

DISCUSSION PAPER SERIES

IZA DP No. 10522

**Crime and the Legalization of
Recreational Marijuana**

Davide Dragone
Giovanni Prarolo
Paolo Vanin
Giulio Zanella

JANUARY 2017

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Crime and the Legalization of Recreational Marijuana

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JANUARY 2017

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ABSTRACT

Crime and the Legalization of Recreational Marijuana

We provide first-pass evidence that the legalization of the cannabis market across US states may be inducing a crime drop. Exploiting the recent staggered legalization enacted by the adjacent states of Washington (end of 2012) and Oregon (end of 2014) we find, combining county-level difference-in-differences and spatial regression discontinuity designs, that the legalization of recreational marijuana caused a significant reduction of rapes and thefts on the Washington side of the border in 2013-2014 relative to the Oregon side and relative to the pre-legalization years 2010-2012. We also find evidence that the legalization increased consumption of marijuana and reduced consumption of other drugs and both ordinary and binge alcohol.

JEL Classification: K23, K42

Keywords: cannabis, recreational marijuana, crime

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1 Introduction

Gary Becker was a strong advocate of the legalization of drugs (Becker and Murphy, 2013), particularly — in the wake of the first wave of legalization of recreational cannabis in the US — of marijuana (Becker, 2014). Becker and Murphy (2013) claimed that the largest costs of a prohibitionist approach to buying and selling drugs in the US “are the costs of the crime associated with drug trafficking”, predicting that legalizing this market would “reduce the role of criminals in producing and selling drugs [and] improve many inner-city neighborhoods”: “Just as gangsters were largely driven out of the alcohol market after the end of prohibition, violent drug gangs would be driven out of a decriminalized drug market”. That is, letting the drug market emerge from illegality would make illegal activities in this market not pay, thus greatly reducing fertile ground for crime, a central theme in Becker’s economic approach to crime (Becker, 1968).

The present paper provides evidence in favor of these conjectures exploiting the full legalization of the cannabis market recently enacted by some states in the US. Although possessing, using, selling and cultivating marijuana is illegal under US federal law,¹ between 2012 and 2016 eight states have legalized recreational marijuana: Colorado and Washington in 2012, Alaska and Oregon in 2014, California, Nevada, Maine and Massachusetts in 2016.² The comparison between Washington (WA) and Oregon (OR) offers an experimental opportunity to study the effect of such legalization on crime because these are neighboring (hence similar, in many respects) states that legalized cannabis for recreational use at about the same time, but with a 2-year time lag that induces a quasi-experiment, and sufficiently early to allow the observation of crime rates for at least two years from official sources. Combining difference-in-differences (DID) and spatial regression discontinuity (SRD) designs at the county level to identify the causal impact of the legalization of cannabis for recreational use on crime rates we find that the legalization reduced rapes by about 4 per 100,000 inhabitants

¹ Except for restricted uses, cannabis has been illegal under US federal law since the Marihuana Tax Act of 1937. The Controlled Substance Act of 1970 (Title II of the Comprehensive Drug Abuse Prevention and Control Act, Public Law 91-513) classified marijuana and tetrahydrocannabinols among the drugs listed in Schedule I, which have high potential for abuse and no accepted medical value.

² Many more states have passed medical marijuana laws. These, however, do not legalize the supply side of the market. Making marijuana legal for recreational purposes is the strongest form of legalization of the cannabis market.

(a 30% drop), and thefts by about 100 per 100,000 inhabitants (a 20% drop).

These results support Becker and Murphy’s conjectures, and are also in line with two possible reasons that have been suggested for why illicit drugs may increase crime (Goldstein, 1985): stealing to buy expensive drugs, and drug wars within the system of drug distribution. However, they stand in sharp contrast with the presumption that drugs cause crime, a major argument in support of a prohibitionist approach to substance use. For instance, according to the California Police Chiefs Association (2009), “public officials and criminal justice organizations who oppose medical marijuana laws often cite the prospect of increased crime”. Case studies of crime reports found drugs to be, in fact, a contributing factor (Goldstein, 1985), and it has been observed that a higher percentage of persons arrested test positive for illicit drugs compared with the general population (US Department of Justice). Yet, research on the recent wave of legalization of cannabis for medical use (“medical marijuana laws”, MML henceforth) in the US yields mixed results on the association between illicit drug use and crime. Some researchers find no significant relationship between MML and crime (Keppler and Freisthler, 2012; Braakman and Jones, 2014; Morris *et al.*, 2014; Freisthler *et al.*, 2016; Shepard and Blackley, 2016), while others show that MML may reduce some kind of non-drug crimes (Ingino, 2015) because of reduced activity by drug-trafficking organizations (Gavrilova *et al.*, 2014). Using data from the UK, Adda *et al.* (2014) argue that the decriminalizing marijuana allows the police to reallocate effort away from drug-related crimes and towards other types of offenses. However, the estimation of a causal effect going from legalizing cannabis to crime rates remains an elusive question because of the lack of an experimental design (Miron, 2004). The present paper makes progress in this respect by engineering a quasi-experiment that is able to provide first-pass causal evidence on the relationship between recreational cannabis and crime rates.

At this level of analysis we cannot pin down the mechanisms operating behind the effects we identify. Moving retail cannabis deals from degraded streets to safe, legal shops most likely played a role. Anecdotal evidence is provided by this message posted on Twitter by the Portland Police on June 10, 2016: “If you are looking to buy marijuana, go to a legit business and avoid street dealers who might rob you”. Substitution away from drugs which have remained illegal and from alcohol which makes consumers more aggressive than if

consuming cannabis is another possibility for which we provide evidence via a complementary analysis that uses substance consumption as an outcome. We find that the legalization of recreational marijuana in Washington induced an increase in the consumption of cannabis of about 2.5 percentage points (off a base level of about 10%), a decrease in the consumption of other drugs of about 0.5 points (off a base level of about 4%), and a decrease in the consumption of both ordinary alcohol and binge alcohol of about 2 points (off base levels of about 50% and 20%, respectively). Finally, the police reallocation channel suggested by Adda *et al.* (2014) is certainly a plausible mechanism. We expand on mechanisms in the concluding Section of the paper. In the next one, we summarize the legal details that generate our quasi-experiment. The data and the results are presented in Section 3.

2 Legal framework

At the general election ballot of November 2012, voters in the state of WA approved with about 56% of votes Initiative 502, which allows producing, processing, and selling cannabis, subject to licensing and regulation by the Liquor Control Board, allows limited possession by persons aged 21 and over (but not home cultivation), and taxes sales. Legal possession began on December 9, 2012. Regulations for producers, processors and sellers were approved in 2013 and retail sales of recreational cannabis began July, 8 2014 (Darnell, 2015). Shortly after, the state of OR passed a similar reform. At the November 2014 general election ballot, voters in OR approved with about 56% of votes Measure 91, a cannabis law reform that is similar to the one passed in WA in terms of taxing sales and subjecting them to regulation and licensing by the Liquor Control Commission, but is more permissive in terms of possession and cultivation.³ A previous legalization attempt in OR (Measure 80 of 2012), quite permissive in terms of regulation and oversight, was marginally rejected with around 53% of votes in November 2012, thus enhancing the comparability with WA. Legalization of possession, use and home cultivation started in OR in July 2015, recreational sales through medical dispensaries in October 2015, and retail store licenses began in October 2016.

³Home cultivation of up to four plants per household is allowed. Adults over the age of 21 are allowed to carry 1 ounce and keep 8 ounces at home, whereas WA establishes a possession limit of 1 ounce.

Therefore, the timing of the reforms was such that cannabis was legal on one side of the border two years before the other side. Specifically, in 2013 and 2014 cannabis was legal in WA but not in OR, a temporary 2-year window followed by a virtually identical legal status across the border between two similar states where voters had a similar attitude towards legalizing cannabis. This allows us to combine a difference-in-differences (DID) design (where WA acts as the treatment group, OR as the control group, 2010-2012 is the pre-legalization period and 2013-2014 is the post-legalization period) and a spatial regression discontinuity (SRD) design (where the WA-OR border marks a discontinuity in the legal status of cannabis in 2013-2014) to identify the causal impact of legal cannabis on violent and property crime.

Even after the legalization, there are counties in WA where cannabis business is prohibited or where, according to the WA Liquor Control Board, Marijuana Sales Activity by License Number, no recreational cannabis retailers are present. These are Columbia, Franklin, Garfield, Wahkiakum, and Walla Walla County, all of them bordering Oregon except Franklin County. We show later that our results are robust to excluding these counties from the analysis.

A potential confounding factor in our analysis is that other relevant legal or institutional changes affecting crime rates in WA may have taken place in 2013-2014. A search for such changes reveals no relevant events that may have affected crime rates at the same time as the legalization of cannabis possession and use. During this period, a reorganization of the 911 emergency call system took place in WA, and there were reforms related to health services, regulation of wine and beer, and drug courts. There were also changes in the statute of limitations for child molestation, incest (victim under age eighteen), and rape (victim under age eighteen), as well as new norms concerning commercial sale of sex and commercial sexual abuse, sexually violent predators, and sexual violence at school. However, all of these changes were too marginal to exert a plausible first-order effect on crime.

3 Data and results

We employ data on criminal activity at the county level from the US Uniform Crime Reporting (UCR) statistics. The data base contains the number of offenses reported by the

sheriff’s office or county police department. For the reasons detailed below, these are not necessarily the county totals, but they are the only publicly available information from the UCR at the county level of disaggregation. We collected these crime data for years 2010 to 2014. For each county and each year, we have the total number of reported offenses for murder, rape, assault, robbery, burglary, and theft. The final dataset is an unbalanced panel (since not all counties report crime data every year) consisting of 335 observations for 75 counties, 36 in OR and 39 in WA. County-level population from the 2010 Census is used to obtain crime rates per 100,000 inhabitants. The distance of each county’s centroid from the WA-OR border is computed using a GIS software. [Table 1](#) reports crime rates in WA and OR counties between 2010 and 2014: all counties at the top of the table, counties at the WA-OR border (where our comparison takes place) at the bottom. Because these rates result from the aggregation of county-level reports in the UCR, they do not necessarily coincide with state-level counts. The reason of the discrepancy is twofold, as explained by the FBI’s Criminal Justice Information Services Division at the UCR website. First, “only data for city law enforcement agencies 10,000 and over in population and county law enforcement agencies 25,000 and over in population are on this site”. That is, crimes occurring in smaller cities are not counted for the published county-level totals. Second, “Because not all law enforcement agencies provide data for complete reporting periods, it is necessary to estimate for the missing data” when building statistics beyond the county level of aggregation. That is, the FBI imputes crime counts to non-reporting agencies when building estimates at the state and nation levels.

In addition, we employ data from the National Survey on Drug Use and Health (NSDUH) to include in our analysis information on substance consumption. Such information may shed some light on competing channels in the explanation of our results. Specifically, we pulled from the NSDUH the rates of use over the previous month for marijuana, other Federal illicit drugs, and alcohol. These statistics are publicly available only as averages over the 2010-2012 and 2012-2014 periods. Fortunately, these roughly correspond to the “pre” and “post” periods in our DID-SRD analysis.⁴ [Table 2](#) reports these consumption rates for the

⁴ For smaller counties the NSDUH data come as aggregates for larger units consisting of groups of neighboring counties. In these cases, each county in the group is imputed the group-level average rate of consumption.

Table 1: Crime rates at the county level

Year	Murder	Rape	Assault	Robbery	Burglary	Theft
All WA counties ($N = 39$)						
2010	0.76	10.96	46.66	12.17	265.79	458.97
2011	0.85	9.65	40.84	10.30	265.08	440.87
2012	1.03	9.16	42.70	9.99	287.77	432.55
2013	0.80	9.07	41.23	9.21	258.73	419.59
2014	0.73	9.70	41.21	10.47	246.90	399.60
All OR counties ($N = 36$)						
2010	0.80	7.22	34.31	6.82	132.96	393.71
2011	0.66	7.26	32.02	6.26	142.14	387.37
2012	0.84	7.51	29.31	6.75	150.93	412.93
2013	0.88	5.69	22.48	5.40	146.14	433.22
2014	0.66	7.22	30.21	4.72	115.17	335.12
Border WA counties ($N = 11$)						
2010	0.35	15.37	33.69	8.51	224.00	529.80
2011	0.48	13.56	33.55	9.69	212.19	491.00
2012	0.75	12.80	42.00	7.58	223.30	445.11
2013	0.59	10.28	40.78	6.15	210.41	407.93
2014	0.71	10.52	39.48	6.97	184.76	357.10
Border OR counties ($N = 10$)						
2010	0.34	1.58	13.40	3.04	41.88	163.57
2011	0.44	2.51	11.22	1.31	49.15	158.78
2012	0.31	2.59	10.76	1.14	56.88	176.11
2013	0.10	1.77	11.67	1.67	41.04	144.27
2014	0.11	0.91	14.89	2.39	40.91	128.08

Notes: Average crimes per 100,000 inhabitants in WA and OR counties, estimated from the county-level counts reported in the Uniform Crime Reporting Statistics. The averages are weighted by county population.

Table 2: Substance Consumption rates at the county level

Year	Marijuana	Other drugs	Alcohol	Binge alcohol
All WA counties ($N = 39$)				
2010-2012	0.102	0.044	0.560	0.222
2012-2014	0.127	0.039	0.542	0.206
All OR counties with consumption data ($N = 34$)				
2010-2012	0.112	0.042	0.596	0.214
2012-2014	0.122	0.040	0.579	0.213
Border WA counties ($N = 11$)				
2010-2012	0.093	0.042	0.535	0.223
2012-2014	0.101	0.034	0.486	0.199
Border OR counties ($N = 10$)				
2010-2012	0.145	0.050	0.630	0.238
2012-2014	0.130	0.043	0.600	0.233

Notes: Average rates of substance use in WA and OR counties, estimated from the rates reported in the National Survey on Drug Use and Health. The averages are weighted by county population.

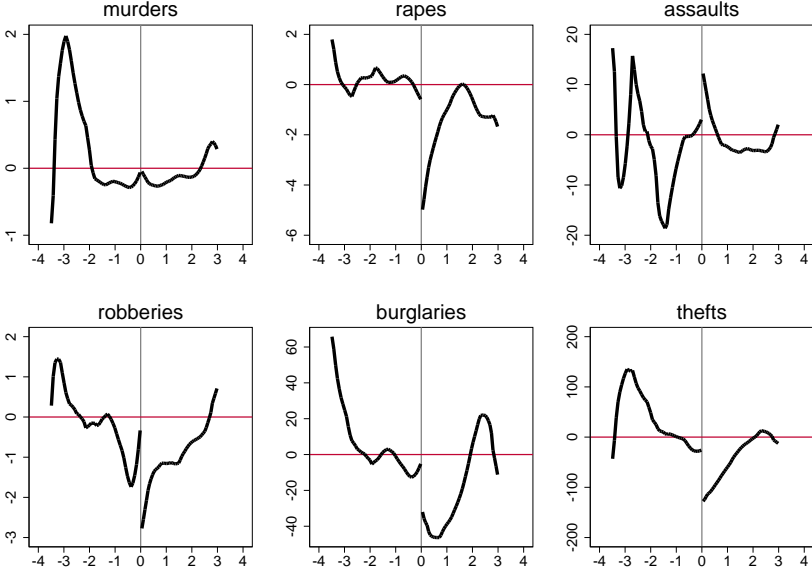
same WA and OR counties used in [Table 1](#).

Four features of our data are crucial for identification. First, WA and OR share similar geographic, economic and institutional characteristics, including (quite crucially) a similar attitude towards legal cannabis (see Section 2). Second, WA legalized the cannabis market at the end of 2012, and OR (despite an attempt to legalize in that same year, marginally failed) in 2014, which results in a 2-year period in which recreational cannabis is legal on one side of the border and illegal on the other side. Third, the longitudinal dimension of the data allows us to condition on county fixed effects and time effects, thus netting out unobserved local characteristics that do not change over time, as well as those factors that vary over time but are common to all counties. Fourth, the geographical features of the data allow us to identify the effect of the policy at the WA-OR border, where treated and control counties offer a better comparison: arguably, the similarity between two different states is maximized when comparing bordering counties. Moreover, by conditioning on distance from the border

and by allowing for different effects of the spatial gap before and after the legalization, the SRD design controls for the effect of distance from the border on crime rates, including possible spillovers due to cross-border activity in response to the different legal status of cannabis.

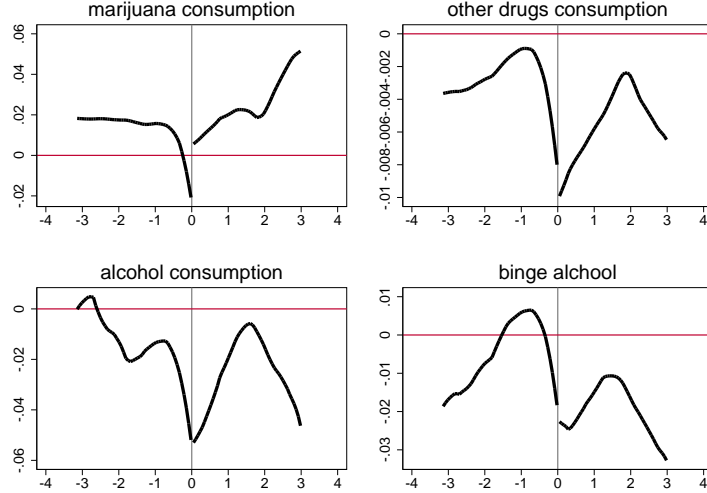
Preliminary graphical evidence about the causal effect of interest is offered in Figure 1. The figure plots nonparametric estimates of the difference between county-level crime rates before (2010-2012) and after (2013-2014) the WA legalization, as a function of the distance (measured in hundreds of kilometers) of the county centroid from the WA-OR border. In each panel of Figure 1, the difference between the variations in crime rates at the border (i.e., the jump at zero distance) is therefore a nonparametric estimate of the effect of legalizing cannabis. Except for murders (for which the variation is essentially zero on both sides of the border) and assaults, the drop in crime on the WA side of the border is much larger than the corresponding drop on the OR side. Figure 2 illustrates the analogous evidence for consumption.

Figure 1: Variation in crime between before and after the WA legalization



Notes: Variation in county-level crimes per 100k inhabitants (vertical axis) as a function of the distance of the county centroid from the OR-WA border measured in hundreds Km (horizontal axis). A positive distance means that the county is located in WA, and a negative distance means that the county is located in OR. The jump at zero distance is a non-parametric DID-SRD estimate of the effect of the legalization policy on crime. The lines are smoothed county-level differences in crime rates obtained from local linear regressions, weighted by county population, employing a triangular kernel and a bandwidth of 100 Km.

Figure 2: Variation in consumption between before and after the WA legalization



Notes: Variation in county-level rates of use of substances (vertical axis) as a function of the distance of the county centroid from the OR-WA border measured in hundreds Km (horizontal axis). A positive distance means that the county is located in WA, a negative distance means that it is located in OR. The jump at zero distance is a non-parametric DID-SRD estimate of the effect of the legalization policy on consumption. The lines are smoothed county-level differences in crime rates obtained from local linear regressions, weighted by county population, employing a triangular kernel and a bandwidth of 100 Km.

To provide a more formal statistical analysis, we employ a parametric model that allows us to condition on unobserved county and time effects. Let c_{it} be the crime rate in county i and year t , and define the following binary variables: first, $w_i = 1$ if county i is located in WA (treatment), and $w_i = 0$ if county i is located in OR (control); second, $p_t = 1$ if year $t > 2012$ (post), and $p_t = 0$ if year $t \leq 2012$ (pre). The DID-SRD design, sometimes referred to as the Difference-in-Spatial-Discontinuity design (Dickert-Conlin and Elder, 2010; Gagliarducci and Nannicini, 2013) can be represented by the following model:

$$c_{it} = k + \alpha p_t + \beta w_i p_t + f(d_i) p_t + g(d_i) w_i p_t + \theta_i + \xi_{it}, \quad (1)$$

where k is a constant, $f(\cdot)$ and $g(\cdot)$ are polynomials of the same order (but possibly different coefficients) in distance d_i from the WA-OR border, θ_i are county fixed effects, and ξ_{it} are residual determinants of crime. Coefficient β is the difference in the SRD estimates between the pre and post periods, i.e., by how much liberalizing recreational cannabis in WA changed the difference in crime rates right across the WA-OR border. We estimated Eq. (1) by OLS, employing quadratic polynomials in distance as is appropriate in a parametric framework (Gelman and Imbens, 2014). The resulting estimates of β are reported in Table 3.

Table 3: Effect of recreational cannabis on crime

	Murder	Rape	Assault	Robbery	Burglary	Theft
Estimated β	0.23 (0.45)	-4.21** (1.26)	-1.30 (8.79)	-1.26 (1.92)	-36.32 (22.20)	-105.62* (40.21)
Observations	335	335	335	335	335	335

Notes: The table reports estimates of β from OLS on Equation 1, a coefficient that represents the difference in the spatial regression discontinuity estimates between the pre and post periods, i.e., by how much liberalizing recreational cannabis in WA changed the difference in crime rates right across the WA-OR border. Ordinary standard error are reported in parentheses (robust standard errors clustered at the county level are smaller than the ordinary ones displayed here). Each county is weighted in the regression based on the size of its population in the 2010 Census. Significance level: * 5%; ** 1% or better.

There is evidence in this table that the legalization of recreational cannabis enacted in WA caused a decrease in crime rates. The point estimates for rape, assault, robbery, burglary and theft are all negative. This conclusion is reinforced by the statistical significance of the drop in rapes (p-value = 0.001) and thefts (p-value = 0.01). For rapes, the reduction is 4.2 offenses per 100,000 inhabitants, which is about 30% of the 2010-2012 rate. For thefts, the reduction is 105.6 offenses per 100,000 inhabitants, which is about 20% of the 2010-2012 rate.⁵ Note that the parametric estimates of β in Table 3 are in the same ballpark of the jump at zero-distance in Figure 1 (except for burglaries). This indicates that our parametric choices are not driving the results.

As a robustness check, we re-estimate the DID-SRD model after excluding 5 WA counties where cannabis business is prohibited and where, according to the Liquor Control Board, Marijuana Sales Activity by License Number, no non-medical cannabis retailers are present. These are Columbia, Franklin, Garfield, Wahkiakum, and Walla Walla County, all of them bordering Oregon except Franklin County. Results are reported in Table 4. These confirm negative point estimates for all of the categories considered, and significant drops in rapes and thefts.

The analogous estimates using consumption as an outcome are reported in Table 5. Our DID-SRD estimates reveal that the legalization increased consumption of cannabis by about 2.5 percentage points (off a base level of about 10%), decreased in the consumption of other

⁵Although the point estimate for murders is positive, it is imprecise and not statistically significant.

drugs by about 0.5 points (off a base level of about 4%), and decreased consumption of both ordinary alcohol (in a marginally significant way) and binge alcohol of about 2 points (off base levels of about 50% and 20%, respectively). These effects on consumption suggest that one of the mechanisms underlying the reduction in crime may be a substitution away from other drugs which have remained illegal substances, such as alcohol, which makes consumers more aggressive than if consuming cannabis. We expand on this point in the next section.

Table 4: Effect of recreational cannabis on crime: robustness check

	Murder	Rape	Assault	Robbery	Burglary	Theft
Estimated β	0.20 (0.49)	-3.77** (1.49)	-0.36 (9.14)	-1.19 (2.04)	-41.84 (25.40)	-117.51** (39.67)
Observations	310	310	310	310	310	310

Notes: The table reports estimates of β from OLS on Equation 1, a coefficient that represents the difference in the spatial regression discontinuity estimates between the pre and post periods, i.e., by how much liberalizing recreational cannabis in WA changed the difference in crime rates right across the WA-OR border. WA counties are excluded were cannabis business is prohibited and where, according to the Liquor Control Board, Marijuana Sales Activity by License Number, no non-medical cannabis retailers are present. These are Columbia, Franklin, Garfield, Wahkiakum, and Walla Walla County, all of them bordering Oregon except Franklin County. Ordinary standard error are reported in parentheses (robust standard errors clustered at the county level are smaller than the ordinary ones displayed here). Each county is weighted in the regression based on the size of its population in the 2010 Census. Significance level: + 10%; * 5%; ** 1% or better.

Table 5: Effect of recreational cannabis on consumption

	Marijuana	Other drugs	Alcohol	Binge alcohol
Estimated β	0.025** (0.009) [0.016]	-0.005** (0.001) [0.002]	-0.023+ (0.014) [0.016]	-0.020** (0.007) [0.010]
Observations	135	135	135	135

Notes: The table reports estimates of β from OLS on Equation 1 when measures of consumption are used as an outcome, a coefficient that represents the difference in the spatial regression discontinuity estimates between the pre and post periods, i.e., by how much liberalizing recreational cannabis in WA changed the difference in consumption right across the WA-OR border. Ordinary standard error are reported in parentheses, and robust standard errors clustered at the county level are reported in brackets. Each county is weighted in the regression based on the size of its population in the 2010 Census. Significance level: * 5%; ** 1% or better.

4 Concluding remarks

Our analysis of the causal effects on crime of the legalization of cannabis for recreational use reaches conclusions in line with what Becker and Murphy (2013) expected when advocating the full decriminalization of the drugs market, namely a crime drop. What are the possible channels through which legalizing the production and sales of cannabis affects criminal behavior? The effects may work through a change in market price and market structure, as well as through institutional changes.

First, the policy leads to the emergence of a legal market, which offers more safety and more reliable product quality. It thus reduces the risk of being victimized while buying, the risk of being sanctioned, search costs (especially for first-time buyers), as well as the psychological unease possibly related to purchasing an illegal product. From the consumer's point of view, this amounts to a reduction in quality-adjusted relative prices. Moreover, retail prices should be expected, on average, to drop when the market is legalized due to a corresponding lower risk on the supply side. Provided that cannabis is a normal good, a price reduction should lead to an increase in its consumption, which is what we find analyzing consumption data. Such increase may take place both at the extensive and intensive margin: the number of consumers may increase and existing ones may consume more. Since cannabis use determines a variety of psychoactive effects, which include a state of relaxation and euphoria (Hall et al., 2001; Green et al, 2003), an increase in consumption may reduce the likelihood of engaging in violent activities. This would hold, in particular, if cannabis is a substitute for violence-inducing substances such as alcohol, cocaine and amphetamines.

Interestingly, the evidence is mixed in this respect. Some studies find that marijuana and alcohol are substitutes (Anderson, Hansen, and Rees 2014; Crost and Guerrero 2012; Kelly and Rasul, 2014; DiNardo and Lemieux, 2001), while others find that they are complements (Williams *et al.*, 2004; Wen *et al.*, 2014). As observed in Sabia *et al.* (2016), who study the effects of MML on body weight and health, the substitutability/complementarity between alcohol and marijuana seems to be heterogeneous, depending on age.

Our results are in line with Gavrilova *et al.* (2016), who find that in US states bordering Mexico the introduction of MML leads to a decrease in violent crimes such as homicides,

aggravated assaults and robberies, and that this reduction in crime rates is mainly due to a drop in drug-law and juvenile-gang related homicides. The introduction of MML is found to reduce the violent crime rate in Mexican-border states by 15-25 percent. This is a large effect, but it is fully compatible with our estimates on the impact of recreational marijuana.

Besides directly affecting cannabis price and consumption, legalizing cannabis also changes market structure. Entry of new legal sellers, who provide better quality than illegal competitors, may drive the latter out of the market. Some illegal dealers might survive if legal consumption is severely taxed, and they will surely survive during the time it takes to open legal dispensaries. Yet, one may expect their profitability to fall – certainly their expected future profits do. One reason is the increase in competitive pressure. Another one is that product quality is not only likely to be higher in the legal part of the market, but it is presumably also easier to identify, so that legalization might in principle introduce price divergence: prices might increase in the legal relative to the illegal part of the market. The likely result is an increase in average product quality and market exit by illegal suppliers. This change in market structure is likely to reduce the presence of drug-trafficking criminal organizations, together with drug-related conflicts and associated crimes. Yet, we do not really know what previous dealers do after legalization, so this argument remains necessarily incomplete. Moreover, one might be concerned that even legal dispensaries attract criminals, e.g., to steal cash or marijuana. Yet, this concern is mitigated by the fact that dispensaries may take measures to reduce crime and increase guardianship, such as doormen or video cameras (Kepple and Freisthler, 2012). What seems more obvious is that the legalization may not just affect the behavior of potential offenders, but also of potential victims. The availability of cannabis through legal channels arguably makes consumers substantially less willing to take risks in the illegal market. This might also contribute to explain the drop in assaults, robberies and thefts that we document.

On top of altering behavior through changes in the cannabis market, legalization may also generate a reallocation of police efforts. A lower rate of drug-related crimes opens the possibility for the police to divert resources toward preventing non-cannabis related crimes, as shown by Adda *et al.* (2014) for the decriminalization of possession of small quantities of cannabis in London, UK. Interestingly, such reallocation may be driven by expectations,

and therefore need not wait for the actual opening of new dispensaries.

Summing up, the WA-OR quasi-experiment provides first-pass evidence that legalizing cannabis may well cause a drop in crime. What we estimate is the short-run response. As new data become available over time, for these states as well as for the other ones that legalized in 2016, it will be possible to appropriately distinguish between short and long-run effects.

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ABSTRACT

High on Crime? Exploring the Effects of Marijuana Dispensary Laws on Crime in California Counties*

Regulated marijuana markets are more common today than outright prohibitions across the U.S. states. Advocates for policies that would legalize marijuana recreational markets frequently argue that such laws will eliminate crime associated with the black markets, which many argue is the only link between marijuana use and crime. Law enforcement, however, has consistently argued that marijuana medical dispensaries (regulated retail sale and a common method of medical marijuana distribution), create crime in neighborhoods with these store-fronts. This study offers new insight into the question by exploiting newly collected longitudinal data on local marijuana ordinances within California and thoroughly examining the extent to which counties that permit dispensaries experience changes in violent, property and marijuana use crimes using difference-in-difference methods. The results suggest no relationship between county laws that legally permit dispensaries and reported violent crime. We find a negative and significant relationship between dispensary allowances and property crime rates, although event studies indicate these effects may be a result of pre-existing trends. These results are consistent with some recent studies suggesting that dispensaries help reduce crime by reducing vacant buildings and putting more security in these areas. We also find a positive association between dispensary allowances and DUI arrests, suggesting marijuana use increases in conjunction with impaired driving in counties that adopt these ordinances, but these results are also not corroborated by an event study analysis.

JEL Classification: K14, K42, H75

Keywords: crime, marijuana markets, local ordinances

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1. Introduction

The impact of liberalizing marijuana laws on crime is a subject of great political and scholarly debate. Advocates for policy reform in states considering liberalization laws, both medical marijuana laws (MMLs) allowing for dispensaries as well as policies promoting retail sale for recreational purposes, suggest that bringing marijuana markets out of the shadows of the black market is a clear net public safety gain.¹ Indeed such a position is supported by scholarly work seeking to identify a causal link between marijuana use and violence, but not finding any (Arseneault et al. 2000; Mulvey et al. 2006). Nonetheless, law enforcement agencies in jurisdictions that have already adopted dispensary systems for medical marijuana claim that these dispensaries are inextricably connected to crime (California Police Chiefs Association 2009; Ingold and Lofholm 2016; Powers 2014).

The difficulty in reconciling these two positions can to some extent be comprehended by understanding the different mechanisms through which marijuana liberalization laws might potentially influence crime. First, there is the obvious impact of legitimizing what was previously an illegal market. By transitioning marijuana transactions from illegitimate exchanges that had to be actively enforced to legitimate transactions, there is an immediate reduction in the burden of enforcement assuming the legal market replaces the black market (Miron and Zwiebel 1995; Shepard and Blackley 2005). Law enforcement and the Courts may then transition resources to other, arguably more violent, types of crimes (Huber, Newman, and LaFave 2016; Miron and Zwiebel 1995). Second, there is the potential for liberalization laws to influence crime rates through an increase in marijuana (mis)use (e.g. psychopharmacological crime), to the extent that marijuana use induces criminogenic behavior. While there is no clear causal link between

¹ For example, see the “Issues” webpage for the Marijuana Policy Project: <https://www.mpp.org/issues/>.

marijuana use and criminogenic behavior, there is suggestive evidence for a positive correlation between use and property crime (Green et al. 2010; Pacula and Kilmer 2003).² A third potential mechanism through which liberalization laws could plausibly influence crime, which might also explain the positive correlation between use and property crime, is that these liberalization ordinances enable the creation of new brick and mortar and delivery businesses that, because of the federal prohibition and banking laws that prevent (until recently) debit cards from being accepted in stores, operate entirely on a cash basis, creating strong targets for burglaries or thefts (California Police Chiefs Association 2009).

A whole new body of scholarly work has emerged exploiting the natural experiment created by new state laws that liberalize the sale of medical marijuana to examine this relationship. As of November 2016, medical marijuana laws have been passed by 28 states plus the District of Columbia. The enactment of state laws since 1996 provide an opportunity to empirically test the effect of regulated markets on outcomes of interest. Studies have evaluated outcomes such as marijuana use (Chu 2014; Harper, Strumpf, and Kaufman 2012; Hasin et al. 2015; Lynne-Landsman, Livingston, and Wagenaar 2013; Pacula et al. 2015; Wall et al. 2011; Wen, Hockenberry, and Cummings 2015), crime rates (Chu and Townsend 2017; Gavrilova, Kamada, and Zoutman 2017; Huber, Newman, and LaFave 2016; Morris et al. 2014; Shepard and Blackley 2016), and other health outcomes (Anderson, Rees, and Sabia 2014; Chu 2015; Smart 2015). These studies all use a difference-in-difference methodology where the treatment is a change in a state law that loosens restrictions on the sale of marijuana.

² Another important factor to consider is marijuana use and victimization, although any evidence of a causal link pointing to an increase in victimization has been inconclusive (Markowitz 2005; Office of National Drug Control Policy 2013).

The concern with these state-level studies is that many states, particularly the early adopting states, actually defer to local entities when it comes to regulating marijuana supply and production, which leads to variation in treatment within states (Dilley et al. 2017; Freisthler et al. 2013). For example, in Colorado and Washington State, which legalized the sale of recreational marijuana in 2014, various types of policies exist at the community level and a significant portion of the population live in communities where the sale of recreational marijuana is not allowed (Colorado Department of Revenue 2016; Dilley et al. 2017). Moreover, medicinal marijuana laws within a state may differ on important elements, such as bans on dispensaries and cultivation (Pacula, Boustead, and Hunt 2014). Therefore, studies that generalize a MML across the state are ignoring heterogeneity within their treatment sample, possibly leading to the inconsistent findings in the MML literature (Pacula et al. 2015). Given the localized nature of crime and the importance of levels of aggregation, this (mis)measurement of the treatment dosage is especially problematic for estimating effects on crime rates (Freeman, Grogger, and Sonstelie 1996; Hipp 2007).

The objective of this study is to investigate whether a particular element of MMLs, namely allowance for dispensaries, affects local crime and other indicators of marijuana misuse (i.e. driving under the influence). We are also able to identify other dimensions of MMLs, such as allowance for home cultivation, but due to little variation in these other dimensions, we focus on allowances for dispensaries.³ Moreover, we estimate effects on different types of crime, as well as arrests indicating marijuana use, to better understand the mechanisms driving the results. By utilizing a novel dataset that codifies elements of MMLs across local jurisdictions within California, we capture heterogeneity on the treatment variable that is present in other studies. Moreover, by focusing on local variation within a single state with a long experience with the

³ We still control for whether a jurisdiction has limitations on home cultivation in all of our models.

policy, we are able to implicitly control for changing state norms and marijuana use that could be independently associated with marijuana-involved crime. Other state-level factors that could bias estimates of crime rates across states, such as depenalization of marijuana, are also implicitly controlled in our analysis (Huber, Newman, and LaFave 2016). This analysis can help inform policies at the local level, where regulation is usually enacted, that better balance safety and access to medical marijuana.

We find no evidence that ordinances allowing for marijuana dispensaries lead to an increase in crime. In fact, we see some evidence of a reduction in property crime along with an increase in DUI and misdemeanor marijuana arrests, pointing to possible increases in misuse of marijuana that do not result in more crime. Supplementary analyses indicate that the significant effects may be driven by pre-existing trends, so we limit our conclusions to the fact that counties allowing dispensaries did not experience an increase in crime. The rest of this paper proceeds as follows: Section 2 provides some background into the literature on regulation of marijuana markets and crime, Section 3 describes the methods used for the analysis, Section 4 provides results, and Section 5 concludes with a discussion of policy implications and limitations.

1. Background

2.1. Why Might Dispensary Laws Affect Reported Crime Rates and Arrests?

It is clear that explicitly writing into law that entities are permitted to engage in retail distribution of medical marijuana reduces the criminal justice risks of supplying marijuana. Theoretically, we might expect this to increase availability and access to marijuana, which could increase demand at both the extensive, and potentially the intensive margins. Indeed there is consistent evidence that laws on-the-books explicitly permitting entities to produce and distribute medical marijuana increase non-medical use of marijuana among adults (Hasin et al. 2017; Pacula

et al. 2015; Wen, Hockenberry, and Cummings 2015). The laws appear to have no general impact on youth marijuana use (Choo et al. 2014; Hasin et al. 2015; Lynne-Landsman, Livingston, and Wagenaar 2013; Anderson, Hansen, and Rees 2015; Shu-Acquaye 2016), although there is some evidence from studies accounting for the relative size of these evolving marijuana market that larger and/or more competitive markets do in fact influence youth marijuana use (D'Amico et al. 2015; Smart 2015); It is *a priori* unclear, however, what effect this increased use among adults may have on community-level violent and property crime or driving under the influence. Moreover, the replacement of a black market by a new cash-based business may or may not lead to a change in reported robberies, burglaries, and thefts (California Police Chiefs Association 2009). Although we cannot hypothesize on the overall directional change, by applying the Goldstein (1985) typology of drug crime, we consider the potential mechanisms driving changes in crime.

The first set of crimes in the typology is those committed due to intoxication, or psychopharmacological crimes. As was summarized in a recent report by ONDCP, there is little evidence for a causal link between marijuana intoxication and pharmacological crime (Office of National Drug Control Policy 2013, 14). Marijuana has been linked to correlates of violence such as development of psychosis disorders, aggression later in life, and delinquent behavior (Arseneault et al. 2000; Hall and Degenhardt 2008; White and Hansell 1998); but laboratory studies have not found a link between cannabis and violence (Moore and Stuart 2005) and there is reason to believe that marijuana use alone may lower the propensity to commit an aggressive act (Ostrowsky 2011). If marijuana is a substitute for alcohol, then increased availability of marijuana through retail outlets may lead to substitution away from alcohol, thereby reducing crime that would otherwise be associated with alcohol intoxication (Carpenter and Dobkin 2010; Carpenter

2007) and DUIs (Anderson, Hansen, and Rees 2013). However, if alcohol and marijuana are complements (Pacula 1998; Williams et al. 2004), it is possible that their joint consumption could lead to more aggressive behavior than alcohol or marijuana alone. Therefore, on net, we are *a priori* ambivalent towards the expected directional change (if any) in reported crime and DUI arrests due to pharmacological criminality, resulting from legal dispensaries or looser rules on cultivation.

A second type of crime in the typology is “economic-compulsive” crimes caused by those in need of income to pay for a drug habit (Goldstein 1985). We can expect that legalization of marijuana, even for medical purposes, will reduce the price of obtaining marijuana, and indeed there is limited evidence showing that potency has risen while prices for potency-adjusted fixed amounts have fallen (Anderson, Hansen, and Rees 2013; Sevigny, Pacula, and Heaton 2014). Substantially larger price declines have been observed with full legalization (Smart et al. 2017). Overall, we would expect a minimal increase in income-producing property crime driven by economic-compulsive behavior as a result of legalizing dispensaries.

The third category of crime is “systemic crimes,” or those associated with the provision and distribution of drugs in black markets. There is very limited evidence of violence attributed to illicit retail marijuana markets, although a recent study has found that counties bordering Mexico in states that passed MMLs have experienced a decrease in violent crime by decreasing the financial incentives of drug trafficking organizations (Gavrilova, Kamada, and Zoutman 2017; Reuter 2009). Nevertheless, any possible violence would have likely been mitigated in California given that home cultivation was allowed in most counties for many years before dispensary laws.⁴

⁴ Our models will control for whether the county had any restrictions on self-cultivation.

However, the presence of dispensary store-fronts may, themselves, lead to a change in both violent and property crimes in a given area, although again the direction is theoretically ambiguous. On the one hand the sale of marijuana, even for medicinal purposes, is illegal to the federal government. Therefore, no banks with a national charter are willing to provide credit or regular services to dispensaries that sell these goods. This has meant that most dispensaries must operate on a cash-basis, and they have a lot of cash (California Police Chiefs Association 2009; McDonald and Pelisek 2009). On the other hand, dispensaries have lots of security in and around them because of their cash business and highly desirable product. They often are zoned in areas that previously had empty buildings, and so by moving into these areas and bringing their own security systems they provide more “eyes on the ground” which can deter crime.

Spatial models that measure the density of dispensaries in a given area are an effective way to test the effect of store fronts on crime, but the results from these have been quite mixed. A few correlational studies have found a positive relationship with crime either in the immediate area (Contreras 2016) or in adjacent neighborhoods (Freisthler et al. 2016). A recent study exploiting an exogenous shock that led to closings of dispensaries in Los Angeles County, though, found that these closures actually led to an increase in crime in the immediate vicinity (Chang and Jacobson 2017). The authors argue that the increase in crime was a result of a loss of “eyes on the street” being provided by the dispensaries that were forced to close. Overall, we cannot say whether we expect a change in the distribution of marijuana caused by the legalizing dispensaries to have a positive or negative effect on reported crime in California.

Because theory does not provide any clear guidance on anticipated effects of these laws, it has been viewed an empirical question. A recent set of studies examine the relationship between MMLs and crime by exploiting variation in uptake across states and using Part I reported crimes

at the aggregate level. Morris et al. (2014) and Shepard and Blackley (2016) both use a difference-in-difference methodology, with the former employing a sample of all states in the period between 1990-2006 and the latter a sample of only the eleven states that make up the Western Census Region between 1997 and 2009.⁵ Chu and Townsend (2017) adopt a similar approach while measuring crime at the city policy agency level to improve measurement, but still rely on a state-level classification of MMLs. Huber (2016) add information about whether states have depenalized marijuana to their difference-in-difference model, arguing that depenalization has an effect on non-drug crime by shifting enforcement resources. Finally, Gavrilova, Kamada, and Zoutman (2017) employ a difference-in-difference-in-difference approach to study the added effect of MMLs on crime in counties bordering Mexico compared to inland adopting counties (where MMLs are measured at the state-level). These studies have mostly found very little evidence of a relationship between uptake of medical marijuana laws and reported crime,⁶ with the exception of the Huber study that estimated a 5% significant decrease in robberies, larcenies, and burglaries.

The current paper addresses important limitations of the prior studies. First, prior studies that exploit state-level policy variation assume the treatment (exposure to medical marijuana dispensaries) is homogenous across the state. It is clear from recent work that this is not the case, as many local jurisdictions choose to adopt bans on medical marijuana dispensaries (Dilley et al. 2017; Pacula et al. 2015). Crime rates are also not constant across a state, and in fact are very localized, which raises uncertainty as to whether variation in aggregated crime rates observed at the state level are being driven by the same or different jurisdictions in which medical marijuana dispensaries are allowed (Dilley et al. 2017; Freeman, Grogger, and Sonstelie 1996). Our study is

⁵ They argue that because up until 2009 only four states outside of the Western Region had passed a MML, a sample of only western states provides a more similar control group.

⁶ The Gavrilova study finds a significant decrease in violent crime in Mexico-bordering counties with MMLs, but a negligible insignificant effect on violent crime in inland counties with MMLs.

able to explicitly address this concern by examining more localized measures of crime and dispensaries at the county level. Second, prior state analyses frequently omit other relevant policy variables that are also changing during this time period, such as cannabis depenalization, that might also be important for determining crime and arrest rates (Huber, Newman, and LaFave 2016). Our study overcomes this limitation by exploiting variation within one very large state, thereby holding constant across our treated and control counties changes in other state-specific laws (Shepard and Blackley 2005).

2.2 California Experiment: Medical Marijuana Laws across California Counties

In 1996, California was the first state to pass a law allowing for the legal possession and cultivation of marijuana for medicinal purposes. The initiative changed a section of the Health and Safety code to protect patients who used marijuana with the recommendation from a physician from state prosecution. Passed through a ballot initiative, Proposition 215 (later to be known as the Compassionate Use Act (CUA)), did not address any channels through which marijuana might be supplied or obtained due in large part because of its explicit contradiction with federal law, which still maintained a strict prohibition on marijuana for medicinal purposes by classifying it as a Schedule 1 drug.

A few factors encouraged county and city jurisdictions in California to start crafting their own medical marijuana regulations, creating the variation over time we exploit in this study. First, the lack of specificity in the CUA regarding the production and distribution of marijuana left local governments with the authority to adopt whatever regulations they felt was appropriate, as there was no state pre-emption of any local regulations (Freisthler et al. 2016). Second, the ambiguity of the state law meant that the distribution of marijuana within the state remained illegal unless localities specifically addressed the issue.

These two factors paved the way for subsequent policy decisions since the passage of the CUA in 1996 that have affected medicinal marijuana regulation in California and solidified the role of counties and cities to create their own laws related to medical marijuana dispensaries. Statute SB 420, which provided legal protection to marijuana dispensaries operating within the state as of January 1, 2004, gave local jurisdictions the autonomy to decide whether and how to permit dispensaries. While it exempted the “collective or cooperative cultivation” from prosecution, it left it to local jurisdictions the authority to implement and regulate them (State of California. October 12, 2003, §1(b), (c)). The “Ogden memo,” published in October, 2009, strengthened the incentive localities had to develop clear regulations over dispensaries, as it specified that the Federal government would not prioritize prosecuting patients or caregivers that were acting in clear compliance with state laws (Ogden 2009). As California law delegated these authorities to local jurisdictions, this memo signaled to city and county governments that local ordinances regarding dispensaries would be binding.⁷ As demonstrated by the increase in counties after 2004 and 2009 with dispensary laws shown in Figure 1, the evolution of these rulings and decisions has spurred the variation in local policy that is currently observed within the state of California today.

⁷ The authority of local governments to regulate dispensaries in their jurisdiction was reinforced in 2013 after the Supreme Court of California ruled in the case of *Riverside vs. Inland Empire Patients Health and Wellness Center* (56 Cal. 4th 729 [2013]) that the city of Riverside had the right to abolish marijuana dispensaries through zoning laws.

2. Data and Methods

3.1. Data

City and County Ordinance Data

This study uses a database of medical marijuana legal provisions adopted across all 58 counties of California as well its most populous 14 cities (those with a population exceeding 200,000 residents). The database is based on legal analysis of the language in the public law versions of county ordinances that were adopted between the period January 1, 1997 through December 31, 2014. The year 1997 is used as a starting point because California's statewide policy passed in November of 1996.

The legal database includes jurisdictions' (dis)approval on provisions related to the distribution of cannabis supply-related products. By December 31, 2014, 28% (16 out 58) of jurisdictions had made legally effective a county ordinance permitting co-operatives or dispensaries.⁸ In order to limit the subjectivity of the database associated with subsequent implementation of the provisions and to ensure every jurisdiction's county ordinances were assessed along the same criteria, e.g. as written in public version, this study does not include successive interpretations of courts or policies established by regulatory bodies.

An indicator variable was created that is defined as "1" for counties that explicitly allow dispensaries in a given year and "0" otherwise. This is a reasonable definition because none of the state-level statutes or court rulings explicitly allow for dispensaries. Inevitably, some counties changed their policy throughout the year and we have created an annual dataset, so we use the law

⁸ The peak number of dispensaries open in one year is actually 18 during 2013, but two counties stopped allowing for dispensaries the following year.

in place for the majority of the year.⁹ Additionally, because home cultivation is allowed by the Compassionate Use Act, we assume that home cultivation is allowed with no limits unless explicitly stated. We create a variable that identifies whether the county has placed any limits¹⁰ on cultivation for the given year. To make it easier to interpret along with the dispensary variable, the indicator variable is defined as “1” when there are no limits placed by the county on home cultivation and “0” when the county either explicitly prohibits or places any sort of limit on home cultivation.

A significant complication to the analysis is that a county ordinance applies to the unincorporated part of a county, which is the area of a county that does not pertain to an incorporated city. Incorporated cities may create different laws than the county they are nested in, which apply to residents within the city limits. Estimation of impacts of just county ordinances ignoring the specific ordinances of the cities incorporated within them could therefore lead to biased results. This is why in addition to the county ordinances, the research team also completed the same categorization procedure of ordinances for the 14 incorporated cities in California with a population larger than 200,000. Doing so meant that in most counties we would capture the laws that applied to the greatest share of the county population in each county.

While crime offense data are available at the level of police agencies within counties, our main analysis will be conducted at the county level because it mitigates the problem of agency jurisdiction borders and because more control variables are available at the county level. The distinction between counties and cities, however, means we have to be careful to account for the

⁹ The data on ordinances is at the monthly level, but because crime offense data should be interpreted at the annual level we collapse the ordinance data annually (very little variation is lost by collapsing the ordinance data to the annual level). We also show as a robustness check the results from estimating the treatment variable as the fraction of the year in which the policy was in place (for example, 0.5 if dispensaries were allowed for 6 months).

¹⁰ We categorize this variable as “any limits” because it is rare for counties to place limits on cultivation. Counties that place any limits, then, should be different than those that do not regulate cultivation.

treatment of cities that had laws different than that of the county (and for the possibility of differences for those cities in which we do not have information). Therefore, we construct a county-level policy indicator using the following rules: (1) the county unincorporated area policy is used if we don't have information on any city within a county, or if the city information is consistent with the county; (2) when information on a city within a county is available and contradicts that of the county policy, we use the county or city policy that applies to the larger share of the full county population.¹¹ As a sensitivity analysis, we collect data on police agency-level reported crime for the 14 cities and the unincorporated areas of each of the 58 counties; and run a similar analysis using ordinances for these 72 independent jurisdictions to ensure that our results are not driven by different laws within jurisdictions in a county. We also conduct robustness checks using other methods of classifying the treatment variable.

Figure 1 displays the distribution of counties in each year that have a policy that allows for dispensaries, using the policy definition described above. It shows that the change in this element of the MMLs was a gradual process that, with the exception of 2 counties (San Francisco and Santa Clara), starts in 2004 after SB420 passed. By 2010, 12 of the 58 counties allow dispensaries and in 2013 18 counties do so. Finally, by the end of our sample period in 2014, 16 of the 58 counties allow for dispensaries. One may note that the number of counties allowing for dispensaries can decrease, and this is a function of the fact that counties that allow dispensaries may either (a) include sunset provisions, or (b) subsequently pass ordinances that disallow them. Our indicator variable reflects these subsequent changes as well.¹²

¹¹ There are 3 counties (Alameda, San Diego, and Los Angeles) that have 2 cities within its boundaries that fit the criteria of a population of 200,000 or more. In these cases, we use the city with the larger population.

¹² This is complicated in our event study analyses, but we account for it by adding a dummy variable to the model indicating years post-treatment when the county no longer allows for dispensaries.

Crime Incident Data

The second source of data we have compiled for use in this study are the number of total offenses reported to police by type of crime, for each county and each year in our sample period. The data on reported offenses for the seven types of index crimes are pulled from the State of California Department of Justice (Criminal Justice Statistics Center 1997-2014) website. The California DOJ publishes raw county-level data¹³ from the information it receives from each police agency. We also create a variable for violent offenses that corresponds to the Uniform Crime Report (UCR) Part I violent crimes: homicide, rape,¹⁴ robbery, and aggravated assault; and property offenses refers to UCR Part I property crimes: burglary, larceny/theft,¹⁵ and motor vehicle theft.

Since the UCR is based on the Hierarchy Rule, only the most severe crime is counted per incident. The importance of this for our purposes is that if marijuana has an effect on the severity of crimes, we may observe this as a change in crime; although no change in the actual number of incidents. For example, where two offenses (e.g. aggravated assault and theft) occurred during an incident; this incident will be recorded as an aggravated assault. If marijuana results in a fall in pharmacological crime (such as aggravated assault), but still affects economic-crimes (theft), we would observe a decrease in aggravated assault and an increase in thefts. While in this scenario the former is true (there is indeed a fall in assault), the latter is not true; the offense of theft occurred in both incidents.

¹³ Raw data means that no imputation procedures are used to account for possible missing values. California does not conduct a state-wide version of the National Crime Victimization Survey, meaning that reported crime-offense reports is the only source for measuring the level of crime.

¹⁴ We don't show results for effects on rape because there is no reason to believe dispensaries would have an effect and agencies in California were allowed to start using the new expanded definition in January 2014.

¹⁵ Larceny/theft includes both felony and misdemeanor crimes. The classification for felony theft in California changed in 2011 and it was not possible to go back and re-classify all previous felony offenses into misdemeanors, so the state decided to include all larceny and theft crimes, regardless of monetary value, under felony property crime.

Final Dataset

We have created a dataset of aggregate crime by year and county and merged it with the ordinance data to create a panel dataset from 1997 to 2014. Figure 2, Panels A, B, and C, track how reported violent offense, property offense, and DUI arrest rates, respectively, have changed over our sample time period for counties that started allowing dispensaries at any period between 1997 and 2014 and those that never allowed dispensaries during that same period. The vertical axes signify the two years (2004 and 2009) that begin an “episode” when more counties start entering the treatment group, as well as a year (2011) when various important state criminal justice policies are passed.¹⁶ The first important pattern to note is that crime has decreased in the state as a whole since 1997, regardless of whether dispensaries were allowed. This downward trend in crime per capita is consistent with the decline in crime that has been observed throughout the United States. Secondly, it appears that there are parallel trends throughout most of the pre-treatment time period between the two groups of counties, with the exception that counties that never allowed dispensaries had a larger decline in violent and property offense rates between 1999 and 2001 than counties that allowed dispensaries at any point in time, and DUI arrests between the two groups start to converge around 2009. Nevertheless, because jurisdictions start allowing dispensaries at different times, it is difficult to draw conclusions about the relationship between dispensaries and crimes from these broad state trends.

We also collect data on variables at the county level that have been shown in the literature to influence the crime rate. These variables include the one-year lagged unemployment rate (Raphael and Winter-Ebmer 2001), the average per capita income, the density of alcohol outlets per capita (Gruenewald and Remer 2006), and the county population density (Shepard and

¹⁶ These include decriminalization of marijuana as well as AB 109, a major policy that led to a shift in resources among all law enforcement agencies.

Blackley 2005). Lastly, we include an indicator for 2011 and later, the year that California both decriminalized recreational marijuana use and substantially changed its criminal justice system through a process that has been termed “Public Safety Realignment.” The unemployment rate comes from the Bureau of Labor Statistics, the per capita income from the Bureau of Economic Analysis, the alcohol outlets from the California Department of Alcohol and Beverage Control, and the land area and population from the United States Census Bureau.

Table 1 shows the summary statistics for the different types of crime we are analyzing and the independent variables used in our model. One will note that most of the total property crime is made up of larceny/thefts and most of the total violent crime is made up of aggravated assaults.

3.2 Empirical Strategy

To test whether allowing dispensaries affects aggregated criminal activity, we analyze the impact of local dispensary laws on UCR reported violent and property crime rates as well as DUI and marijuana-related arrest rates.¹⁷ Using the county-year as our unit of analysis, we will capture the effect from a change in dispensary allowance through a staggered difference-in-difference approach. Counties become part of the treated group at different times as they adopt laws throughout our sample period, and the changes resulting from adoption are compared to a control group that never adopts. All our model specifications include county fixed effects, as we are confident that there are unique unobservable county characteristics, which may cause a spurious correlation between crime rates and policy adoption. To account for the fact that there are trends in crime and arrest rates that are common across counties, we also include in the model a continuous (annual) time variable and a second order term. We choose this specification, over the

¹⁷ DUIs include driving under the influence of any substance that may impair driving, so driving under the influence of marijuana is included in these figures..

more common method of including year dummy variables, to preserve more power after observing a clear quadratic trend in all crime.¹⁸ Finally, we control for various time-variant county characteristics, described in the previous section, that may be correlated with both changes in crime and a county's propensity to adopt an ordinance allowing for dispensaries.

Our preferred specification is one that also adds county-specific time trends to the model. If counties across the state had differing pre-treatment trends, this specification helps create a better fit of the data. Studies that examine crime as an outcome across states, including in the MML literature, have argued for the inclusion of these jurisdiction-specific trends (Chu and Townsend 2017; Gavrilova, Kamada, and Zoutman 2017; Raphael and Winter-Ebmer 2001). California is very diverse with counties that differ in economic, political, and demographic characteristics; creating differences in crime trends one would usually associate with states. Moreover, there were differential impacts of the Great Recession and Public Safety Realignment across counties because of these different characteristics, resulting in differential crime trends that we can see when we look at counties individually.

The model specification is represented by the equation

$$\log(y_{ict}) = \alpha + \delta D_{ct} + \rho Cult_{ct} + \beta X_{ict} + \alpha_c + \omega Time_t + \tau Time_t^2 + f_{ct} + \varepsilon_{ict}$$

where y_{ict} represents the logarithm of the reported crimes per 100,000 residents¹⁹ of crime type i for county c in year t . Our main treatment variable is represented by D_{ct} , an indicator for whether county c in year t allows for dispensaries. α_c controls for the county-specific variation, $Time$ and $Time^2$ control for state trends over the study's time-period, and f_{ct} accounts for the county-specific trend (we will show results based on different functional forms used to model the trend). $Cult$

¹⁸ We run all the models including year dummies as well to ensure that the coefficients are not affected by this choice.

¹⁹We ran a variety of tests for model fit and found that this model best described the data generating process. Additional models were also tested and available upon request.

controls for whether the county had a restriction in place on amount or location with regards to cultivation and X_{ict} represents a vector of county time-varying covariates that have been shown to be associated with crime rates in the literature.²⁰ The coefficient of interest, δ , estimates the average effect in reported offenses for counties that allowed dispensaries compared to those that did not.²¹ Finally, our models are robust to clustered standard errors.

A primary assumption in the difference-in-difference methodology is that of pre-policy parallel trends in outcomes, or that there are no variables in the error term correlated to the outcome as well as the decision for a jurisdiction to adopt a dispensary policy. If this type of policy endogeneity were occurring or if pre-policy trends in crime between the treated and untreated groups differed for other reasons, we'd expect the trend for policy-adopting jurisdictions to change before the passage of an ordinance, leading to a biased coefficient of the treatment variable. One advantage from our technique is that the treatment is staggered over time, mitigating the probability that something happened at the state level that affected both crime and county-specific entry into treatment. Moreover, as ordinances are legislative processes, it is likely that many factors are attributable to the passage that have nothing to do with changes in crime (Williams and Bretteville-Jensen 2014). Finally, dispensaries were adopted by large and small, urban and rural counties, which mitigates the concern that counties adopting dispensaries are inherently different.

As a check that the parallel trends assumption holds and to explore possible dynamic effects of treatment, we complement our average effect model with an event study. The event study

²⁰ The covariates used are: An indicator for when California decriminalized marijuana starting in 2011, the density of alcohol outlets in the county, log of per capita income for the county, the lagged unemployment rate in the county, and the log of the population density in the county.

²¹ While there is a wide range in populations and urban density in counties across California, which could lead to variance in the error term that is not constant across observations, we decided not to incorporate a weighted least squares regression. Models incorporating a WLS regression, testing various weights, did not improve estimates for homoskedasticity, so we did not feel that we fully understood the structure of the variance component to properly adjust for it. Results from these tests are available upon request.

disaggregates D_{it} into a set of dummy variables indicating whether a county-year observation represents a certain number of years before or after treatment. The model specification will be the same as that shown above, to account for other state and county characteristics and trends that affect county-specific crime rates.

The event study allows for identifying potential endogeneity if there are significant effects in the years leading up to policy adoption. For example, it picks up effects from the years preceding the passage of the law if suppliers sense that the county legislature or law enforcement are amenable to dispensaries and start to operate before an ordinance is officially put in place. The event study model also addresses a limitation from our model in which the average effect may mask differences in the development stage of dispensary operations after implementation (Meer and West 2015). It may be the case that there is a lag in observed effects as development of dispensaries takes place in the first few years.

3.3 Local Jurisdictions and Sensitivity Checks

As mentioned in the section describing the data, the analysis incorporates a measure of crime and arrests at the county level even though it is not always the case that a dispensary ordinance applies throughout the entire county. We address this issue by also running our difference-in-difference model at the ecological level of police-agency jurisdictions, where the reported crime rates should reflect 100% of the geographical area defined by our treatment variable. We collected agency-level data on the reported offenses by crime type from the UCR database for each of the 14 cities for which we have ordinance information and for the unincorporated areas of each of the 58 counties. For the cities, we use offense data that are reported by the police department of the city (e.g. reported offenses according to the Los Angeles Police Department to measure crime in Los Angeles City). For the unincorporated parts of each county,

we use offense data reported by the Sheriff's department of the county. This leaves us with crime rates from a total of 72 independent jurisdictions, which match the 72 jurisdictions for which we have information on ordinances regarding allowance for dispensaries.

We follow the same empirical model from the main analysis, where the explanatory variable of interest is now an indicator for whether dispensaries are allowed in each jurisdiction, for the 72 independent jurisdictions over the 18-year sample period. One complication of running the analysis at the level of individual police-agency jurisdictions is that the covariates used in the regressions from the previous section are not available at this geographic level. Nevertheless, this should not affect the results because the variations across years within jurisdictions for variables that affect crime rates are minimal and are mostly absorbed by the controls that exploit the panel data structure. In the current model, we incorporate dummies indicating the independent jurisdictions to control for unobserved heterogeneity across individual jurisdictions and the same continuous time variables as above to control for state-level changes. Lastly, we estimate standard errors robust to clustering at the county-level, as even across two independent agencies, there may be correlation within the same county.

We also apply other sensitivity checks that address less serious, but important, concerns. First, we present results removing certain counties that may be different than the rest because they adopted a dispensary policy very early, even before the passage of SB 420. Second, we conduct robustness checks related to the issue of differential city ordinances contained within a county by estimating the model using other methods to choose the applicable ordinance for the jurisdiction. Third, we address the difficulty in properly identifying the amount of time during a year in which the policy was active by presenting results of a model measuring the main treatment variable using fractional years based on the month that the policy went into effect. Finally, we estimate a model

with a sample consisting of only control counties and treated counties with a policy in place five or more years. Similar results to the main analysis would point to consistent effects on crime over the treatment period.

3. Results

4.1 County Level Crime and Arrests

We present in Table 2 the results of the average effect on overall violent and property crime based on specifications with no county-specific time trend (columns (1) and (4)), as well as with county-specific trends using linear (columns (2) and (5)) and quadratic functional forms (columns (3) and (6)).²² The first important result to observe is that our estimates are sensitive to an inclusion of the county-specific time trend, as it leads to an increase in the magnitude of the coefficients for both overall violent and property crimes. For property crimes, it changes a roughly zero effect size to at least a partially significant coefficient. The choice of functional form for the county-specific trends is less important, with coefficients that are roughly similar across the different specifications. As we found differential property crime trends in some counties in supplemental analyses (not reported here), we have greater confidence in models that adjust these series for the county-specific time trend.

We find no significant impact of dispensaries on violent crime in any of our models. Table 3 shows that even when we disaggregate by crime type, none of the violent crimes (columns 1-3) are affected by dispensary laws. The consistency of findings regardless of inclusion or exclusion

²² We also ran the model using a cubic functional form for the county-specific time trend, but don't show the results for simplicity, as they are very similar to the quadratic functional form model.

of the county-specific time trend is reassuring, but not surprising in light of the more consistent trends observed across counties in these measures.

For property crimes, we see no effect from adopting dispensaries in the model excluding county-specific time trends. However, the model incorporating a linear trend shows a 5.1% statistically significant drop in reported property offenses during the years in which counties allowed for dispensaries, while the quadratic specifications shows a 6.3% decrease that is statistically significant. Further decomposing these results, Table 3 shows that the effect on property crime appears to be driven by a decrease in thefts.

Only a brief discussion of the other covariates is warranted. As previously mentioned, due to very lax regulations on cultivation, the variable for cultivation regulations only measures whether there were any explicit limits set by a county. While Table 2 does show a sharp drop in violent crime of almost 10% in counties that didn't restrict cultivation, when county-specific trends are not included, this relationship becomes insignificant with the inclusion of time trends. The effects from the other covariates included in the model are difficult to interpret due to limited variation once the fixed effects and time trends are controlled for.²³

Table 4 shows results for the effects on variables that may be informative with regards to marijuana (mis)use. We see a very strong and robust effect on DUI arrests, as adopting dispensary laws was associated with at least a statistically significant 7.7% increase in DUI arrests.²⁴ This effect increases when county-specific time trends are included in the model, with the preferred specification indicating a significant increase in DUIs of 9.1%. As DUIs in California (at least

²³ Supplemental analyses not shown here reveal that nearly all of the variation in our other descriptors (more than 90%), with the notable exception of unemployment, can be captured by fixed effects and county-specific time trends.

²⁴ While the increase in DUIs may be a result of changes in enforcement in counties that allowed for dispensaries, it is unlikely that there is a high correlation between the timing of dispensary laws and changes in DUI enforcement. Many factors impact enforcement, and cultivation of marijuana was allowed in almost all counties well before dispensaries opened (Williams and Bretteville-Jensen 2014).

during the study period) apply to any substance use, this increase may have been a result of more marijuana-impaired driving arrests. This is equivalent to 65 more DUI arrests per 100,000 residents on average per year,²⁵ as a result of dispensaries. Arrests for felony and misdemeanor marijuana arrests are noisy due to important changes across the state that led to an overall large drop in both types of arrests statewide. Our results demonstrate a significant increase in misdemeanor arrests with our preferred specification, though, which does reinforce the evidence of possible increases in marijuana misuse.

The event study analysis results, demonstrated in the panels in Figure 3 where the graphs show the effect of each individual year relative to the passage of a law, can help in interpreting the results described above. Note that the sample is not perfectly balanced; many counties adopted dispensary laws later in the sample period so they did not have as many years of post-treatment observations. The tails in the figures below, the values -3 and 4 on the x-axis, represent dummy variables that incorporate all the years before or after, respectively, relative to the year of adoption (0 value on the x-axis).

Panels A of Figure 3 show that for overall violent crime, the failure to observe an effect is not due to a violation of the parallel trends assumption. The effect sizes of for violent crime consistently include 0 in both the pre- and post-policy periods and do not demonstrate any clear trends. Panels B, C, and D, on the other hand, demonstrate pre-existing trends for property crime and DUI and misdemeanor marijuana arrests. Moreover, it appears from the left tail of the figures that, historically, counties that adopt dispensary laws have higher property crime rates and lower DUI and misdemeanor arrests than non-adopting counties, and that regression towards the mean was occurring before dispensaries were allowed. Possible policy endogeneity makes it difficult to

²⁵ We took the average across non-adopting years for counties that would eventually adopt dispensaries for this calculation because counties that adopted dispensary laws had lower DUIs on average (see Figure 2).

measure the magnitude of any possible overall and dynamic effects, though the trends continuing past zero, even if not significant, point to the significant effects shown in Table 2.

4.2 Sensitivity Checks

In this section, we show the results from a variety of sensitivity checks that account for limitations to our main analysis. Each row in Table 5 shows the coefficient for the “allows dispensary” variable of a different analysis, with regressions run for property and violent crime, as well as DUIs, presented in the columns. We show these three outcomes because our main analysis has not demonstrated any significant effects on specific types of these crimes, with the exception of theft, which seems to track the property crime variable.²⁶²⁷

The results for our first sensitivity check, shown in the first row of Table 5, represent the average effect of allowing dispensaries when variables are measured at the police-agency jurisdiction level. We see that the coefficient magnitudes are similar to those of the main analysis, even though the DUI arrests and property crime variables are no longer significant. This may occur because our new unit of analysis is smaller, leading to more variation from year to year and noisier data. Overall, these results do not contradict those of the main analysis.

In the next two rows, we check for whether how we define the treatment variable changes our findings. “Unincorporated County” means that we identify the treatment based only on the county (i.e unincorporated part of the county) law even if a city exists within the county with a different law, and “City Always” defines a variable that uses the city law (if available) to identify treatment regardless of whether the unincorporated population is larger. The following row shows the results of a model allowing for the treatment variable to be a fraction if an ordinance was passed

²⁶ We also ran these models on theft crimes and find similar results to those shown for property crime.

²⁷ We use county-specific time trends instead of agency-specific because county rates should have smoother trends. This decision has no impact on the results shown.

after January of that year. The two rows labelled “No San Francisco” and “No Santa Clara” show the results of analyses that exclude each of these counties. These two counties adopted dispensaries very early on, even before the enactment of SB 420, which might indicate something unique about them.²⁸ Moreover, given the changing trend in crime over our sample period, the timing of their “post-intervention” may impact the results (even after adjusting for county-specific linear trends) in addition to the higher leverage demonstrated by San Francisco due to it experiencing more years of treatment. Finally, the last row presents the effects of dispensary laws when we restrict the treatment sample to counties with laws for five or more years. All of these sensitivity checks point to the same findings as our main analysis, indicating a significant increase in DUI arrests and decrease in reported property crime offenses. While the analysis excluding San Francisco leads to an insignificant coefficient for property crime, it is still negative and similar in magnitude to the other models.

4. Discussion

California is experimenting with opening recreational marijuana retail stores, which will make it the largest state (in population and size) to do so. Again, localities will get to decide where and how many stores are allowed to open in each of their jurisdictions. Insights from the opening of medical marijuana dispensaries may be useful for better understanding the likely impacts of opening these recreational stores, and could serve to help police agencies and the courts and correctional systems prepare.

This study improves upon the work conducted thus far evaluating the impact of retail medical marijuana stores on crime. We use a novel longitudinal local ordinance database that allows us to assess the extent to which types of violent, property, and substance abuse crime rates

²⁸ In fact, Santa Clara County is unique in that it stops allowing dispensaries to operate after 3 years and then adopts a new ordinance allowing for dispensaries in 2011.

are impacted over time with the decision by local jurisdictions to allow dispensaries to open. Consideration of local variation within a state where substantial differences exist in allowances is crucial but had been previously ignored in the literature. Moreover, by examining variation within a single state, we can account for important statewide changes that are also important for driving marijuana use and potentially crime, including rules related to cultivation and decriminalization.

Evidence from our statistical analysis of a quasi-experimental setting finds no impacts on any type of violent crime, although counties adopting local ordinances did potentially experience a small decrease in property crime and increase in DUI arrests. Due to evidence of pre-existing trends, it is not possible to make a conclusive statement about the magnitude of these effects.

Our study is not without its own limitations, however. A clear problem is that our policy indicator is not capturing the actual exposure to the law for the residents in a county, since cities within counties can adopt conflicting ordinances. Our analysis at the police-agency level suggests that, at the very least, we are not missing increases to reported crime due to incongruence in treatment exposure. It also does not provide enough evidence to refute our findings of increases in DUI arrests. Moreover, when we measure our treatment variable using two alternative methods, we find similar results.

Second and relatedly, our study does not empirically assess the impact of having many versus few dispensaries within a jurisdiction (i.e. the “intensive margin”). Studies focusing on dispensary density and crime in the immediate vicinity, though, have not been much more definitive, finding no effect on any crime (Kepple and Freisthler 2012), a negative relationship with property crimes (Chang and Jacobson 2017), and small increases on property and violent crimes in adjacent areas (Freisthler et al. 2016). We do know that within California, counties differed substantially in their approach to dispensary allowances, with some jurisdictions

significantly limiting the total number of dispensaries allowed from the beginning and others not imposing any thresholds until much, much later. The lack of annual store-front data (pertaining to density) makes it more difficult to interpret dynamic effects, as there is scant research on the length of time we should expect for dispensary laws to be fully implemented within a jurisdiction and whether there are threshold effects in terms of total number of open dispensaries. There is also little to no information about delivery services, and laws associated with delivery services. The impact of delivery services may cause property crimes to rise in areas outside of the immediate vicinity of the dispensaries, thereby influencing property theft crimes in jurisdictions outside of those choosing to adopt the policy.

Third, a significant limitation in all difference-in-difference analyses is that there is no direct mechanism to test whether the treatment variable is correlated to an unobserved variable that affects the outcome, leading to a violation of the parallel trends assumption. We performed an event study analysis that did not refute our conclusions in the case of violent crimes, although there was evidence of policy endogeneity for property crime and DUI arrests. Until the policy endogeneity is explicitly addressed, the magnitude of the true effect on these outcomes cannot be easily determined.

Our study appears to reinforce the conclusions from other studies that fail to find an increase in the type of crime predicted by law enforcement. We find no effects on burglary, robberies, or assaults, which are the types of crimes one would expect if dispensaries were prime targets as a result of their holding large amounts of cash. It is important to note, though, that it may merely be the case that crime is such a localized effect that there is too much variation even within our treatment exposure aggregated to the city or county level (Hipp 2007). Pertaining to our findings of potentially decreasing property crime rates, there is a theoretical reason for why

dispensary store-fronts may decrease crime. Dispensaries may open in otherwise desolate areas, creating foot traffic, or “eyes on the street,” that makes these areas safer (Chang and Jacobson 2017).

We do find some interesting preliminary results with respect to the relationship between dispensaries and DUIs. Anderson, Hanson, and Rees (2013) find that MMLs in Colorado led to a substitution away from alcohol use, but the potential positive relationship between dispensaries and DUI arrests we find in our analysis suggests that either increases in marijuana-impaired driving exceeded reductions in alcohol impaired driving (a hypothesis we find highly unlikely) or that the opening of dispensaries induced use of both substances among those who were willing to drive impaired (more likely). The latter interpretation would have important ramifications for crime rates, given the known association between using alcohol together with other illicit substances and violent behavior (Office of National Drug Control Policy 2013). It is possible that our null results mask an increase in violent crime due to concurrent use of marijuana and alcohol, which is being offset by other mechanisms such as a decrease in pharmacological crimes due to an increase in marijuana use alone.

As we can only measure an aggregate effect, future research should attempt to tease out the effects on crime due to different mechanisms and actions of local actors. While some attributes of dispensaries may have led to a reduction in crime compared to the status quo, other aspects may have promoted crime. Moreover, the effect on crime rates will depend on other actions taken on by the local policymakers, dispensary owners, and law enforcement. For example, dispensaries may have adopted home delivery methods, which would reduce the potential number of victims near dispensaries. There may have also been specific actions taken by police that prevented an increase in crime rates, and these should be identified. Further research that identifies elements of

MMLs along with more specific aspects of implementation can help policymakers respond with actions that address crime-promoting aspects of allowing for retail dispensaries.

Our findings indicate that policymakers should be careful in how they regulate the presence of dispensaries, while not jumping to the conclusion that dispensaries are clearly crime generating hot-spots. Similarly, while police are right to be wary about potential crime effects from the introduction of cash-dependent businesses, our results demonstrate that current policy has not led to a wave in crime (even if this may be due to actual police practices). Our findings suggest that it is possible to regulate these markets and find a common ground between safety and access to medical marijuana. Natural experiments like the one being undertaken in California will only further help researchers better understand exactly how to find this ideal common ground.

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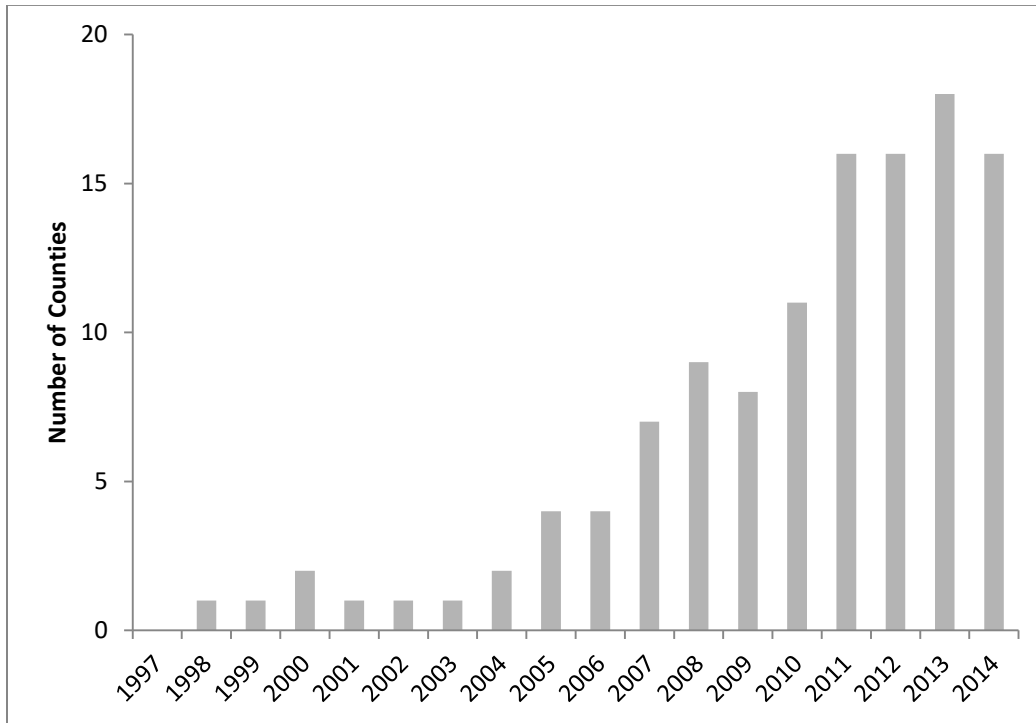
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6. Figures

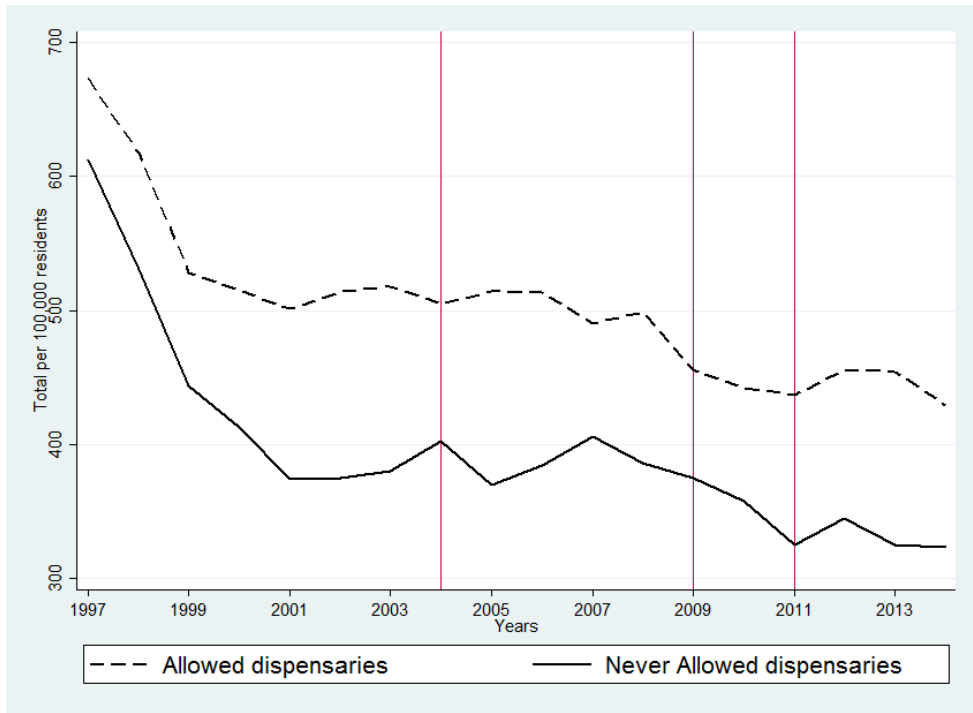
Figure 1: Number of Counties that Allow Medical Marijuana Dispensaries, by Year



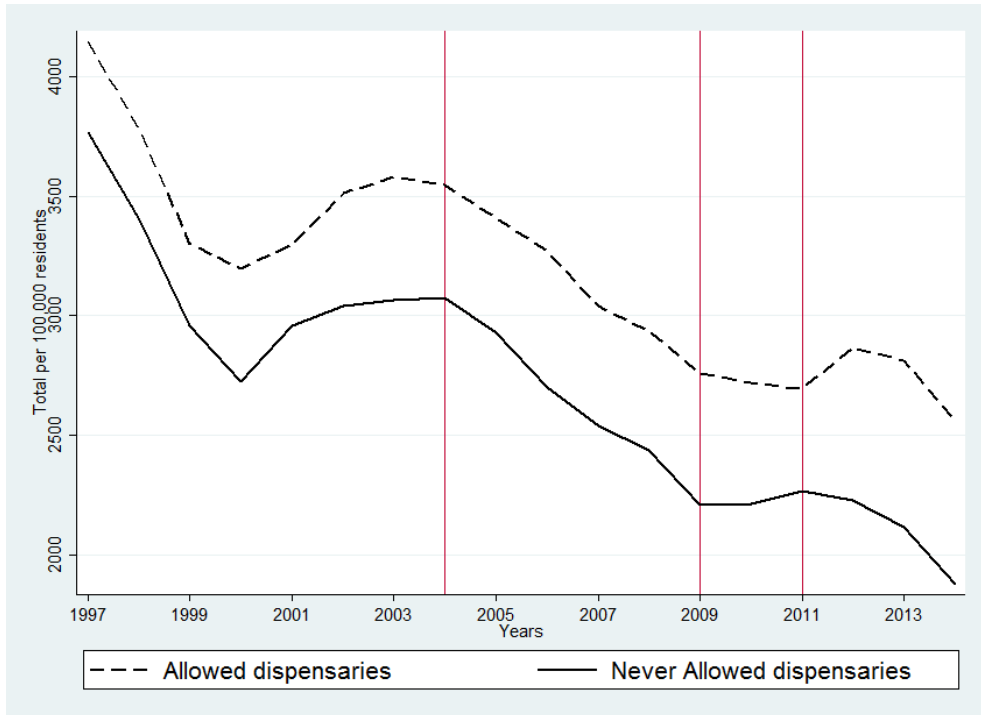
Note: This figure represents the method of using a county's ordinance unless there is a city in the county that has the largest share of the population in the county.

Figure 2: Crime Rates per 100,000 residents, by Whether County Ever Allows Dispensaries

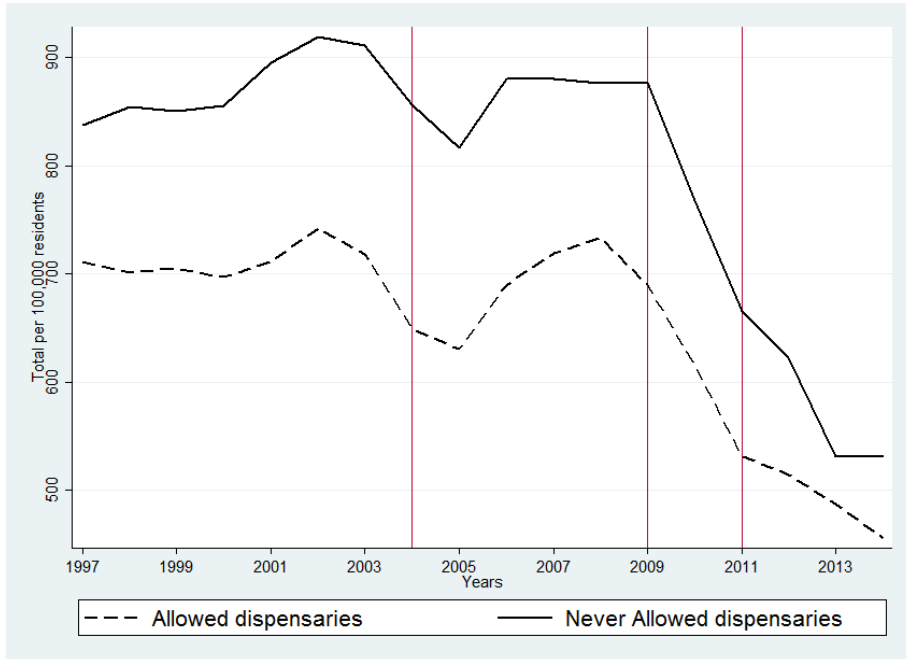
Panel A: Total Violent



Panel B: Total Property

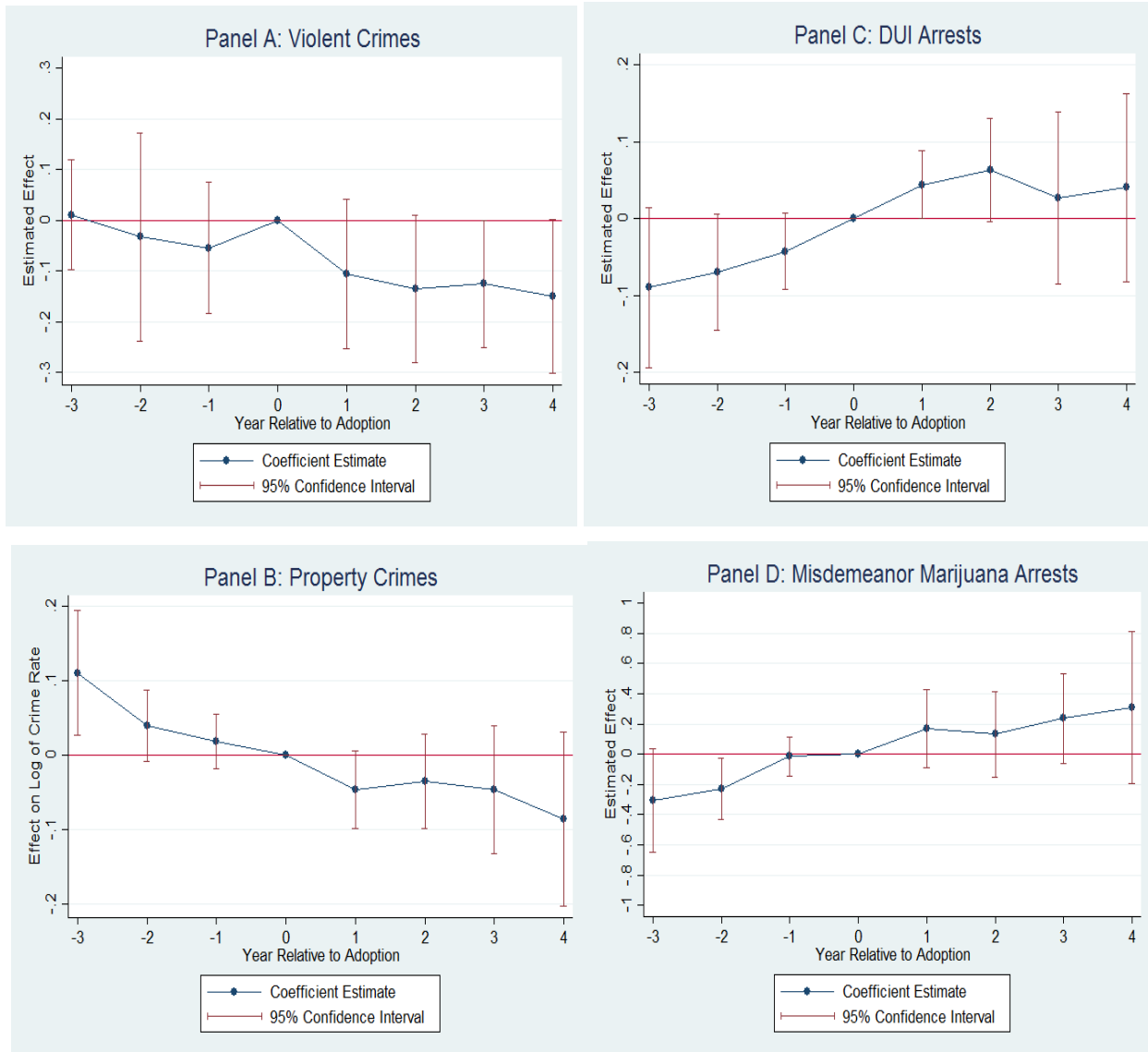


Panel C: DUI Arrests



Notes: The dashed line represents the counties that ever allow dispensaries in the sample period. The solid line represents counties that up until the end of the sample period, had never allowed dispensaries. The vertical lines represent the years 2004 and 2009 because these were important transition years.

Figure 3: Event Study



Notes: “Year 0,” indicating year when policy adopted, is omitted from the regression to provide an excluded category. Counties never adopting a law have a 0 for all indicator variables. Dummy variables for 3+ years pre- and 4+ years post-intervention are represented by -3 and 4, respectively. Regressions also include the covariates from the model described in Section 3.2. An indicator variable in the model controls for county-year observations for periods after an adopting county no longer allows for dispensaries.

7. Tables

Table 1: Summary Statistics

	Mean	Standard Deviation
All Violent Crime Rate	433.3	156.3
Homicide Crime Rate	4.3	2.2
Robbery Crime Rate	85.7	82.7
Assault Crime Rate	312.7	109.3
All Property Crime Rate	2,866.1	980.0
Burglary Crime Rate	735.8	225.8
Theft Crime Rate	1,768.1	695.8
Motor Vehicle Theft Crime Rate	362.3	219.1
DUI Arrests	749.4	346.1
Felony Marijuana Arrests	59.5	61.0
Misdemeanor Marijuana Arrests	140.6	110.7
Alcohol Outlet Density	32.4	27.6
Per Capita Income	34,852.5	11,069.5
Unemployment Rate	9.0	3.1
Population Density	659.1	2,298.9

All rates are calculated per 100,000 residents. Alcohol outlet density is calculated as the number of outlets per 10,000 people in the county. Population density is calculated as the number of people per square mile of land area in the county. All violent crime rate includes rape crimes even though we do not study the effect on rape crimes alone.

Table 2: Effect of Allowing Dispensaries on Violent and Property Crime Rates

	Violent Offenses			Property Offenses		
	(1)	(2)	(3)	(4)	(5)	(6)
Allows Dispensaries	0.006 (0.065)	-0.020 (0.071)	-0.013 (0.064)	0.008 (0.029)	-0.051 (0.025)	-0.063* (0.019)
Cultivation-No Limits	-0.096 (0.043)	-0.047 (0.054)	-0.048 (0.055)	-0.044 (0.037)	-0.056 (0.038)	-0.049 (0.037)
Alcohol Outlet Density	-0.000 (0.001)	-0.000 (0.002)	0.000 (0.001)	0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Post CJ Reforms	-0.137* (0.042)	-0.154** (0.044)	-0.151** (0.043)	0.081* (0.026)	0.084* (0.025)	0.072* (0.026)
Population Density	-0.871 (0.432)	1.495 (1.292)	1.161 (0.894)	-0.072 (0.197)	0.912 (0.630)	1.591** (0.416)
Per Capita Income	-0.300 (0.364)	0.043 (0.267)	-0.139 (0.301)	-0.209 (0.296)	-0.122 (0.182)	-0.026 (0.158)
Unemployment Rate	0.003 (0.005)	0.004 (0.004)	0.006 (0.004)	0.002 (0.003)	0.001 (0.003)	0.004 (0.003)
R^2	0.22	0.43	0.41	0.52	0.66	0.67
County-specific trends	None	Linear	Quadratic	None	Linear	Quadratic

+ $p < 0.0167$; * $p < 0.0083$; ** $p < 0.00167$ (p-values are adjusted for multiple testing using the Bonferroni adjustment for 6 tests)

Outcome variable is in log scale of the per/100,000 population. All models include county fixed effects and a continuous time trend (including 2nd order term). Standard errors (in parentheses) are adjusted for clustering within counties. The county ordinance is based on the ordinance of the major city when that city has a population greater than 200,000 and a population greater than the unincorporated area. Each regression has 1,044 observations and covers the period from 1997-2014.

Table 3: Effect from Allowing Dispensaries, by Crime Type

	Homicide (1)	Robbery (2)	Assault (3)	Burglary (4)	Theft (5)	MV Theft (6)
Allows Dispensaries	0.249 (0.185)	0.299 (0.247)	-0.047 (0.077)	-0.016 (0.026)	-0.060* (0.029)	-0.098 (0.075)
Cultivation-No Limits	-0.449 (0.330)	-0.064 (0.167)	-0.027 (0.063)	-0.033 (0.045)	-0.078+ (0.041)	-0.081 (0.121)
Alcohol Outlet Density	-0.016 (0.013)	-0.001 (0.002)	-0.000 (0.002)	0.000 (0.001)	-0.000 (0.001)	-0.004 (0.004)
Post CJ Reforms	0.129 (0.292)	-0.090 (0.180)	-0.134* (0.054)	0.002 (0.035)	0.104** (0.031)	0.263 (0.176)
Population Density	6.447 (4.161)	8.287+ (4.306)	1.681 (1.501)	-0.650 (0.829)	1.176* (0.508)	-2.146 (3.986)
Per Capita Income	-0.263 (3.372)	-1.616 (1.061)	-0.045 (0.298)	0.016 (0.221)	-0.282 (0.258)	0.120 (1.274)
Unemployment Rate	-0.001 (0.050)	-0.006 (0.020)	0.003 (0.005)	0.012** (0.004)	-0.002 (0.003)	0.001 (0.020)
R^2	0.08	0.11	0.46	0.51	0.64	0.09

+ $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Outcome variable is in log scale of the per/100,000 population. All models include county-specific linear time trends, as well as fixed effects and a continuous time trend (including 2nd order term). Standard errors (in parentheses) are adjusted for clustering within counties. The county ordinance is based on the ordinance of the major city when that city has a population greater than 200,000 and a population greater than the unincorporated area. Years since adoption is calculated from January of the first year dispensaries were explicitly allowed. Each regression has 1,044 observations and covers the period from 1997-2014.

Table 4: Effect of Allowing Dispensaries on Marijuana-Related Arrests

	DUI Arrests			Felony Marijuana			Misdemeanor Marijuana		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Allows Dispensaries	0.077*	0.091*	0.088**	-0.022	-0.015	-0.049	0.087	0.215	0.125
	(0.024)	(0.026)	(0.025)	(0.092)	(0.083)	(0.084)	(0.120)	(0.106)	(0.080)
Cultivation-No Limits	0.034	0.070	0.085	-0.113	-0.135	-0.090	-0.383	-0.241	-0.095
	(0.032)	(0.039)	(0.038)	(0.106)	(0.100)	(0.092)	(0.174)	(0.133)	(0.098)
Alcohol Outlet Density	0.001	0.001	0.000	0.002	-0.000	0.001	0.003	-0.002	-0.003
	(0.001)	(0.001)	(0.001)	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Post CJ Reforms	-	-	-0.204**	-	-0.434**	-0.429**	-	-1.666**	-1.714**
	0.198**	0.195**		0.337**			1.628**		
	(0.030)	(0.032)	(0.033)	(0.061)	(0.089)	(0.102)	(0.163)	(0.187)	(0.161)
Population Density	-0.657*	-1.715	-1.701**	-0.064	-5.463	-1.413	2.343	-0.341	-2.521
	(0.226)	(0.817)	(0.463)	(0.622)	(2.955)	(1.560)	(1.217)	(1.704)	(1.522)
Per Capita Income	-0.177	-0.151	0.042	1.075	2.611	2.608	-3.052	-2.206	-0.679
	(0.146)	(0.206)	(0.231)	(0.785)	(1.570)	(1.773)	(2.784)	(2.377)	(1.599)
Unemployment Rate	-0.003	-0.003	-0.002	0.033	0.053*	0.048	-0.010	-0.001	0.003
	(0.004)	(0.005)	(0.005)	(0.014)	(0.018)	(0.019)	(0.018)	(0.019)	(0.015)
R ²	0.47	0.58	0.57	0.03	0.16	0.15	0.55	0.66	0.68
County-specific trends	None	Linear	Quadratic	None	Linear	Quadratic	None	Linear	Quadratic

+ $p < 0.0111$; * $p < 0.0055$; ** $p < 0.0011$ (p-values are adjusted for multiple testing using the Bonferroni adjustment for 9 tests)

Outcome variable is in log scale of the per/100,000 population. All models include county fixed effects and a continuous time trend (including 2nd order term). Standard errors (in parentheses) are adjusted for clustering within counties. The county ordinance is based on the ordinance of the major city when that city has a population greater than 200,000 and a population greater than the unincorporated area. Each regression has 1,044 observations and covers the period from 1997-2014.

Table 5: Sensitivity Checks

	Violent Offenses (1)	Property Offenses (2)	DUI Arrests (3)
City Agencies	-0.036 (0.067)	-0.042 (0.026)	0.160 (0.145)
Unincorporated County	-0.027 (0.085)	-0.068+ (0.031)	0.056 (0.038)
City Always	-0.034 (0.075)	-0.054 (0.026)	0.090** (0.028)
Partial Year	-0.022 (0.088)	-0.052 (0.031)	0.099** (0.030)
Removing San Francisco	-0.008 (0.074)	-0.036 (0.022)	0.097** (0.027)
Removing Santa Clara	-0.033 (0.081)	-0.059 (0.028)	0.087* (0.030)
Only Counties 5+ years	-0.170+ (0.069)	-0.088 (0.044)	0.089 (0.041)

+ $p < 0.0333$; * $p < 0.0067$; ** $p < 0.0033$ (p-values are adjusted for multiple testing using the Bonferroni adjustment for 3 tests)

City Agencies refers to using city agency crime rates and laws. Unincorporated County refers to analysis using laws according to county, even when larger cities exist. City Always refers to analysis always choosing law applicable to city within county if available. Partial Year refers to using fractions for treatment variable, in case a law was passed after January. Removing San Francisco, Removing Alameda, and Removing Santa Clara refers to excluding each of these counties, individually, from the analysis. Only Counties 5+ Years refers to analysis with sample of non-adopters and counties that had law in place 5+ years.

Outcome variable is in log scale of the per/100,000 population. All models include county fixed effects, a continuous time trend (including 2nd order term), and county-specific linear time trends. Standard errors (in parentheses) are adjusted for clustering within counties. Each regression (except City Agencies) has 1,044 observations and covers the period from 1997-2014

BROWSE NEWS CATEGORIES

DEBUNKING DISPENSARY MYTHS

Part 1, Leafly Study Debunks Dispensary Myths Around Crime & Teen Use

DAVID DOWNS AND BRUCE BARCOTT



FACT:
Property values near cannabis stores, and in legal towns, rise 7.7% faster than property where cannabis stores are banned.

MYTH: PROPERTY VALUES FALL

Next Up
Cannabis Strains Highest in CBD
00:42

Evidence-Based Studies Refute Dispensary Fears

When a state legalizes cannabis, local municipal officials are put in a tough spot. They have the power to allow or prohibit cannabis stores from opening in their jurisdiction. It's done through property zoning.

When the issue comes up for vote, the discussion is often dominated by imagined fears. Law enforcement leaders warn about crime increases. Parents worry about their kids having easier access to cannabis. Real estate agents forecast doom for any neighborhood surrounding a cannabis store. Pew Research has found a 25 point gap between support for legalization (75%), and support for a store nearby (50%).

A review of the research finds that cannabis dispensaries improve public safety, health, and nearby property values—contrary to previous fears.

All too often, the result is a complete ban on cannabis stores—which has the unintentional effect of propping up the local illicit market. Here's the rub: Cannabis stores actually *improve* public safety, health, and property values. The research proves it.

In a review of 42 key studies, Leafly's team of data analysts, researchers, and editors found that the broad body of published research suggests crime near licensed dispensaries has generally stayed flat or decreased. Teen cannabis use in legalization states has fallen since legalization. And property values near cannabis outlets generally are not affected or even rise.



Special Report: Debunking Dispensary Myths

Literature Review Finds Cannabis Stores Are
Associated With Lower Crime, Decreased Teen Use,
and Increased Property Values

By David Downs and Bruce Barcott, Leafly
With Dominic Corva, Ph.D.; co-director, Humboldt Institute for
Interdisciplinary Marijuana Research; founder, Center for the Study of
Cannabis and Social Policy

May 2019

Leafly's report examined 42 published studies on the effects of cannabis medical dispensaries and adult-use stores. (Click to download.)

[Click Here to Download 'Debunking Dispensary Myths'](#)

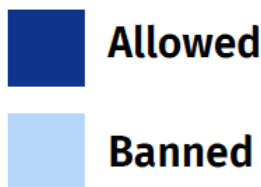
That literature review, [Debunking Dispensary Myths](#), is intended to better inform civic debate at the city, state, and national levels. Leafly is sharing the report with elected officials, legislative aides, activists, industry groups, and

researchers nationwide, as well as presenting the findings at upcoming events.

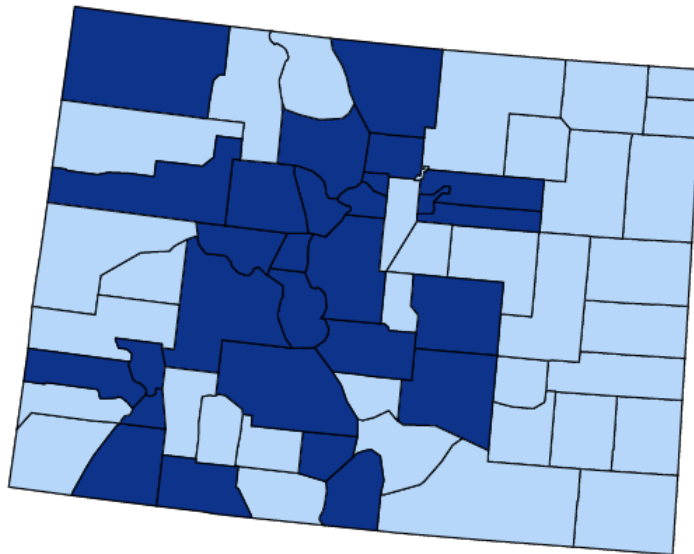
Fears surrounding local cannabis stores have prompted many communities to prohibit cannabis companies in their towns, cities, and counties. Millions of adult consumers now living in legal states find it impossible to purchase legally in their own towns. Leafly found that as of May 1, 2019:

- In California, 75% of jurisdictions have banned cannabis stores.
- In Colorado, 65% of cities and counties have similar bans.
- In Massachusetts, 54% of the state's 351 municipalities have banned cannabis stores.
- In Washington, 35% of cities and 20% of counties have banned cannabis stores.
- In Nevada, 75% of counties and 42% of cities prohibit cannabis stores.

Colorado County Cannabis Bans



Colorado famously legalized cannabis for all adults in 2012. But 38 of the state's 64 county governments have banned cannabis stores, resulting in a patchwork of legal and prohibition counties.



Clean Stores, Good Neighbors

In Colorado and Washington, where data is now available from five years of adult-use cannabis sales, many local officials have switched from hesitance to confidence in the positive benefits of well-regulated stores. Cannabis companies “are tremendous employers and socially responsible members of the communities in which they operate,” said Ron Kammerzell, former senior director of enforcement at the Colorado Dept. of Revenue.



The *Lux cannabis store* in Seattle's Lake City neighborhood is the cleanest, brightest property in a transitional business district. (Photo courtesy of *Lux*)

Dispensaries Add 6% to 8% to Home Values

Some of the data backing up that conclusion:

- Crime rates unaffected: An overwhelming majority of studies—including one from the journal [Preventive Medicine in 2018](#), and a [Federal Reserve Bank 2017 paper](#)—found no increase in crime related to the location of medical marijuana dispensaries or adult-use retail stores.
- Teen use unaffected specifically, declines generally: Colorado and Oregon state health reports show teen cannabis use flat or down since licensed adult-use stores opened. In Washington, a [2018 JAMA Pediatrics study](#) concluded use had fallen. Federally administered surveys show the 2016 teen use rate was the lowest in more than 20 years.
- Property values increase: A [2016 study](#) in the journal *Economic Inquiry* concluded allowing stores added 6% to city home prices, compared to ban towns. A 2018 study in the journal [Contemporary Economic Policy](#) found home prices went up by 7.7% within a half-mile of a new cannabis store

[Debunking Dispensary Myths](#) identifies and examines the most reliable studies on medical and adult-use cannabis stores. In the report, Leafly editors David Downs and Bruce Barcott worked with cannabis policy expert Dominic Corva, co-director of the [Humboldt Institute for Interdisciplinary Marijuana Research](#) (HIIMR) at Humboldt State University in Arcata, CA.

Over the coming years, virtually every city council and county supervisorial board will eventually have to weigh the pros and cons of cannabis retail. “We can all have different opinions, but we have to work from the same set of facts,” said Leafly CEO Tim Leslie. “These discussions should be informed by the best available research, not imagined fears and archaic mythology.”



What's the Real Link Between Pot Dispensaries and Crime Rates?

A new study aims to deconstruct myths about the so-called dangers of cannabis dispensaries

By **EJ DICKSON**



A new study claims that cannabis dispensaries don't have a negative affect on surrounding neighborhoods.

Richard Vogel/AP/REX/Shutterstock

For years, opponents of **marijuana** legalization have voiced the same arguments whenever the subject of dispensaries comes up: having legal **cannabis** vendors, they say, promotes the spread of crime, brings property values down in the neighborhood and encourages teenage marijuana use. And even though the push for marijuana legalization has gained widespread national support, these arguments against dispensaries have held sway.

A new study, however, attempts to debunk the link between cannabis stores and crime once and for all. Authored by the marijuana website Leafly in conjunction with the Humboldt Institute for Interdisciplinary Marijuana Research, the **review** considered more than 100 studies, eventually identifying 42 studies, surveys and research papers on the impact cannabis retailers have had on the surrounding communities. What the authors found was that despite many community members' concerns about having cannabis dispensaries in their neighborhood, the data indicated that licensed cannabis dispensaries have been linked to either decreased crime rates or no changes in crime rate in a given area, as well as increased property values and a decrease in teenage marijuana use.

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Legalization Is a Mess

In the larger context of the conversation surrounding legalization, the issue of how state cannabis laws are locally enforced is not often

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Leafly who co-authored the report. In California, for instance, where both recreational and medicinal cannabis use is legal, nearly 75% of jurisdictions have banned marijuana stores, with many city councils citing a concern over cannabis dispensaries leading to an increase in crime rates.

These fears primarily stem from the early days of medical marijuana legalization, when there were fewer regulations governing medical marijuana dispensaries. “Imagine if a liquor store opened up in your neighborhood without any liquor licensing. There’d be parking impacts, there’d be traffic, there’d be pedestrians, and neighbors get upset,” Downs said. “[A] lot of the public safety myths are tied to those early, unregulated medical licensees,” citing the proliferation of illegal and unregulated **marijuana dispensaries** in Los Angeles as

an example.

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A number of studies pointing to a link between rising crime rates and dispensaries are also based on data from law enforcement, which has traditionally voiced opposition to legalization: a February 2019 **paper** from the University of Colorado Denver, for instance — which pointed to a rise in crime rates in neighborhoods with dispensaries after Colorado legalized recreational marijuana use — was based on official police data, which may have been skewed if law enforcement went out of its way to target neighborhoods with dispensaries.

Banning dispensaries on the municipal level, Downs says, tends to yield the opposite intended effect: In lieu of a legal and regulated cannabis industry. “You’re gonna continue to have a thriving local black market of production, distribution and sale of cannabis, without any of the upside in terms of tax revenue, or purity, or potency, or safety,” he says. Even in cities or counties where it is legal to open dispensaries, the cost of operating such establishments, as well as the bureaucratic red tape involved in obtaining a license, effectively restricts access for everyone but “the one percent,” Downs says, excluding lower-income community members from taking leadership roles in the cannabis industry.

As someone with a clear stake in the marijuana legalization debate, Downs admits that the study may be perceived as biased, though he insists the data speaks for itself: “Don’t listen to us, listen to the studies,” he says. Nonetheless, in light of the increasing public support for cannabis legalization (more than **60% of Americans support legalization**, according to a 2018 Pew poll), there’s clearly a need to further unpack the data surrounding the actual impact of marijuana legalization on the local level. Downs hopes that this review will spark further discussion about the impact of dispensaries on local communities, particularly lower-income communities and communities of color, as well as clarify myths surrounding marijuana use in general. Even if marijuana is legalized on the federal level, “if we fail at local implementation, then legalization won’t really happen,” he says. “These myths have been the biggest barrier to succeeding at local implementation, and I hope we can get over this barrier and, as citizens and local taxpayers, have smart, incisive discussions about the best path forward.”

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Marijuana legalization is not driving increases in violent crime

BY PAUL ARMENTANO, OPINION CONTRIBUTOR — 02/22/19 11:30 AM EST
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Allegations that the regulation of marijuana use and retail sales is responsible for an [uptick in violent criminal activity](#), are not supported by the available evidence. In fact, studies typically show just the opposite to be true.

Specifically, FBI data from Washington state correlates legalization with decreases in violent criminal activity. As [reported](#) by The News Tribune in 2017, "Since voters approved Initiative 502, FBI crime statistics show lower rates of violent crime in Washington than before legalization."

A separate [analysis](#) of Washington state crime data published by the IZA Institute of Labor Economics similarly reports:

There is evidence ... that the legalization of recreational cannabis enacted in Washington caused a decrease in crime rates. The point estimates for rape, assault, robbery, burglary and theft are all negative. This conclusion is reinforced by the statistical significance of the drop in rapes and thefts. ... Our estimates reveal that the legalization decreased ... both ordinary alcohol and binge alcohol. ... These effects on consumption suggest that one of the mechanisms underlying the reduction in crime may be a substitution away from other drugs ... such as alcohol, which makes consumers more aggressive than if consuming cannabis.

A similar trend emerged in Colorado following legalization. According to a [white paper](#) published by the CATO Institute think-tank, "[M]onthly crime rates from Denver, Colorado ... remain essentially constant after 2012 and 2014. ... Other cities in Colorado mirror those findings."

More recently, a 2018 study published in the journal *Police Quarterly* [reported](#) that cannabis legalization is associated with an overall improvement in crime clearance rates. Researchers at Washington State University assessed crime clearance rates in Colorado and Washington in the years immediately prior and immediately following the enactment of adult use legalization. They reported that clearance rates were either flat or decreasing prior to legalization, but then improved significantly



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following the change in law — particularly with respect to violent crimes and property crimes.

Authors concluded, "Our models show no negative effects of legalization and, instead, indicate that crime clearance rates for at least some types of crime are increasing faster in states that legalized than in those that did not."

Peer-reviewed data also exposes the myth that brick-and-mortar cannabis retailers are likely to be potential crime magnets.

Specifically, a federally-sponsored study assessing medical cannabis dispensaries in Sacramento concluded, "There were no observed cross-sectional associations between the density of medical marijuana dispensaries and either violent or property crime rates in this study."

A 2017 evaluation of marijuana facility operations in Los Angeles reported that dispensary openings were associated with a reduction in incidences of certain types of crimes, such as larceny, while the closure of cannabis facilities resulted in short-term increases in criminal activity.

Statewide data from California compiled by the RAND institute in 2018 also failed "to find an increase in the type of crime predicted by law enforcement. We find no effects on burglary, robberies, or assaults, which are the types of crimes one would expect if dispensaries were prime targets as a result of their holding large amounts of cash."

The bottom line? One in five Americans reside in a jurisdiction where the adult use of cannabis is legal under state statute, and the majority of citizens reside someplace where the medical use of cannabis is legally authorized. Many of these latter programs have been in place for the better part of two decades. Were the societal impacts of these policies as dire to public health and safety as those like Jason Johnson allege, public and political support in American for marijuana policy reform would be rapidly declining. Instead, just the opposite is true.

According to the latest national polling compiled by Gallup, 66 percent of U.S. adults — including majorities of Democrats, Independents, and Republicans — believe that the adult use of marijuana should be legal. It's time for politicians to act on this public sentiment and reject the fear-mongering of those who insist on the perpetuation of criminalization.

Paul Armentano is the Deputy Director of the National Organization for the Reform of Marijuana Laws (NORML) and is the co-author of the book "Marijuana Is Safer: So Why Are We Driving People to Drink?

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Pelosi: Trump 'is engaged in a cover-up'

BY SCOTT WONG - 05/22/19 10:18 AM EDT



Pelosi: Trump 'is engaged in a cover up'

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Marijuana Regulation and Crime Rates

[\(/pdf_files/NORML-Factsheet-Marijuana-Regulation-and-Crime-Rates.pdf\)](#)

Adult use marijuana laws are not associated with an uptick overall criminal activity

"First-pass evidence is provided that the legalization of the cannabis market across US states is inducing a crime drop. We exploit the staggered legalization of recreational marijuana enacted by the adjacent states of Washington (end of 2012) and Oregon (end of 2014). Combining county-level difference-in-differences and spatial regression discontinuity designs, we find that the policy caused a significant reduction in rapes and property crimes on the Washington side of the border in 2013-2014 relative to the Oregon side and relative to the pre-legalization years 2010-2012. The legalization also increased consumption of marijuana and reduced consumption of other drugs and both ordinary and binge alcohol. ... The concern that legalizing cannabis for recreational purposes may increase crime occupies a prominent position in the public debate about drugs. Our analysis suggests that such a concern is not justified."

Crime and the legalization of recreational marijuana, Journal of Economic Behavior & Organization, 2018
<https://www.sciencedirect.com/science/article/pii/S0167268118300386>

"Our models show no negative effects of legalization and, instead, indicate that crime clearance rates for at least some types of crime are increasing faster in states that legalized than in those that did not. ... [T]he current evidence suggests that legalization produced some demonstrable and persistent benefit in clearance rates, benefits we believe are associated with the marijuana legalization proponents' prediction that legalization would positively influence police performance."

Marijuana legalization and crime clearance rates: Testing proponent assertions in Colorado and Washington state, Police Quarterly, 2018
<http://journals.sagepub.com/doi/abs/10.1177/1098611118786255?journalCode=pqxa>

ADDITIONAL REFERENCES



Medical cannabis regulatory laws are not associated with an uptick overall criminal activity

"The objective of this study is to investigate whether a particular element of MMLs, namely allowance for dispensaries, affects local crime and other indicators of marijuana misuse. We find no evidence that ordinances allowing for marijuana dispensaries lead to an increase in crime. In fact, we see some evidence of a reduction in property crime. ... Our study appears to reinforce the conclusions from other studies that fail to find an increase in the type of crime predicted by law enforcement. We find no effects on burglary, robberies, or assaults, which are the types of crimes one would expect if dispensaries were prime targets as a result of their holding large amounts of cash. ... Our findings indicate that policymakers should be careful in how they regulate the presence of dispensaries, while not jumping to the conclusion that dispensaries are clearly crime generating hot-spots. ... Our findings suggest that it is possible to regulate these markets and find a common ground between safety and access to medical marijuana."

High on Crime? Exploring the Effects of Marijuana Dispensary Laws on Crime in California Counties, IZA Institute of Labor Economics Discussion Paper Series, May 2018 (<http://ftp.iza.org/dp11567.pdf>)

"[T]he introduction of medical marijuana laws (MMLs) leads to a decrease in violent crime in states that border Mexico. The reduction in crime is strongest for counties close to the border (less than 350 kilometres) and for crimes that relate to drug trafficking. In addition, we find that MMLs in inland states lead to a reduction in crime in the nearest border state. Our results are consistent with the theory that decriminalisation of the production and distribution of marijuana leads to a reduction in violent crime in markets that are traditionally controlled by Mexican drug trafficking organizations."

Is legal pot crippling Mexican drug trafficking organizations? The effect of medical marijuana laws on US crime, 2018. The Economic Journal
<http://onlinelibrary.wiley.com/doi/10.1111/eoj.12521/full>

ADDITIONAL REFERENCES



Retail cannabis facilities are not positively associated with increased criminality, and may play a role in the prevention of certain crimes, like larceny

"Tobacco shops, medical marijuana dispensaries (MMD), and off-sale alcohol outlets are legal and prevalent in South Los Angeles, California—a high-crime, low-income urban community of color. This research is the first to explore the geographic associations between these three legal drug outlets with surrounding crime and violence in a large low-income urban community of color. ... Results indicated that mean property and violent crime rates within 100-foot buffers of tobacco shops and alcohol outlets—but not MMDs—substantially exceeded community-wide mean crime rates and rates around grocery/convenience stores (i.e., comparison properties licensed to sell both alcohol and tobacco)."

The geography of crime and violence surrounding tobacco shops, medical marijuana dispensaries, and off-sale alcohol outlets in a large, urban low-income community of color, Preventive Medicine, 2017 (https://www.ncbi.nlm.nih.gov/pubmed/29277409)

"The results presented above show that temporary dispensary closures increase crime in the short-run. ... Analyzing medical marijuana dispensary closures in the City of Los Angeles, we find no support for the idea that closing dispensaries reduces crime. Rather, temporary closures deter some types of Part I crime. ... Our findings have direct policy implications for regulating marijuana sales in the U.S. They imply that dispensary closures, and potentially the closure of other types of retail establishments, exert a significant negative externality in terms of neighborhood criminality. A quick back of the envelope cost calculation using the change in larceny theft at 1/3 of a mile and crime costs ... suggests that an open dispensary provides over \$30,000 per year in social benefit in terms of larcenies prevented."

Going to pot: The impact of dispensary closures on crime. Journal of Urban Economics, 2017 (http://www.sciencedirect.com/science/article/pii/S0094119017300281)

"There were no observed cross-sectional associations between the density of medical marijuana dispensaries and either violent or property crime rates in this study. These results suggest that the density of medical marijuana dispensaries may not be associated with crime rates or that other factors, such as measures dispensaries take to reduce crime (i.e., doormen, video cameras), may increase guardianship such that it deters possible motivated offenders."

Exploring the ecological association between crime and medical marijuana dispensaries, Journal of Studies on Alcohol and Drugs, 2012 (http://www.jsad.com/doi/10.15288/jsad.2012.73.523)

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EXHIBIT F

May 30, 2019

Monterey County Resource Management Agency

1441 Schilling Place

2nd Floor

Salinas, CA 93901

Monterey County Planning Services

1441 Schilling Place

Salinas, CA 93901

Re: Carmel Valley Original, Inc. (PLN170336)

Estimado señor o señora:

Estoy escribiendo en apoyo del plan propuesto por Carmel Valley Original, Inc. para abrir una tienda minorista de cannabis en 299 River Road, Salinas, California.

Resido en 301 River Road directamente al otro lado de la calle de la instalación propuesta. Me he reunido con los operadores del negocio y, después de conversar con ellos sobre los pasos que están tomando para abordar el tráfico, la seguridad y el estacionamiento.

Puedo afirmar afirmativamente que no tengo ninguna preocupación sobre una tienda minorista de cannabis en la calle donde vivo.

Hago esta declaración bajo pena de perjurio según las leyes del estado de California.

Sinceramente



ATANACIO TAVIZON

EXHIBIT G

Title of SOP: Odor Management Plan

Original: Yes x No ___ Revision: Yes ___ No ___ Revision No.: _____

Related SOPs:

Administration 8.00

Introduction:

The proposed retail sales of cannabis could impact the environment and cause odors. A preliminary evaluation has been made of possible significant impacts of odors to the environment and mitigation measures that can be incorporated into the planning, design, and operation of the Cannabis Business. The primary purpose of this Odor Management Plan is to demonstrate how we will comply with the applicable environmental laws and regulations pertaining to our facilities.

The Cannabis Business will have a series of active carbon filters to reduce any odors. Additionally, the air will be filtered with humidifiers, dehumidifiers and air conditioning. The air conditioner will use an air filter which further filters the air as a secondary odor mitigation source.

Liaising with Community and Local Agencies:

Neighbors in close proximity to our facilities will have the name of one or more contact persons on our staff whom they can notify day or night in case there is a problem impacting them or that they feel may impact us.

We will periodically reach out to neighbors to ensure that there are no unreported problems of this sort. Any new neighbor will be provided notice informing them of a phone number (which will be answered 24 hours a day) to address any concerns regarding odors.

We also will reach out to agencies to develop a professional working relationship and a coherent contingency plan for incidents that require an agency involvement at our facility.