Report to the Virginia General Assembly and Governor of Virginia

Impact on the Commonwealth of Legalizing the Sale and Personal Use of Marijuana

As required by Chapters 1285 & 1286, 2020 Acts of Assembly

November 30, 2020

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Acknowledgements

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Additionally, the team would like to thank the secretariat and agency staff that supported these efforts in planning meetings, doing research, and assisting with the drafting of minutes and this final report. Specifically, thank you to staff at VDACS, the Virginia Alcoholic Beverage Control (ABC) Authority, the Department of Taxation, the Virginia Economic Development Partnership (VEDP), the Department of Criminal Justice Services (DCJS), the Department of Behavioral Health and Developmental Services (DBHDS), and the Virginia Foundation for Healthy Youth.

Chapter 1: Recommendations

The following is a list of consensus policy recommendations that emerged from the discussion of the Marijuana Legalization Work Group.

Regulatory Structure – Virginia should consider either putting its cannabis regulatory structure under one agency or umbrella structure to cover both adult-use and medical marijuana. There was also discussion about including regulation of industrial hemp and/or hemp-derived products intended for human consumption under this agency. It was pointed out to the group that other states either regulate hemp cultivation via their department of agriculture or let the U.S. Department of Agriculture (USDA) regulate it. There was some agreement that there is additional oversight needed on hemp-derived products from a consumer safety standpoint.

Industry Structure – Virginia should consider allowing but not requiring vertical integration within the industry.

Licensing Structure – Virginia should consider a license structure that includes various steps of the industry supply chain. This structure may include grower, processor, distributer/transporter, wholesaler, retailer, delivery, and social consumption/hospitality. Virginia should consider a social equity license category as other states, such as Illinois and Massachusetts have done. Virginia should be very thoughtful about how to set up this license structure and should consider what will work best for businesses and be the easiest to understand. Virginia should consider a measured approach for the number of licenses in each category at first and evaluate the program on an annual basis. License fees should not be an insurmountable barrier to entry, especially with social equity licenses, but Virginia should consider what license fees would cover versus what a cannabis-specific excise tax would cover. Virginia should consider the best way to have transparency in the licensing process.

Taxation – Virginia should consider taxation of product at the retail level. The cannabis primary regulatory agency would likely be best positioned to collect this tax. Taxation could include different levels based on the type of product. A tax rate should be high enough to cover costs of the program to provide consumers with certainty that products are regulated and safe (e.g. free from adulterants) to consume and to cover any other revenue goals Virginia has. However, the tax rate should not be so high that it encourages a thriving illicit market.

Other Regulatory Structural Considerations – Virginia should build a robust agency structure with various functions to regulate a new legal adult-use marijuana industry. Virginia should look to other agencies, such as the Board of Pharmacy and Alcoholic Beverage Control, for guidance on how to best organize. Virginia should create regulatory authority for the agency to establish a program and appropriate funding, as opposed to developing the program based on tax revenue and fees. The group recognized that up-front funding and established positions will be critical to start a program before license fees and tax revenues materialize. Virginia could consider a Cannabis Cabinet of agencies or Secretariats mandated to come together on a regular basis for updates and

to address challenges of program start-up and alleviate the potential "red tape" that could be experienced bringing multiple state agencies together working with different regulatory authorities.

Banking – The group recognized that banking is a critical component of having a successful industry, from the standpoints of both access to capital and banking services. Virginia should explore options to allow the marijuana industry to conduct business with financial institutions, including state-chartered banks and credit unions.

Social Equity – Virginia should consider that undoing the harms of criminalization should include expungement or sealing of criminal records, creation and issuance of social equity licenses, assistance with access to capital and business planning, consideration of how the entire regulatory scheme could affect barriers to entry into the industry, and community reinvestment and monitoring with a disparity report.

Local Control – When possible, local input should be considered regarding where marijuana retailers and social consumption sites can operate. Virginia should also consider how businesses could cluster in certain areas or neighborhoods and potential externalities of zoning for these businesses.

Product Regulation – Virginia should consider regulating the composition of products including, in addition to cannabinoid limits, limits for serving sizes and whole products. This could include product composition safety measures, such as pesticide residues and other adulterants. Virginia could also include packaging requirements, such as requiring packages to be tamper evident, with a way for consumers to verify they are consuming a legal and regulated product and educating consumers on using those codes.

Personal Cultivation – Some states allow personal cultivation, and there are substantial pros and cons regarding this policy decision. Virginia should consider that this product is much more valuable than other controlled products, such as beer, that are allowed to be produced in home settings. There is also an element of personal danger and risk because of the electrical and insulation needs for indoor growing.

Impaired Driving – There is not yet a simple, straightforward answer on how to deal with impaired driving. Some states use per se limits, and some use other methods to determine impairment. Virginia should continue to explore new technologies and methods in this space. Virginia could also work to collect more robust data about marijuana-related impaired driving on the roads of the Commonwealth.

Impairment and Employment – Virginia should consider the rights of both employers and employees when crafting policy around being impaired at work. Workplace safety is paramount, but Virginia should consider how policies could affect adults who are using a legal product.

Health Impacts - There is a lack of consensus on how marijuana legalization has impacted public health and public safety in other states. Additionally, information on the health benefits and risks of marijuana use is emerging. Virginia could begin collecting baseline data before the legal market opens, and invest in both data collection and research.

Consumer Education and Product Safety – This is critical for preventing harms and encouraging responsible use. Virginia could require child-proof, tamper-evident packaging, include single serving packages whenever possible, as well as child-resistant packaging for multi-use products, and require consumer education at point of sale that includes clear and standardized packaging, inserts, signage, QR codes, and required training for retail associates. Using the medical cannabis program as a framework, Virginia could require third-party lab testing and consider a state reference lab. To the extent possible, Virginia should track movement into the licit market and diversion through a robust seed-to-sale system.

THC Levels – High amounts of THC may make individuals more susceptible to substance use disorder and individuals should have a clear understanding of THC amounts. Virginia could adopt per-dose/per-serving/per-package THC limits, as well as per-sale limits, being mindful of practical consideration for certain products. Virginia could strongly consider a tiered tax system, similar to Illinois, to disincentive use of high potency products, but potency "caps" may result in higher levels of unhealthy additives in certain products. The Commonwealth should ensure regulations are inclusive of all primary cannabinoids (including both THC-9 and THC-8).

Cannabis Use Disorder – This is a real public health issue, and legalization will likely increase and change the demand for substance use disorder treatment in the long term. Virginia should assess marijuana-related services in the current behavioral health safety net project and prepare for the impact of legalization. Tax revenue should be used to invest in substance use disorder treatment and recovery services. This could include focusing on behavioral health treatment programs for justice-involved population, investing in Virginia Medicaid's Addiction and Recovery Treatment Services (ARTS) and the community services boards (CSBs), and supporting training for SUD identification and intervention for touch points (e.g. counselors, primary care physicians).

Youth Impacts – Early initiation of use increases the likelihood of problem use, so Virginia should focus on addressing youth impacts. Virginia could require mandatory ID checks and increase youth-focused prevention efforts, both in communities and schools. Virginia could also build off current behavioral health SOL requirement and include age-appropriate marijuana education, invest in supports and education for individuals aged 21-26, as they are more vulnerable to both use and abuse (due to life stage and their developing brain). Virginia could limit proximity of marijuana retailers to schools and other youth-focused places and minimize marketing to youth. One common standard is that audiences of billboards, social media, etc. must reasonably be expected to be 71% adults. Virginia could require that products and their packaging not be attractive to youth and that advertisements must be a certain distance (e.g. 1,000 feet) from schools and community centers.

Prevention and Education – Virginia could implement public health campaigns to highlight negative implications, and this should include awareness that anyone could be at-risk for substance use disorder and risks for those with certain mental health conditions and those that are pregnant or breastfeeding. This could also address workplace and driving impairments and interactions with other medications. Virginia could invest in education that includes youth but should also include healthcare professionals and seniors. Virginia could also invest in holistic community supports and coalitions that address both economic supports and social determinants of health. Virginia should regularly review and update information given emerging research.

Health Equity – Reform should address and, where possible, undo harms of criminalization. This could include ensuring the benefits of legalization are equitable and including density caps or similar mechanisms to avoid an over concentration of dispensaries in low-income neighborhoods, recognizing that wealthier communities are better equipped to navigate zoning and other rules. Virginia should consider the impact on evictions when setting policies, especially for those in government housing. Social consumption sites could provide everyone with a legal place to consume marijuana. Virginia could target investments to those who are experiencing the inequities of past criminalization of marijuana, and this should include community stakeholder engagement, including minority institutions. Virginia could invest in diversion programs and services for justice-involved population, especially upon re-entry, and monitor police activity data to be aware of disproportionate enforcement.

Clean Indoor Air Act – Virginia should maintain its Indoor Clean Air Policy. Marijuana laws should be consistent with Virginia's Indoor Clean Air policies for tobacco and similarly to tobacco, it should identify distances from buildings and include signage for designated areas for use.

Chapter 2: Executive Summary

Since 2012, states across the nation have begun legalizing adult-use marijuana for sale and personal use. Colorado and Washington State took the first leap into this policy area through statewide ballot referendums. Since then, 15 total states across the Northeast, Midwest, and West have also decided, via both ballot initiatives and legislative action, to legalize the substance, which remains illegal at the federal level. If Virginia was to legalize marijuana, it would be the first state in the South to do so.

The purpose of this report is not to recommend to either the Governor or the General Assembly whether or not the Commonwealth should take legislative action to legalize marijuana. Rather, this report seeks to outline important areas of consideration should Virginia pass legislation legalizing the substance. This report was mandated in Chapters 1285 and 1286 of the 2020 Acts of Assembly as an enactment clause in the legislation that decriminalized possession of small amounts of marijuana (HB972 &SB2). Furthermore, that clause required the creation of a work group comprised of relevant stakeholders to explore these ideas in depth. This work group met 15 times, including subgroup meetings, between July and October 2020 to hear from policy experts, health professionals, community leaders, and government officials from across the nation, including from states that have already legalized marijuana. This report is a reflection of the consensus, stakeholder-driven process by which this work group conducted its task.

Chapter 4 of this report is an overview of how other states have approached the question of marijuana legalization and the legal and regulatory frameworks they set up to control its sale and use. Every state has different approaches to each of the associated policy questions, but in some areas, such as legal age for purchase, a national consensus standard has emerged. Virginia has an opportunity to learn from and build upon all of these states that have already implemented programs. All of these states have faced substantial challenges, and if Virginia is intentional and allocates adequate resources, it can seek to minimize these challenges as much as possible.

The next chapter of the report provides an overview of Virginia's existing cannabis programs and recent marijuana policy changes, including the industrial hemp program, medical marijuana pharmaceutical processor program, and the 2020 law that decriminalized possession of small amounts of marijuana. This chapter also discusses what the potential goals of a legal adult-use marijuana program could be and how those goals might influence particular policy directions. These goals include protecting public health, ensuring social and racial equity, raising revenue, and ensuring the success of existing cannabis programs.

Chapter 6 covers the feasibility of legalizing marijuana for sale and personal use in Virginia. Setting up an adequate regulatory structure will require a significant upfront investment, in time, patience, and budgetary resources. This chapter includes a section regarding the potential regulatory, structural, and staffing needs of a state agency responsible for overseeing marijuana. This chapter also includes the estimated cost of setting up and maintaining this structure and

fulfilling its regulatory goals. A program as complex as this cannot be created quickly; it is in Virginia's best interest to move at a thoughtful pace.

One topic of particular interest to the Commonwealth is the potential impact of marijuana legalization on Virginia's economy and state revenue. Chapter 7 includes fiscal analyses and concludes that there is significant opportunity for Virginia. For example, a legal adult-use marijuana industry could be worth $698 million to $1.2 billion annually in economic activity and up to $274 million in tax revenues per year at industry maturation. However, there are two caveats. First, this analysis relies on a number of assumptions, many of which could change once Virginia actually moves forward with a legalization program. Additionally, it will likely take at least five years for the industry itself to mature, which adds greater uncertainty. This chapter also discusses options regarding how the product itself might be taxed. These decisions will impact the growth of the industry and the amount of revenues the Commonwealth collects.

Chapter 8 focuses on the legal and regulatory framework Virginia would need to implement to successfully legalize the sale and personal use of marijuana. This chapter covers the potential structure of the industry and options for licensing programs for marijuana businesses. Importantly, this chapter discusses the opportunity for Virginia to establish a social equity program with a goal of undoing the past harms of criminalization on communities of color and other people who have been negatively impacted by marijuana prohibition. Furthermore, this chapter contains policy options on regulatory topics such as product composition, packaging and labeling, advertising, personal cultivation, and impairment. Finally, a section covers various criminal code changes that Virginia will need to consider with any potential marijuana legalization legislative effort. Overall, thoughtful deliberation will be required on each of these topics and many others as policymakers move forward.

Chapter 9 is dedicated to the review of the potential health impacts of marijuana legalization. Overall, there are scant data to demonstrate a scientific consensus of how marijuana legalization could impact both individual health and public health. One key recommendation of this report is to collect targeted data regarding public health and safety matters, such as poison control calls, emergency room visits, driving impairment, youth use rate, and treatment data by drug. This will allow Virginia to accurately analyze the impact of legalization and the efficacy of public health and safety efforts. Efforts such as consumer education, youth access prevention, and behavioral health programs, such as substance use disorder prevention, treatment, and recovery, are all important. Policymakers should consider allocating some of the revenue the state collects from marijuana sales to these programs. Finally, ensuring the success of public health tools like Virginia's Indoor Clean Air Act should continue to be a priority.

Overall, this report provides a blueprint for thinking about marijuana legalization in Virginia, should policymakers choose to pursue legislation. This report rarely makes specific recommendations. However, it does lay out options for officials to consider as they move forward in this area.

Chapter 3: Virginia Marijuana Legalization Work Group

Section 3.1 – Legal Authority and Charge

Chapters 1285 and 1286 of the 2020 Acts of Assembly, which decriminalized possession of small amounts of marijuana, included a second enactment clause that directed the Secretaries to complete this report. The clause also specified individuals within state government, academia, healthcare, and the community that the Secretaries shall consult with in writing this report. The full enactment clause is as follows:

> *That the Secretaries of Agriculture and Forestry, Finance, Health and Human Resources, and Public Safety and Homeland Security shall convene a work group to study the impact on the Commonwealth of legalizing the sale and personal use of marijuana. The work group shall consult with the Attorney General of Virginia, the Commissioner of the Department of Taxation, the Commissioner of the Department of Motor Vehicles, the Commissioner of the Virginia Department of Agriculture and Consumer Services, the Executive Director of the Board of Pharmacy, the Director for the Center for Urban and Regional Analysis at the Virginia Commonwealth University L. Douglas Wilder School of Government and Public Affairs, the Virginia State Crime Commission, the Virginia Association of Commonwealth's Attorneys, the Executive Director of Virginia NORML, a representative of the Virginia Alcoholic Beverage Control Authority, a representative of a current manufacturer of medical cannabis in Virginia, a medical professional, a member of a historically disadvantaged community, a representative of a substance abuse organization, and a representative of a community services board. In conducting its study, the work group shall review the legal and regulatory frameworks that have been established in states that have legalized the sale and personal use of marijuana and shall examine the feasibility of legalizing the sale and personal use of marijuana, the potential revenue impact of legalization on the Commonwealth, the legal and regulatory framework necessary to successfully implement legalization in the Commonwealth, and the health effects of marijuana use. The work group shall complete its work and report its recommendations to the General Assembly and the Governor by November 30, 2020.*

The Secretaries created a work group consisting of the individuals identified in the legislation and other members of state government necessary to discuss all relevant topics. The charge of this work group was not to determine if the Commonwealth should legalize the sale and personal use of marijuana. Rather, the work group worked to determine how the Commonwealth would implement marijuana legalization.

The Office of Diversity, Equity, and Inclusion provided direct consultation in the forming of the workgroup and best practices for community engagement. Additionally, the Chief Diversity

Officer provided on-going support and consultation throughout the process and in the final drafting of the report.

Section 3.2 – Membership

The enactment language directs the Secretaries to convene a work group and engage with a number of stakeholders, including several state agency heads, advocacy organizations, and representatives of other community interests. Based on these requirements, the Secretaries formed a work group composed of these individuals. Additionally, the Secretaries included members from other relevant state agencies, as they felt necessary to address these topics. Some members attended some or all of the meetings themselves, and some members chose to send designees and other staff to the meetings.

The membership of this work group (including designees) was as follows:

Secretary of Agriculture and Forestry
Bettina Ring, Secretary of Agriculture and Forestry
Designee: Brad Copenhaver

Secretary of Finance
Aubrey Layne, Secretary of Finance
Designees: Joe Flores, June Jennings

Secretary of Health and Human Resources
Daniel Carey, Secretary of Health and Human Resources
Designee: Catie Finley

Secretary of Public Safety and Homeland Security
Brian Moran, Secretary of Public Safety and Homeland Security
Designees: Jae K Davenport, Nicky Zamostny, Jacquelyn Katuin

Attorney General of Virginia
Mark Herring, Attorney General
Designee: Holli Wood

Commissioner of the Department of Taxation
Craig Burns, Tax Commissioner
Designees: Kristin Collins, Joe Mayer

Commissioner of the Department of Motor Vehicles (DMV)
Richard Holcomb, DMV Commissioner
Designees: Sharon Brown, Colby Ferguson, George Bishop, and Camdon Gutshall

Commissioner of the Virginia Department of Agriculture and Consumer Services (VDACS)
Jewel Bronaugh, VDACS Commissioner
Designee: Charles Green

Executive Director of the Board of Pharmacy (BOP)
Caroline Juran, Executive Director of the Board of Pharmacy
Designees: David Brown, Annette Kelley

Director for the Center for Urban and Regional Analysis at the Virginia Commonwealth University (VCU) L. Douglas Wilder School of Government and Public Affairs

Fabrisio Fasulo,[1] VCU Wilder School Director for the Center for Urban and Regional Analysis

Designee: Michael MacKenzie

Virginia State Crime Commission

Kristen Howard, Executive Director, State Crime Commission

Designee: Colin Drabert

Virginia Association of Commonwealth's Attorneys

Nate Green, Williamsburg James City County Commonwealth's Attorney

Executive Director of Virginia NORML

Jenn Michelle Pedini, Executive Director of Virginia NORML

Representative of the Virginia Alcoholic Beverage Control Authority (ABC)

Travis Hill, Virginia ABC Chief Executive Officer

Designees: John Daniel, Katie Crumble

Representative of a current manufacturer of medical cannabis in Virginia

Ngiste Abebe, Director of Public Policy, Columbia Care

Medical professional

Sam Caughron, Charlottesville Wellness Center Family Practice[2]

Member of a historically disadvantaged community

Michael Carter, Jr., Virginia State University Small Farm Outreach Program & 11th generation farmer

Representative of a substance abuse organization[3]

Nour Alamiri, Chair of Community Coalitions of Virginia

James Thompson, Virginia Center of Addiction Medicine

Jimmy Christmas, River City Integrative Counseling

Representative of a community services board

Jennifer Faison, Executive Director, Virginia Association of Community Services Boards

Designee: Heather Martinsen

Virginia State Police

Captain Richard Boyd, Virginia State Police

Designee: John Welch

Department of Forensic Science (DFS)

Linda Jackson, DFS Director

Designee: David Barron

[1] After the first meeting, Dr. Fasulo accepted another position within state government. Michael MacKenzie represented the Center for Urban and Regional Analysis for the remainder of the work group

[2] Dr. Caughron also represented the Medical Society of Virginia

[3] The Secretaries included 3 representatives of substance use organizations in order to capture input from the prevention, treatment, and recovery perspectives of substance use disorder

Section 3.3 – Organization and Meetings

The work group was organized into 3 subgroups to explore different categories of policy questions. Each subgroup selected two co-chairs to help lead the meetings and discussion. These subgroups and their co-chairs were:

1. Fiscal and Structural – Jewel Bronaugh and Travis Hill
2. Legal and Regulatory – Jenn Michelle Pedini and Nate Green
3. Health Impacts – Nour Alamiri and Sam Caughron

Over the course of three months, the work group held 3 full group meetings and 12 subgroup meetings, including one joint meeting of the Fiscal and Structural and Legal and Regulatory Subgroups to discuss social equity.

All meetings were conducted as open public meetings and were posted in accordance with § 2.2-3707. In accordance with § 4-0.01 g.1. of the 2020 Appropriations Act and Governor Northam's Executive Order 51, all meetings of the full work group and its subgroups took place via electronic communication means without a quorum of the public body physically assembled in one location.

Minutes were taken of each meeting and posted on the Commonwealth Calendar, and each meeting was recorded and the videos uploaded to YouTube.[4]

<u>Full Work Group</u>
The meetings of the Full Work Group and guest speakers present at each meeting are below:

- July 31, 2020
  - Justin Bell, Assistant Attorney General
  - Dave Cotter, Department of Criminal Justice Services
- September 16, 2020
  - Gillian Schauer, Senior Consultant
  - Norman Birenbaum, State of New York Director of Cannabis Programs and Chairman of the Cannabis Regulators Association
- October 28, 2020

<u>Fiscal and Structural Subgroup</u>
The meetings of the Fiscal and Structural Subgroup and guest speakers present at each meeting are below:

- August 17, 2020
- September 11, 2020
  - Steve Hoffman, Chairman, Massachusetts Cannabis Control Commission

[4] Minutes from each meeting, along with links to the recorded videos on YouTube, are included as appendices of this report, and relevant presentations and publicly-submitted comments are included as well. This report references these documents throughout.

- Justin Nordhorn, Chief of Enforcement, Washington State Liquor and Cannabis Board
- Charles Green, Deputy Commissioner, VDACS

❖ October 15, 2020
- Caroline Juran, Executive Director, Virginia Board of Pharmacy
- Travis Hill, CEO, Virginia ABC

❖ October 26, 2020

Legal and Regulatory Subgroup

The meetings of the Legal and Regulatory Subgroup and guest speakers present at each meeting are below:

❖ August 17, 2020
❖ September 14, 2020
- Sheba Williams, Founder and Executive Director, NoLef Turns
- Vickie Williams, Chair, Decriminalize Virginia

❖ October 21, 2020
- George Bishop, Deputy Commissioner, Virginia DMV

Health Impacts Subgroup

The meetings of the Health Impacts Subgroup and guest speakers present at each meeting are below:

❖ August 19, 2020
❖ September 14, 2020
- Nancy Haans, Executive Director, Prevention Council of Roanoke
- Tom Bannard, VCU Program Coordinator, Rams in Recovery (Collegiate Recovery Program at VCU)
- Dr. Dustin Sulak, Owner and Medical Director, Integr8 Health
- Dr. Peter Breslin, Board Certified Psychiatrist/Board Certified Addiction Medicine

❖ October 14, 2020
❖ October 20, 2020
- Dr. Natalie Hartenbaum, President at CEO at Occumedix

Joint Subgroup on Equity

For one meeting, the Fiscal and Structural Subgroup and Legal and Regulatory Subgroup convened jointly to discuss social and economic equity. Details of that meeting and its guest speakers are below:

❖ October 20, 2020
- Toi Hutchinson, Illinois Cannabis Regulation Oversight Officer
- Amber Littlejohn, Executive Director, Minority Cannabis Business Association

Chapter 4: Legal and Regulatory Frameworks in Other States

As of November 2020, ten states have established legal sale of marijuana for adult-use. Those states are (in chronological order based on date of legalization): Colorado, Washington, Alaska, Oregon, California, Maine, Massachusetts, Nevada, Michigan, and Illinois. Five other states and the District of Columbia have legalized sale, but have not yet established legal, regulated markets. Vermont legalized possession and personal cultivation in 2018, recently legalized sales, and expects to start issuing licenses in October 2022.[5] In November 2020, four additional states – New Jersey, Arizona, Montana, and South Dakota – legalized marijuana for adult-use. This summary covers the 10 states that currently have legal and regulatory frameworks for marijuana sale for adult use.[6]

Section 4.1: Regulatory Schemes and Oversight

All 10 states have set up a standard commercial model.[7] In this model, production, distribution, and sale are handled in the private market, and are subject to laws and regulations. Other potential options states have considered include a state-run monopoly and a non-profit model.

Three states established a Marijuana Regulatory Agency or Commission. Three states placed the regulatory authority under existing Liquor/Alcohol/Beverage Control Boards, and three states placed it under the Department of Revenue/Taxation/Finance. California divided the authority among several agencies (consumer affairs, public health, and agriculture).[8]

Most state marijuana programs are led either by a small Board/Commission or an Executive Director, which are often appointed by the Governor. Advisory committees and boards vary in terms of size and authority, including whether or not they have rule-making powers. Many committees have designated seats for individuals with certain professional backgrounds. Examples include financial experts, community-based mental health providers, criminal defense attorneys, social equity applicants, public health experts, medical cannabis industry representatives, civil rights activists, addiction specialists, and labor organizations. Almost all states have moved medical cannabis licensees under the adult-use regulatory body. However, the department of health sometimes retains maintenance of the patient and practitioner registry for the medical cannabis program. State departments of agriculture regulate hemp unless the product is intended for human consumption, and then it is typically regulated by the agency that regulates food and dietary supplements.

[5] (Lopez, 2020)
[6] (Fuller, 2020)
[7] See appendix 2
[8] See appendix 2

Table 4.1: State Regulatory Oversight

	Agency Responsible for Adult-use Marijuana	Does the agency also regulate medical cannabis licensees?	Leadership of Regulatory Body	Advisory Board Structure
Illinois	Department of Financial and Professional Regulations (IDFPR)	Yes	Cannabis Regulation Oversight Officer, appointed by the Governor	Dept of Public Health Convenes Adult-use Health Advisory Committee, with 30 members appointed by the Governor, designated backgrounds
Massachusetts	Standalone, Independent	Yes	5 Commissioners jointly appointed by the Governor, Attorney General, Treasurer, designated backgrounds	Advisory Board with 25 members jointly appointed by the Governor, Attorney General, and Treasurer to fill designated backgrounds, rule-making powers
Washington	Washington State Liquor & Cannabis Control Board	Yes	3-member Control Board appointed by the Governor	Advisory Councils with industry stakeholders
California	Divided among 3 agencies (consumer affairs, public health, agriculture)	Yes	3 authorities each have own leadership (e.g. Executive Director)	Cannabis Advisory Committee with designated backgrounds
Maine	Department of Administrative and Financial Services	Yes	Director	15-member Marijuana Advisory Committee, designated seats from the legislative and executive branches and members of the public appointed by the Senate President and Speaker of the House
Oregon	Oregon Liquor Control Board	No, Oregon Health Authority licenses medical marijuana cardholders and dispensaries	7 Commissioners, appointed by the Governor, at least one from each congressional district	Yes, advisory role
Michigan	Marijuana Regulatory Agency (standalone agency)	Yes	Executive Director appointed by the Governor with advice and consent of the senate	Exec Director may convene as necessary, advisory role

Colorado	Colorado Department of Revenue, Marijuana Enforcement Division (MED)	Yes	State Licensing Authority, also serves as the Executive Director of the Dept of Revenue (appt'd by the Governor, serves in the Governor' Cabinet) – MED Director has specific delegated authority	N/A
Nevada	Cannabis Compliance Board	Yes	5 Board Members appointed by the Governor, designated backgrounds	12-member Cannabis Advisory Commission appointed by the Governor, designated seats, rule-making recommendations, license distribution, study emerging technologies, and any matters submitted by the Board
Alaska	Alcohol & Marijuana Control Office, Dept of Commerce, Community & Economic Development	Alaska has no Medical Marijuana designations	5-member board, designated backgrounds	Yes, with rulemaking powers. The seat are designated to come from industry (2), Public Safety (1), the general public (1), and Health (1).

Section 4.2: Tax Structure

Excise taxes, taxes levied on specific products, vary from state to state. Excise tax rates on marijuana range from 10-15% in Maine, Massachusetts, Michigan, and Nevada to 37% in Washington. Most states collect these taxes at the retail level, with some also taxing the wholesale product when it is sold from the cultivator/processor to the retailer. Alaska is the only state with retail-level excise tax. The most common tax is ad valorem (price-based) and the second most common is weight-based. Localities in some states can levy an additional tax (see local control section).

Illinois is the only state with a tiered tax based on THC content in order to disincentive use of high potency products. They levy a 10% retail tax for products with less than 35% THC, a 25% tax rate for products with more than 35% THC, and a 20% tax rate for cannabis-infused products (including edibles). There is also a 7% gross sales tax on sales from cultivators to dispensaries.

Section 4.3: Possession Limits

Most states with legalized adult-use marijuana have a possession limit of one ounce of flower, which is equivalent to approximately seven or eight grams of concentrate. The District of Columbia allows two ounces, Maine and Michigan allow 2.5 ounces, and Oregon allows 8 ounces.

Possession limits typically align with purchase limits, or the amount that can be bought in one exchange at a marijuana retailer. In addition to possession limits, some states also limit the amounts of purchased marijuana that can be kept at one time. For example, Massachusetts allows no more 10 ounces or marijuana in the home and requires anything more than one ounce to be locked away. Michigan and Oregon limit the in-home amount to 10 ounces and 8 ounces, respectively.

Adult-use is limited to individuals over 21. Many states have fines for 18-20 year olds, which may match alcohol possession penalties. Minors are usually subject to drug education/screening or community service.

Table 4.2: State Possession Limits

	Possession Limits
Colorado	Equivalent of 1 oz marijuana
Washington	1 oz usable (the harvested flowers or "bud"), 7 g concentrate,16 oz or edibles in solid form, 72 oz in liquid form
Oregon	1 oz usable in public, 8 oz usable at home, 1g extract , 16oz of products in a solid form, 72oz of products in a liquid form
Alaska	1 ounce of dried marijuana.
California	28.5g flower, 8g concentrate
Nevada	Purchase limits are 1 ounce of marijuana or 1/8 of an ounce of concentrated cannabis per transaction. Possession limits are 1 ounce for adult-use consumers
Maine	2.5 oz any product, including no more than 5g concentrate
Massachusetts	1 oz 1. One ounce of Marijuana flower shall be equivalent to five grams of active tetrahydrocannabinol (THC) in Marijuana concentrate including, but not limited to, Tinctures. 2. One ounce of Marijuana flower shall be equivalent to five hundred milligrams of active tetrahydrocannabinol (THC) in Edibles. 3. Topicals and ointments shall not be subject to a limitation
Michigan	2.5 oz, 15g concentrate
Illinois	30g flower, 5g concentrate (different for non-Illinois residents)

Section 4.4: Product Regulations

Washington and California have edible restrictions and only allow shelf-stable products. Some states also limit the THC that can be in each serving and per package, often to 5mg or 10mg for edibles:

Table 4.3: State Product Limitations

	Maximum THC per dose/serving (specify which one)	**Maximum THC per package/product (specify)**
Colorado	10mg per serving	100mg per package
Washington	10mg per serving of a marijuana-infused product	100mg for edibles, 1 g for concentrate
Oregon	5mg per serving for edibles	50mg per package for edibles
Alaska	Edibles can have no more than 5 mg per serving	Units with multiple servings must not exceed more than 10 single serve units.

California	10mg per serving for edibles and orally dissolving edibles (see definitions in 17 CCR §40100)	100mg for edibles and orally dissolving edibles, 1,000mg for concentrates, 1,000mg for topicals (see definitions in 17 CCR §40100)
Nevada	Cannabis sold as -- a capsule, not more than 100 mg per capsule or more than 800 mg per package. -- a tincture, not more than 800 mg --as an edible cannabis product, not more than 10mg per serving or 100 mg per product --a topical product, a concentration of not more than 6 percent THC per serving or more than 800 mg per package --a suppository or transdermal patch, not more than 100 mg per suppository or transdermal patch or more than 800 mg of THC per package. --For any other cannabis product, not more than 800 mg of THC.	See the per serving column Edibles that can't clearly demark each serving shall be limited to not more than 10 mg per unit of sale
Maine	10mg per serving for edibles	100mg per package for edibles
Massachusetts	5mg for an Edible Marijuana Product (also see table 4.2)	not more than 20 servings or 100mg (also see table 4.2)
Michigan	10mg per serving for edibles, 10mg per serving for capsules and tinctures, 10mg for all other products except topicals	100mg per container for edibles, 200mg per container for capsules and tinctures, 100mg for all other products except topicals
Illinois	10mg per serving	100mg per cannabis-infused product (edibles, tinctures)

Section 4.5: Personal Cultivation

Eight states allow personal cultivation. Most allow up to six plants (three flowering) and others allow four (OR), two (VT), and twelve (MI). Two states do not allow personal cultivation for adult-use products (WA & IL).

Table 4.4: Personal Cultivation[9]

	Personal Cultivation Permitted?	**Number of Plants Permitted**
Alaska	Yes	6 (no more than 3 mature plants)
California	Yes	6
Colorado	Yes	6

[9] (NORML, 2020b)

District of Columbia	Yes	6
Illinois	Only for registered medical cannabis patients	5
Maine	Yes	3
Massachusetts	Yes	6
Michigan	Yes	12
Nevada	Yes	6
Oregon	Yes	4
Vermont	Yes	2 (and up to 4 immature plants)
Washington	No	0

Section 4.6: Retail Sites and Advertising

All states prohibit tobacco and alcohol from being sold at the same location as marijuana. All states have zoning requirements that set a minimum distance from locations that may attract children, typically at 500-1000 feet with local authority to adjust them. The vast majority of states have mandatory ID checks, and Washington State does unannounced compliance checks.

A marijuana retail store in Seattle, Washington (Source-Lux Pot Shop Ballard)

No states require broad training for retail associates. However, Washington requires specific training for retail associates to discuss medical implications, and Colorado provides incentives for retail associates that attend a training program. States typically allow co-located medical cannabis and adult-use products, though they may be separated on different sides of the same store.

No states allow marketing to youth, but they differ in what qualifies as marketing to youth. Most states have a requirement that an advertisement can only be placed in a medium where 71.6% of the population can reasonably be expected to be over 21. Massachusetts sets that threshold at 85%.

Most states do not allow advertising within 1,000 feet from child- or community-related locations. Some states expand that 1,000-foot requirement to additional locations, such as substance use treatment centers, hospitals, and college campuses.

No states allow advertisements to include false statement or claims about health benefits and therapeutic effects. Most states do not permit advertisements on public property, including transportation stops. Some states have limits around retail store signs, require warnings in advertisements, and have billboard restrictions. Some TV, radio, print, and internet advertisements are allowed (with audience restrictions). While most states do not employ all of these, other state approaches to limiting advertising include:

- Requiring specific warnings in ads,
- Requiring license number of establishment on ads,
- Prohibiting giveaways or promotional events,
- Prohibiting unsolicited advertising or "pop-ups,"
- Limiting signs per retail establishment,
- Prohibiting depiction of consumption,
- Restricting billboards,
- Prohibiting neon signs after dark,
- Prohibiting ads on certain merchandise (e.g. apparel and electronics),
- Prohibiting ads on vehicles,
- Prohibiting use of the name or logo of the state marijuana enforcement agency,
- Prohibiting ads at sports/entertainment events where those under 21 are present,
- Prohibiting depiction of a leaf image.

Section 4.7: Packaging & Labeling

Packaging and labeling is critical for consumer safety on those using the products, as well keeping them away from children. Labels include the primary cannabinoid content (e.g. THC, CBD). Restrictions in other states include:

- All states have requirements that packaging and labeling must not appeal to children.
- Many states require child-resistant, tamper-evident packaging, as well as re-sealable packaging for multi-use products.
- Many states require opaque packaging.
- Seven states have a universal symbol, to ensure individuals are clear that there is THC in the packaging regardless of literacy level or language spoken.
- One state has pre-approval for all edible products packaging and labeling, to ensure they are in compliance with regulations.

The vast majority of states also have specific warnings that must be on products. At least one state has a rotating warning schedule, to avoid having a sea of small text. Required warning context includes:

Topics on Warning Labels in Adult-use States[10]

	Keep away from children	Pregnancy/ breastfeeding	Delayed intoxication	Driving/ machinery/ impairing	Addictive/ dependence risk	General health risks	Unlawful outside of state	Smoking is hazardous
AK	X	X		X	X	X		
CA	X	X	X	X		X		
CO	X	X	X	X		X	X	
IL								
MA	X	X	X	X		X		
ME	X	X		X		X		
MI	X			X				
NV	X		X		X		X	
OR	X			X				
WA	X		X	X	X		X	X

Section 4.8: Testing, Additives, and Contaminants

No state allows any nicotine or alcohol additives in cannabis products. All states conduct some level of testing that includes cannabinoid content and residual solvents. Most states test for microbials and pesticides. Several states test for heavy metals, mold/yeast, mycotoxins, and foreign matter in cannabis products.

All states are working to license third party labs. Colorado and Nevada are setting up reference labs, which help to identify anomalous labs or lab shopping.

Section 4.9: Licensing Types & Caps

All states have licensing types for producers/cultivators, processors/manufacturers, and retailers. Typical license types also include distribution and testing labs. Some states divide their producer/cultivator licenses into sub-categories based on the number of plants or square footage at the facility. Some states have additional license types, including:

- Four states allow have social consumption licenses, though where they are available varies. For example, Colorado allows hospitality establishments and Michigan allows businesses to have designated areas or temporary event licenses.
- Five states allow delivery licenses.

[10] See appendix 2 – Minutes and Materials of September 16th Meeting

- Massachusetts has a "craft cooperative" license.

"Vertical integration" means individuals may hold multiple types of licenses and participate in multiple parts of the supply chain. For example, a business with all three of the main license types could participate in the industry from seed to sale. All states except Washington allow vertical integration, but no states require it.

States can set a cap on the number of licensees in statute or in regulation. Alternatively, the regulatory authority can manage the number of licenses based on supply and demand, or can leave that management up to localities.

Table 4.5: State Licensing Limits

State	Limits on Number of Wholesalers (Growers/Producers/Processors)	Limits on Number of Retail Stores/Dispensaries
Colorado	Not limited, localities can set	Not limited, localities can set
Washington	Not limited	Not accepting new applications, increased from 334 to 556 in 2016
Oregon	No cap. Temporary moratorium on new producer applications, sunsets January 2022.	No cap
Alaska	Not limited, localities can set	Not limited, localities can set
California	Not limited, localities can set	Not limited, localities can set
Nevada	Not limited. The State is tasked with doing a supply and demand analysis to determine the need for additional licenses. Businesses may only apply during open application periods	Limited to 132 (voter-approved), localities can set
Maine	Not limited, localities can set	Not limited, localities can set
Massachusetts	Limits for each applicant	No overall cap, no more than three retail licenses per individual/entity
Michigan	Not limited, localities can set	Not limited, localities can set
Illinois	Max 30 cultivation center licenses, 100 craft growers	500 (issued in set waves)

*At one point, Oregon legislature did put a "pause" on licensees due to oversupply issues.

Section 4.10: Local Control & Zoning

All states allow some level of local control, with most states allowing localities to opt out of having a marketplace.

Table 4.6: Local Control

	Can the locality **opt out** of sales?	Does the locality have a **role in licensing?**	Can the locality levy an **additional excise tax**?	Can the locality impose **time, place, manner** restrictions?	Can the locality **prohibit possession and use** in your home?
Illinois	Yes	Approval for on-site consumption, cannot establish own licensing structures	Yes, up to approximately 6% (e.g. up to 3% for municipalities, 3.5% for unincorporated)	Reasonable zoning requirements for marijuana establishments, includes distance limitations from "sensitive areas" and between cannabis operations	No
Massachusetts	Yes, but must be through referendum if voted for the 2016 legalization ballot measure	Applicant must have "host community agreement"	Up to 3% (fee through host agreement) and 3% retail tax	Yes, includes (but not limited too) signage, reduce 500-ft distance from schools. Local ordinance must allow for conversion of medical to adult-use dispensaries.	No
Washington	Yes, localities can also file an objection after being notified about upcoming establishments, Board must give those "substantial weight"	No	No	May prohibit processors and producers in residential area, may reduce the 1,000-ft distance around schools	No
California	Yes	Yes	Yes (avg of 14%)	Yes, generally given freedom re: ordinances.	No, also cannot prohibit personal cultivation or delivery
Maine	Yes, must opt in for each license type (cultivation, manufacturing, testing and retail sale)	Local authorization required	No (but may impose licensing, permitting fees)	Yes, including land use regulations and licensing requirements. Local entities may refuse to prohibit some or all licensed commercial activities (cultivation, manufacturing, testing and retail sale).	May limit personal cultivation, except that limitations must permit, at a minimum, cultivation of 3 mature marijuana plants per person 21 years of age or older who is domiciled on the property where cultivation occurs

Oregon	Yes	The local jurisdiction signs a Land Use Compatibility Statement prior to OLCC licensure. Localities can also have a licensing process if they wish.	Yes, up to 3%	Yes, including having a requirement that retail sites may not be within 1,000 feet of one another	No
Michigan	Yes	Social consumption and temporary event licenses require local approval. State licenses may only be issued if the issuance would not violate a local ordinance.	Fee of up to $5,000, no additional tax	Yes	No, also may not prohibit delivery
Alaska	Yes	Yes, if the state does not provide a license in a timely fashion	Yes	Yes	May prohibit delivery
Colorado	Yes	Yes, need both state and local licenses to operate	Yes	Yes	No, also may not prohibit personal cultivation (but limited number of plants per residence)
Nevada	Yes (zoning and ordinances)	Yes (local licensing is separate from the State)	No	Yes, including advertising	No

Section 4.11: Dedicated Tax Revenue

States use marijuana tax revenue for a variety of purposes including schools, public health, mental health/substance abuse, public safety/traffic safety, research, local governments, basic health/wellness funds, roads, recidivism, and criminal justice.

Table 4.7: Tax Revenue

	Tax Revenue Distribution
Illinois	After reimbursing various agencies for administrative costs related to the program, the tax revenue is distributed by allocating: • 35% to the General Revenue Fund, • 25% to the Restoring Our Communities Fund for community reinvestment, • 20% to support mental health and substance abuse services at local health departments, • 10% to the Budget Stabilization Fund (to pay the backlog of unpaid bills), • 8% to the Illinois Law Enforcement Training and Standards Board to create a law enforcement grant program, • 2% to the Drug Treatment Fund to fund public education and awareness
Massachusetts	Massachusetts collects a 20% tax on recreational cannabis, including a 6.25% sales tax, 10.75% excise tax, and optional 3% local tax. • Sales tax goes to the state's general fund, as well as the Massachusetts Bay Transportation Authority and School Building Authority funds**.** • Excise tax goes into a Marijuana Trust Fund that is maintained by the Cannabis Control Commission (CCC) and is subject to appropriation, with the legislation listing seven non-binding potential uses in addition to funding the Commission's operating budget.
Washington	The dedicated marijuana account is allocated using a detailed methodology to the: • Department of Social and Health Services for prevention and reduction of substance abuse, • Department of Health for marijuana education and public health programming, • State universities for research on short- and long-term effects, • Washington Health Care Authority for community health services, • Superintendent of Public Instruction for drop-out prevention, • General Fund.
California	The state excise taxes on retail and cultivation, as well as certain fines and fees, are deposited into the California Cannabis Tax Fund. • The revenues go first to reimburse state agency cannabis regulatory and administrative costs, and then to cannabis and related research. • The remainder is allocated as follows: 60 percent for youth programs related to substance use education, prevention, and treatment; 20 percent for environmental programs; and 20 percent for law enforcement.
Maine	Maine collects an excise tax on commercial cultivation facilities sales and transfers (approximately 21.5% -- by weight for mature marijuana plants, marijuana flower and marijuana trim, by unit for immature plants, seedlings and seeds) and on retail marijuana items (10%) for an overall effective tax rate of approximately 20% on retail sales of marijuana items. • 12% of all tax revenues generated by the Adult-use Marijuana Program (excise and sales tax) are deposited in the Adult-use Marijuana Public Health and Safety Fund to support "public health and safety awareness and

	education programs, initiatives, campaigns and activities relation to the sale and use of adult-use marijuana and adult-use marijuana products…" (50%); and, • "enhanced law enforcement training programs relating to the sale and use of adult-use marijuana and adult-use marijuana products for local, county and state law enforcement officers…" (50%).
Oregon	Oregon collects a 17% excise tax. The Oregon Marijuana Account has been distributed to the: • State School Fund (40%), • State Police (15%), • Behavioral Health Services (20%), • Drug Abuse Prevention and Treatment (5%), • Cities (10%) and Counties (10%) who allow marijuana establishments in their locality.
Michigan	There is an excise tax of 10%, in addition to the state's 6% sales tax. Revenues in the Marijuana Regulation Fund funds administration of program. After those costs are covered, it is distributed to: • FDA approved clinical trials re: medical marijuana ($20M annually for 2 years), • municipalities (15%) and counties (15%) in proportion to the number of marijuana retails stores and micro-businesses, • K-12 education (35%), • and the Michigan Transportation Fund (35%).
Colorado	Proceeds from the 15% excise tax and 15% special sales tax are distributed through a specified methodology. In FYs 2014-2020 that methodology resulted in: • 31.7% to Human Services, • 20.7% to Public Health and Environment, • 16.4% to Education, 15.5% to Local Affairs, • 3.5% to Higher Education, 3.2% to Agriculture, • and less than 3% to Public Safety, law, judicial branch, transportation, office of the governor, healthcare policy and financing, labor and employment, and regulatory agencies.
Nevada	During the first two fiscal years of adult-use sales, revenue from the retail marijuana tax went to the state's Rainy Day reserve fund, while revenue from the wholesale tax went to the Distributive School Account (DSA) to help fund the state's public schools. The Rainy Day Fund received $42.5 million in Fiscal Year 2018, and $55.2 million in Fiscal Year 2019. The DSA received $27.5 million in Fiscal Year 2018 and $43.7 million in Fiscal Year 2019.

Section 4.12: Consumption at work, at home, and in public

Most states allow employers to set their own policies related to marijuana for adult-use. Similarly, many states give landlords authority to prohibit adult use, especially for smoking. As mentioned above, five states allow some type of social consumption site. Aside from those sites, public use

is generally prohibited. Public places can include restaurants, amusement parks, common spaces in apartment buildings, and other businesses.

Table 4.8: Consumption Laws

	Employers	**Landlords**
Illinois	Can implement cannabis policies (related to smoking, consumption, storage, use)	May prohibit, subject to local ordinances
Massachusetts	No change in existing law	No change in existing law
Washington	May prohibit using or being under the influence, no change in drug testing law	Can implement smoke-free rules
California	Does not change employer rights to a prohibit use	May prohibit (must be on lease)
Maine	Can drug test, can refuse to hire based on marijuana use	Yes, on lease
Oregon	No change in existing law (can require drug testing)	No change in existing law
Michigan	No change in employer rights	May prohibit smoking marijuana
Alaska	May prohibit otherwise regulate	May prohibit or otherwise regulate
Colorado	Employers can test for marijuana and make employment decisions based on the results	May prohibit possession and use of all products
Nevada	Cannot deny employment based on marijuana in a pre-employment drug test, except for safety-sensitive positions (only state to pass such a law)	Can prohibit smoking

Section 4.14: Social Equity Programs

Illinois

The state of Illinois promotes social equity in their marijuana industry regulation, including through a $20 million low-interest loan program. This program subsidizes the costs associated with entering the licensed marijuana industry for those that qualify as “social equity applicants”. Social equity applications are Illinois residents that meet specific criteria such as, i) living in a disproportionately impacted area, ii) individuals who have been arrested for or convicted of an marijuana-related offense that would qualify for expungement, and iii) individuals with family members who have been arrested for or convicted of marijuana-related offenses.

Disproportionately impacted areas are regions that are economically disadvantaged and have been impacted by high rates of arrest, conviction, and incarceration for marijuana-related offenses. The definition also applies to applicants who have a minimum of 10 employees and more than half meet the criteria. The state awards “points” for retailer applications with plans to engage the community, focus on the environment, and a local community/neighborhood report. Social equity applicants can also qualify for a 50% license application and license purchase fee waiver. Illinois

has paid special attention to achieving equity through ownership and licensure, meaning that their process is designed to ensure the most equitable marketplace through mechanisms such as multiple types of licenses for new entrants and early approval. The state established a grant program to invest in communities that have been most impacted through discriminatory drug policies. The state has also developed an expungement matrix for marijuana-related records with a streamlined process.[11]

Massachusetts

In Massachusetts, the Cannabis Control Commission provides benefits for disproportionately harmed individuals, for businesses that economically empower disproportionately harmed people, and for minority-owned, women-owned, and veteran-owned businesses through their Social Equity Program. Applicants are eligible based on income level or residency in an area of disproportionate impact for five years. Individuals with marijuana-related convictions, or individuals with certain immediate family members (e.g., spouses, parents) with marijuana related convictions are also eligible. The program provides for the exclusive ability to apply for certain types of licenses, no application fees, and a 50% reduction in annual license fees. There is also expedited review and a requirement that every licensee for a Marijuana Establish positively impact disproportionately harmed people. The Commission publishes data in the form of reports on the participation of marginalized communities in the legal cannabis industry.[12]

Washington

In June of 2020, Washington passed a bill to ensure business opportunities were available to communities disproportionately impacted by the enforcement of marijuana prohibition laws. A certain number of retailer licenses will be reserved for individuals who were impacted by marijuana prohibition and will positively impact the community if a license is issued to them. In addition, a technical assistance grant program has been created with a $1.1 million in annual appropriation, and grants may be issued to individuals who qualify for the social equity licenses. Additionally, an 18-member task force has been created to advise the Liquor and Cannabis Board (LCB) in developing the program for issuance of up to 34 marijuana retail licenses to qualified social equity applicants.[13]

California

The Cannabis Advisory Committee has created the Sub-Committee on Equity to create and oversee social equity framework and practices. California has robust social equity programs in connection to its legalization of recreational use. California assists municipalities in the provision of loans, grants and technical assistance to cannabis license applicants. Cities such as Los Angeles, San Francisco, and Oakland have created social equity programs that provide low- or no-interest loans to businesses, training on how to run businesses in the cannabis industry, and assistance through the license application process. The state legislature also passed an Expungement Initiative.

[11] (Illinois, n.d.)
[12] (Commonwealth of Massachusetts Cannabis Control Commission, 2020)
[13] (Washington State Liquor and Cannabis Board, 2020)

In Los Angeles, the city identified individuals that have been disproportionately impacted by cannabis criminalization as qualified applicants in their social equity pilot program. This includes individuals who have past cannabis arrests or convictions and those that live in Disproportionately Impacted Areas. The program provides technical and business assistance in navigating the licensing process, fee deferrals and workforce development/job placement.[14]

Maine

Social equity provisions were not included in marijuana legalization. However, expungement initiatives are pending.

Oregon

Oregon does not have any statutory provisions regarding social equity. There is a pilot program in Portland, which offers license fee reductions and early assistance reimbursement to small businesses and individuals with prior marijuana convictions.[15]

Michigan

A prior conviction solely for a marijuana-related offense does not disqualify an individual from obtaining a marijuana license, unless the offense involved distribution to a minor. The marijuana regulatory agency must develop a plan to encourage industry participation and positively impact communities disproportionately impacted by marijuana prohibition.

Alaska

The work group is unaware of a social equity program in Alaska.

Colorado

The Colorado State Legislature passed a bill in their 2020 Regular Session that creates "social equity" licensees and alters qualifications to include a retail marijuana store licensee and mentorship programs, financial incentives and reductions in application/license fees for applicants who meet the criteria. It also expands the Governor's power to pardon individuals convicted of possession of up to 2 ounces of marijuana without certificate from any other judicial or correctional entity.[16]

Nevada

The work group is unaware of a social equity program in Nevada.

[14] (City of Los Angeles Department of Cannabis Regulation, 2019)
[15] (The City of Portland Oregon, 2020)
[16] (Social Equity Licensees In Regulated Marijuana, 2020)

Chapter 5: Existing Virginia Cannabis Programs and Potential Goals of Legal Adult-use of Marijuana

Section 5.1 – Virginia's Industrial Hemp Program

Source: Virginia Cooperative Extension/Virginia State University Hemp Research Program

In Virginia, the Virginia Department of Agriculture and Consumer Services (VDACS) regulates industrial hemp cultivation and processing. The federal Agricultural Act of 2014 defined industrial hemp, in part, as *Cannabis sativa L.* with a delta-9 tetrahydrocannabinol (THC) concentration of not more than 0.3 percent and permitted an institution of higher education or a state department of agriculture to grow or cultivate industrial hemp if (i) the industrial hemp was grown or cultivated for purposes of research conducted under an agricultural pilot program or other agricultural or academic research and (ii) the growing or cultivating of industrial hemp was allowed under the laws of the state in which such institutions of higher education or state department of agriculture is located. The Virginia Industrial Hemp Law (Va. Code § 3.2-4112 et seq.) was enacted by the 2015 Session of the General Assembly and authorized the Commissioner of Agriculture and Consumer Services (Commissioner) to establish and oversee an industrial hemp research program directly managed by public institutions of higher education.

The federal Agricultural Act of 2018 ("2018 Farm Bill"), which was signed in December 2018, included hemp-related provisions that allow for the commercial production of hemp in the U.S. and require the U.S. Department of Agriculture (USDA) to promulgate regulations regarding the production of hemp. The 2018 Farm Bill established a new definition of "hemp" and removed hemp from the definition of "marihuana" in the federal Controlled Substances Act. The new definition of "hemp" retains the restriction upon the THC concentration of a cannabis plant in order for that plant to be "hemp" – hemp shall not have more than 0.3 percent THC on a dry weight basis. The new definition explicitly states that all derivatives, extracts, and cannabinoids of "hemp" are also considered "hemp." This new, broader definition of hemp coupled with the removal of hemp from the federal Controlled Substances Acts' definition of "marihuana" would likely create challenges in assigning the regulation of hemp and hemp products to a state entity responsible for administering an adult-use marijuana program.

The 2018 Farm Bill provides that states desiring primary regulatory authority over the production of hemp submit a hemp production regulation plan, through the state's department of agriculture, for USDA's approval after first consulting with the chief law enforcement officer and the Governor of the state. The 2018 Farm Bill also directs USDA to establish a hemp production regulatory program for farmers who desire to grow hemp in a state that does not have a USDA-approved hemp production regulatory plan.

At least 47 states have enacted legislation to establish hemp production programs or to allow for hemp cultivation research. Most of these states have authorized their respective departments of agriculture to regulate hemp production, while some states have authorized their departments of agriculture to share hemp-related responsibilities with a research university or hemp-specific commission. In response to the 2018 Farm Bill, the 2019 Session of Virginia's General Assembly amended the Virginia Industrial Hemp Law to eliminate the previous research requirement for hemp production and allow for the commercial production of industrial hemp, which, by definition, has a THC concentration no greater than that allowed by federal law. Pursuant to the Virginia Industrial Hemp Law, VDACS issues Industrial Hemp Grower, Processor, and Dealer Registrations, which enable the registrant to possess industrial hemp and provide the registrant with an affirmative defense against a marijuana-related charge in Virginia. The Law directs the Commissioner to monitor compliance with the Law, and VDACS uses a risk-based system to select industrial hemp production fields for sampling and THC testing in order to do so.

The 2018 Farm Bill explicitly states that its hemp provisions do not affect or modify (i) the U.S Food and Drug Administration's (FDA) authority regarding the federal Food, Drug, and Cosmetic Act (FD&C Act) or the Public Health Service Act or (ii) the authority of the FDA Commissioner and U.S. Secretary of Health and Human Services pursuant to these laws. The most commonly produced hemp product is a hemp-derived extract such as cannabidiol (CBD) oil. While FDA has advised that it is unlawful to introduce food containing added CBD into interstate commerce or to market CBD as or in a dietary supplement, in an effort to address product quality and consumer safety concerns, VDACS's Food Safety Program has established criteria for manufacturers of hemp-derived extracts that are intended for human consumption and standards for any of these extracts distributed in Virginia. Some states have taken a similar approach, with the state's food regulatory authority, which is typically either the department of agriculture or department of health, regulating hemp products intended for human consumption, while some states are waiting for FDA to develop regulations for cannabis-derived products.

Section 5.2 – Virginia's Pharmaceutical Processor Program

In Virginia, the medical cannabis program is regulated by the Board of Pharmacy, one of 13 health regulatory boards within the Department of Health Professions. Virginia entered into the medical cannabis field in 2015 when the Virginia General Assembly created an affirmative defense for the possession of cannabidiol (CBD) oil and tetrahydrocannabinolic acid (THC-A) oil, initially to address the treatment of intractable epilepsy. Legislation passed in 2016, and reenacted in 2017,

authorized the Board of Pharmacy to issue up to five pharmaceutical processor permits, one in each health service area (HSA) established by the Board of Health. A pharmaceutical processor is authorized to cultivate cannabis plants intended only for producing cannabis oil and dispensing such oil products to board-registered patients. As required in Code, the Board of Pharmacy adopted regulations establishing health, safety, and security requirements for pharmaceutical processors. A Request for Applications (RFA) was released in April 2018 to facilitate a competitive selection process for awarding the five pharmaceutical processor permits. Four of the selected entities awarded conditional approval were subsequently issued a pharmaceutical processor permit. Conditional approval for a fifth entity was rescinded in June 2020 and a RFA is currently open for a pharmaceutical processor permit in HSA I. It is anticipated that the Board of Pharmacy will award conditional approval for an entity to be located in HSA I in the first quarter of 2021.

A pharmaceutical processor operates as a vertically integrated program, cultivating cannabis plants indoors, producing cannabis oil in various formulations, and dispensing these drug formulations to registered patients for treatment or to alleviate the symptoms of any diagnosed condition or disease determined by the practitioner to benefit from such use - an expansion of the original intent to treat intractable epilepsy that was enacted into law in 2018. The pharmaceutical processors operate under the supervision of a pharmacist. Prior to dispensing, an independent laboratory must test a sample from each batch for microbiological contaminants, mycotoxins, heavy metals, pesticide chemical residue, and for purposes of conducting an active ingredient analysis. Only those oils that successfully pass laboratory testing can be registered by the Board of Pharmacy and dispensed to patients.

The prohibition for the oils to contain no more than 5% tetrahydrocannabinol, the psychoactive component of the cannabis plant, was removed in the 2020 General Assembly Session. The formulations are required by the Code of Virginia to contain at least five milligrams of CBD or THC-A and no more than 10 milligrams of THC per dose. The term "dose" is not defined. Current examples of cannabis oil product formulations available include: nasal spray, chewable, suppository, topical gel, oral and vaped oils, wax concentrate, and bubble hash concentrate inhalations. The THC/THC-A combined concentration in the inhalant products range from 35% to 82%, while other formulation types range from 0.25% to 3.5%. The CBD/CBDA combined concentration in the inhalant products range from 0.08% to 4.4% while other formulation types range from 0.0% to 1.1%. In addition to dispensing the cannabis oil products that the pharmaceutical processor produces for its own patients, the processor is also permitted to wholesale distribute cannabis oil products to other permitted pharmaceutical processors.

In 2020, legislation legally expanded the number of dispensing sites in the Commonwealth from five to thirty. The legislation authorizes the Board of Pharmacy to issue permits for up to five cannabis dispensing facilities in each HSA that must be owned in part by the pharmaceutical processor located in that HSA. The cannabis dispensing facilities, which are anticipated to become operational in 2021, will not cultivate nor process any cannabis. These facilities may only dispense cannabis oil products to registered patients.

Federally, marijuana is a Schedule I illicit substance. There is no legal ability under State or Federal law to prescribe it. Hence, its derivative, e.g., cannabis oil as defined in the Code of Virginia,

cannot be prescribed. Instead, the Code of Virginia authorizes a practitioner to issue a written certification recommending the use of the oil. The term "practitioner" is defined to mean a licensed doctor of medicine or osteopathic medicine, physician assistant or nurse practitioner. The written certification form, required by Code to be developed by the Supreme Court of Virginia in consultation with the Virginia Board of Medicine, initially provided an affirmative defense for the patient, parent, legal guardian or registered agent to possess cannabis oil as defined in the Code of Virginia. In 2020, the Code was changed to legalize the possession of cannabis oil if the patient, parent, legal guardian, or registered agent maintains a valid written certification and Board of Pharmacy registration. Per the Code of Virginia, the practitioner may issue the written certification to be valid for no more than 12 months from the date of issuance.

To issue a written certification, the practitioner must first hold a current active license with the Virginia Board of Medicine, or in the case of nurse practitioners, a license issued jointly by the Virginia Boards of Nursing and Medicine. The practitioner must also obtain registration from the Virginia Board of Pharmacy. A practitioner issuing a written certification for the use of cannabis oil must evaluate the patient, perform an examination, and make a diagnosis. The practitioner may determine the manner and frequency of patient care and evaluation, which may include the use of telemedicine consistent with federal requirements for the prescribing of Schedules II through V controlled substances. These tasks cannot be delegated to another practitioner. The practitioner must be of the opinion that the potential benefits of cannabis oil outweigh the risks associated with its use. The practitioner must query the patient in the Prescription Monitoring Program, which should include an evaluation of whether the patient has a current written certification issued by another practitioner, because a patient may only possess one unexpired written certification at any time.

Once an individual receives a written certification recommending the use of cannabis oil, the patient and the parent or legal guardian, if applicable, must register with the Board of Pharmacy. The applicant, when applying for registration, must provide a copy of the written certification, along with proof of identity and residency. To legally possess cannabis oil patients must obtain both the written certification and the board registration. These documents must be shown in order to obtain dispensed oils. Patients may not obtain these oils from any location other than a permitted pharmaceutical processor or cannabis dispensing facility, and may receive no more than a ninety-day supply at a time. Patients or their registered agent must currently present the written certification in-person at the pharmaceutical processor or cannabis dispensing facility annually after obtaining a newly issued written certification. Subsequent dispensations may then be delivered to the patient's residence by a delivery agent of the pharmaceutical processor or cannabis dispensing facility. The allowance for a "registered agent" to obtain the oils on behalf of a patient became effective in 2019, following the passage of emergency regulations on this subject. Prior to 2020, only a patient residing in the Commonwealth was eligible for a patient registration. Legislation passed during the 2020 General Assembly Session expanded eligibility to persons temporarily residing in the Commonwealth.

Section 5.3 – Marijuana Decriminalization

Decriminalization is distinct from legalization in several key ways. States that have decriminalized marijuana typically remove the criminal penalty associated with possession of small amounts of marijuana, but maintain a civil penalty such as a fine. Legalization of marijuana removes criminal and civil penalties and commonly establishes a regulatory system for distribution and use. Decriminalizing simple possession reduces the burden on the criminal justice system and public safety agencies by allowing agencies to focus limited resources on more serious offenses. According to the National Conference of State Legislatures, 27 states and the District of Columbia have decriminalized marijuana as of 2019.

Decriminalization in Virginia

In 2010, Delegate Harvey Morgan introduced the first marijuana decriminalization bill in the Virginia General Assembly.[17] Over the past decade, state legislators have continued to pursue this policy change for multiple reasons, frequently citing racial inequities in the criminal justice system and the rising marijuana arrest rates across the Commonwealth. In 2018, nearly 29,000 Virginians were arrested for marijuana-related charges, up from approximately 20,000 arrests in 2009.[18] Nationally, about 40 percent of all drug arrests are related to marijuana, but in Virginia 60 percent of all drug arrests are marijuana-related.[19]

Black Virginians are approximately three times more likely to be arrested for marijuana-related charges than white Virginians.[20] This disparity is even greater in certain areas of the Commonwealth. For example, in Arlington County, the marijuana arrest rate for Black individuals is about eight times higher than white people.[21] Individuals with charges or convictions for simple possession of marijuana often face significant challenges obtaining employment, certain professional certificates or licenses, and housing in addition to other barriers.

A marijuana decriminalization bill passed in the 2020 General Assembly Session. The legislation carried by Delegate Charniele Herring (HB972)[22] and Senator Adam Ebbin (SB2)[23] went into effect on July 1, 2020. This law decriminalized marijuana and created a $25 civil penalty for simple possession. Under the new legislation, a person found to have one ounce of marijuana or less would have a rebuttable presumption that it is for personal use. At this point, it is too early to assess how this law has affected other types of marijuana-related convictions aside for simple possession of marijuana.

[17] (Marijuana; Decriminalizes Simple Possession Thereof, Civil Penalty., 2010)
[18] (Uniform Crime Reporting Section Department of State Police, 2009)
[19] (FBI: UCR, 2017)
[20] (Capital News Service, 2017)
[21] (Capital News Service, 2017)
[22] (Marijuana; Definitions, Possession and Consumption, Civil Penalties, Report., 2020)
[23] (Marijuana; Definitions, Possession and Consumption, Civil Penalties, Report., 2019)

Section 5.4 – Potential Goals of Legal Adult-use Marijuana

The work group heard from experts about the importance of considering all of the potential goals associated with legalizing marijuana and creating a regulatory program for adult-use.[24] These goals could include protecting public health, undoing the past harms of criminalization, creating opportunities for equitable industry participation, raising tax revenues, or ensuring the continued success of Virginia's existing cannabis programs. It is likely that Virginia would seek to meet a combination of these goals, and any program the Commonwealth creates should reflect these objectives.

For example, a program that seeks primarily to protect public health would need to be more tightly controlled by the Commonwealth. One option would be for the Commonwealth to have a monopoly on the sale of marijuana products. However, this could conflict with another goal of ensuring equitable industry participation. A state-run marijuana industry may also incur some legal risk given marijuana's illegality at the federal level. A program that values public health would likely also include specific standards for products themselves, as well as advertising, packaging and labeling, and the location of establishments. Furthermore, Virginia could consider utilizing newly generated revenue to fund public health efforts, such as education campaigns and behavioral health priorities.

If Virginia places a high priority on undoing the past harms of criminalization and ensuring equitable participation in a new marijuana industry, there are several policy directions that could fulfill these goals. The Commonwealth could continue to build upon the policies included in the 2019 marijuana decriminalization law, which seals certain marijuana-related convictions and seeks to rectify decades of disproportionate harm to communities of color. Virginia could also follow the lead of several other states and create a licensing program that gives strong consideration to social equity objectives. This could include separate license categories and associated license costs, assistance from the Commonwealth in the form of loans, grants, and business-planning expertise. Additionally, Virginia could dedicate certain revenue to community redevelopment efforts in those areas where marijuana prohibition has had disproportionately adverse impacts.

A program that seeks to maximize the amount of tax revenue the Commonwealth collects from marijuana sales would likely concentrate on finding an optimal tax rate for the product while also encouraging growth of the industry itself. While much is still unknown about the price elasticity of demand of marijuana products, the total potential demand for those products, and the possible size of a marijuana sector, the Commonwealth will need to consider how each of those factors could impact the total amount of revenue. This objective could also be considered in tandem with a potential goal of job creation for Virginians and additional economic development. However, each of these could potentially conflict with the public health goals stated above, as a growing marijuana industry will likely have impacts on both consumption rates and rates of behavioral health issues, such as substance use disorder.

[24] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)

Finally, one additional aim of a legal adult-use marijuana program could be to protect and ensure the continued success of Virginia's existing cannabis programs, which were outlined above. The industrial hemp program has created new opportunities for farmers and other entrepreneurs, and the pharmaceutical processing program has created new treatment options for thousands of Virginians, not to mention that multiple companies have made an already sizable capital investment to grow, process, and sell cannabis-based pharmaceutical products. The Commonwealth would likely need to consider how these programs would potentially be impacted, in terms of both challenges and opportunities, by changes in state laws and regulations regarding cannabis.

Chapter 6: Feasibility of Legalizing the Sale and Personal Use of Marijuana

Section 6.1: Regulatory Structural Considerations

States that have implemented adult-use marijuana programs have considered regulatory systems focused heavily on licensure requirements for individuals or businesses involved in the cannabis industry and robust seed-to-sale track-and-trace systems for cannabis and cannabis products. Oversight of the industry will likely include management of a licensing and credentialing system, ensuring compliance with tax collection and remittance requirements, and administering a system designed to prevent the illegal diversion or inversion of marijuana products.

There are also other important functions that must be addressed in a regulatory framework, including establishing product standards and safety requirements and addressing social equity objectives. In order to accomplish these goals, a comprehensive organizational and regulatory framework is necessary to ensure the effective and equitable oversight of an adult-use marijuana program in Virginia.

The lead regulatory agency must have adequate resources, a strong management structure, and competent technical experts. This agency must be vested with appropriate rulemaking authority to effectively regulate the industry. Additionally, the agency with primary authority to oversee the marijuana industry must also ensure that regulation of marijuana-related businesses and products is integrated into the existing regulatory framework.

States with established adult-use marijuana programs have used a variety of approaches to address the need for regulatory oversight of a state-managed program. Some states have chosen to incorporate marijuana regulatory oversight within a single existing agency, other states have established an entirely new agency or commission to oversee marijuana programs, and a few states handle marijuana regulation by splitting duties between existing agencies. Leaders in other states typically noted the benefits of having the primary regulatory authority in one agency.

Some of the considerations given to the establishment of a new adult-use marijuana program, either regulated by a stand-alone agency or as a new program within an existing agency, include:

- the cost of establishing a program;
- the number and types of positions necessary to establish and effectively administer a program;
- the rulemaking authority vested in the lead regulatory agency, and
- the timeline determined for the program to become operational.

While each state regulating adult-use marijuana uses a unique organizational structure, there are common categories of technical roles necessary to operate the agency or commission. The types of positions include:

- Licensing and registration staff
- Auditing and investigation staff
- Financial analysts/financial processing
- Data analysts
- Software administrators for a seed to sale tracking system and other applications
- Scientific or laboratory positions
- Internal support positions – (i.e. Human Resources, Policy, IT, FOIA)
- Liaison position(s) to coordinate regulatory work with other regulatory agencies

Members of the Virginia Marijuana Legalization Work Group concluded that Virginia should build a robust agency structure to regulate a new legal adult-use marijuana industry. The work group concluded that all functions should be housed within one agency. The group discussed the merits of either creating a stand-alone agency or housing this function within an existing regulatory agency (e.g., ABC).

As a member of the work group, staff from the Virginia Department of Agriculture and Consumer Services (VDACS) solicited information from various states with adult-use marijuana programs in order to explore their organizational structures and to estimate the potential fiscal impact of starting an adult-use marijuana program managed by a state agency. VDACS staff communicated with marijuana regulators in Colorado, Oregon, Nevada, and California regarding the operating structure and budgets associated with their programs.[25]

In 2012, Colorado voters passed Amendment 64, allowing for adult-use marijuana sales, and, in January of 2014, the first recreational marijuana dispensaries opened in Colorado. The Marijuana Enforcement Division (MED) was established within the Colorado Department of Revenue to be that state's licensing authority and primary regulator of both the adult-use and medical marijuana sectors. The MED appropriation for fiscal year 2020 was approximately $22.2 million. During a telephone conversation with regulators in Colorado, VDACS staff noted that the Colorado MED has approximately 150 full-time equivalent positions (FTEs) with a large portion of employees in licensing and enforcement. MED also shares certain administrative positions in human resources and budget and some information technology services with the rest of the Department of Revenue, the agency in which MED is housed.

In Oregon, the Oregon Liquor Control Commission (OLCC) administers the state's adult-use marijuana program. Previously, this was solely the alcohol regulatory agency. In Oregon, the medical marijuana program is administered by a different state agency. OLCC reports that its operating budget for the oversight of the recreational marijuana program was $19 million for the 2017-2019 biennium. This budget covers 59 positions directly related to the marijuana program, including policy, enforcement, licensing, and data analysis positions as well as 10 additional positions for support services within the agency, including procurement, communication, information technology, and financial services.

Nevada, with a much newer marijuana program, has both medical and recreational marijuana regulatory oversight under one program overseen by the Nevada Cannabis Compliance Board

[25] See Appendix 5 - Meeting Minutes and Materials (September 11 Fiscal & Structural Meeting)

(CCB). The CCB is a stand-alone entity established by the Nevada legislature in 2019. The CCB currently has approximately 44 FTEs. The program started by overseeing medical marijuana and added 32 FTEs when recreational marijuana oversight was included in the agency's responsibilities. The program had requested an additional 21 FTEs for fiscal year 2021 at the time VDACS staff spoke with CCB representatives. It is important to note that the CCB is approved for 60 FTE's, however, due to COVID-19 and statewide budget constraints, the CCB is maintaining limited staffing. In fiscal year 2020 the CCB generated $50,219,530 in total revenue. Of this total amount collected, $39,740,986 went to the Nevada Distributive School Account, $5,000,000 went to local government grants, and approximately $5,478,544 was used for program payroll and operations.

In California, regulatory oversight of marijuana is split between multiple agencies. This system appears to be overly complex and potentially confusing for both regulated businesses and the regulatory agencies. The California Department of Food and Agriculture (CDFA) licenses and regulates marijuana cultivation in that state, while the Bureau of Cannabis Control is the lead agency in regulating commercial cannabis licenses for medical and adult-use cannabis. Additionally, the California Department of Public Health's Manufactured Cannabis Safety Branch (MCSB) is one of three state licensing authorities charged with licensing and regulating commercial cannabis activity in California. MCSB is responsible for the regulation of all commercial cannabis manufacturing in California. Members of the Virginia Marijuana Legalization Work Group concluded that splitting primary regulatory oversight between multiple agencies would not be an effective or efficient strategy in Virginia. Again, the work group concluded that the primary marijuana regulatory function in Virginia should be housed within one agency.

In addition to addressing the primary regulatory function, many states interviewed by members of the work group noted the importance of considering existing state agencies and established programs and regulations that will influence the industry. Regulatory agencies in other states consistently mentioned the value of cross-agency collaboration on issues involving product safety, consumer protection, and environmental stewardship. Specifically, these states pointed to the importance of addressing critical issues such as (i) pesticide use on cannabis and testing for pesticide residues and other adulterants in consumer products, (ii) food safety inspections for marijuana-infused food and beverage products, (iii) the certification of weighing and measuring devices used in the industry, (iv) plant pest issues involved with a new crop, and (v) natural resource considerations around water utilization and energy consumption. These are all areas currently regulated by existing state agencies in Virginia. The states interviewed by VDACS staff noted a significant increase in demand for services such as scale certifications, pesticide misuse investigations, and food safety inspections for edibles manufacturers, which were typically not services under the purview of the primary marijuana regulator.

The greatest initial obstacle to implementing an adult-use marijuana program in many states appeared to be the challenges of securing adequate start-up funding for a new program, coupled with an aggressive timeline established for initiating the first retail sales. For example, in Washington and Colorado, the first retail dispensaries were licensed and conducting sales less than 24 months after the legalization of adult-use marijuana.

In Colorado, Amendment 64 passed on November 6, 2012, making Colorado one of the first states to legalize recreational marijuana. At the same time, the state of Washington also passed a recreational marijuana law, Initiative 502 (I-502), similar to Amendment 64.

In May of 2013, Colorado Governor John Hickenlooper signed legislation regarding the regulation of adult-use marijuana. On September 9, 2013, the Colorado Department of Revenue adopted final regulations for recreational marijuana. The regulation covered issues such as licensing fees, inventory tracking, security requirements, waste disposal, packaging, and advertising. On January 1, 2014, adult-use marijuana businesses began selling marijuana for the first time in Colorado.

After passage of I-502 in Washington, the Washington State Liquor and Cannabis Board had a deadline of December 1, 2013, for establishing regulations for the new adult-use marijuana industry. On November 18, 2013, Washington began accepting applications for marijuana business licenses. Adult-use retail sales began in Washington in July 2014.

An aggressive implementation timeline, similar to the ones undertaken by Colorado, Washington, and many other states, would be extremely difficult to accomplish in Virginia given the standard three-step rulemaking process established by the Virginia Administrative Process Act (APA). A compressed timeline would also be difficult to manage if Virginia decided to create an entirely new state agency to handle marijuana oversight. Even consolidating primary regulatory oversight within an existing regulatory agency will pose implementation challenges.

No matter which agency takes primary regulatory responsibility, the work group heard from many different states that Virginia should expect to spend more time setting up a program than originally anticipated, with a general consensus of nothing shorter than 18-24 months being feasible or prudent. Although it would likely not make much difference in the overall establishment timeline, in order to ensure flexibility and provide the ability to adapt to an industry that is quickly growing and changing, Virginia could also consider exempting certain regulatory processes from the APA. However, this will need to be considered alongside all of the Commonwealth's other potential goals for legalization.

Several states interviewed by members of the Virginia Marijuana Legalization Work Group noted start-up challenges related to initial budget appropriations. Many states use revenue generated from licensing fees to fund marijuana oversight. The primary regulatory agency often has the rulemaking authority to set and adjust licensing fees in order to adequately support their operations. Once a program is operational, this system can be self-sustaining. Many states noted, however, that inadequate consideration and resources were provided during the start-up phase of adult-use regulation, prior to adequate revenues being generated by licensing fees. For example, the work group heard from Massachusetts, whose legislature provided no initial funding for its new marijuana regulatory agency, about the difficulties that decision created for the board and staff tasked with creating a new program from scratch.[26]

One reason other states such as Colorado and Washington were able to quickly implement adult-use marijuana retail sales programs is that these states previously had established medical

[26] See Appendix 5 - Meeting Minutes and Materials (September 11 Fiscal & Structural Meeting)

marijuana programs that offered licensing structures, retail location options, and allowances for a variety of marijuana products similar to what was subsequently allowed under their adult-use programs. These states were able to quickly allow certain existing medical marijuana businesses to transition to adult-use businesses.

While Virginia's medical marijuana program is more limited than the medical marijuana programs in many of the states that have already undertaken adult-use legalization, members of the Virginia Marijuana Legalization Work Group were interested in allowing Virginia's existing medical marijuana businesses to be the first to transition into adult-use production and sales. This would serve as a bridge until a new regulatory framework is developed for a fully operational adult-use market and industry. However, the group did not reach consensus on this point, and there should be additional consideration regarding these existing companies' ability to meet the initial demand for legal marijuana products, a key aspect of establishing consumer trust in order to encourage the dissolution of the existing illicit market and the potential for these companies to gain an insurmountable lead in market share before other businesses can become operational. Additionally, the work group discussed an interest in combining regulatory oversight of both the adult-use sector and the medical marijuana sector under the authority of one regulatory agency.

While Virginia may consider establishing a new agency to oversee the marijuana industry, the Virginia General Assembly might consider the cost, time, and operational efficiencies of exploring a regulatory structure that uses the framework of an existing agency to administer marijuana programs. In at least three states, the decision was made to house regulatory authority for cannabis in the already established alcohol control agency of the state. Washington, Oregon, and Alaska all have a combined alcohol and cannabis regulatory agency. In these cases, the states leveraged the licensing structure, expertise, and personnel involved in alcohol regulation to more quickly establish the regulation of cannabis. Having been legalized following the repeal of Prohibition in 1934, alcohol remains a controlled substance subject to extensive licensing and regulatory requirements.

There are potential benefits of incorporating the regulation of cannabis into the Virginia Alcoholic Beverage Control Authority (ABC), the organization responsible for regulation alcohol in the Commonwealth. Currently, ABC has the infrastructure to support a regulatory mission. Fewer additional employees would need to be hired to provide Human Resources, Finance, and Procurement services. ABC's leadership structure is already established and could focus on initiating the regulatory process rather than establishing a new organization. As a regulator, ABC has experience in regulating a controlled substance and working with manufacturers, wholesalers, and retailers – all potential participants in a legal cannabis market. ABC also has a dedicated enforcement division which functions as a regulatory actor with police powers. Just as it does with alcohol, ABC can regulate businesses, provide guidance and regulatory enforcement. Additionally, ABC has law enforcement capabilities at its disposal. ABC currently administers over 19,000 annual licenses that range from small family businesses to large multi-national corporations. It will be important to properly fund the agency to create an effective regulatory program that does not impede other aspects of ABC's mission, if cannabis regulation is also assigned to ABC.

While ABC has extensive experience on licensing and regulatory matters, it would still need support and input from other state agencies with cannabis expertise. It would be reasonable to

anticipate that VDACS would need to continue to be involved from a grower and chemical application perspective. Additionally, involvement from the Virginia Board of Pharmacy, with its experience with the medical marijuana program would be beneficial. These are just two examples of the need for involvement from other state bodies. However, ABC already has experience coordinating efforts with other agencies regarding taxation issues, health matters, and law enforcement in performing its current obligations. Assigning responsibility to a single entity would still involve expertise from a number of other entities to be successful and would likely provide a sustainable model for regulating the cannabis industry.

Section 6.2: Estimated Costs of Implementation

The following "fiscal impact" analysis is based on the potential concept that the Virginia ABC Authority may be tasked with regulating marijuana in the Commonwealth. The Commonwealth could also decide to give authority to a separate new agency, and the additional potential costs associated with that are not reflected here.

The analysis is speculative at best until specific legislation is introduced and considered by the General Assembly and specific "costs" can be associated with a market the General Assembly may choose to authorize.

This analysis is based on experiences from other states and to respond to a report being developed by the Executive Branch as to how best to regulate marijuana in the Commonwealth. It is also based on the real life experiences by ABC in regulating the controlled substance of alcohol in the Commonwealth and the components of regulating that substance that reach beyond the efforts of law enforcement. For instance, this could include education and prevention, a system of providing due process to violators, communicating regulatory interpretations, and other factors incidental to creating a public safety environment to avoid abuse and apply an indiscriminate environment for the proposed activity.

Total Potential Needs – 93 FTEs: $8,961,000.00

I. <u>Administration and Support:</u> 44 FTEs at $4,081,000.00

Associate Legal Counsel and Government Relations: 3 Attorneys, 1 Paralegal, and 1 Legislative and Regulatory Specialist
Hearings: 1 Hearing Officer
Cost: $632,000.00

Licensing: 15 – this would include processing and assisting applicants through the licensing process. Furthermore, these staff would work along with Social Equity Program staff to reach out to communities to educate stakeholders about the program and assist with the licensing process.
Cost: $1,125,000.00

- Additional training and authority would be given to the licensing unit to investigate and make determinations working closely with the field operations staff. Investigators would assist in reviewing application for concerns around hidden ownership, public safety issues, etc., but the licensing staff would be responsible for collecting and validating application

materials. Furthermore, the goal of this office would be to establish strong collaborative relationships with license applicants and licensees to help businesses through the various processes and find ways to make the marijuana regulations work for them.

Social Equity Program (does not include potential funding needs for grants, loans, and business planning support): 10 – 1 Director and 9 Program Specialists
Cost: $959,000.00

Human Resources: 2
Education and Prevention: 2
IT Support: 2
Finance: 2
Procurement: 1
Business Transformation Office/Change: 1 Change Management Analyst and 2 Policy Analysts
Communications: 1
Cost: $1,365,000.00

II. Bureau of Law Enforcement: 49 FTEs at $4,880,000.00

Operations: Field staff – sworn and non-sworn, 20 sworn and 20 non-sworn (40). Sworn and non-sworn would work together seamlessly with a strong knowledge base of the licensing, regulatory compliance, and investigations to ensure regulatory compliance.
Cost: $4,000,000.00 (Includes Limited Equipment and Training Related Costs)

Tax Management: Tax Examiners 5
Cost: $350,000.00

Compliance Audit: 4
Cost: $280,000.00

Seed-to-sale tracking and tracing software – this is necessary to prevent diversion of product. Most states have adopted an RFID tag model that tracks products through each stage of the supply chain. Generally, companies that offer this technology contract with the state for the software itself and then sell the RFID tags themselves directly to the licensed businesses.
Cost: $250,000.00

Conclusion
Once again, this analysis is based on the concept of Virginia ABC assuming primary regulatory authority over a potential marijuana program. One additional option the Commonwealth has to consider is creating a new agency altogether, and this would create some unspecified additional costs. Furthermore, the work group did not discuss potential funding mechanisms to cover the start-up costs for a new agency or division, but Virginia has several options in this regard.

Chapter 7: Potential Revenue Impacts

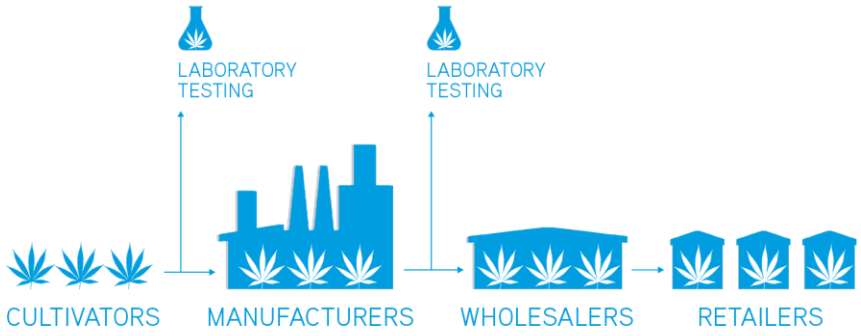
Section 7.1: Economic Impact Estimates

Estimating the economic impact of an industry involves tracing the economic output of that industry backwards through its supply chain and the household spending of associated workers. In an established industry, models utilize input-output tables that describe the flow of sales and purchases between producers and consumers. However, public data on the relatively young and concentrated adult-use marijuana industry is limited to a handful of states as well as private companies. Little public data exists quantifying the supply chain relationships between end consumers, retail establishments, manufacturers, cultivators, and other related industries.

This report utilizes several existing industries as proxies for marijuana-based industries to broadly estimate the possible economic impact of legalizing adult-use of marijuana in Virginia. These proxies function under a different legal framework than an anticipated marijuana industry likely would. Regulatory factors such as vertical and/or horizontal integration, licensing quotas, and taxation structure are not considered in the estimates detailed below, and such factors will influence the economic impact of the industry.

The model described below makes use of similar reports undertaken by the Rockefeller Institute of Government and the Marijuana Policy Group (MPG) to estimate the composition of a hypothetical marijuana workforce. In a 2016 report on the economic impact of marijuana legalization in Colorado, MPG estimated that the direct employment created by marijuana legalization totaled 12,591 FTEs.[27] Those FTEs were divided by industry segment:

- Retail operations: 4,407 (35%)
- Administration: 2,770 (22%)
- Manufacturing: 2,015 (16%)
- Management: 1,889 (15%)
- Agriculture: 1,511 (12%)



A potential marijuana industry supply chain (Source: Rockefeller Institute of Government)

[27] (Marijuana Policy Group, 2016)

In order to estimate a hypothetical marijuana industry in Virginia, similar industries (using the IMPLAN classification system) are chosen as proxies:

- Retail operations: Miscellaneous store retailers (35%)
- Administration: Office administrative services (22%)
- Manufacturing: (16%)
    - Non-chocolate confectionery manufacturing (8%)
    - Medicinal and botanical manufacturing (8%)
- Management: Management of companies and enterprises (15%)
- Agriculture: Greenhouse, nursery, and floriculture production (12%)

Some of the proxies are natural fits in accordance with 2017 NAICS designations (retail, agriculture, management, and administration). However, the non-chocolate confectionary-manufacturing sector was added to mimic the frequent sales of marijuana-infused edible products in addition to dried flowers and concentrates. MPG's 2016 report proposes an industrial classification within the NAICS for infused marijuana product as part of the non-chocolate and confectionary-manufacturing sector.

The employment distribution was modeled as a proxy to industry output. Industry output is generally utilized as the model input to estimate the number of FTEs supported by a change in that output. However, data on the output of each marijuana-based sector is not readily available. Modeling an employment change of 100 FTEs (converted to IMPLAN Employment) with those FTEs distributed as described above allows us to estimate the economic multiplier[28] of such a hypothetical industry at 1.789. This suggests that for $1.00 in economic output in the marijuana industry in Virginia, another $0.79 is likely to be generated through indirect effects (suppliers) and induced effects (household spending). For reference, an economic multiplier of 1.789 would be greater than that of breweries in Virginia, at 1.42, and around that of full-service restaurants.

A multiplier of 1.789 would be conservative compared to some estimates of other economies. MPG estimated Colorado's marijuana retailing multiplier at 2.398.[29] The Rockefeller Institute of Government estimated a potential adult-use marijuana industry in New York could have a multiplier of 1.885.[30]

Applying the 1.789 multiplier to the hypothetical markets below, we estimate that the economic impact of an adult-use marijuana market in Virginia ranges from $698 million to $1.2 billion.

[28] Type SAM multiplier, which is calculated as the sum of direct, indirect, and induced output divided by direct output.
[29] (Marijuana Policy Group, 2016)
[30] (Schultz, 2019)

Table 7.1: Potential adult-use marijuana sales markets in Virginia

Comparison basis	2017 Sales[a, b, c]	Monthly users[d]	Sales per user	Va. Users[d]	Va. Sales (est.)	Total impact (Sales * 1.789)
Oregon	$523,000,000	640,000	$817	477,000	$389,798,438	$697,349,405
Colorado	$1,091,000,000	779,000	$1,401	477,000	$668,044,929	$1,195,132,379
Washington	$927,000,000	971,000	$955	477,000	$455,385,170	$814,684,069

[a] Oregon Liquor Control Commission. "Marijuana Market Data," 2020. https://www.oregon.gov/olcc/marijuana/Pages/Marijuana-Market-Data.aspx.
[b] Colorado Department of Revenue. "Marijuana Sales Historical Report, January 2014 to Date," 2020.
[c] Dab Software. "Washington i502 Marijuana Sales Data." 502 Data, 2020. https://502data.com/.
[d] National Survey on Drug Use and Health, 2017 and 2018. "Table 3. Marijuana Use in the Past Month." SAMHSA, Center for Behavioral Health Statistics and Quality, 2020.

Virginia sales figures of adult-use marijuana are unlikely to match the hypothetical markets in the first one to three years following legalization. The 2017 annual sales in reference states represent markets that have been established for more than one year. In Colorado, a mature medical cannabis market aided the growth of the adult-use market. Virginia can expect slower growth.

This modeling also fails to account for the necessarily intrastate nature of an adult-use marijuana industry. Due to the legal status of the marijuana industry, most supply chain purchasing would happen within Virginia. Economic models based on existing industries mimic the supply chain purchasing patterns of those industries, some of which likely happens outside of Virginia. When these dollars are spent outside of the Commonwealth, their economic impact happens elsewhere. Greater intrastate trading in the marijuana industry would result in a larger economic multiplier.

Section 7.2: Revenue Estimates

The potential magnitude of revenues from collecting the existing Retail Sales and Use Tax and imposing a retail-level excise tax on marijuana sales can be estimated based on data from other states that have emerging marijuana markets. The estimate in this report begins with adult marijuana sales for Illinois and Michigan. Michigan legalized adult-use marijuana sales effective December 2019 and Illinois legalized such sales effective January 2020. Sales for the first 10 months for Michigan and 9 months for Illinois were used to estimate an average monthly purchase of adult marijuana in each state. The potential number of adults purchasing marijuana in Michigan and Illinois was estimated using each state's 2019 population estimates. The population figures were then reduced by subtracting out those under the age of 18. The over 18 populations were multiplied by each state's usage rate provided by the Substance Abuse and Mental Health Data Archive[31] to estimate the number of potential purchasers of marijuana in each state. The average monthly sales were then divided by the number of potential purchasers to generate an estimate of the monthly sales per purchaser. These estimates for Michigan and Illinois were averaged for an estimated per monthly sales of $42.37 per potential purchaser.

[31] (Substance Abuse & Mental Health Data Archive, 2017)

This average monthly sales figure was multiplied by the estimated number of purchasers in Virginia to estimate the monthly Virginia sales. Those estimated sales were used to estimate the revenue from excise taxes at various rates (10%, 15%, 20%, and 25%) and sales tax revenue. Because Virginia's Retail Sales and Use Tax varies by region and locality, ranging from 5.3% to 7%, the estimate assumes a blended 5.67% Retail Sales and Use Tax rate. Actual sales for Washington and Colorado, which have mature adult marijuana sales markets, were used to produce estimated growth rates for Virginia from year one to year two and beyond.

For illustrative purposes, this estimate assumes an effective date of July 1, 2021. Due to the time necessary to build a regulatory framework, it is likely that the actual effective date of any legislation would be delayed. Any future estimates would need to be adjusted to take into account the effective date of the legislation, as well as the specific regulatory and tax structure proposed in such legislation.

Using this framework, it is estimated that between $35 million and $69 million in Retail Sales and Use and retail excise tax revenues could be generated in the initial year that such legislation becomes effective. Such revenues would grow exponentially, reaching a potential range of $140 million to $274 million in the fifth year of implementation. See Table 7.2 below for more details.

Table 7.2: Estimated Revenue for the Sale of Adult Marijuana in Virginia at Various Excise Rates
Using Data from States with Emerging Marijuana Markets*

Excise Tax Rate	Sales Tax Rate	Year One FY2022**	Year Two FY2023	Year Three FY2024	Year Four FY 2025	Year Five FY2026
10%	5.67%	$35.4	$73.1	$107.3	$130.1	$140.1
15%	5.67%	$46.7	$96.5	$141.6	$171.6	$184.8
20%	5.67%	$58.1	$119.8	$175.8	$213.1	$229.5
25%	5.67%	$69.4	$143.1	$210.1	$254.6	$274.3

**Based on Illinois and Michigan; includes both excise and sales tax revenues; amounts in millions*
***11 months of tax receipts*

There are several limitations to this estimate and, therefore, it should be considered a preliminary estimate intended to provide a potential order of magnitude. Limitations include the following:

- There is no consideration of elasticity within the estimate. Accordingly, estimated sales do not decrease when the 10% excise tax rate is increased to 15%, 20%, or 25%. Incorporating assumptions about elasticity would reduce the amount of revenues generated at the higher excise tax rates.
- The estimate does not directly take into account the illegal marijuana market in Virginia. This could impact the revenue estimate to the extent that the illegal market in Virginia would differ significantly from Michigan and Illinois.

- There is no accounting of the portion of sales that would be generated by in-state residents and out-of-state commuters or visitors. This factor could also impact the estimated revenue collections.
- There is no consideration for how robust the Virginia-specific market may be or the magnitude of brand loyalty that purchasers may have. There are also no specific adjustments for pricing differences that may exist between Virginia and the other states.
- The estimate assumes a tax, regulatory, and price structure similar to those in place in Illinois and Michigan. Any differences in the tax or regulatory framework would impact the estimated amount of revenues that would be collected.
- The estimate includes the excise tax and sales and retail tax only. It does not consider wholesale taxes, licensing fees, or any other potential revenue sources from the adult marijuana industry.

If specific legislation is introduced by the General Assembly, Tax Department staff recommend that the specific provisions of the legislation, especially those related to regulatory and tax structure, be carefully considered so that these factors can be incorporated into the revenue analysis to generate a more accurate estimate of revenue collections.

Section 7.3: Tax Structure

The work group discussed several options with regard to how Virginia could structure the taxation of marijuana, and as discussed in the above section, the actual revenue impacts to the Commonwealth would be dependent upon the final tax structure. The work group found consensus on a few different areas relating to a potential tax structure.

First, the group discussed where in the supply chain a potential excise tax should be collected and settled generally on a recommendation that a tax on the product at the retail level would be preferable. This is the option most states have chosen, and it is the method reflected in the above revenue estimate analysis. However, the group also considered that it could be easier and more straightforward for the agency that is collecting the tax to collect it at the wholesale level, as there are likely to be fewer wholesalers of the product than there are retailers. This would mirror Virginia's excise tax on alcohol.

The group also discussed which agency would be best suited to collect a potential excise tax and audit licensees for compliance. Due to the nature of the product itself and the complexities of a brand new industry, a consensus emerged that the agency tasked with regulating the industry would be best positioned to serve this function, rather than the Virginia Department of Taxation. Again, this mirrors Virginia's taxation system for alcohol. Whichever agency has taxation authority will need to fully understand the market, the licensed sellers, and the product mix.

Furthermore, the group discussed exploring a structure which taxes different product types at varying rates to meet certain public health goals, such as decreasing usage of higher potency products. The health impacts subcommittee recommended strongly considering a tiered tax system

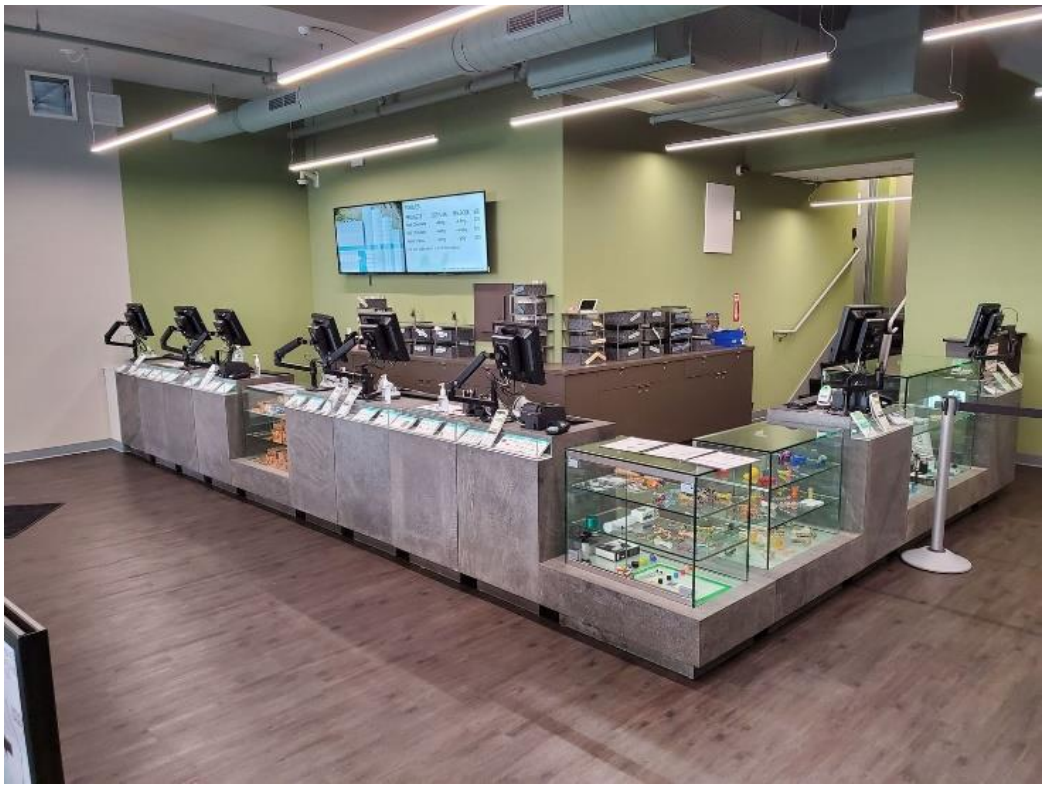
based on THC, as Illinois did. Another option to consider would be basing a tax schedule on product category, such as taxing marijuana flower, edible products, and vaped products at different rates. The group did not make a recommendation about what varying rates should be, but it is important to keep in mind that whatever tax structure Virginia decides upon will influence the total amount of possible revenue for the state.

As for the level of an excise tax (or taxes) itself, the group did not recommend a quantitative value. Generally, there was a consensus that the tax rate should be high enough to cover the costs of implementing the state program and to cover any other revenue goals the Commonwealth has. Furthermore, this would demonstrate to consumers that the products themselves are safe (e.g., free from adulterants) to consume. However, the tax rate should not be so high as to encourage an illicit market. As discussed in the preceding section, which provides a range of potential tax rates and associated revenues, there are still many variables and unknown factors related to taxation.

Chapter 8: Necessary Regulatory Framework

Section 8.1: Industry Structure

Legal adult-use marijuana would be a completely new industry in Virginia, so the group spent time discussing the potential structure of this industry. Discussion points included the Commonwealth's involvement in the actual sale of the products and the various pieces of an industry supply chain, including the possibility of vertical integration.



A marijuana retailer in Lynn, Massachusetts (Source: The Boston Globe)

Marijuana is federally illegal, so the Commonwealth would need to ensure that all marijuana commerce remains intrastate. The group discussed how Virginia could regulate the industry to keep all commerce within state lines. Virginia is one of seventeen states that hold a monopoly on the retail sale of liquor, and the work group discussed whether Virginia should develop a similar model for adult-use marijuana.

Experts told the group that state or non-profit organizations serving as the retailer of the product could support certain public health goals, as these entities typically do not have the same profit-

seeking objectives as private industry. A state-run program would allow the Commonwealth to maintain a very controlled industry. Furthermore, holding this type of monopoly would be helpful in tracking exactly where products are sold in order to prevent diversion across state lines. However, having the Commonwealth itself in the business of selling a product that is federally illegal could be problematic. As mentioned in the section about a potential regulatory structure, Virginia could utilize a seed-to-sale tracking system, as other states have done, to prevent diversion. There was also consensus that the Commonwealth should seek to develop a commercial market, attract consumers from the current illicit market, and allow market participation by Virginians, especially those who have been harmed by the past criminalization of the product.

The work group also spent some time discussing the industry supply chain and the possibility of vertical integration. Virginia's current pharmaceutical processor program mostly requires vertical integration, except for some allowance to purchase hemp-derived oil from a registered processor.

The work group recommended that Virginia should allow, but not require vertical integration in the adult-use market. Even though a vertically integrated structure could be more straightforward to regulate, with all cultivating, processing, and retail sales under the same roof, this type of model requires a significant capital investment and would be a large barrier to entry into a new industry.

If Virginia were to prohibit vertical integration, it would limit some firms' ability to utilize that business model to maximize efficiencies. Furthermore, because Virginia already has five vertically integrated companies selling marijuana in the pharmaceutical processor program, the Commonwealth would be forcing those businesses to change their operating model if they chose to also participate in the adult-use market.

Section 8.2: Licensing Structure and Process

Along with the industry structure discussion, the work group also formed some consensus around how the potential licensing structure and process would function in the Commonwealth. If Virginia chooses to allow, but not require vertical integration, a marijuana regulatory agency will need to license several categories of marijuana businesses, including cultivation, processing, distribution and wholesale, retail, and testing. Additional categories the group discussed include delivery, social consumption, and hospitality, which some states are beginning to allow.

This is an area of regulation that could mirror Virginia's existing model for alcoholic beverages to some degree. Businesses would need one or more licenses to participate in relevant sectors of the industry they desire, but the Commonwealth should be careful not to make the license structure too complex, which would be difficult to administer from an agency standpoint and difficult to understand as a business owner. One approach would make each license category as narrow as possible and require a business to hold multiple licenses for each part of the supply chain. For example, a business that seeks to grow, process, and sell the product all under one umbrella would need to hold three separate licenses. Alternatively, Virginia could seek to make each license category as broad as possible with regard to allowable activity. For example, a cultivation license

could also allow for a distribution or wholesale function, allowing the producer the flexibility to get their product to market however they choose.

In this discussion, members expressed concerns about a large number of potential license categories, which would also create administrative difficulty for the agency tasked with regulating the industry.

The group also noted that there should be a separate license process for social equity purposes, and this idea will be discussed further below in the social equity section of this report.

Additionally, the group discussed the licensing process as a whole and formed some consensus around the cost of licensure, the number of available licenses, and the transparency of the process itself. First, the cost to the business owner of both applying for and obtaining a license should not be an insurmountable barrier to entry into the industry. This is particularly relevant for Virginians who are seeking a license under a social equity framework. As discussed in the taxation section, the excise tax and sales tax on the product could cover the cost of running a program, and Virginia would not necessarily need to seek to defray that obligation. While the group did not recommend specific numeric values for these potential costs, they should be congruent with the overall costs of starting a marijuana business and the expected profitability of the business associated with each type of license.

The group agreed on some broad principles regarding the potential number of licenses the state could offer, but there were no specific numbers of licenses identified for each category. However, there was a recognition that because this would be a new industry with many unknown factors, Virginia could begin with a measured approach and limit the number of licenses it issues. On an annual basis, the marijuana regulatory agency could evaluate the program and the market to determine if additional licenses are necessary. The Commonwealth could easily issue new licenses if the market requires them, but it would be very difficult to remove licenses from the marketplace. Additional considerations include distributing licenses in a regional model to prevent one area of Virginia from containing all of the licensed marijuana businesses.

Finally, there was general agreement that the licensing process for this new industry should be straightforward. This would include clear application criteria, a scoring matrix that is made publicly available, and a transparent and timely decision process for license awards.

Section 8.3: Social Equity

Virginia has an opportunity to build upon the work other states have done to create social and racial equity programs as a part of the legalization process. This has three core components: criminal justice reform, access to ownership opportunities, and community reinvestment. These investments are designed to benefit those who have been disproportionately impacted by the enforcement of cannabis prohibition. As mentioned above, according to Virginia State Police data compiled by the Capital News Service, Black Virginians are approximately three times more likely

to be arrested for marijuana-related charges than white Virginians.[32] The impacted individuals include those who were incarcerated, as well as the families of those with cannabis arrests and convictions. Individuals without convictions also felt the impacts of over-policing, gun violence, and disinvestment in their communities, schools, and businesses.

Criminal Justice Reform

Criminal justice reform includes ending arrests and convictions, releasing currently incarcerated individuals, and implementing an automatic sealing or expungement process for cannabis-related convictions. Virginia made strides in 2020 by sealing records and not allowing previous cannabis convictions to be used in hiring decisions via SB2/HB972. However, should the General Assembly choose to legalize adult-use of cannabis, it could also consider expungement. This idea is critical for ensuring Virginians do not continue to face barriers to employment, housing, education, and entrepreneurship and will be discussed further in the "Criminal Code Changes" section. Furthermore, Virginia could provide additional assistance for those who have faced negative consequences of criminalization, and this could include re-entry programs, job training, and housing assistance.

Should adult-use cannabis be legalized, juveniles who use or possess the drug should face consequences that discourage future use. The work group discussed treating youth infractions similar to alcohol (misdemeanor conviction) or tobacco (civil fine). The group also discussed the importance of centering a public health perspective when setting consequences, including providing youth health care and behavioral health support.

Access to Ownership Opportunities

Access to ownership opportunities ensures individuals and communities that experienced the worst impacts of prohibition and disproportionate enforcement are able to benefit from the legalized cannabis industry. The work group discussed four key aspects to providing access to business opportunities in a new cannabis industry.

Other states have designed a social equity license status that prioritizes individuals with cannabis convictions, relatives of those with cannabis convictions, and long-time residents of disproportionately impacted areas (DIAs). Applicants who meet the definition are given first access to cultivation, processing, transportation, and retail licenses. In some states, that has meant priority in regulatory approval. In Illinois, one of the most recent adult-use social equity programs to launch, the first 75 licenses are being issued to social equity qualifying applicants.[33]

To ensure the application process is accessible, regulators have removed known hurdles to entering the cannabis industry. License applicants are not required to identify real estate, a costly process that can lead to months of rent being paid without guarantee of a business. Application fees are reduced (Virginia's medical license applications have a fee of $10,000; by comparison, $2,500 was used for Illinois's social equity applicants and even that could be waived).[34] Social equity

[32] (Capital News Service, 2017)
[33] (Illinois Department of Financial and Professional Regulation, n.d.)
[34] (Illinois Department of Financial and Professional Regulation, n.d.)

applicants are also not required to demonstrate cash on hand or personal financial details to prove capitalization.

The work group also heard that a social equity license program should only be one component of ensuring equitable access to marijuana business ownership opportunities. For instance, the group heard from the Massachusetts program that one of the largest hurdles for ownership is equitable access to capital.[35] Banks, credit unions, and Community Development Financial Institutions (CDFIs) are largely constrained by federal law from actively participating in the marijuana businesses, and the banking section of this report will discuss this further. However, aside from federal law, these institutions' participation is also limited by their own risk tolerances, which could lead to a disinclination to participate to a large degree, especially with smaller businesses. Virginia should consider working with these institutions to find ways to allow businesses to have equitable access to credit. The work group also discussed considering a state-administered grant or loan program to function in concert with a social equity license structure. This could also include access to professional business planning and management expertise that could be tailored to different types of businesses. For example, agribusiness and farm planning will be different from distribution business planning, which will be different from preparation to start and operate a retail business.

In addition to a preferential license category, access to capital, and sound business planning expertise, social equity applicants need technical support to navigate the license application process. This includes community outreach to ensure individuals know and understand that these programs exist. Applicants must also be provided resources to avoid predatory scams from application writers and exploitative partnerships with larger companies. To implement a successful social equity program, the state will need to expand existing resources for small businesses navigating SCC registration, bank account formation, and other bureaucratic processes. A cannabis regulator could partner with other state and non-profit entities to encourage outreach and participation.

Community Reinvestment

Reinvesting some revenue back into communities that have been disproportionately harmed by criminalization is the third and final pillar of social equity under legalized adult-use cannabis. The work group discussed Illinois's Restore, Reinvest, Renew (R3) program.[36] The R3 program is funded by 25% of cannabis tax revenue (projected to be $31 million for CY2020). The R3 program is overseen by its Chair, Lieutenant Governor Julia Stratton, and a committee of state legislators and impacted community members. The R3 program funds grants for violence prevention, reentry services, youth development, economic development and civil legal aid services in areas of the state that are suffering from violence, and have experienced concentrated disinvestment. These areas are identified by their rates of gun injuries, child poverty, unemployment, and incarceration rates. The fund prioritizes groups that are based in the communities they serve.[37] Should Virginia's General Assembly choose to legalize adult-use cannabis, designating funds from marijuana tax

[35] See Appendix 5 - Meeting Minutes and Materials (September 11 Fiscal & Structural Meeting)
[36] (Illinois Department of Commerce & Economic Opportunity, 2020)
[37] (Hayden, 2020)

revenue to reinvest in communities would be a critical component to social equity. Furthermore, regular disparity studies regarding relevant data points in these communities would be essential to analyzing the success of all social and racial equity objectives.

Section 8.4: Product Regulation

The work group had a discussion about the various options about the regulation of marijuana products and coalesced around a set of key principles. First, Virginia should consider regulating the composition and types of legally available marijuana products, both from the standpoint of cannabinoid content and other product safety measures.

An example of a pre-rolled smokeable product (Source: New England Public Media)

Virginia should consider allowing products across different categories. These categories could include but are not limited to: combusted products, edible food and drinks, pills, oils intended for vaping, oil tinctures, and wax. However, as the industry continues to innovate, Virginia should seek to keep its product regulations up to the speed of the industry itself, perhaps through an APA exempt process as discussed in the "Regulatory Structural Considerations" section above. Each product classification will likely need to have different regulations regarding both cannabinoid content and consumer safety.

Many states that have legalized the product have set THC serving size limits for edible products at 5mg or 10 mg of THC and limited the number of servings allowed per unit of product. The group also discussed the need to consider similar limits for vape products based on how those products are consumed. Serving sizes for some modes of use can be challenging to measure consistently. In addition to other states, the Commonwealth could consult with the Department of Health Professions on lessons learned from Virginia's medical cannabis program.

The group also discussed the need to set consumer safety requirements, similar to food safety standards, for marijuana products. This could include minimum acceptable limits of adulterants, such as pesticide residues, foodborne pathogens, heavy metals, mycotoxins, solvents, and other potential contaminants. Both the hemp derived oils and pharmaceutical processor programs already contain these types of standards, and Virginia could consider merging all of those requirements into standards for cannabis products generally.

The group also heard from public health expert Dr. Gillian Schauer regarding the need to consider other ingredients or constituents that could potentially be present in products. These include

substances such as excipients and diluents, which are particularly relevant for vape products and about which we have relatively little evidence about the potential health effects; one good example of this is Vitamin E acetate, which has been linked to E-cigarette or Vaping Product Use-Associated Lung Injury (EVALI).[38]

The state would likely also need to consider how to regulate flavorings and any other additives. For example, no state currently allows additives such as nicotine or tobacco to be added to marijuana products.[39]

One additional consideration is the regulation of terpenes, which are natural botanical aromatic compounds. In marijuana, terpenes are generally responsible for the plant's aroma and flavor compound, however they can also be derived from other plants as well. These compounds can be extracted from the plant and then added to various products, such as oil intended for vaping, to provide consistent flavor profiles. However, there is still much unknown regarding the health effects of these compounds.[40]

In order to successfully regulate marijuana products, the Commonwealth will need to consider requirements for product testing and reporting. An emerging best practice among states has been to require third-party lab testing of all products. Virginia currently has some third party labs, but will need more to meet the increased demand after legalization. Lack of access to testing has been one of the barriers to growth in Virginia' medical cannabis program. However, in order to prevent producers from "shopping" for labs to find desired results, the Commonwealth should also consider establishing a reference laboratory in some form, such as a state-run lab that spot checks products via risk and random sampling, to ensure fidelity.[41]

Section 8.5: Advertising

In her presentation to the work group, Dr. Gillian Schauer flagged limitations on advertisements as an area of opportunity for public health. Addiction and recovery experts who presented to the group stressed that information from the cannabis industry sometimes overstates the benefits and understates the harms of marijuana. Approaches other states have taken to limit advertising, while avoiding de facto bans, are listed under Chapter 4. There are also lessons learned from advertising for tobacco and alcohol, and it may be appropriate to take a consistent approach with marijuana. In recent years, limits on tobacco advertising have followed more of a public health framework.[42] The Commonwealth should also be mindful of free speech protections and relevant legal precedent.

[38] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[39] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[40] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[41] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[42] Barry RA, Glantz S (2016) A Public Health Framework for Legalized Retail Marijuana Based on the US Experience: Avoiding a New Tobacco Industry. PLoSMed13(9):e1002131.doi:10.1371/ journal.pmed.100213

The work group focused on limiting marketing to children. The typical standard is that 71.6% of the advertisement's audience must reasonably be expected to be over 21 years old. Massachusetts further limited the audience to no less than 85% adults. Advertisements are typically restricted near schools and other youth-focused buildings, such as parks or libraries. Importantly, advertisements should not be appealing to minors, including limitations on cartoons, the leaf emblem, and bright colors. As with other marketing tools, regulations should be prescriptive to avoid gray area or loopholes.

Section 8.6: Packaging and Labeling

The primary requirements for packaging in other states revolve around avoiding unintentional pediatric consumption. Packages should be child-resistant, tamper-evident, and re-sealable (multi-use). While child-resistant packaging mitigates pediatric exposure, it does not eliminate it. Consumers must also be educated on safe storage and potentially be made aware of the resources of the poison control center in case of an accident.

As the group heard from Norm Birenbaum, Chairman of the Cannabis Regulators Association, stating what a company cannot have on a label leaves a lot of room for what it can have. Companies may then be able to create products that do not meet the spirit of the law. As one example, Washington State decided to update its guidance and create a pre-approval process for every package after finding certain products on the shelves. Despite prohibiting products that are appealing to children, companies had candy look-a-likes with bright colored packaging and bubbles letters.[43] Other examples may be found in the presentation slides from the September 16th meeting.[44]

Labels allow consumers to know what is in a product. As described in the health impacts section, marijuana is unique in that its chemical composition differs both product-to-product and plant-to-plant. Some presenters and work group members expressed concern over misuse of high potency products and all work group members agreed that certain additives are harmful. Some products have high THC concentration because they are intended to be consumed in small doses. In addition to concentration, the speed and length of onset varies among products. Clear labels with cannabinoid content and health warnings enable educated consumers to use the product as intended.

Doctors with Cannabis has suggested using a universal symbol and a standard label, similar to what is used for food products. Even with standard labels, there are some challenges with measuring exact cannabinoid content, including THC, especially with botanical products. The "strain" or chemical makeup varies on the same plant, so sample testing is not always precise given that the plant is not homogenous. Some states allow a variance (e.g., 15%) in terms of label accuracy for botanical products, given that challenge.

[43] (Groover, 2018)

[44] See appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)

Canada's universal marijuana symbol (Source: USA Today/Getty Images)

Many states have specific warnings that must be included on packages. For example, Washington State products must note the product: has health risks, should not be used during pregnancy or by minors, can impair judgment and driving, and may be habit forming. Label and warning requirements should be mindful of product shape and size, since some products are very small or round. The amount of text on the label should be legible and clear. Package inserts, QR codes and signage can help communicate important information while avoiding a lot of small text. QR codes are used in some states not only to relay detailed product information but also to verify that the business is a licensed marijuana establishment. Another option is rotating warning schedules, as used in Rhode Island's medical cannabis program.

Section 8.7: Personal Cultivation

Personal cultivation of marijuana, often colloquially referred to as "home-growing," is permitted in 10 states. These states set a specific number of plants an individual is permitted to grow in their home for personal use. Some states identify a set number of "mature" and "immature" plants whereas others simply provide a maximum number of plants. Illinois only allows home-grows for registered medical cannabis patients. Table 4.4 in section 4.5 of this report details the number of home-grow plants permitted in each state.

Leaders from other states including Colorado and Massachusetts have identified public safety concerns regarding home-grows. Those leaders have shared that there is an increased number of house fires, as a result of the lamps needed to grow the plants and attempts to dry the leaves prior to smoking. There are also reports of increased violent crime, particularly robberies and burglaries, as marijuana is still very valuable in the illicit market.

Washington was one of the first states to legalize marijuana, but does not allow for home-grows or home delivery.[45] In recent years, the Washington State Liquor and Cannabis Board considered the legalization of home-grows. The Board's 2017 report identified public safety concerns including (i) increased youth access; (ii) increased illegal growing and illicit market activity, (iii) increased calls for service related to civil issues (e.g., smell), and criminal activity such as burglaries and robberies.[46] In addition, Washington officials raise concerns about enforcement of plant limits. Officials asked for clarification about what qualifies as a "plant," what qualifies as a "mature" or "immature" plant. There are also concerns about the number of plants permitted in one home if there are multiple residents cohabiting in a household or apartment building. The Washington Association of Sheriffs and Police Chiefs detailed their concerns in a letter to the Board and endorsed the continued prohibition of recreational home-grows.[47]

Section 8.8: Impaired Driving

Impaired driving is a serious concern related to the decriminalization and legalization of marijuana, and while it is universally agreed that preventing impaired driving is critical, there is not yet a consensus among policymakers nationwide on how to accurately measure whether a driver is impaired. This work group heard from leaders in other states, including Massachusetts, Washington, and Colorado about marijuana legalization and impaired driving. Experts from Virginia's Department of Motor Vehicles (DMV) and Department of Forensic Science (DFS) also provided information about the potential impact on Virginia. In addition, Virginia was selected to participate in the National Governors Association's *Learning Collaborative on State Strategies to Strengthen and Leverage Data to Address Impaired Driving* in the fall of 2020. Virginia's stated goals for the learning collaborative include (1) understanding the impact marijuana decriminalization and legalization has had on impaired driving and traffic-related fatalities in other states, (2) gathering best practices related to toxicology screenings and road side tests for impaired drivers particularly those who use drugs including fentanyl, and (3) building a data collection system to track the impact of marijuana and opioid-related policy changes.

In 2018, in fatal crashes, 94 deceased drivers tested positive for some level of THC. There were over 800 traffic fatalities in 2018, one third of these were alcohol related. In 2019, 90 deceased drivers tested positive for some level of THC,[48] and there were 827 total traffic fatalities that year.[49]

Data Collection

In general, little is known about the rate of drug-impairment (with the exception of alcohol) among drivers in the U.S.[50] There have been some reports which indicate marijuana-impaired driving is

[45] (NORML, n.d.-c)
[46] (Washington State Liquor and Cannabis Board, 2017)
[47] (Mitch Barker, 2017)
[48] See Appendix 10 - Meeting Minutes and Materials (October 21 Legal & Regulatory Meeting)
[49] (Virginia DMV, 2020)
[50] (Smith et al., 2019)

on the rise.[51] Given the speed with which many states legalized marijuana, primarily via referendum, it is difficult to understand the impact of marijuana legalization on impaired driving. This is an opportunity for Virginia to assess its existing data collection efforts and fill any gaps in data prior to legalization and truly measure the impact of legalization. While Virginia has worked consistently to reduce the number of impaired drivers on the roads and has seen a decrease in the number of alcohol related fatalities, the shifting landscape of drug-use in the Commonwealth will likely require new data collection capabilities and flexible policies.

Currently, Virginia does not have robust data about drug-impaired driving, particularly when it comes to THC. Crashes or traffic stops that do not involve a fatality often yield little to no data about potential drug use or poly-substance use. During the course of an impaired driving investigation, if the law enforcement officer has reasonable cause to believe, through field sobriety tests, a preliminary breath test, or other information, that the individual was driving under the influence of any drug, the officer may obtain a sample of whole blood through implied consent or via search warrant. A Drug Recognition Expert (DRE), which is a law enforcement officer trained to recognize impairment in drivers under the influence of drugs other than, or in addition to, alcohol,[52] can be called in to document evidence of signs and symptoms that indicate potential impairment. The testing of collected blood sample(s) can detect THC or other drugs in the blood related to impaired driving. However, blood draws require a medical professional to collect the sample and therefore take longer to complete, giving the drugs time to metabolize further. Furthermore, the detection of THC presence in the blood does not necessarily indicate a person was driving while impaired.

In addition to difficulties with blood draws, it is still challenging to detect poly-substance use in impaired drivers. If a blood sample is taken from a driver, and the BAC is found to be 0.10% by weight by volume or higher, no further testing for the presence of other drugs is completed. Additional toxicology screens and assessments will require more resources.

Detection of impaired driving continues to evolve and change over time. Oral fluid testing, which involves swabbing the inside of the cheek, is becoming a more popular method of testing for impaired driving enforcement.[53] Although oral fluid testing can detect THC and/or metabolites for days and even weeks after marijuana use, some states have begun using oral fluid testing on the roadside in pilot programs.

Types of DUI Laws

There is no scientifically accepted method for determining impairment based on an established amount of THC in the blood.[54] DFS Director, Linda Jackson spoke about this issue with the work group, and noted that the pharmacological activity of THC is vastly different than alcohol, making it more difficult to assess the level of impairment from individual to individual.[55]

[51] (Berning et al., 2015)
[52] (IACP, n.d.)
[53] (Arnold et al., 2019)
[54] (Smith et al., 2019)
[55] See Appendix 10 - Meeting Minutes and Materials (October 21 Legal & Regulatory Meeting)

1) Zero Tolerance

Thirteen states have a zero-tolerance policy for THC, meaning any level of THC detected would be considered impaired driving. It is worth noting that one of these states is Michigan, which legalized marijuana but also has a zero-tolerance law for marijuana-impaired driving.[56] The group determined that this approach would likely not be the most effective, as THC can remain in someone's blood long after the person is no longer impaired.

2) Per Se Standard

Six states have a per se standard for marijuana impairment while driving. In these states drivers can be charged with Driving Under the Influence (DUI) if the level of THC or metabolites in their blood is above the per se threshold.[57] Nevada and North Dakota have a per se limit of 2 ng/mL. Idaho, Missouri, and Washington have a per se limit of 5ng/ml.[58] While Colorado has a per se limit of 5ng/mL, it also has a "permissible/reasonable inference" law. Given the scientific limitations related to establishing marijuana impairment, policymakers should recognize per se standards might capture a larger or smaller population of drivers than intended. For example, if the THC limit is set too high, people who are no longer impaired but previously used marijuana may be charged with DUI. Alternatively, if the per se limit is set too low, some drivers that are actually still impaired may not be charged.

3) Impairment Based

Meanwhile, other states use "effect-based" or "level of impairment" laws to capture impaired drivers without using a specific per se standard or zero tolerance policy. In addition, there are emerging technologies that seek to record an initial analysis of potential impairment. An impairment-based approach would likely require an additional investment in training for law enforcement to be DREs and/or an investment in other impairment recognition tools.

Section 8.9: Impairment and Employment

Employers have both an ethical and a legal obligation to ensure a safe working environment for their employees. Marijuana use raises a particular challenge for policymakers, employers, and employees in addressing safety concerns and handling worker's compensation claims. This issue also has implications for employer and employee rights.

It is critical to understand the impact of marijuana consumption on workplace safety. This is particularly important for "safety sensitive" positions in which impairment could pose a threat to the safety of employees or the public. Threats to workplace safety can include the potential for physical injury, environmental contamination, property damage, impaired judgment or decision-making in emergency response situations, the use of firearms, and more. The method of defining safety sensitive positions varies from state to state. In some states the employer makes this categorization, but in others, the state develops general categories.

[56] (Governors Highway Safety Association, 2020)
[57] (Governors Highway Safety Association, 2020)
[58] (Governors Highway Safety Association, 2020)

To effectively evaluate the impact of marijuana on performance and working conditions, it is not sufficient to test for the presence of cannabinoids. A worker's level of impairment must also be measured. As discussed above, the pharmacological activity of marijuana is different than alcohol, making it more challenging to measure the level of impairment from individual to individual. Additionally, drug testing may not pick every type of cannabinoid. For example, current federal drug testing laws allow for testing of delta-9-THC, but not delta-8-THC even though it is intoxicating. Given the lack of reliability of drug testing to determine impairment, it is difficult to fairly define when the use of marijuana may become a threat to workplace safety. In Illinois, employers can adopt reasonable testing policies in order to retain "a reasonable workplace drug policy." They can also take disciplinary action, including termination, if they have a "good faith belief" that the employee is impaired while on duty, based on symptoms that decrease performance such as agility or speech; negligence in operating machinery; disregard for safety; disruption in a production process; or carelessness.[59]

Employer discretion in enforcement of marijuana-related policies might come at the cost of employees who are legally exercising their right to consume marijuana. Thirteen states currently have anti-discrimination protections in place for employees with regard to medical cannabis use. Only one, Nevada, has similar protections for recreational cannabis.[60] Reducing employment barriers is also a key consideration for workers, including the expungement of cannabis-related convictions.

Defining safety-sensitive positions, and evaluating impairment while simultaneously protecting the employer's legal obligation to maintain a safe working environment and the employee's rights is particularly complicated when it comes to marijuana. A lack of reliable and timely testing capability further complicates the issue. Policies related to cannabis legalization should take into account the employer's role in promoting and maintaining safety as well as worker protections.

Section 8.10: Local Control

While the work group did not include a representative of local government, there was some discussion about the role of Virginia's localities in a potential marijuana industry. Staff outreach also included some engagement with local government representatives.

Work group members agree local input should be considered regarding where marijuana businesses can operate. Localities already have zoning regulations as one available tool to control where certain businesses can operate. Virginia should also consider ways to avoid the clustering of marijuana businesses in a way that is harmful to public health and safety.

Group members believe that the industry could potentially be treated similarly to alcohol. In 2019, Virginia changed its statewide law to make all localities "wet" but allow for a locality to opt-out

[59] ((410 ILCS 705/10-50) Personal Use of Cannabis, 2019)
[60] (National Conference of State Legislators, 2019)

via local referendum. This law became effective on July 1, 2020.[61] A similar model could be considered for marijuana businesses.

However the Commonwealth decides to proceed with marijuana legalization, the work group saw great value in continuing to engage with localities, specifically regarding the location of businesses and the creation of potential tax revenues.

Section 8.11: Banking

One of the most critical components of a thriving industry is banking, and several states identified this as a significant challenge.[62] Legal hurdles require most transactions to take place in cash, make deposits difficult, and also prevent businesses from accessing credit.

Because marijuana remains a federally illegal product, multiple federal laws and regulations prevent financial institutions from fully participating in the industry in states where the substance is legal. According to the American Bankers Association, "all proceeds generated by a cannabis-related business operating in compliance with state law are unlawful, and that any attempt to conduct a financial transaction with that money (including simply accepting a deposit), can be considered money-laundering. All banks, whether state or federally chartered, are subject to federal anti-money laundering laws."[63]

A law under consideration in the United States Congress would fix many of the current hurdles to financial institutions participation in the cannabis industry. The Secure and Fair Enforcement (SAFE) Banking Act of 2019, which passed the House of Representatives in September 2019 with broad, bipartisan support, would allow financial institutions to provide services to cannabis-related legitimate businesses, as long as they are operating in accordance with state law.[64]

Some states have found creative solutions to give financial institutions within their borders the level of comfort they need to participate, in a relatively limited manner, in the industry, and Virginia should consider all options to facilitate further engagement between financial institutions and a legal adult-use marijuana industry.

Section 8.12: Criminal Code Changes

If the Virginia General Assembly moves forward with the legalization of marijuana there will be implications for the criminal code. For example, unlicensed production and sale of marijuana, sale to a minor, or personal cultivation over a certain limit could all become criminal offenses. Additionally, the General Assembly will need to determine the penalty for underage use of marijuana. The legislature could also address impaired driving differently for marijuana and

[61] See Chapters 37 and 178 of 2019 Acts of Assembly
[62] Appendices 2 and 5 (Minutes from Fiscal-Structural meeting 1 and Full work group meeting 2)
[63] (Bergen, 2020)
[64] (Bergen, 2020)

change the current Driving Under the Influence of Drugs (DUID) statute to include a per se or zero tolerance standard.

Sealing and Expungement

As the General Assembly contemplates the legalization of marijuana, it is critical to consider the disproportionate harm done to communities of color across the Commonwealth. Expungement or sealing of marijuana-related convictions would help support social and racial equity initiatives.

In Virginia, individuals may petition the court to get their records expunged under certain circumstances. For example, cases that are dismissed, acquitted, or entered nolle prosequi are eligible for expungement. Records may also be expunged in the case of an absolute pardon or writ of actual innocence. Juvenile records are an exception; juvenile records involving misdemeanors and status offenses are automatically expunged when the juvenile turns 19 and five years have elapsed since the last hearing in the case, including cases where the juvenile was adjudicated delinquent. In general, felony records for juveniles are not expunged but may be sealed.

Expungement and record sealing are two distinct processes. In Virginia, expunged records are never actually physically destroyed (e.g., paper records); however, access to expunged records is only permitted pursuant to court order. Meanwhile, record sealing prevents individuals from accessing the record in the Central Criminal Records Exchange (CCRE) system. In the regular 2020 session, HB972 and SB2 included language to automatically seal existing simple possession of marijuana convictions. Seventeen states, including Virginia offer some form of expungement or record sealing for past marijuana convictions.[65]

Should the General Assembly legalize possession and sale of marijuana, legislators may consider sealing other types of marijuana-related offenses including crimes such as possession with intent to distribute. Sealing can be done automatically and is more cost effective than expungement in this case.

[65] (NORML, 2020a)

Chapter 9: Health Effects and Mitigation

Section 9.1: Review of Data on Health Impacts

One of the work group presentations was from Dr. Gillian Schauer, a senior consultant who works with a number of state and federal agencies on cannabis policy issues, data monitoring, and research translation. She opened her review by stating that "we are living in a scientific time where you can find a study to support anything you want to say about the health effects of cannabis."[66] Similarly, the seminal study entitled "*The Health Effects of Cannabis and Cannabinoids"* published in 2017 by the National Academy of Sciences, Engineering, and Medicine (NASEM) called the lack of research on the health effects of marijuana a matter of public health concern for vulnerable populations.[67] In addition, there is not always reliable data on changes in key public health measures after legalization in other states. While there is strong evidence for certain trends, some were more difficult to identify based on inconclusive – and sometimes conflicting – information presented to the work group.

In addition to the general research limitations, the health effects of marijuana presented here are not intended to be comprehensive. While the work group and this report aimed for a balanced approach, the health impacts below are not based on a systematic, academic review of the literature. This review is based largely on information provided to the work group by the National Governors Association, presentations from state and national experts, and items raised by work group members.

This report addresses the health impacts of adult-use legalization in three subsections:

1) The first subsection is a brief summary of the Virginia Substance Abuse Service Council's review of marijuana in 2015.

2) The second subsection provides a high-level overview of the effects of marijuana itself. It begins with a review of the research landscape. This subsection also includes highlights from work group discussions, resources from the National Governors Association (NGA), and some independent review. While marijuana use will likely increase with legalization, it should be noted that marijuana - and therefore its associated health effects - are already present in the Commonwealth and nationwide.

3) The third subsection of the report describes changes in public health trends in states that have legalized marijuana for adult use.

[66] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[67] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)

For the remainder of this section, "legalization" means legalization for adult use unless otherwise specified.

1 – Virginia Substance Abuse Services Council 2015 Marijuana Review

During 2014 and 2015, the Governor's Substance Abuse Services Council focused on the issue of legalizing medical use marijuana in Virginia. The council brought in experts to provide information about medical concerns and effects of marijuana, as well as the possible advantages and medical use. The following are the major points that came from these presentations:

Marijuana is a Schedule I Substance. Under federal law, it has no accepted medical use in the United States in its raw form and it is not approved by the FDA. Without establishing an appropriate risk-safety profile for use or determining the basic requirements such as dose, frequency, and duration of use, consumers may be subjected to greater harms than realized. (*PARHAM JABERI,MD,MPH, DIRECTOR, CHESTERFIELD HEALTH DISTRICT, VDH.)*

As with tobacco and alcohol, an increase in the availability and acceptability of marijuana, even if limited to medicinal purposes, will likely lead to increased rates of use, misuse, and addiction in our communities. Thus, additional resources will be needed to address public health and safety concerns as well as prevention and treatment services. Increased availability and/or acceptability of marijuana through legalization can also lead to delays in seeking treatment and/or promote relapse for those in recovery. (*MELLIE RANDALL, former DIRECTOR, OFFICE OF SUBSTANCE ABUSE SERVICES, DBHDS*.) In 2012, survey results indicated that more youth were using marijuana than cigarettes, and that marijuana was easier to get than cigarettes. A survey of youth conducted by the Partnership for Drug Free America indicates that youth report that "if marijuana were legal," they would be more likely to use it.

While marijuana may be less addictive than illicit drugs or alcohol, nearly 9 percent of adults and 17 percent of teens that use marijuana regularly will become addicted. A recently published long-term study indicated a reduction in intellectual functioning by eight points for individuals who started using marijuana in adolescence and continued use into adulthood (age 38). In addition to decreased intellectual functioning, heavy marijuana use negatively impacts attention, memory, motivation, and increases risks of physical injury. (*PARHAM JABERI,MD,MPH, DIRECTOR, CHESTERFIELD HEALTH DISTRICT, VDH.)*

Delta-9-tetrahydrocannabinol (Δ9-THC or THC) is the substance primarily responsible for the psychoactive effects of cannabis. THC has been demonstrated to have both beneficial as well as detrimental immunosuppressive effects on cancer cells related to its ability to induce cell death. Another active ingredient derived from the cannabis sativa plant that has been shown to have potential therapeutic value in treatment of severe seizures is cannabidiol (CBD). Unlike THC, CBD does not have a psychoactive effect and thus does not produce the "high" associated with THC. The body has an endocannabinoid system with receptors located in both the central nervous system and in the immune system; this gives cannabis a variety of therapeutic possibilities. (*NASSIMA AIT-DAOUD TIOURIRINE,MD, ASSOCIATE PROFESSOR, PSYCHIATRY AND NEUROBEHAVIORAL SCIENCES, UNIVERSITY OF VIRGINIA)*

At the date of these presentations, in states that have reformed their marijuana policy, there has been no increase in teen marijuana use. There was also no conclusive evidence that the drug effects of marijuana are causally linked to the subsequent abuse of other illicit drugs or that there are any long-term permanent cognitive deficits from heavy cannabis use. In fact, in states that have reformed their marijuana policy, prescription opioid overdose deaths are down by 25%. *(MALIK BURNETT,MD,M.B.A., POLICY MANAGER, OFFICE OF NATIONAL AFFAIRS, DRUG POLICY ALLIANCE)*

In conclusion, members reviewed and discussed the information provided in the presentations on issues related to marijuana, particularly medical marijuana, and analyzed the potential impacts of its legalization on Virginia. Members reviewed the research, as well as the multiple viewpoints presented, and agreed that further in-depth study of the potential impacts of marijuana on the Commonwealth and its citizens should be conducted. Accordingly, the council agreed to send a letter to the Governor and General Assembly recommending that such a study be undertaken.

2 – Health Effects of Marijuana

Marijuana Research Limitations

Cannabis has been used since antiquity[68] and there are many published studies examining its effect. However, there is minimal cannabis research that is based on generalizable, placebo controlled, randomized controlled trials. As a result of the research limitations much of the information of cannabis is associative, not causal. It is also based on botanical products, which are generally lower in potency and do not mirror the full range of commercially available products.

Variance between products and between cannabis plant materials make it difficult to consistently define exposure or dosage. The biggest barrier is the federal research restrictions on cannabis. Under the Controlled Substances Act, cannabis, excluding hemp, is classified as a Schedule I controlled substance which means it has no acceptable medical use and has a high potential for abuse. A Drug Enforcement Administration (DEA) registration is required to perform research on a Schedule I substance. Researchers have indicated that obtaining or modifying a DEA registration for this purpose can be difficult and time-consuming. An additional registration as a manufacturer may be required for research protocols wherein a particular dosage form must first be created.

While DEA indicated in August 2019 that it would review additional grower applications, there is currently only one entity, the University of Mississippi, registered by DEA to cultivate cannabis for research purposes under a grant with the National Institute on Drug Abuse (NIDA). A single domestic source of cannabis limits formulations for research and the University does not appear to have the capacity to provide cannabis for commercial development. Additionally, federal law does not allow researchers supported by NIDA or other federal agencies to obtain cannabis from state dispensaries for research purposes. While there have been efforts to research these products, including by some state universities, there appears to be a lack of research on these formulations and their health effects.

[68] (Diane P. Calello, MD, n.d.)

As more states legalize marijuana for both medical and recreational adult use, the number of high quality research trials is on the rise. When it comes to the therapeutic benefits of cannabis, there is substantial preliminary evidence that the plant can be used for additional clinical purposes. In the meantime, most public health experts recommend using systematic reviews of "gold standard" research. One example is the seminal study entitled "*The Health Effects of Cannabis and Cannabinoids"* published in 2017 by the National Academy of Sciences, Engineering, and Medicine (NASEM).

2020 Marijuana Legalization Work Group Discussions

Cannabis use is more harmful in certain populations:

Youth**:** Early use of marijuana, especially heavy use, increases the likelihood of experiencing some of the negative health outcomes described below. The rate of addiction in marijuana users increases from approximately 1 in 10 to 1 in 6 for those who initiate use before age 18.[69] According to an article recommended by the National Governors Association (NGA), "adolescents who use cannabis are more likely than adults to develop dependence; show cognitive impairment; leave school early; use other illicit drugs; develop schizophrenia and affective disorders; and have suicidal thoughts."[70]

Use during adolescence is associated with long-term impairment in academic and employment achievements, as well as social relationships and roles.[71] As presented by Tom Bannard, program manager for the Virginia Commonwealth University collegiate recovery program, students are more likely to take breaks from college as they increase use. Heavy users also end up having lower earnings 10 years later.[72] In terms of IQ changes from teen use, the work group was presented with both studies that showed no significant causal impact[73] and those that demonstrated an eight-point IQ drop with heavy use.[74] While we are continuing to learn its exact impact, we do know that adolescent marijuana use affects brain development in negative ways.

During Pregnancy**:** There is substantial evidence that cannabis smoking during pregnancy is associated with low birth weight, which can lead to other negative health outcomes. More recent evidence also suggests that it is associated with child behavioral problems, including cognitive function and attention.[75] The American Academy of Pediatrics and the American College of Obstetrics and Gynecology have both released strong statements discouraging cannabis use during

[69] (Substance Abuse and Mental Health Services Administration, 2020)
[70] (Hall et al., 2019)
[71] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[72] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting)
[73] (NORML, n.d.-a)
[74] (National Institute on Drug Abuse, 2019)
[75] Dr. Robert Wallace, University of Iowa College of Public Health, summarizing the NASEM 2017 Report: https://www.youtube.com/watch?v=KBhRF7InKQE

pregnancy and breastfeeding.[76] The AAP also found surveys that showed dispensaries recommending cannabis for morning sickness.[77]

Individuals with certain mental illnesses: As described below, marijuana can have negative interactions in individuals with certain mental illnesses, such as schizophrenia and bipolar disorder. The work group discussed focusing on education and early intervention for those vulnerable populations.

Cannabis Use Disorder: Cannabis Use Disorder (CUD) is a significant health impact of using marijuana and was an area of focus for the work group. Substance use disorder (SUD) impacts approximately 8.5% of Americans[78] and CUD impacts between 10-25% of regular cannabis users.[79] According to U.S. surveys done in the 1990s, "the risk of [cannabis] dependence was 20-30% in people who used cannabis 100 times or more and might be higher in those how use high potency products."[80] CUD is significantly more likely when use starts early in childhood and with heavy patterns of use.[81]

Addiction generally is "a disease of learning and memory that leads to 'self-inflicted harm and suffering.'"[82] That characterization also applies to CUD, which can include a number of symptoms such as tolerance, persistent attempts to reduce use without success, withdrawal and cravings, and continued use despite interference with important social, occupational, and relational commitments.[83] Dr. Peter Breslin, addiction specialist, noted that it might be hard to distinguish between medicinal use, with a net therapeutic benefit, and problem use or CUD.[84] Finally, CUD has been associated with other substance use disorders, mental health disorder, and disability.[85]

Therapeutic Effects of Cannabis: The National Academy of Sciences report found evidence of moderate health benefits, such as reducing emesis (vomiting) in cancer patients, improving spasticity (muscle stiffening) in multiple sclerosis patients, and reducing chronic pain symptoms. It found moderate evidence for improving sleep in individuals with certain conditions, and some limited evidence for improving symptoms of certain anxiety disorders and posttraumatic stress disorder. The U.S. Food and Drug Administration (FDA) also approved one form of CBD for treatment of epileptic syndromes.[86]

Dr. Sulak referenced studies demonstrating a link between cannabis use and lower obesity rates and cardiometabolic risk factors. He focused on patients substituting marijuana for other, more harmful drugs. Tom Bannard and Dr. Peter Breslin noted that there is a tendency for the cannabis

[76] (Diane P. Calello, MD, n.d.)
[77] (Grigsby et al., 2020)
[78] See Appendix 14 - Meeting Minutes and Materials (October 20 Health Impacts Meeting)
[79] (World Health Organization, n.d.)
[80] (Hall et al., 2019)
[81] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[82] See Appendix 14 - Meeting Minutes and Materials (October 20 Health Impacts Meeting)
[83] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting)
[84] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting)
[85] (National Institutes of Health, 2016)
[86] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)

industry to overstate some of the therapeutic benefits. While they agreed there are some benefits and promising studies, they cautioned against getting ahead of the research. For example, marijuana can help with anxiety but it can also worsen it, especially acutely. Similar to Dr. Schauer, Dr. Breslin encouraged using systematic literature reviews to avoid relying on low-quality or inconclusive research.[87]

As described above, Virginia currently has a medical cannabis program that allows patient access for many cannabis products. However, some work group participants noted that a significant portion of recreational adult consumers likely use marijuana for health or wellness reasons. For example, one survey conducted by Eaze, an online cannabis delivery company, found 71% of consumers reduced or stopped their over-the-counter pain treatment.[88]

Negative physical effects: Smoking cannabis is strongly associated with respiratory symptoms and chronic bronchitis. However, it has not been associated with Chronic Obstructive Pulmonary Disease (COPD).[89] While there are some early studies that suggest marijuana smoke may be similar to tobacco smoke[90] and contains carcinogens at similar rates,[91] there is no consistent evidence of lung and other cancers in cannabis users.[92] Researchers are continuing to look at long-term lung impairment. For example, Colorado's public health department has found daily or near daily marijuana smoking may be associated with bullous lung disease.[93] There is also evidence of acute (short-term) improvement of airway function.[94] Frequent marijuana use is associated with cyclical vomiting or cannabinoid hyperemesis syndrome.[95] Many other long-term physical health effects remain unclear.

Negative psychosocial and mental health effects: The most significant, established negative mental health association with marijuana is the risk of development of schizophrenia or other psychoses.[96] While it is unlikely that marijuana causes schizophrenia in those who were not already predisposed to it, marijuana use often worsens the prognosis and treatment outcomes.[97] Heavy use increases the likelihood of suicidal thoughts. There is also some evidence of an

[87] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting)
[88] (Eaze, 2019.)
[89] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[90] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[91] (Diane P. Calello, MD, n.d.)
[92] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting) and ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[93] (Colorado, n.d.)
[94] Dr. Robert Wallace, University of Iowa College of Public Health, summarizing the NASEM 2017 Report: https://www.youtube.com/watch?v=KBhRF7InKQE
[95] (Hall & Lynskey, 2020)
[96] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[97] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Dr. Peter Breslin presentation

association between depressive disorders, social anxiety disorder, and increased mania symptoms in individuals with bipolar disorder.[98]

Acute (short-term) effects: Marijuana impairs cognitive functioning, memory, and attention, with some effects lasting for days or weeks after use.[99] Marijuana impairment increases the risk of motor vehicle accidents.[100] Cannabis can produce adverse acute effects including anxiety and paranoia, depression, psychotic symptoms, and adverse gastrointestinal symptoms.[101] Studies presented to the work group showed that marijuana may protect individuals experiencing a traumatic brain injury or heart attack,[102] though other studies show acute marijuana use may be associated with increased risk of heart attack among adults.[103]

High amounts of THC can also cause episodic psychotic states. Cannabis-induced psychosis is distinguished from psychotic orders more generally by the onset of symptoms, including paranoid symptoms, between a day and a week after consumption. Common symptoms include unusual thought content, excitement, grandiosity, hallucinatory behavior, and uncooperativeness. "Findings largely confirm reports of authors who have stated that cannabis produces a psychosis with predominantly affective features and more of positive symptoms, violence and excitement."[104]

Causing initiation of other drug use ("gateway drug"): While many claim that cannabis is a "gateway drug," the National Academy of Sciences report found only limited evidence of an association of cannabis use and changes in use patterns of other substances. Importantly, the report also found moderate evidence that marijuana use increases the likelihood of substance use disorder, including from tobacco, alcohol, and other illicit substances.[105] Similar to other drugs, many marijuana users use multiple substances. As many as 80% of marijuana users also use tobacco and nicotine products.[106] More than 40% of high school students nationwide who report prescription opioid misuse also reported marijuana use in the past 30 days.[107] Some surveys and studies show individuals using marijuana instead of prescription and over-the-counter drugs.[108]

Higher Potency Products: Potency refers to the product's amount of THC, which is the psychoactive cannabinoid in marijuana. Marijuana today is much more potent than it used to be,

[98] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[99] See Appendices 2, 12, and (National Institute on Drug Abuse, 2020)
[100] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[101] (Hall et al., 2019)
[102] See Appendix 12- Meeting Minutes and Materials (September 14 Health Impacts Meeting), Dr. Dustin Sulak presentation
[103] (Colorado, n.d.)
[104] (Kulhalli et al., 2007)
[105] ("The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.," 2017)
[106] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[107] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Nancy Hans presentation
[108] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Dr. Dustin Sulak presentation

and that is especially true in states have legalized marijuana for recreational adult use.[109] For example, Colorado data suggests average potency has increased from 56.6% in 2014 to 68.6% in 2017.[110] Additionally, higher potency products can take people by surprise and lead to more accidental overdose. Raw plant products (often smoked) are less potent than waxes, dabs, and often vaporizers and edibles. While botanical products still make up a slight majority of the market nationwide, other products are gaining in popularity.[111] Colorado saw significant increases in dabbing and edible use among teens between 2015 and 2017.[112] Some work group members noted that looking solely at concentration could be misleading, since products may differ in serving size. They also noted is high potent products often have less additives.

There is little information available on the long-term health effects of high potency products. However, many public health experts have identified them as an area of primary concern. In addition to potential overconsumption, heavy patterns of use are associated with negative health effects. Different studies show that higher the potency products are correlated with problematic or more frequent use.[113]

No Fatal Overdose: Unlike other drugs (e.g., opioids), cannabis overdose does not cause people to stop breathing (except in some infants and toddlers with very high doses).[114] Only a very small number of deaths from cardiovascular disease and stroke and a hyperemesis syndrome have been attributed to sustained, heavy use of cannabis.[115]

3 – Changes in Public Health Measures in States that have Legalized Marijuana

Similar to the challenges around determining the health effects of marijuana, there is insufficient data to fully determine the impact of legalization on key public health and safety measures. Only several years of data are available even for states like Washington and Colorado. Many states also do not have comprehensive historical baseline data. Quantifying the illicit market and stigma also make assessments challenging; individuals may be more likely to self-report use after legalization. Finally, despite the fact that heavy patterns of use are important to track, the level of exposure to marijuana is not always measured.[116] While there is a lot that remains unknown, several key points emerged from the work group:

The effects of criminalization are a public health concern. The work group agreed that marijuana prohibition has had a significant public health impact. Individuals with charges or convictions for simple possession of marijuana often face significant challenges obtaining employment and necessary social supports. Those barriers impact socioeconomic status, which is clearly linked to health outcomes.[117] Marijuana criminalization has also disproportionately

[109] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting) and (Hall & Lynskey, 2020)
[110] (Marijuana Policy Group, 2018)
[111] (New Frontier Data, n.d.)
[112] (Colorado Department of Public Health & Environment, 2018)
[113] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[114] (Diane P. Calello, MD, n.d.)
[115] (Hall et al., 2019)
[116] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[117] (Office of Disease Prevention and Health Promotion, n.d.)

impacted minority individuals and communities. The Virginia Crime Commission founded that 46% of those arrested for a first offense of marijuana possession between 2007 and 2016 were African American.[118] In Washington State, while racial disparities in arrests persisted, there was a significant decline overall in marijuana-related arrests after legalization, especially among 18-20 year olds.[119] However, Washington State did not decriminalize marijuana prior to considering legalization. When discussing instances where substance use disorder (SUD) likely led to arrest, physicians on the work group agreed that SUD is a disease as opposed to indicating a "law-breaking" nature.[120]

Legalization likely increases adult use of marijuana. We have seen an increase in daily and near daily use in both adults and young adults in states that have legalized marijuana for recreational adult use.[121] "The legalization of recreational cannabis use in the US has substantially reduced the price of cannabis, increased its potency, and made cannabis more available to adult users. It appears to have increased the frequency of cannabis use among adults, but not so far among youth." The author also looked to alcohol to suggest potential long-term trends.[122] A recent study presented to the work group by Dr. James Thompson also showed states' percentage of frequent adult users increasing from 2.13% to 2.62% after marijuana legalization, which would translate to an increase of around 30,000 Virginians.[123]

The highest prevalence of marijuana use is among young adults (18-25) and seniors. As noted earlier, the group focused on young adults given their vulnerability. In Washington State, at-least-weekly marijuana use among young adults (21-25) increased from below 17% in 2014 to more than 21% in 2019.[124] In Colorado, "the prevalence rates for marijuana use in the past 30 days increased for young adults (18 to 25 years old), from 21.2% in 2005/06 (pre-commercialization) to 31.2% in 2013/14 (post-commercialization), but stabilized at 32.2% in 2015/16."[125]

The impact of legalization on youth use is unclear. The work group heard different perspectives on whether legalization is associated with increased adolescent use. While one presenter pointed to information showing increasing teen use in states after legalization,[126] the majority of information showed no increase in prevalence of adolescent use in many states that have legalized.[127] Among youth nationwide (12-17 years old), both past 30-day use and daily/near daily use has a slightly decreased overall since 2012.[128] In Colorado, past 30-day use among 12-17 year

[118] (Jouvenal, 2019)
[119] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Tom Bannard presentation
[120] See Appendix 14 - Meeting Minutes and Materials (October 20 Health Impacts Meeting)
[121] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)
[122] (Hall & Lynskey, 2020)
[123] See Appendix 14 - Meeting Minutes and Materials (October 20 Health Impacts Meeting)
[124] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Tom Bannard presentation
[125] (Colorado Department of Public Safety, 2018)
[126] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Nancy Hans presentation
[127] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting), Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), (Hall & Lynskey, 2020)
[128] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)

olds increased 2011-2013 and then decreased 2013-2015, with marijuana legalization passing in 2012 and the legal market opening in 2014.[129]

However, perception of harm among youth has been decreasing, which typically indicates future use.[130] A *JAMA Psychiatry* study referenced by Dr. Thompson found a slight increase in youth problem use among teens post-legalization.[131] There are also variables that may be obscuring the impact of legalization on youth use. For example, youth use of other substances is declining. Among twelfth graders, past 30-day use of alcohol and cigarettes are steadily decreasing while marijuana use is slightly rising. Vaping among twelfth graders, which overlaps with marijuana, has been dramatically increasing since 2016.[132]

There is an increase in Accidental Overdose and Marijuana-Related Hospital Visits following legalization. Studies show that poison control center calls for unintentional pediatric exposure to cannabis are higher in states with more liberalized access to marijuana.[133] This trend is confirmed in the seminal cannabis study by the National Academy of Sciences, which found that legalized states have increased risk of unintentional overdose. In Colorado, the number of poison center calls more than doubled after legalization (110 calls in 2012 compared to 223 in 2014), with one of the biggest increases in the 8-year-old and younger group. The number of calls remained stable 2014-2017, though the portion of calls related to edibles increased in that time period.[134]

Colorado also saw an increase in the number of hospitalizations and emergency room visits with potential marijuana exposures and diagnoses after legalization.[135] The emergency presentations were more likely to be younger adults and/or related to mental illness.[136] In addition, "there has been an increase in marijuana-related emergency and urgent care visits, for example, in the pediatric population in Washington State and Colorado since the commercialization of medical and recreational marijuana."[137]

No conclusion on legalization decreasing opioid misuse. Information from studies provided by NORML stated that, "cannabis access is associated with reduced rates of opioid use and abuse" and in opioid-related injuries.[138] Dr. Dustin Sulak, CEO of Integr8, also presented information on patients substituting cannabis for prescription drugs including opiates. In the Medical Cannabis Work group, a couple of research physicians presented information on promising preliminary studies indicating that medical cannabis can decrease opioid use.

, SAMHSA National Survey on Drug Use and Health (NSUDH)

[129] (Colorado Department of Public Safety, 2018)

[130] (Ladegard, 2020)

[131] See Appendix 14 - Meeting Minutes and Materials (October 20 Health Impacts Meeting)

[132] See Appendix 2 - Meeting Minutes and Materials (September 16 Full Meeting)

[133] (Diane P. Calello, MD, n.d.)

[134] (Colorado Department of Public Safety, 2018)

[135] (Colorado Department of Public Safety, 2018)

[136] (Hall & Lynskey, 2020)

[137] (Ladegard, 2020)

[138] (NORML, n.d.-b)

However, studies have also refuted the association between liberalized cannabis laws and lower opioid misuse and mortality rates.[139] At least one study concluded, "cannabis use appears to increase rather than decrease the risk of developing nonmedical prescription opioid use and opioid use disorder."[140] In review of the literature, the Colorado Department of Public Health & Environment found "conflicting research" on whether marijuana use is associated with decreased opioid use in chronic pain patients or those with a history of opioid addiction treatment.[141] As presented by Tom Bannard, it appears more evidence is needed to determine the relationship between cannabis access and opioid use.[142]

Minimizing the number of impaired drivers on the road in Virginia is critical to public health and safety, but much is still unknown about this issue. Similar to other drugs, the use of marijuana can impair an individual's ability to drive safely. Preliminary data indicates the rate of marijuana impaired driving is on the rise nationally. The National Highway Traffic Safety Administration reports a 48 percent increase in the number of weekend nighttime drivers that tested positive for THC between 2007 and 2013-14 (i.e., an increase from 8.6 percent to 12.6 percent of drivers tested).[143] As noted previously in this report, states that legalized marijuana did not have high quality baseline data prior to legalization making it challenging to determine the consequences of legalization on marijuana-impaired driving. In Virginia, 94 deceased drivers tested positive for some level of THC in 2018. There were over 800 traffic fatalities in 2018, one third of these were alcohol related. In 2019, 90 deceased drivers tested positive for some level of THC.[144] However, Virginia is currently working to address data gaps and collect more comprehensive data about the rate of marijuana-impaired driving in the Commonwealth. It is also important to keep in mind that a positive THC blood test does not necessarily indicate marijuana-impairment.

This work group heard from leaders in other states and experts from the Department of Forensic Science (DFS) and the Department of Motor Vehicles (DMV) about the potential impact of marijuana legalization on traffic safety in Virginia. There was a focus on different types of impaired driving laws and specific types of roadside testing (e.g., oral swabs). Policymakers should carefully consider mechanisms to deter and reduce marijuana-impaired driving. Further details regarding impaired driving may be found in Section 8.8 of this report.

Existing marijuana users have access to a safer product. Many participants in legal commercial markets were using prior to legalization. According to a study recommended to the work group by the NGA, "legalization has reduced the illicit cannabis market in the U.S. states that have legalized recreational use, but might have increased illicit cannabis trafficking between states that have legalized cannabis and those that have not."[145] It appears that the demand for cannabis is relatively inelastic[146] and many individuals are willing to pay a premium for the cleaner, safer product on

[139] (Shover et al., 2019)
[140] (Olfson et al., 2017)
[141] (Colorado, n.d.)
[142] See Appendix 14 - Meeting Minutes and Materials (October 20 Health Impacts Meeting)
[143] (Berning et al., 2015)
[144] See Appendix 10 - Meeting Minutes and Materials (October 21 Legal & Regulatory Meeting)
[145] (Hall et al., 2019)
[146] (Gravelle et al., 2014)

the regulated market.[147] In Washington State the number of 21-25 year olds getting marijuana from friends declined from 73% to 25% over six years.[148] Some sources point to increases in illicit market sales after legalization.[149] Virginia should encourage transition into the legal market, as access to a safer, well-labeled product is a clear public health benefit of legalization.

Section 9.2: Consumer Education

Similar to alcohol and tobacco, approximately 20% of users use 80% of the product. Robust, targeted information at the point of sale enables both frequent and new consumers to make informed choices. It can also encourage responsible use and mitigate negative health consequences, especially given the greater likelihood with heavy patterns of use.

Warnings and product information on packaging and inserts is important, but consumers often do not read the fine print. Requiring in-store signage with key information and health warnings is important.

Consumers also get much of their information from retail associates, sometimes referred to as "budtenders." While Colorado has an optional retail associate training program with incentives, no state currently requires retail associate training. Required training, in partnership with public health experts, would help consumers get accurate and comprehensive information at point of sale.

The group also discussed defining "responsible use." NORML has guiding principles on what responsible use looks like, including keeping it away from youth, not operating a motor vehicle while impaired, being considerate of surroundings, and not abusing the drug.

Section 9.3: Prevention Strategies

As Nour Alamari, co-chair of the health impacts subgroup mentioned, consumer education is important but is often too late to encourage informed choices. Youth perception of harm will likely continue to decrease as more states legalize marijuana. As described in section 9.1, adolescent use is associated with a greater likelihood of developing substance use disorder and other long-term negative effects. Dr. Dustin Sulak, CEO of Integr8, noted that many teens know what responsible use looks like for alcohol, but not more marijuana. Nancy Haans, Executive Director of the Prevention Council of Roanoke, said many parents are confused about what messages to give their children about marijuana.

While youth efforts are foundational to prevention, education should not be limited to school-aged youth. The brain continues developing into an individual's mid-20s, and college-aged students are developing patterns for behavior later in adulthood. Additionally, marijuana use among the senior

[147] (NORML, 2020c)

[148] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting), Tom Bannard presentation

[149] (Smart Approaches to Marijuana, 2018)

population is increasing nationwide. Those new users may be returning to different products than they used in young adulthood and will need education.

While marijuana prevention efforts in Virginia are less robust than those for alcohol and tobacco, Virginia has a strong foundation on which to build. Evidence-based, marijuana-focused prevention programs have also been emerging in recent years. For example, both the Prevention Council of Roanoke and Chesterfield SAFE Marijuana have peen partnering with Oregon's Clear Alliance to implement the Tobacco, Marijuana, and E-Cigarettes curriculum. Through sustained prevention efforts paired with local data collection, Roanoke County has also seen an overall decrease in the prevalence of marijuana use among middle and high school students (2002-2020).

If the Commonwealth moves forward with marijuana legalization, it is important to assess current efforts, address gaps in marijuana education services, and build on what is available. Policymakers should examine lessons learned from alcohol, tobacco, and other drugs, while recognizing that some challenges may be unique. Work group members suggested several existing efforts and areas of focus:

· **Public Health Campaigns**: It is important that public health campaigns be evidence-based and unbiased. While every drug is different, tobacco cessation campaigns were highlighted as model. Campaigns should:

- Include awareness that anyone could be at-risk for substance use disorder;
- Include health risks, especially for youth, women who are pregnant and breastfeeding, and those with certain mental health conditions; and
- Address workplace and driving impairment, as well as interactions with other medications.

· **Community Coalitions**: Virginia has evidence-based prevention strategies and approaches in place, especially through its community coalitions. The coalitions receive no general fund and rely primarily on local funding.

· **K-12 Education**: Virginia's newly revised Health Standards of Learning addresses substance use prevention throughout every grade level. The new curriculum could incorporate marijuana prevention education.

· **Virginia Foundation for Healthy Youth**: VFHY takes a comprehensive approach to prevent youth tobacco and nicotine product use, childhood obesity, and substance use. The organization provides grants for prevention education, community action, and research, has a statewide marketing campaign, and a robust youth engagement program. All of these efforts use evidence-based approaches to maximize impact.

· **Virginia ABC Education and Prevention:** By code, Virginia ABC is responsible for facilitating the Virginia Office for Substance Abuse Prevention Collaborative (VOSAP) and Virginia Higher Education Substance Use Advisory Committee (VHESUAC). VOSAP works to promote positive youth development by providing strategic statewide leadership, fostering collaboration and sharing of resources at all levels, promoting evidence based prevention and reporting annually on statewide

youth substance use prevention efforts. VHESUAC is responsible for coordinating strategic statewide leadership for substance use education, prevention, intervention and recovery at Virginia's public and private institutions of higher education. Additionally, Virginia ABC Education and Prevention's mission is to eliminate underage and high-risk drinking, therefore programming and resources are provided for all Virginians including: youth, adults, licensees, health care providers and community partners.

· **DBHDS Office of Behavioral Wellness:** OBHW utilizes evidence–based prevention approaches to address alcohol, tobacco and other drugs that include heightened community awareness of the issue, local community coalition mobilization and development to address, plan and identify local strategies and reduce underage access to prevent youth consumption. These strategies can also be used to mitigate and reduce the risk of harm with marijuana legalization.

· **College Recovery Programs**: The brain continues to develop into an individual's mid-20s, and college-age students are often developing patterns for the rest of their adult life. Virginia has developed a comprehensive College Recovery program partnering with VCU and utilizing State Opioid Response (SOR) funding. Currently the state is working with four additional colleges to add to the existing group of eight institutions. Marijuana use has been increasing in this population and must be addressed formally. In the college environment, the students and staff that are in the recovery programs are the voices for college prevention initiatives.

· **Health Care Professionals**: Health care professionals are on the front lines of identifying substance use disorder and advising patients and families. They will also be facing many of the likely challenges of marijuana legalization, such as increased marijuana-related emergency visits and substance use disorder needs. They should be consulted and provided with information on how to encourage responsible use and mitigate risk.

Section 9.4: Addressing Youth Impacts

Preventing youth use of marijuana was an area of focus for the work group and is woven throughout many of the sections above. Protecting youth includes safe storage, limits on marketing, and prevention strategies and education. The work group also agreed there should be mandatory ID checks and dispensaries should not be located near schools and other youth-focused locations. In light of the negative health effects from using marijuana while pregnant, work group members also recommended engaging Virginia's "Handle with Care" program that serve substance using pregnant and parenting women and their children. National Families in Action has also put together resources on how to "help legalization states develop regulations to protect children from commercial marijuana and other states to seek marijuana policies that chart a middle road between incarceration and legalization."[150]

[150] (The Marijuana Report, n.d.)

Section 9.5: Undoing harms of marijuana criminalization

There are some tradeoffs between a public health approach to legalization and one that creates business opportunities for equity applicants. However, both health and economic equity was at the forefront of health impacts subgroup conversations. Social determinants of health - such as housing, access to healthy food, and income level – determine up to 80% of health outcomes.[151] Access to resources is necessary for health and economic opportunity, and many work group members stressed that the benefits of legalization must be distributed equitably.

Michael Carter highlighted the importance of addressing root causes of inequities and listening to communities. For example, minorities may be using marijuana to cope with stress caused by racial discrimination and disproportionate criminalization. Urban, suburban, and rural communities have different challenges and different needs. The legalization structure should be set up in coordination with stakeholders including minority institutions.

Legalization poses unique challenges for those in government-funded and rented housing and renters. In terms of federally subsidized housing, marijuana is a Schedule I drug and previous federal guidance has limited the ability of medical cannabis users to consume in the home.[152] Many states allow landlords to prohibit use or cultivation on their rental property. Some states allow social consumptions sites, which provide individuals with an additional location to consume marijuana legally.

The group also agreed that legalization should avoid unintended consequences that exacerbate racial and other disparities. For example, consider mechanism to avoid dispensaries being overly concentrated in low-income neighborhoods, which could be detrimental for public health. Potential approaches are setting "density caps" for dispensaries or requiring them to be a certain distance from each other. Wealthier communities may be better equipped to navigate zoning and other rules. A report published by the American Academy of Pediatrics also found Black adolescents were more likely to use marijuana, in addition to having less access to treatment.[153]

Two potential investments were mentioned in light of the principles mentioned above.

- A community reinvestment model, potentially similar to the model used by Illinois. In this approach, communities can apply for funding to meet their specific, community-driven needs including behavioral health care, education, housing, etc.
- Reentry and diversion programs for individuals in the criminal justice system: Virginia could build on existing efforts to focus on rehabilitation and decreasing recidivism. These supports include behavioral health treatment, given the significant portion of justice-involved individuals struggling with substance use disorder. As of August 2020, approximately 70% of individuals in Virginia state correctional facilities and 66% of Virginias on probation have substance use disorder needs.

[151] (Robert Wood Johnson Foundation, 2019)
[152] (Henriquez, 2011)
[153] (Ladegard et al., 2020)

Many of the issues posed by legalization are complex and the policy change will not be sufficient to undo the harms of criminalization. Even in some states where legalization has reduced the overall number of Black individuals arrested for marijuana related crimes, disproportionate arrests rose.[154] Monitoring disproportionate policing and creating "disparity reports" similar to Illinois could help evaluate implementation.

Section 9.6: Substance Use Disorder and Treatment

Given the likely increase in marijuana use with legalization, the work group discussed the importance of assessing the substance use disorder (SUD) system and preparing for changes in treatment needs. As described above, predictive factors for developing cannabis use disorder (CUD) include frequency of use, socioeconomic status, and level of education. According to an article published by the American Academy of Pediatrics, individuals who are unemployed or undereducated are disproportionately likely to suffer from severe CUD.[155] According to Dr. Thompson, genetics are the single strongest contributing factor to developing SUD. An increase in the number of marijuana users will likely lead to an increase in the prevalence of substance use disorder. Legalization may also decrease the stigma associated with marijuana, which could either encourage individuals to seek treatment or further normalize marijuana use.

Work group members noted that Virginia's addiction services are already strained, especially its behavioral health safety net. In terms of marijuana, Virginia Medicaid and the Community Services Boards are already providing marijuana treatment services, which primarily involves psychotherapy and counseling. Based on Medicaid claims from state fiscal year 2020, approximately 4,700 beneficiaries were treated for CUD, including 1,360 individuals under 21, 680 people with disabilities, and 1,975 non-Hispanic Black individuals. Work group members recommended using a portion of marijuana tax revenues to support existing substance use disorder services that are underfunded instead of "reinventing the wheel." These services include behavioral health treatment for justice-involved populations, Virginia Medicaid's Addiction and Recovery Treatment Services (ARTS) benefit and Community Services Boards. They also recommended supporting training for SUD identification and intervention at "touch points" such as counselors and primary care physicians. Finally, one presenter noted that, based on our experience with alcohol, it is likely that costs to the public and to the government will exceed state revenue from marijuana sales.[156]

Section 9.7: Virginia's Clean Indoor Air Act

Virginia should develop marijuana policy consistent with clean indoor air policies for tobacco. Research is still developing regarding the effect of secondhand smoke from marijuana, though it

[154] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting)
[155] (Grigsby et al., 2020)
[156] See Appendix 12 - Meeting Minutes and Materials (September 14 Health Impacts Meeting) and (Centers for Disease Control and Prevention, 2018)

has been associated with bronchospasms in those with lung issues. Public smoking further normalizes use for youth and others, and having designated areas and clear signage is important.[157]

Virginia's Indoor Clean Air Act (Code Title 15.2, sections 15.2-2820 through 15.2-2833) was signed into law on March 9, 2009 by then Governor Kaine. The Act bans lighting or smoking of pipes, cigars, cigarettes, or any other "lighted smoking equipment," in most Virginia restaurants. The Act covers the following locations in which smoking is prohibited: (i) elevators, regardless of capacity, except in any open material hoist elevator not intended for use by the general public; (ii) public school buses; (iii) the interior of any public elementary, intermediate, and secondary school; (iv) hospital emergency rooms; (v) local or district health departments; (vi) polling rooms; (vii) indoor service lines and cashier lines; (viii) public restrooms in any building owned or leased by the Commonwealth or any agency thereof; (ix) the interior of a child day center licensed pursuant to § 63.2-1701 that is not also used for residential purposes; however, this prohibition shall not apply to any area of a building not utilized by a child day center, unless otherwise prohibited by this chapter; and (x) public restrooms of health care facilities.

Exceptions to this law include allowing restaurants to have smoking areas if they are structurally separate from non-smoking areas, separately ventilated, and have separate doors between the smoking area and non-smoking areas of the restaurant. The Act does not regulate smoking in "open air" or outdoor areas of public restaurants nor does it apply to private clubs or portions of a restaurant that are used exclusively for private functions. A restaurant proprietor is required to post signs advising that smoking is not permitted, and to remove all ashtrays from non-smoking areas. Violations of the Virginia Indoor Clean Air Act by the proprietor of a restaurant or by a patron are punishable by a civil fine of not more than $25 for each violation. (Virginia Code section 15.2-2825).

Section 9.8: Data Collection

The work group agreed that additional research and data collection was needed. There are many unknowns when it comes to marijuana and the impact of marijuana legalization. Without comprehensive baseline data, the Commonwealth will be unable to identify and respond to changes. The work group identified several areas where having baseline marijuana-related data is critical,

- Poison Control Center Calls
- Hospital and Emergency Room Visits
- Impaired Driving
- Use rates, including heavy or frequent use, mode of use, and demographic information especially for vulnerable populations (e.g., youth, pregnant women)
- Treatment rates

One option is to create an interagency working group to examine existing marijuana-related services and data collection in the Commonwealth.

[157] See Appendix 3 - Meeting Minutes and Materials (October 28 Full Meeting)

Chapter 10: Conclusion

While the goal of the work group and this report was not to recommend whether or not Virginia should legalize the sale and personal use of marijuana, the thoughtful, stakeholder-driven conversations of the group yielded a wealth of recommendations and considerations for the Commonwealth to draw upon should it decide to pass and implement marijuana legalization legislation. Virginia is in a unique position of being able to learn from other states that have already ventured down this policy path and being a leader nationally in setting up a thoughtful, comprehensive adult-use marijuana program.

Virginia has already implemented other cannabis programs over the past few years, and a legal marijuana program could build upon the progress that has already taken place to ensure the success of these programs. Furthermore, the Commonwealth can develop a program that accomplishes a wide array of policy goals if it chooses to pass marijuana legalization legislation.

This task would be both challenging and complex, requiring the input of multiple state agencies, stakeholders, and experts. The process to set up a state regulatory program would likely take some time and require adequate resources. While the potential economic opportunities and revenue impacts are promising, they are not guaranteed.

In addition, one of the most important ways Virginia can show leadership is through careful consideration of public health and safety impacts of legalization. It is crucial for the Commonwealth to dedicate state resources to collecting the right data and supporting key priorities, such as consumer and youth education and behavioral health programs. The Commonwealth can continue to fulfill its role of protecting its citizens and could also serve as a model for other states who may be considering marijuana legalization.

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