Planning for Pot
Incorporating the Production of Medical Marihuana Into the Zoning Bylaw of the District of West Kelowna

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EXECUTIVE SUMMARY

PLANNING FOR POT: INCORPORATING THE PRODUCTION OF MEDICAL MARIHUANA INTO THE ZONING BYLAW OF THE DISTRICT OF WEST KELOWNA

BAILEY CHABOT

APRIL 2014

In June 2013, Health Canada enacted the Marihuana for Medical Purposes Regulations (MMPR), legislation that changed the way medical marihuana is grown and distributed. This was in response to problems that arose from the previous legislation allowing the home production of medical marihuana. Under the new MMPR legislation medical marihuana producers must declare themselves to local authorities and local government. Most importantly, medical marihuana production is now prohibited from occurring in a dwelling place. As MMPR legislation is federal, all Canadian municipalities must allow medical marihuana production facilities or be prepared to prove that residents still have reasonable access to medical marihuana.

This research was aimed at determining how best to incorporate a medical marihuana land use into the zoning bylaw of the District of West Kelowna, British Columbia. Three questions were posed:

1. In which zone, if any, is the production of medical marihuana most appropriate?;
2. If an existing zone is not appropriate, what would a new zone for the production of medical marihuana include?; and,
3. Within the District of West Kelowna, which areas would be most appropriate to be included in this new medical marihuana zone?.

FUNCTIONAL LAND USE REVIEW

Medical marihuana production facilities require two major inputs: water and electricity. Both are for the propagation and growth of the marihuana. Waste products include the dried cannabis flower, which is the intended product, along with the decomposing marihuana plant and wastewater. The use has several accessory activities such as testing, storage, and packaging, however, these uses require minimal space and do not produce any negative externalities. The production of medical marihuana does produce two major negative externalities. One is odour
pollution, which is required by MMPR to be mitigated through air filtration systems. Another is the attraction of criminal activity due to the high cash value of the medical marihuana crop.

These facilities are typically large, approximately 10,000 m², with considerable variation. Setbacks should be a minimum of 30.0 m on all sides to mitigate negative externalities, assuming proper air filtration can mitigate odour. On-site parking is required for employees, however, a facility that is 10,000 m² would require only approximately 50 spaces. The facility requires only one loading bay for the loading and unloading of inputs and outputs.

This new land use has several compatible adjacent activities and land uses. Examples include light industrial uses such as warehouses, processing facilities, light manufacturing, wholesale distribution, and some office parks. They have similar built form and will not be seriously affected by medical marihuana production’s negative externalities. Incompatible adjacent activities and land uses do not have similar built form to medical marihuana facilities and have the potential to be affected by their negative externalities. Examples include residential zones and commercial zones, particularly in central business districts.

**Findings**

Zoning Bylaw No. 0154 has 41 zones, nine of which have purposes consistent with the production of medical marihuana, permit its use, and meet the stipulations set forth by the MMPR legislation. These nine zones are highlighted in Chart 1-Comparative Zoning of the DWK.

Some of the nine zones are more appropriate than others. The A1-Agriculture zone is appropriate because medical marihuana production has been deemed a farm practice according to the Right to Farm Act and contravening provincial policy could create potential issues later. However, medical marihuana production is not compatible with this zone. Often the necessary utilities are not available while adjacent land uses are not always compatible.

The rural zones (RU1-RU5) are not appropriate because they often lack the necessary utilities.
### Chart 1: Comparative Zoning of the DWK

This chart shows all zones in the DWK. It shows whether medical marihuana production meets the purpose of the zone, it is a permitted use, and if the zone meets MMPR legislation.

<table>
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<tr>
<th>Zone</th>
<th>Zoning Bylaw No. 871</th>
<th>Meet Zone Purpose</th>
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† Medical marihuana production permitted in zone under agriculture, general or greenhouse or plant nursery.
*Recommended zones
**Recommended with restrictions

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The C4-Service Commercial zone is not appropriate because of its generally small size (minimum parcel size of 500 m²), the risk of impacting neighbouring businesses with negative externalities, and the fact that uses in this zone typically have customers arriving on-site to conduct business, while medical marihuana facilities must ship their product to their customers.

The two industrial zones, I1-Light Industrial and I6-Rural Industrial, are both appropriate. The land use is consistent with the built form of these zones, while negative externalities are mitigated due to the similar uses occurring in the zone. Finally, the I1-Light Industrial zone is often serviced with the required utilities, however, that may not be the case for the I6-Rural Industrial zone.

District Council can choose to amend the existing zones within Zoning Bylaw No. 0154 or they can introduce a new specialized zone for medical marihuana. Such a zone would require a purpose, as simple as “to accommodate the production of medical marihuana and its associated uses”. Siting requirements are necessary. Minimum parcel sizes of 5,000 m² to accommodate the generally large facilities, with setbacks of at least 30.0 m on all sides to mitigate negative externalities. Maximum height of 12.0 m is appropriate as most facilities are single storey, while multi-tenant buildings should be prohibited as they increase the likelihood of impacting neighbours with negative externalities.

This specialized zone should be located on relatively flat parcels, with minimum grade due to the large size of the facilities. They should be located on parcels that are serviced with municipal utilities such as water and sewer. Finally, the zone should be located on parcels that help mitigate negative externalities such as odour pollution yet be on or near transportation routes to facilitate the movement of the product.

**RECOMMENDATIONS**

Based on the findings from the research four recommendations were made to efficiently and effective incorporate a medical marihuana land use into the urban fabric of the District of West Kelowna. Recommendations include:

**RECOMMENDATION 1:** Amend Zoning Bylaw No. 0154 to include a definition for ‘medical marihuana production’ similar to this: “a facility, licensed by the Federal
Government, used solely for the production, manufacturing, processing, testing, packaging, and shipping of marihuana and marihuana products for medical purposes as authorized under the *Controlled Drugs and Substances Act (Canada)*”. Medical marihuana is currently permitted under the uses of *agriculture, general* and *greenhouse or plant nursery*, creating issues with consistency as a land use. A specific definition for this land use will avoid issues of consistency.

**Recommendation 2**: Amend Zoning Bylaw No. 0154 to permit medical marihuana production on all Agricultural Land Reserve parcels to avoid contravening the *Farm Practices Protection (Right to Farm) Act*.

**Recommendation 3**: Amend Zoning Bylaw No. 0154 to permit medical marihuana production and its associated uses in the most appropriate zones which are: A1-Agriculture (with increased setbacks as this zone is often adjacent to residential zones, an incompatible land use), I1-Light Industrial and I6-Rural Industrial.

**Recommendation 4**: Amend Zoning Bylaw No. 0154 to permit medical marihuana production as a permitted use within established zones as opposed to using site specific amendments for each proposal for a medical marihuana production facility is made to the District.

**Conclusion**

This report examined the most appropriate way to incorporate the medical marihuana production land use into the urban fabric of the District of West Kelowna, using three research questions. The findings of this research were used to offer recommendations to make the incorporation as efficient and effective as possible.

Despite limitations, this research was able to utilize the lack of best practice and availability of ‘other’ practice to examine the options available to incorporate the production of medical marihuana into the District of West Kelowna’s Zoning Bylaw No. 0154.
Planning for medical marihuana production would benefit from future research that focusses on including more case studies and the development of best practices to offer a standard for the incorporation of this land use into a zoning bylaw.
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I would like to thank the people who generously gave their time to help me complete this project: Dr. John Meligrana for helping me arrive at a project that was manageable yet original; and Dr. David Gordon for meeting with me and guiding me through the research.

Thank you to my roommate and friend, Trina Rogers, for her support, encouragement, and sharp eye for editing and detail.

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Finally, thank you to my summer supervisor, Ms. Dallas Clowes, who was the source of inspiration for this project.
1.0 INTRODUCTION

1.1 MARIJUANA

Marijuana (Cannabis) is a flowering plant native to Central and Western Asia\(^1\). It has been used by humans for over 5000 years\(^2\), originally for medical purposes\(^3\). These medicinal uses have fallen into disfavour and marijuana is now typically regarded as an illicit recreational drug.

*Cannabis* has been recognized as an effective treatment for a large range of medical issues\(^4,5\). Research has shown that marijuana is useful in reducing nausea after chemotherapy treatment, increasing hunger in cancer patients, reducing number of seizures for those suffering from epilepsy, as a treatment for migraine headaches, and in the treatment of depression and pain.

Health Canada has recognized the potential for marijuana as a medicinal tool for pain management and the treatment of illness. Marijuana was officially recognized by Health Canada in 2001 as a treatment for specific illnesses and maladies. This was done through the *Medical Marihuana Access Regulations*.

1.2 MEDICAL MARIHUANA ACCESS REGULATIONS (MMAR)

On July 30, 2001 the Federal government, through Health Canada, introduced the *Medical Marihuana Access Regulations* SOR 2001/227\(^6\) (MMAR), making it legal in Canada to produce and obtain marihuana for the treatment of serious medical

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conditions. As a medicinal use, medical marihuana is treated as a medication and is prescribed by a physician. MMAR were introduced as a means of providing medical marihuana as treatment for debilitating disease or as part of end of life care. There are two symptom categories that are used to established eligibility of medical marihuana. Category 1 Symptoms are defined as:

-Any symptom treated within the context of compassionate end-of-life care,

  OR

-Symptoms related to specific medical conditions, namely:
  - Severe pain and/or persistent muscle spasms from multiple sclerosis
  - Severe pain and/or persistent muscle spasms from a spinal cord injury
  - Severe pain and/or persistent muscle spasms from a spinal cord disease
  - Severe pain, cachexia, anorexia, weight loss, and/or severe nausea from cancer
  - Severe pain, cachexia, anorexia, weight loss, and/or severe nausea from HIV/AIDS infection
  - Severe pain from severe forms of arthritis
  - Seizures from epilepsy

Category 2 symptoms are defined as ‘a debilitating symptom that is associated with a medical condition or with the medical treatment of that condition, other than those described in Category 1’.

Through this avenue, dried medical marihuana would be prescribed to patients who suffer from a range of diseases and conditions.

Under this legislation, an individual is required to obtain an Authorization to Possess through Health Canada in order to have a prescription filled. The prescription is then filled in a number of ways. Health Canada has its own supply of medical marihuana that it dispenses to those with a prescription and an Authorization to Possess. Additionally, an individual can obtain a Licence to Produce which allows a patient to grow their own medical marihuana, or a Designated-Person Production Licence, which allows an individual to grow marihuana on behalf of others. The total amount of marihuana produced is regulated by the production licence, which stipulates the total amount of marihuana a producer can be in possession of. It is also stipulated through the MMAR that a designated-person can only grow medical marihuana for up to four patients.

Medical marihuana differs from illicit marijuana in that its production and consumption is controlled and monitored by Health Canada through the Medical Marihuana Access Regulations SOR 2001/227 (MMAR) and a prescription from a physician is required to access this drug.
There are no differences in the physical characteristics of medical marihuana or illicit marijuana; it is the same *Cannabis* plant. The two are separately identified in writing by substituting the ‘j’ in the illicit marijuana for an ‘h’ in the medicinal marihuana.

It is possible for medical marihuana to become illicit marijuana. If the proper regulations are not followed, such as an individual in possession of more marijuana than their *Authorization to Possess* allows, the medical marihuana is now considered illicit. Under such circumstances, the drug is no longer regulated under *MMAR* and is in contravention of the *Controlled Drugs and Substances Act* (S.C. 1996, c. 19). Unauthorized activities associated with medical marihuana will be considered criminal offences and will be subject to penalties and punishments under the *Controlled Drugs and Substances Act*.

### 1.3 Unanticipated Issues with MMAR

Under the MMAR legislation, the production of medical marihuana must occur indoors, at a private residence. This creates potential issues in regards to monitoring and regulation. The *Freedom of Information and Protection of Privacy Act of British Columbia* [RSBC 1996] Chapter 165 (FIPPA) precludes individuals with a *licence to produce* or a *Designated-Person Production Licence* from declaring themselves to local authorities. If a building inspector presents themselves, they can be turned away under FIPPA as declaring medical information is considered a violation of privacy. It also creates the situation where the production of medical marihuana is not controlled by zoning, or any other local bylaws.

The stipulations of MMAR and the protection of FIPPA may combine to create a situation where illicit marijuana production is difficult to patrol by the local authorities, leaving a dark corner for illicit production to hide. The illicit production of marijuana stemming from MMAR typically occurs when individuals with authorization to produce medical marihuana take advantage of the gaps in MMAR and FIPPA by producing more marihuana than allowed and selling the excess on the black market.

This overproduction is not only illicit it can create dangerous situations for the occupants of the dwelling, often children, and potentially hazardous situations if emergency responders are called. Producers of illicit marijuana operate in dwellings that may be poorly ventilated, causing air quality issues such as the growth of mould or the lingering of chemicals used in the production
of the marijuana. Requirements in terms of temperature management and ventilation can also create a situation where illicit marijuana growers perform do-it-yourself renovations where studs are removed from walls and joists are cut from floors and ceilings to make room for make-shift ventilation systems. Heat and humidity from the operation have the added effect of warping wooden structures, including studs and joists in the house.

Both illicit marijuana and legal medical marihuana operations require a large amount of electricity. Illicit operations will often tamper with the electrical meter so it seems as though lower amounts of electricity are being consumed, and may even steal electricity from surrounding buildings. Like the structural renovations, electrical work may also done by a non-professional, often the operator of the grow house. The potential for electrical fires are increased due to exposed live wires and overheated electrical ballasts. Pairing home electrical work with tampered key structural components creates a situation where a potential electrical fire weakens an already weak structure. A dwelling that should be safe for emergency personal to enter, either to fight fire or aid injured occupants, has the potential to collapse.

Fire in a dwelling with an illicit marijuana operation has negative health implications for those neighbouring the operation; spores from the marijuana plant are toxic to humans. These spores can cause health issues with occupants residing in the dwelling, while introducing a fire allows these spores to spread within the neighbourhood.

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Theft is a major concern, for both the owner of the grow house and for other occupants and neighbours. Theft of a grow house is called a “rip”. Grow rips can be violent, and would-be thieves do not always have current information. It has happened that thieves attempting grow rips are confronted by innocent persons who live in a decommissioned grow house.\(^\text{11}\)

These concerns have not gone unnoticed by municipalities and Health Canada. The Federal government, in consultation with the Federation of Canadian Municipalities, has revised requirements and regulations legislating the production of medical marihuana. These concerns and subsequent revisions are what have led to the *Marihuana for Medical Purposes Regulations*.

### 1.4 *Marihuana for Medical Purposes Regulations* - A Solution to the Problems

In June of 2013, the Federal Government of Canada, through Health Canada, introduced the *Marihuana for Medical Purposes Regulations SOR/2013-100 (MMPR)*. They were enacted to replace the *Medical Marihuana Access Regulations* (MMAR) when they were repealed April 1, 2014. MMPR were introduced seven months prior to the repealing of MMAR to allow for a smooth transition from the latter to the former.

This new MMPR legislation is parallel to its predecessor in that they both have a goal of providing medical marihuana to those who need it. However, there are striking differences in

how the marihuana is to be grown and how medical marihuana production incorporates into the urban fabric of a municipality. These changes were introduced to rectify problems with growing medical marihuana in the home.

The most significant difference is that the production of medical marihuana is now under a licenced business model, with producers applying for a licence to produce through the federal government. They must also declare their location to the local government, local fire authority and the local police (Part 1, Section 38). This allows for monitoring and regulation of the medical marihuana production facilities.

The production of medical marihuana is no longer allowed at a dwelling place (MMPR, Part 1, Section 13). This is significant, in conjunction with the treatment of medical marihuana production as a business, in rectifying safety issues faced by those living with the production of medical marihuana under MMAR. This also ensures that inspections are possible and don’t contravene FIPPA, as patients can no longer produce medical marihuana for themselves. As an additional security measure, a summary report must be prepared annually by the producer ‘containing a concise and critical analysis of all adverse reactions the dried marihuana that have occurred in the past 12 months’ (Part 1, Section 63[2]).

Several rules have been incorporated in the MMPR that will affect how this new land use is incorporated into a municipality’s urban fabric. All production and storage must happen indoors (Part 1, Sections 14&15), on a property that is visually monitored all day, every day by security measures that can record potential unauthorized access to the medical marihuana (Part 1, Sections 43&44). The medical marihuana production businesses cannot operate a storefront and must ship all medical marihuana to their clients (Part 5, Section 132). Greenhouses are not suitable for this land use as they are not easily secured and may have difficulty mitigating any odour pollution produced.

1.5 The Production of Medical Marihuana - A New Land Use

This report examines the issue of incorporating the production of medical marihuana into Zoning Bylaw No. 0154 of the District of West Kelowna, British. Three questions will be examined:

4. In which zone, if any, is the production of medical marihuana most appropriate?;
5. If an existing zone is not appropriate, what would a new zone for the production of medical marihuana include?; and,
6. Within the District of West Kelowna, which areas would be most appropriate to be included in this new medical marihuana zone?

The Methods chapter will examine how the necessary information was collected and the how it was analyzed. The Functional Land Use Review chapter examines what exactly a medical marihuana production facility is, including inputs, outputs, accessory activities, externalities, and siting and sizing requirements. The Analysis chapter examines the data collected in detail and uses the methods of analysis to better understand the data. This chapter answers the three research questions. The Recommendations chapter offers suggestions and solutions so that medical marihuana production can be quickly and efficiently incorporated into the District of West Kelowna, while the Conclusion chapter sums the report.

This report deals solely with the production of medical marihuana as a land use and its incorporation into the zoning bylaw of a municipality. It will not address the general legalization of marijuana nor will it comment on the purported health benefits medical marihuana offers.
2.0 Method

2.1 The Case Study Method

A case study has been defined as ‘an intensive study of a single unit for the purpose of understanding a larger class of (similar) units’. It is easy to see with this definition that case study research is used to explore the contextual and nuanced aspects of a phenomenon. Examples of phenomena researched using case studies include single events, processes, or a specific place, and can sometimes be used to resolve specific problems. As such, case studies lend themselves as a methodology, rather than method of data collection. As a methodology, a case study generally employs qualitative research methods common in social sciences, but also incorporates quantitative research. Finally, case studies are unique in that understanding a single case of the phenomenon itself holds value and additional study through other cases are not necessary.

To this end, a case study is the most appropriate method as this topic deals with the process of incorporating medical marihuana production into a zoning bylaw, in a specific place, the District of West Kelowna. Both qualitative and quantitative data will be collected to explore this phenomenon and the results found will themselves be useful in incorporating the production of medical marihuana as a land use into Zoning Bylaw No. 0154.

2.2 Data Collection

The research began with a functional land use review of the medical marihuana land use. Inputs, outputs, accessory activities, externalities, the sizing and siting of this land use, adjacent activities and land uses, and finally, a comparison with a similar land use, mushroom farming. This functional land use review gives a comprehensive overview of the new medical marihuana land use.

Next, a literature review using a keyword search was completed. Examples included “medical marihuana and zoning”, “land use marihuana”, and “MMPR and zoning”. As very little academic literature exists on the subject, I relied heavily on newspaper articles, council reports,

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12 Gerring, J. (2004). What is a case study and what is it good for?. American political science review, 98(2), 341-354. Pg. 342  
14 Ibid.
and academic literature regarding other land uses that experience negative social connotations that have been studied from a land use perspective, termed locally undesirable land uses (LULUs). An example of a LULU would be brothels within the urban landscape. A previous study involved the examination of the placement of gay brothels in Sydney, Australia in relation to urban governance and planning. It was discovered that despite the association of gay brothels with crime, AIDS, and low moral standards, and the perception that they contaminated sensitive land uses such as churches or schools, gay brothels had a positive effect on health and lifestyle opportunities of specific areas of the city. This literature review was used to establish a framework for better understanding the rules and regulations of MMPR and how medical marihuana production as a business functions. The literature review also acted as a preliminary search for other practice examples across the province of British Columbia.

A policy review of the DWK’s Zoning Bylaw No. 0154 was undertaken. Requirements in terms of land use for each proscribed zone were noted and then compared to the land use requirements set forth in the new MMPR. This was used to initially examine each zone under Zoning Bylaw No. 0154 and to immediately disregard any zone that did not meet MMPR requirements or any zone in which the production of medical marihuana did not fit the intended purpose. Requirements in terms of land use, lot size, and building sizing and siting were extracted from all documents and then compared. The Marihuana for Medical Purposes Regulations were then analyzed. Relevant sections were extracted and used to create a comparative chart with Zoning Bylaw No. 0154. From this a useful comparison was created to establish which zones were entirely inappropriate, judged by the MMPR. Finally, an informational bulletin published by the Agricultural Land Commission regarding medical marihuana production as a farm use was examined.

An “other” practices review was completed of other British Columbia municipalities that have zoned for the medical marihuana land use. I use the term “other practice” rather than “best practice” because of how recently MMPR has been enacted. There has not been a long enough time frame to establish best practice. Despite the fact that zoning for a medical marihuana production land use is new, some municipalities have already included this land use in their zoning bylaws. The priority was in finding BC municipalities that have amended their zoning bylaws.

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byslaw to include a medical marihuana production land. I examined how this new land use has been incorporated into their zoning bylaws and reviewed any feedback. This was also relevant in examining what a new zone would include should an existing zone not be appropriate for this land use.

Finally, semi-structured, focused, stakeholder interviews following the procedures set forth by Merton, Fiske, and Kendall (1990) was undertaken.\textsuperscript{16} It was conducted with a planner involved in zoning for the medical marihuana production land use and with a professional planner familiar with the District of West Kelowna. The main focus of the interview was to discuss the location of medical marihuana production that fits best within their zoning bylaw and minimizing secondary impacts of medical marihuana on adjacent land uses. Secondary impacts occur when one particular land use impacts adjacent land uses, such as increasing crime in the area thereby decreasing property values.\textsuperscript{17}

\textbf{2.3 Data Analysis}

Data analysis used three methods. The first was a zoning analysis chart to establish which existing zone is best suited for the medical marihuana production land use. This was based upon the MMPR regulations and the DWK’s Zoning Bylaw No. 0154.

The stakeholder interviews were analysed using the coding system discussed in Hay (2010) and Merton, Fiske and Kendall (1990). In this system, words, phrases and themes that fall under a specific category are similarly coded. The codes are then analysed for emerging patterns. I was looking specifically for descriptive codes, or codes that “reflect themes or patterns that are obvious on the surface or are stated directly by the research subjects”.\textsuperscript{18}

Finally, the analysis of the most appropriate areas for a new medical marihuana production zone was completed using a combination of Hok-Lin Leung’s sizing and siting method from his book \textit{Land Use Planning Made Plain} (2003) and examples of ‘other’ practice from communities throughout British Columbia. In this method, Leung (using principles from Chapin and Kaiser


\textsuperscript{18} Hay, I. (2010). \textit{Qualitative Research in Human Geography}. South Melbourne, Australia: Oxford University Press. Pg. 283
(1979) and Chapin, Godschalk, and Kaiser (1995)) has established physical and locational characteristics that best suit each specific zone.

2.4 **Quality of Research Methods**

An important part of any research is ensuring the data collected and conclusions drawn are rigorous. Establishing quality research design is the most effective and important tool in creating rigorous research. Four tests have been established to determine quality research design: construct validity, internal validity, external validity, and reliability. These tests are defined as:

*Construct Validity* - Identifying the correct operation measures for the concepts being studied.

Construct validity was maintained through the triangulation of methods, or by using several methods to collect data (literature review, policy review, interviews, and “other” practice review) and through the review of draft reports by a key informant.

*Internal Validity* - Seeking to establish causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships.

Internal validity applies to explanatory or causal studies and not to exploratory study. As this was an exploratory case study, internal validity was not a concern.

*External Validity* - Defining the domain to which a study’s findings can be generalized.

External validity can be difficult to maintain in a single, exploratory case study; however there are ways of increasing external validity. Using theory during research design, such as Leung’s siting and sizing of land use, increased external validity.

*Reliability* - Demonstrating that the operations of a study-such as the data collection procedures-can be repeated, with the same results.

Reliability of this research was accomplished through proper documentation during data collection and stringent adherence to the methods outlined above. However, as with any project, this research did not have unfettered time or resources. As such, limitations have been

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20 Ibid.
acknowledged and addressed. Most importantly, these limitations were heavily considered in the recommendations.

2.5 LIMITATIONS

Lack of Best Practices- The timeline of this project was such that it would be completed prior to the MMAR being repealed in order to be considered useful to the District of West Kelowna. This makes for a timely and relevant project, however it also ensures that studies have not been conducted nor any literature compiled. It also ensures that ‘best practices’ have not yet been established.

For this research, the lack of ‘best practice’ did not prevent an examination of other municipalities’ treatment of the production of medical marihuana, it simply meant that ‘best practice’ had been replaced with its lesser known cousin, ‘other practice’. An ‘other practice’ is simply how other municipalities have chosen to incorporate this land use within their urban practice. ‘Other practices’ are limited in offering guidance to the most appropriate zoning for this new land use, but it is useful. It was used in this project as an examination of all possible outcomes to the question of which zone is the most appropriate for the production of medical marihuana.

‘Other practices’ are by nature not yet ‘best practices’. It is possible with these ‘other practices’ none of the solutions that have been offered are the most appropriate or even appropriate at all. Although ‘other practices’ were used to inform this research, they were not given the same weight as proven ‘best practices’ would have and were always considered knowing they may not be appropriate for the District of West Kelowna at all.

Examination of Locally Undesirable Land Uses- The siting of existing locally undesirable land uses (LULUs) to inform the siting of medical marihuana production facilities is a useful way to help mitigate secondary impacts on surrounding land uses. Using existing LULUs and their siting history can aid in assuaging public opposition to medical marihuana production facilities, a potential concern for municipalities zoning for medical marihuana production.

The benefits of relying on past experience with existing LULUs is countered by the reality that that the precedents set by existing LULUs don’t necessarily extend to the production of medical
marihuana. Medical marihuana production may affect the municipality in ways not seen with existing LULUs. It is also entirely possible that there is little public opposition and that medical marihuana production is not even seen as a LULU. This is particularly probable considering the significant safety and monitoring systems that are required for medical marihuana production facilities, and the lack of storefront, preventing the flow of users to and from the facility.

The mitigation of this limitation was simply to be cognizant of the fact that this is a new land use during the analysis and recommendation phase. Paying close attention to public opinion in municipalities that have medical marihuana production facilities in operation or in stream was another strategy employed to mitigate this limitation, while remaining aware that every municipality will react to this new land use differently.

*Extrapolation of a Single Case Study*- Single case studies are simply that: the study of a particular instance or geographic region. The method used in this research was designed specifically to address the question of medical marihuana production within the zoning bylaw of the District of West Kelowna. The method may itself lend to other municipalities, however the analysis and recommendations cannot be applied to any other community.

This limitation cannot be mitigated; however, it is not to the detriment of this research. Single case studies are designed to be valid in and of themselves, and there are lessons to be learned from an independent, single case study. The results of this research are still applicable to the District of West Kelowna and can be valuable to other municipalities as they attempt to zone for the medical marihuana production land use.
3.0 FUNCTIONAL LAND USE REVIEW

As a new land use, medical marihuana production lacks precedents, making it somewhat difficult for planners and municipalities to anticipate how this land use will interact with adjacent uses. However, we can analyze the required inputs and outputs of this facility, along with required loading and employee needs, and compare them to similar land uses to provide a functional land use analysis, allowing for a better understanding of where in a municipality this land use fits.

3.1 MEDICAL MARIHUANA PRODUCTION CHARACTERISTICS

Inputs

There are several inputs required for the operation of a medical marihuana facility. First and foremost is a requirement for electricity. Marihuana plants require light to grow and the most powerful and highest crop producing bulbs are high-intensity discharge lamps (metal halide or high pressure sodium). These lights consume between 400 to 600 kilowatt-hours per bulb. Operating a single 600 kWh bulb for 60 minutes during on-peak hours in Ontario would cost $77.40\(^{21}\). Marihuana plants are typically kept under light between 12-20 hours per day. One facility expects to consume approximately $100,000 per month in electricity, operating a facility that is 14,000 m\(^2\) with 50,000 marihuana plants\(^{22}\).

The second major input for a medical marihuana facility is water. Medical marihuana can be grown in the standard medium of soil or hydroponically, where the plant is grown in an inert medium (such as sand, gravel, or lava chips) that absorbs water and has a stable pH. The roots are then suspended in water with the required nutrients added. Marihuana grown in soil or hydroponically requires a considerable amount of water for optimal growth. For consistency and reliability, a municipal water connection is preferable to a well.

Depending on the climate in which a facility is located and the season, water may also be required to maintain an optimal growing environment for the marihuana plant. An optimal


humidity for marihuana is 50%. Facilities that have a natural humidity below 50% will need to artificially increase the humidity to the optimal level.

The final major input is fertilizer. Fertilizer is required in hydroponics to provide nutrients to the plant, while fertilizer is used in soil to ensure proper nutrient balance and maximum crop yield. Nutrients provided to the plants are typically a combination of nitrogen, phosphorus, and potassium (abbreviated as NPK), with ratios varying depending on which growth state the plant is in. For example, a typical NPK ratio for a marihuana plant in a vegetative growth state is 15-5-5 or 20-5-5, while the flowering state requires an NPK ratio of approximately 10-30-1023.

One input that would seem essential to this land use that is not required is sunlight. Marihuana does require light, however, medical marihuana is grown using agricultural bulbs and can occur in a completely enclosed space.

**Outputs**

As an output, a medical marihuana facility produces dried marihuana that has been packaged on-site and is prepared to be shipped to a licenced consumer. Dried marihuana is the only product that a medical marihuana facility is currently authorized to sell to patients; however, there are waste outputs.

One waste output is the plant itself. Marihuana plants are annual plants: they flower and die once in a single growing season24. Once the marihuana plant dies it is no longer useful and must be destroyed in accordance with MMPR. If the destruction occurs on site, it must occur in such a way that no individual is exposed to cannabis smoke (Part 1, Division1, Section 20.a.ii, MMPR). The destruction of the plant is often done via

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24 Ibid
composting, first by chipping the product into mulch and then composting it with other plant and compost waste. This service can be provided by a third party compost business.

The second waste output is the water that is used in the growth of the marihuana plant. This is more of an output for the hydroponic production of marihuana, but waste water is produced when marihuana is grown in a soil medium. In either scenario, the fertilizers used in the production of marihuana are not so harsh that they cannot be treated by standard waste water treatment systems in place in most municipalities. This is supported by the Right to Farm Act. Greenhouses, a farm practice that occurs indoors and uses fertilizers, cannot discharge waste water into a watercourse or groundwater supply. Concerns would arise if the medical marihuana production facility disposed of wastewater in a stormwater drain or into septic tanks where leaching and contamination of groundwater can occur as they are not capable of properly treating the waste water.

Accessory Activities

Several accessory activities occur alongside the actual cultivation of medical marihuana and include the processing, testing, and packaging of the marihuana. These activities must occur at the same site where the marihuana is produced and must also occur indoors. The processing of medical marihuana is the drying of the flower of the marihuana plant, the part of the marihuana plant that will be consumed by patients. This activity requires very little input, only the monitoring of the temperature and humidity to ensure proper drying.

The testing of medical marihuana, required by MMPR to ensure the levels of delta-9-

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tetrahydrocannabinol (THC) and cannibidiol (CBD), the active ingredients in the marihuana, involves a high degree of technical ability but produces nothing in the way of externalities.

Storage of the medical marihuana prior to shipping does not require a lot of space, because the product that is shipped has been dried, reducing its size, and is only the flowering portion of the plant.

The packaging of the marihuana involves the dried and tested marihuana being contained in tamper-proof and child-proof packages that are airtight, so the odour does not escape and moisture does not enter. The package must also be labeled with the address of the patient and with warnings mandated by MMPR. While the packaging and labeling materials must be brought in to prepare the marihuana for shipping, this activity does not create any negative externalities.

Once the marihuana has been packaged and labeled it is then ready for shipment. The marihuana can be shipped through any reliable means the owner of the facility deems fit. It can be shipped via courier, through Canada Post, or delivered in person by the owner. Such an activity would require a van or truck to arrive once a day, on-site, to pick-up the packages that will be delivered through the preferred service.

Finally, office space for administrative employees and management is required.

These accessory activities require minimal space in a medical marihuana production facility. The majority of the facility is dedicated to the growth and propagation of the marihuana plants for sale. In summary, a medical marihuana production facility will probably be a large, windowless, single story, industrial building with a relatively small testing lab, storage space, and packing and shipping room, with space for offices. The facility is somewhat similar to a mushroom farm, but with more employees.

Externalities

Finally, as a land use, medical marihuana production facilities have two negative externalities associated with marihuana growth. During the flowering phase of production, marihuana plants
produce resin, which gives off the distinct, skunk-like smell of marihuana\textsuperscript{27}. This odour can be quite obnoxious, particularly if tens of thousands of plants are producing resins. This can be mitigated using air filtration systems and production facilities are required ‘be equipped with a system that filters air to prevent the escape of odours and, if present, pollen’ (Division 3, Section 50, MMPR).

The second, and more serious, externality of medical marihuana production is the attraction of criminal activity. Medical marihuana is a high-value cash crop that can be sold illegally. A facility with tens of thousands of plants would be a major target for theft. Theft of marijuana, as seen when illicit marijuana grow operations are robbed, often involves weapons and has the potential to become violent. It is for this reason that Health Canada has insisted on such stringent security measures for each marihuana production facility.

Medical marihuana production facilities are taking further steps to ensure security. Few facilities are offering the address of their production site publicly. John Woodley, chief security officer of CanniMed Ltd. a facility that has obtained a licence to produce medical marihuana in Saskatoon, Saskatchewan, has said “We don’t want to be found. It makes sense for security reasons”\textsuperscript{28}. A Google Maps search of CanniMed Ltd. will not produce a location.

### 3.2 Sizing and Siting

**Sizing**

As of March 20\textsuperscript{th}, 2014, there are 12 approved medical marihuana production facilities across Canada, as far west as Vancouver Island and as far east as Smiths Falls, Ontario\textsuperscript{29}. Tweed Inc., of Smiths Falls, Ontario is has obtained a licence from Health Canada to produce medical marihuana. They are located at One Hershey Drive, an over 45,000 m\textsuperscript{2} square facility on just over 16 hectares of land that used to be a Hershey Canada chocolate factory\textsuperscript{30}. Tweed, Inc. will use approximate 14,000 m\textsuperscript{2} of the existing factory to produce the medical marihuana (Figure 6). Other approved facilities are similar in size; CanniMed Ltd. is expanding their existing facility to

approximately 14,000 m² by 2015\textsuperscript{31}. However, there is considerable variation in facility size. Some facilities are smaller in scale - a proposed facility by Alchemy Medical Marijuana Inc. in Hamilton, Ontario is only 465 m² in size\textsuperscript{32} - while others are much greater in size - International Herbs Medical Marijuana in Atholville, New Brunswick is proposing a facility in an over 37,000 m² building that formerly housed Atlantic Yarns\textsuperscript{33}. Cannadiana, a proposed medical marihuana production facility still in the process of obtaining a production licence from Health Canada, will use a 2,300 m² repurposed indoor soccer stadium as their production site\textsuperscript{34}.

Medical marihuana production benefits from economies of scale; the cost per gram of medical marihuana generally decreases with as the production increases, because fixed costs are spread out over more units of output (grams of medical marihuana). Economies of scale in medical marihuana production mean that the larger the medical marihuana production, the larger the

facility, the lower the cost to produce a single gram of medical marihuana as the cost to grow, test, store, and package the marihuana is spread out across a greater number of plants. However, a facility that is too large will saturate the market. It is then to find the most appropriate scale of production. It would seem from the facilities that are licensed or in the process of becoming licensed, that an approximate size for a typical production facility is near the 10,000 m² mark.

**Siting**

Medical marihuana production facilities are typically large (several thousand square metres), entirely indoor, and must be constantly and effectively monitored. The only people who physically access this facility are employees and individuals authorized to inspect or monitor the medical marihuana production. These facilities have huge requirements for both power and water, with potentially serious externalities in the form of odour pollution and attraction of criminal activity.

The siting of such a facility requires consideration of these factors. To determine appropriate setbacks for these facilities, an examination of loading and unloading requirements for shipping and inputs is required. Fertilizers and the medium in which the marihuana is grown are a required part of medical marihuana production while the outputs are in the form of solid waste (dead marihuana plants) and the medical marihuana product itself. One loading bay would be enough to service the requirements of a medical marihuana production facility. With this loading bay, there must be enough room for a truck or van to load/unload completely on-site, without blocking local traffic.

An additional consideration during the establishment of appropriate setbacks is the consideration of odour pollution and how it may affect adjacent land uses. Increasing setbacks increases the chance that adjacent land uses will not be negatively affected by the potential odour pollution of a medical marihuana production facility. Depending on adjacent land uses, setbacks as high as 100 m may be appropriate, however, setbacks of at least 30 m along all sides of the parcel (front, back, and sides) should be the minimum depending on how effective the air filtration system is and the adjacent land use.

Off-street parking for employees is also an important consideration. Because customers cannot purchase the medical marihuana on-site, parking is only required for staff. Medical marihuana
facilities will have security on-site 24 hours a day, 7 days a week, but staff will typically be present only during the day and evening. A facility that is 10,000 m$^2$ will have up to 50 employees on-site at any given time, including management, technical staff, and security. Smaller facilities will have fewer employees, while larger facilities will have more. Therefore approximately 50 off-street parking spaces are required for a facility that is approximately 10,000 m$^2$.

Adjacent Activities and Land Uses

There are several compatible adjacent activities and land uses for a medical marihuana production facility. Land uses that are compatible will have similar built form to medical marihuana production facilities and will also not be seriously affected by its negative externalities. Examples are typically light industrial uses operating in large, non-descript buildings that typically don’t attract consumers to the facility such as warehouses, processing facilities, light manufacturing, wholesale distribution, and some office parks.

There are several activities, however, that are incompatible with a medical marihuana land use. There are land uses that do not have similar built form to medical marihuana facilities and have the potential to be affected by their negative externalities. Quite a number of land uses fit this description. Residential areas, from single detached housing to small multi-unit apartment complexes, have very different built forms than medical marihuana production facilities; building scale and designs are incompatible. Commercial areas, particularly in central business districts, are not compatible because they attract customers to their premises, and typically have a built form that is more similar to residential areas than to medical marihuana production facilities.

Tweed Inc. in Smiths Falls, Ontario is located in a light industrial zone, directly adjacent to several other zones (Figure 7). To the south there are residential and highway commercial zones. To the west is an institutional zone, while to the north are residential and light and general industrial. Finally, general industrial parcels are found east of Tweed Inc. The facility’s very large setbacks, which can be seen in Figure 6, help to mitigate the impact that potential negative externalities will have on adjacent residential and commercial land uses.
3.3 COMPARATIVE LAND USE- MUSHROOM FARMING

Mushroom farming, called fungiculture, is the growth of mushrooms for food, medicine, and other products. Mushrooms are not plants and do not require sunlight to grow. They obtain all of their nutrients from the medium in which they are grown through biochemical processes. They convert decaying organic matter into carbohydrates and proteins for their own consumption. Because mushrooms do not require sunlight, or light of any source, they are grown commercially in large, often times windowless, buildings due to the temperature, humidity, and atmospheric gas control required to grow high quality mushrooms.

Commercial farmers use compost as a substrate to grow mushrooms and usually obtain the compost from agricultural by-products. Compost substrate examples include straw-bedded horse manure, and hay or wheat straw. Other manure is added to manipulate the chemical ratio of the

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36 Ibid.
substrate. Poultry manure is added to increase nitrogen in the compost.\(^{37}\) Mushroom farmers often produce their own substrate through composting on-site.

Having agricultural by-products and animal manure as major inputs for a commercial production, many externalities are produced. Three negative externalities are associated with composting: odour, noise, and dust. To mitigate all three nuisances, the BC Ministry of Agriculture suggests increasing distance between uses. This can be done by increasing setbacks between uses in the zoning by-laws.

Medical marihuana production is a similar land use to mushroom farming in that both occur in large-scale, warehouse-like facilities, with the potential to produce odour as a negative externality. Additionally, both mushroom farms and medical marihuana facilities produce wastewater as an output. The BC Ministry of Agriculture has prohibited mushroom farm wastewater from being discharged without first being treated.\(^ {38}\)

Mushroom farming in the DWK’s Zoning Bylaw No. 0154 is allowed under the use *agriculture, intensive*. The *agriculture, intensive* use is permitted in three zones: A1-Agriculture, RU4- Rural Residential Large Parcel, and RU5- Rural Resource. In the A1-Agriculture zone the setbacks for this use are 30.0 m, while the RU4- Rural Residential Large Parcel zone and RU5- Rural Resource zones have setbacks for *agriculture, intensive* at 100.0 m. These setbacks are increased for the *agriculture, intensive* use to mitigate the negative externalities associated with it.

Medical marihuana production, although a similar land use to mushroom farming, has two key differences: heavy reliance on water and electricity as inputs, and the attraction of crime as an externality. Mushroom farming, although reliant on its inputs - mainly compost material - can obtain these inputs on-site or can have them delivered. These are also inputs that are not offered by the municipality. Medical marihuana production, however, require a significant amount of municipally provided services in the form of water and electricity.


The second key difference between these two land uses is that medical marihuana production has the potential to attract criminal activity. Marihuana is a high value cash crop that is easily sold on the black market making medical marihuana production facilities a prime target for theft. However, municipalities have no jurisdiction on this matter as crime is a federal offence. As such, municipalities cannot zone with the anticipation of avoiding criminal activity.
4.0 Analysis

The goal of this chapter is to examine all of the data collected and, using the predetermined tools of analysis, determine the best incorporation of medical marihuana production into the urban fabric of the District of West Kelowna through the Zoning Bylaw No. 0154. The possibility of not including this new land use as part of Zoning Bylaw No. 0154 will not be considered as the DWK has made clear that this land use will be incorporated, it is only a matter of where.

4.1 Collected Data

This section describes the relevant data that has been collected through this research program.

4.1.1 Literature Review

Locally undesirable land uses (LULUs) are not a new phenomenon; planners have been encumbered by them in the past. They generally fall into two categories: human or public service facilities and facilities that have potential health or environmental impacts. LULUs can be a variety of land uses but they have in common that they cause concern in the general public. Generally speaking, the concerns with any LULU include:

(1) health risks; (2) decline in property values; (3) the inability of the community to keep out other LULUs once one has been sited; (4) the decline of the image of the community; and/or (5) the decline in the quality of life due to noise, traffic, pollution, odour, etc.

However, a LULU is only undesirable if the public says so. There has not yet been major public opposition to medical marihuana production as a land use, yet it would be unwise to think the public may not react poorly. Mitigating public opposition to the siting of a LULU is not a simple process. There are several factors involved, some more prevalent than others depending on the nature of the LULU in question. Groups opposed to a LULU are often spurred by perceived health or environmental impacts, or concerns over the effects on property values. These

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\subsection*{4.1.2 Policy Review}

\textit{Marihuana for Medical Purposes Regulations}

There are several sections relevant to this research that have been included in the \textit{Marihuana for Medical Purposes Regulations}. This land use must occur indoors and must occur on a property that is visually monitored by security measures (Part 1, Sections 14 & 15). All marihuana products must be stored indoors.

The two most crucial sections of the MMPR for a medical marihuana production land use: where this production cannot occur and how it is to be sold. Under Part 1, Sections 13-15, the MMPR stipulates that the production of medical marihuana cannot occur at a dwelling place. With these three sections of Part 1, it is officially illegal to grow medical marihuana in a home. Under Part 1, Section 73, producers of medical marihuana cannot operate a storefront, they must ship their product to their clients.

\textit{Zoning Bylaw No. 0154}

Upon reviewing DWK’s Zoning Bylaw No. 0154, it became obvious that the production of medical marihuana was encompassed under two separate definitions: \textit{Agriculture, general} and \textit{Greenhouse or plant nursery}. \textit{Agriculture, general} is defined as the ‘premises used for the husbandry of plants or livestock or for apiculture and may include the storage or repair of farm machinery and implements used on the farm on which the storage or repair is taking place’. Medical marihuana production is further supported under this definition by the fact that the use of land in the Agricultural Land Reserve is subject to the approval by the Agricultural Land Commission, whose goal is to preserve agricultural land and promote agri-business throughout
The Agricultural Land Commission has deemed the production of medical marihuana as a farming practice and can occur on Agricultural Reserve Land so long as it occurs within MMPR standards and regulations.

*Greenhouse or plant nursery* is defined as the ‘premises used for the cultivation, storage and sale of plants, trees, bushes, sod and related gardening products and materials’. Medical marihuana production is the cultivation, storage, and sale of plants. Therefore, it’s valid under this definition as well.

Having a single land use fall under two separate definitions is significant because it is now allowed under two different permitted uses, *Agriculture, general* and *Greenhouse or plant nursery*, with separate requirements and setbacks. This may cause serious implications in terms of regulation and consistency and create a route of potential problems moving forward.

*Medical Marihuana Production in the Agricultural Land Reserve*

This is an information bulletin published by the Agricultural Land Commission and updated in January of 2014. This document clarifies for local governments and proponents of medical marihuana production facilities how this new land use relates to land within the Agricultural Land Reserve. *The Agricultural Land Commission Act* and regulations determine land use in the Agricultural Land Reserve. Under Section 1 of this act, ‘farm use’ is defined as:

‘An occupation or use of land for farm purposes, including farming of land, plants and animals and any other similar activity designated as farm use by regulation, and includes a farm operation as defined in the *Farm Practices Protection (Right to Farm) Act.*’

Based on this definition, the lawfully sanctioned farming of a marihuana plant for medical purposes would be an acceptable use of ALR land. Its accessory uses (business office, testing lab, storage facility, etc.) are permitted on ALR land so long as they are directly associated with the production of medical marihuana.

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4.1.3 ‘Other’ Practices Review

These ‘other’ practices have all been selected on the basis that they have already incorporated medical marihuana production into their zoning bylaws, yet have done so in different ways. One important factor in these ‘other’ practices is that there is insight to be gleaned, and potential ways of incorporating this new land use, for the DWK. Chart 1-Zones of ‘Other’ Practice gives a comparison of the zones that have permitted medical marihuana production from each municipality.

District of Summerland

The District of Summerland has incorporated the medical marihuana land use without amending their zoning bylaw No. 2000-450. They have instead opted to allow this land use under agricultural and industrial zones as they stand, and do not have amendments planned.

The District of Summerland was selected as most municipalities have opted to amend their zoning bylaws. Allowing a medical marihuana production land use under existing definitions and zones is an interesting approach.

City of Kamloops

The City of Kamloops has introduced medical marihuana production under their I2-General Industrial and I3-Heavy Industrial zones into their Zoning Bylaw No. 5-1-2001. The City of Kamloops has also added definitions for ‘Medical Marihuana Grow Operation’ and ‘Marihuana for Medical Purposes Regulations’. This use is, however, stipulated by eleven requirements for medical marihuana production facilities. They are:

1. Requirements for medical marihuana production facilities to provide a description of all discharges to air, sanitary sewer, storm sewer, streams or groundwater;
2. A Building Permit, pursuant to the City of Kamloops Building Bylaw No. 11-80;
3. Must meet all applicable municipal, provincial and federal regulations;
4. A ventilation plan submitted to the City including how the system prevents offensive odour from leaving the building;
5. Medical marihuana production facilities are permitted in stand-alone buildings only (not permitted in multi-tenant buildings);
6. No ancillary use permitted in a building containing a medical marihuana production facility;

7. Cannot be located no closer than 150m from any residential zone, daycare facility, playground, community centre, school, public park, or any use catering to individuals under the age of 18;

8. Diverting building-generated CO₂ gas or otherwise provided CO₂ gas to feed plants is prohibited;

9. Medical marihuana production facilities will be decommissioned if inactive for more than one year;

10. Formerly licenced medical marihuana production facilities under the MMAR shall be decommissioned by the property owner and remediated in accordance with the Controlled Substances Property Remediation Bylaw No. 24-20; and,

11. Medical marihuana production facilities require a business licence before operation.\(^\text{46}\)

The City of Kamloops was selected as the City has opted to create proscriptive regulations as a part of their bylaw amendments for the medical marihuana production land use.

**City of Chilliwack**

The City of Chilliwack amended their zoning bylaw No. 2008, 2001 to include a specific definition for medical marihuana production and defined it as *the cultivation, growth, storage or distribution of marihuana for medical purposes as lawfully permitted and authorized under the Federal Marihuana for Medical Purposes Regulation*. City Council incorporated medical marihuana production into zone M6-Special Industrial only. This zone is ‘intended for a variety of industrial uses including those that may have the potential to be environmentally incompatible with residential and commercial uses’.\(^\text{47}\) Finally, the City of Chilliwack amended the definitions of *general agriculture* and *warehousing* to prohibit medical marihuana production under these permitted uses.

Upon closer examination of the zoning map of the City of Chilliwack, it appears that there is only one parcel of vacant land zone for M6: a single parcel of 8.64 hectares, valued at $7.38 million dollars located at 7581 Cannor Rd.\(^\text{48}\) It appears that all of the other parcels zoned for M6

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(of which there are few) are in use. It would seem parcels are only zoned M6-Special Industrial through site-specific zoning amendments.

The City of Chilliwack was selected on the basis that it has isolated medical marihuana production to one particular zone, however, this zone is not exclusive to the production of medical marihuana.

**Municipality of North Cowichan**

The Municipality of North Cowichan amended Zoning Bylaw No. 2950 to include a definition of *Medical marijuana production facility*. Their definition ‘means a facility, licensed by the Federal Government, used solely for the production, manufacturing, processing, testing, packaging, and shipping of marijuana and marijuana products for medical purposes’. The definition of *agriculture* was amended to *not* include medical marihuana production while “medical marijuana production facility” was added as a permitted use under zones I1-Industrial Light and I2-Industrial Heavy. “Medical marijuana production facility” as a land use was added to a list of other land uses *not* permitted under the definition of *agriculture*. Other uses not included are feedlots, fur farms, piggeries, poultry farms, and mushroom farms. These facilities typically have negative externalities such as odour pollution or contaminated solid waste in the form of animal feces.

The Municipality of North Cowichan was selected as it specifically defined the production of medical marihuana, but more importantly, it relegated this use to industrial zones, specifically amending its definition of agriculture to prevent medical marihuana production there. It would seem that the Municipality of North Cowichan considers the production of medical marihuana a land use with negative externalities.

**District of Maple Ridge**

The District of Maple Ridge amended Zoning Bylaw No. 3510, 1985 to incorporate the medical marihuana production land use. Four changes were made in this amendment to include medical marihuana production in agricultural zones only. First, a section was added to the *General Regulations* section to stipulate that the production of medical marihuana can occur in

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agricultural and residential zones only when it is on ALR land, and, secondly, setbacks similar to that of mushroom growing were added to the *Medical marihuana, commercial production* use.

**Chart 1-Zones of ‘Other’ Practice.** This chart compares the zones that permit medical marihuana production in the five municipalities of ‘other’ practice.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Zone</th>
<th>Minimum Parcel Size</th>
<th>Min. Parcel Frontage</th>
<th>Max Parcel Coverage</th>
<th>Max Height</th>
<th>Front Parcel Boundary</th>
<th>Rear Parcel Boundary</th>
<th>Interior Side Parcel Boundary</th>
<th>Exterior Side Parcel Boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Summerland</td>
<td>A1</td>
<td>2.0 ha</td>
<td>60.0m</td>
<td>65%</td>
<td>12.0m or 2 storeys</td>
<td>15.0m</td>
<td>30.0m</td>
<td>30.0m</td>
<td>15.0m</td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>8.0 ha</td>
<td>60.0m</td>
<td>65%</td>
<td>12.0m or 2 storeys</td>
<td>15.0m</td>
<td>30.0m</td>
<td>30.0m</td>
<td>15.0m</td>
</tr>
<tr>
<td></td>
<td>M2</td>
<td>1,800m²</td>
<td>30.0m</td>
<td>60%</td>
<td>14.0m or 2 storeys</td>
<td>7.0m</td>
<td>0.0m</td>
<td>5.0m</td>
<td>5.0m</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td>1,800m²</td>
<td>30.0m</td>
<td>65%</td>
<td>11.0m or 2 storeys</td>
<td>15.0m</td>
<td>15.0m</td>
<td>5.0m</td>
<td>10.0m</td>
</tr>
<tr>
<td>City of Kamloops</td>
<td>I2</td>
<td>2,000m²</td>
<td>30.0m</td>
<td>60%</td>
<td>16.0m</td>
<td>6.0m</td>
<td>4.5m</td>
<td>4.5m</td>
<td>4.5m</td>
</tr>
<tr>
<td></td>
<td>I3</td>
<td>1.0 ha</td>
<td>30.0m</td>
<td>60%</td>
<td>30.0m</td>
<td>6.0m</td>
<td>4.5m</td>
<td>4.5m</td>
<td>4.5m</td>
</tr>
<tr>
<td>City of Chilliwack</td>
<td>M6</td>
<td>8,000m²</td>
<td>n/a</td>
<td>n/a</td>
<td>15.0m</td>
<td>15.0m</td>
<td>15.0m</td>
<td>15.0m</td>
<td>15.0m</td>
</tr>
<tr>
<td>Municipality of North Cowichan</td>
<td>I1</td>
<td>1,675 m²</td>
<td>30.0m</td>
<td>50%</td>
<td>n/a</td>
<td>8.0m</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>I2</td>
<td>16,000 m²</td>
<td>90.0m</td>
<td>50%</td>
<td>n/a</td>
<td>46.0m</td>
<td>46.0m</td>
<td>46.0m</td>
<td>46.0m</td>
</tr>
<tr>
<td>District of Maple Ridge</td>
<td>A1</td>
<td>2.0 ha</td>
<td>n/a</td>
<td>60%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>4.0 ha</td>
<td>n/a</td>
<td>60%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>8.0 ha</td>
<td>n/a</td>
<td>60%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>A4</td>
<td>n/a</td>
<td>n/a</td>
<td>60%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>A5</td>
<td>8.0 ha</td>
<td>100m</td>
<td>1%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>RS1</td>
<td>n/a</td>
<td>n/a</td>
<td>40%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>RS2</td>
<td>n/a</td>
<td>n/a</td>
<td>40%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
<tr>
<td></td>
<td>RS3</td>
<td>n/a</td>
<td>n/a</td>
<td>40%</td>
<td>n/a</td>
<td>60m</td>
<td>30m</td>
<td>30m</td>
<td>60m</td>
</tr>
</tbody>
</table>

Third, additional setbacks were introduced from schools (200m) and other medical marihuana production facilities (1000m). Finally, a definition for *Medical marihuana, commercial production* was added and is defined as ‘the use of premises for the commercial cultivation, processing, testing, packaging and shipping of marihuana used for medical purposes as authorized under the *Controlled Drugs and Substances Act* (Canada) or any regulations made pursuant to that Act, and permitted as a farm use under the *Agricultural Land Commission Act*
The District of Maple Ridge was selected as it specifically addressed ALR.

From Chart 1—Zones of ‘Other’ Practice, we can see when comparing minimum parcel sizes for the zones allowing medical marihuana production in the municipalities of ‘other’ practice, that there is a wide range of variety, the smallest at 1,675 m² with the largest specified minimum parcel size being 80,000 m². Setbacks are varied as well, however, most zones have opted for greater setbacks (15.0 m or greater). The only zones that have medical marihuana production as permitted uses are agriculture and industrial, with the District of Maple Ridge allowing the use in residential zones but only on ALR land.

4.1.4 Stakeholder Interviews

Stakeholder interviews were conducted with two professional planners, one employed with a municipality that is currently reviewing commercial medical marihuana legislation for potential inclusion into the municipality’s zoning bylaw (Planner 1) and another professional planner who is from the Central Okanagan but is not currently practicing there (Planner 2). For ease of readership, the interviewees will be referred to as Planner 1 and Planner 2. Interview questions can be reviewed in Appendix B. Responses were not included as they gave identifying information, however, critical information from the responses will be condensed and given here.

Planner 1

Planner 1 felt that potential zones for medical marihuana may be agricultural and industrial zones. Industrial zones were given as they provided space to prevent issues with odour pollution which are of concerns to residential neighbours. In addition, the federal legislation requires that buildings used for the commercial production of medical marihuana essentially be constructed as warehouses with security fencing which may be more appropriate for industrial zoned parcels in terms of built form. The agricultural zones may also be appropriate for two reasons: other indoor farming uses already occur on agricultural land, such as mushroom farming, and the Agricultural

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Land Commission (ALC) has deemed medical marihuana production an agricultural use. The former is a point on consistency in land uses, the latter is a reflection that a considerable amount of agricultural land is included in the agricultural land reserve, which is controlled by the ALC. Prohibiting the production of medical marihuana on land within the agricultural land reserve may contravene the ALC’s interpretation of outright farm uses.

*Planner 2*

Planner 2 felt that the most appropriate zone for medical marihuana production is either an agricultural or light industrial zone. An agricultural zone fits because medical marihuana production is encompassed by the *Right to Farm Act*, while a light industrial zone fits as this land use would be similar in terms of functional land use to a brewery, comparable to breweries zoned in light industrial areas in Vancouver and Victoria. Planner 2 felt that it was important to remove this land use from residential areas, however, it was important that medical marihuana not be so removed from the public eye so that this new land use can begin to integrate into the community and be seen as a legitimate land use. Planner 2 also felt that a light industrial zone would be best for infrastructure and physical access needs of the facility. Despite Planner 2’s acknowledgement of the fact that medical marihuana production was appropriate in an agricultural zone for legislative reasons, it was felt that the land use is not ideal as agriculture often occurs adjacent to residential zones, while industrial zones are typically away from residential areas.

Planner 2 was of the opinion that a specialized zone using site specific amendments to incorporate this new land use could be appropriate as this makes the land use more regulated and allows the municipality to be more aware of this land use. Finally, Planner 2 felt that a definition for the production of medical marihuana would one that is consistent with the *Right to Farm Act* and the MMPR legislation.

4.2 **Data Analysis**

In this section, collected data will be analyzed to answer the three questions posited by this research:

1. In which zone, if any, is the production of medical marihuana most appropriate;
2. If an existing zone is not appropriate, what would a new zone for the production of medical marihuana include?; and,
3. Within the District of West Kelowna, which areas would be most appropriate to be included in this new medical marihuana zone?

4.2.1 Determining the Best Suited for Medical Marihuana Production

The purpose of the Chart 2-Comparative Zoning of the DWK is to compare Zoning Bylaw No. 0154 to the requirements set forth in the MMPR in order to establish in which existing zones the production of medical marihuana is permissible. As the production of medical marihuana is encompassed by two separate definitions, the number of zones under which it is a permitted use is increased. From the Chart 2-Comparative Zoning of the DWK, we can see there are a total of 41 zones included in Zoning Bylaw No. 0154. Of the 41 zones, nine have purposes that are consistent with the production of medical marihuana, 10 zones would allow the production of medical marihuana as a permitted use, while 26 zones would be acceptable under the MMPR. The nine highlighted zones in Chart 2-Comparative Zoning of the DWK are the only zones where the purpose of the zone, the permitted use of the zone, and the stipulations of the MMPR appear to be met with a medical marihuana production land use. They are:

A1-Agriculture;
RU1-Country Residential;
RU2-Rural Residential Small Parcel;
RU3-Rural Residential Medium Parcel;
RU4-Rural Residential Large Parcel;
RU5-Rural Resource;
C4-Service Commercial;
I1-Light Industrial; and,
I6-Rural Industrial.
Chart 2 - Comparative Zoning of the DWK. Chart 2 shows all zones in the DWK. It shows whether medical marihuana production meets the purpose of the zone, it is a permitted use, and if the zone meets MMPR legislation.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Zoning Bylaw No. 871</th>
<th>Meet Zone Purpose</th>
<th>Permitted Use</th>
<th>MMPR Permitted</th>
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</thead>
<tbody>
<tr>
<td>WATER ZONE</td>
<td></td>
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<td></td>
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<tr>
<td>Recreational Water Use Zone</td>
<td>W1  No</td>
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<tr>
<td>Intensive Water Use Zone</td>
<td>W2  No</td>
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<td>FOREST RESOURCE ZONES</td>
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<td>AGRICULTURAL ZONES</td>
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<td>Agricultural Zone</td>
<td>A1  Yes</td>
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<td>Rural Residential Medium Parcel Zone</td>
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<td>Rural Resource Zone</td>
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<td>RESIDENTIAL ZONES</td>
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<td>Westbank Centre Compact Residential Zone</td>
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<tr>
<td>Boucherie Centre Compact Residential Zone</td>
<td>RC2  No</td>
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<td>Compact Single Detached Residential Zone</td>
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<td>Single Detached</td>
<td>R1  No</td>
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<td>Manufactured Home Residential Zone</td>
<td>R1M</td>
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<td>Large Parcel Single Detached Residential Zone</td>
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<td>Manufactured Home Park</td>
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<tr>
<td>Duplex Residential Zone</td>
<td>R2  No</td>
<td>No</td>
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</table>

<table>
<thead>
<tr>
<th>Zone</th>
<th>Zoning Bylaw No. 871</th>
<th>Meet Zone Purpose</th>
<th>Permitted Use</th>
<th>MMPR Permitted</th>
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<tbody>
<tr>
<td>Low Density Multiple Residential Zone</td>
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<td>Medium Density Multiple Residential Zone</td>
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<tr>
<td>Westbank Centre Multiple Residential Zone</td>
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<tr>
<td>COMMERCIAL ZONES</td>
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<td></td>
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<tr>
<td>Urban Centre Commercial Zone</td>
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<td>No</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Neighbourhood Commercial Zone</td>
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<td>No</td>
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<tr>
<td>Gasoline Service Station Commercial Zone</td>
<td>C3  No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
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<td>Service Commercial Zone</td>
<td>C4  Yes</td>
<td>Yes</td>
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<tr>
<td>Campground, Cabin and Motel Commercial Zone</td>
<td>C5  No</td>
<td>No</td>
<td>No</td>
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<td>Tourist and Resort Commercial Zone</td>
<td>C6  No</td>
<td>No</td>
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<td>INDUSTRIAL ZONES</td>
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<td>Heavy Industrial Zone</td>
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<td>Yes</td>
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<td>Institutional and Assembly Zone</td>
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<td>Comprehensive Development Zone (Westlake)</td>
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<td>Comprehensive Development Zone (The Cove Resort)</td>
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<tr>
<td>Comprehensive Development Zone (Mission Ridge Estates)</td>
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<td>Comprehensive Development Zone (The Pines of Mission Hill)</td>
<td>CD4</td>
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<td>Comprehensive Development Zone (IHA Health Centre)</td>
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<td>Comprehensive Development Zone (Mission Hill)</td>
<td>CD6</td>
<td>No</td>
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</tbody>
</table>
**A1-Agriculture**

The purpose of this zone is ‘to accommodate agricultural operations and related activities located on parcels that are typically within the Agricultural Land Reserve’. This zone allows the production of medical marihuana under the permitted use of *agriculture, general and greenhouse or plant nursery*. The maximum parcel coverage of this zone, for these uses is 35%.

**RU1-Country Residential**

The purpose of this zone is ‘to accommodate rural, agricultural and residential uses on parcels of land that are 0.5 ha or greater’. This zone allows the production of medical marihuana under the permitted use of *agriculture, general and greenhouse or plant nursery*. The maximum parcel coverage in this zone, for these uses is 20% meaning a medical marihuana production facility could be 1,000 m² on the smallest sized parcel.

**RU2- Rural Residential Small Parcel**

The purpose of this zone is ‘to accommodate rural, agricultural, and residential uses on parcels of land that are 1 ha or greater’. This zone allows the production of medical marihuana under the permitted use of *agriculture, general and greenhouse or plant nursery*. The maximum parcel coverage in this zone, for these uses is 10% meaning a medical marihuana production facility could be 1,000 m² on the smallest sized parcel.

**RU3-Rural Residential Medium Parcel**

The purpose of this zone is ‘to accommodate rural, agricultural, and residential uses on parcels of land that are 2.0 ha or greater’. This zone allows the production of medical marihuana under the permitted use of *agriculture, general and greenhouse or plant nursery*. The maximum parcel coverage in this zone, for these uses is 10% meaning a medical marihuana production facility could be 2,000 m² on the smallest sized parcel.

**RU4-Rural Residential Large Parcel**

The purpose of this zone is ‘to accommodate rural, agricultural, and residential uses on parcels of land that are 4 ha or greater’. This zone allows the production of medical marihuana under the permitted use of *agriculture, general and greenhouse or plant nursery*. The maximum parcel
coverage in this zone, for these uses is 10% meaning a medical marihuana production facility could be 4,000 m$^2$ on the smallest sized parcel.

**RU5-Rural Resource**

The purpose of this zone is ‘to accommodate rural, agricultural, and residential uses on parcels of land that are 30 ha or greater’. This zone allows the production of medical marihuana under the permitted use of *agriculture, general* and *greenhouse or plant nursery*. The maximum parcel coverage in this zone, for these uses is 10% meaning a medical marihuana production facility could be 30,000 m$^2$ on the smallest sized parcel.

All of the rural zones (RU1-RU5) are on the edge of development within the DWK, or along the border with Tsinstikeptum Indian Reserve land (Appendix B-Zoning Map).

**C4-Service Commercial**

The purpose of this zone is ‘to accommodate vehicular oriented low intensity uses and associated uses’. The production of medical marihuana is permitted in this zone as *greenhouse or plant nursery*. The maximum parcel coverage in this zone is 65% with a minimum parcel area of 500 m$^2$ meaning a medical marihuana production facility could be 325 m$^2$ on the smallest sized parcel.

**I1-Light Industrial**

The purpose of this zone is ‘to accommodate light industrial uses and associated uses’. The production of medical marihuana is permitted in this zone as *greenhouse or plant nursery*. The maximum parcel coverage in this zone is 75% with a minimum parcel area of 400 m$^2$ meaning a medical marihuana production facility could be 300 m$^2$ on the smallest sized parcel.

**I6-Rural Industrial**

The purpose of this zone is ‘to accommodate rural oriented industrial activities and some associated uses, including the processing and storage of agricultural products’. The production of medical marihuana is permitted in this zone as *agriculture, general*. The maximum parcel coverage in this zone is 35% with a minimum parcel area of 4000 m$^2$ meaning a medical marihuana production facility could be 1,400 m$^2$ on the smallest sized parcel.
Chart 3: Permitted Zones of the DWK. Chart 3 compares the sizing of all the existing zones in the DWK’s Zoning Bylaw No. 0154 that allow the production of medical marihuana.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Minimum Parcel Size</th>
<th>Min. Parcel Frontage</th>
<th>Max Parcel Coverage</th>
<th>Max Height</th>
<th>Front Parcel Boundary</th>
<th>Rear Parcel Boundary</th>
<th>Interior Side Parcel Boundary</th>
<th>Exterior Side Parcel Boundary</th>
<th>FAR</th>
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<tr>
<td>Agriculture</td>
<td>40,000m²</td>
<td>30m or 10%</td>
<td>35%</td>
<td>20m</td>
<td>6m</td>
<td>3m</td>
<td>3m</td>
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<tr>
<td>Country Residential</td>
<td>5,000m²</td>
<td>30m</td>
<td>20%</td>
<td>20m</td>
<td>6m</td>
<td>7.5m</td>
<td>4.5m</td>
<td>4.5m</td>
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<tr>
<td>Rural Residential Small Parcel Zone</td>
<td>10,000m²</td>
<td>30m</td>
<td>10%</td>
<td>20m</td>
<td>6m</td>
<td>7.5m</td>
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<tr>
<td>Rural Residential Medium Parcel Zone</td>
<td>20,000m²</td>
<td>30m</td>
<td>10%</td>
<td>20m</td>
<td>6m</td>
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<tr>
<td>Rural Residential Large Parcel Zone</td>
<td>40,000m²</td>
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<td>10%</td>
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<td>20m</td>
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<tr>
<td>Service Commercial Zone</td>
<td>500m²</td>
<td>15m</td>
<td>65%</td>
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<td>Light Industrial Zone</td>
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<td>12m</td>
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<td>8.0m</td>
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<td>6.0m, 10m</td>
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</tr>
</tbody>
</table>

From Chart 3: Permitted Zones of the DWK we can see that the minimum lot size is varied, from 500 m² to 300,000 m², however, the setbacks are relatively consistent across all zones that would allow medical marihuana production.

Which then, is the most appropriate zone? From the review of LULUs the rural residential zones (RU1-RU5) are the most isolated and therefore the least likely to face opposition from the public. They will have the least impact on adjacent property values due to their removal from the urban centre, and will have a lower perceived health impacts for the same reason. Odour pollution will be reduced as well.

The interview with Planner 1 reiterates the benefit of isolated parcels in reducing odour pollution, a concern that was discussed. Planner 1, however, never mentioned rural parcels in particular, nor was there any discussion of parcels that had a residential purpose as these zones do. This is reflective of the MMPR that plainly states that medical marihuana production cannot occur within a dwelling place. There would be the additional concern of inputs and outputs, specifically whether a rural residential zone would be able to provide the amount of water a facility would require, and whether a facility would be connected to the municipal sewer system in order to treat waste water.
This is supported by the examples of ‘other’ practice. None of the five municipalities examined have incorporated the production of medical marihuana land use within a zone that has a residential use as a part of its purpose. The exception to this rule is the District of Maple Ridge which allowed this land use on residential lands only when this land was also a part of the ALR.

Finally, from a siting standpoint, these zones have very low parcel coverage standards. The greatest parcel coverage is that of the RU1 zone, which allows for maximum parcel coverage of 20%. The other four RU zones have maximum lot coverage 10%. A facility that is 10,000 m² would require a parcel of at least 50,000 m² (50.0 ha) for the RU1 zone and 100,000 m² (100 ha) for all other rural zones. This is not practical and would be very costly for the owner of the facility to purchase a parcel of land this size.

The Agricultural Zone (A1) would seem to have the same benefits in terms of the siting of a LULU that the rural residential zones offered with the same concerns regarding the lack of support for electricity as an input and proper treatment of the waste water output. The input/output concerns can be overcome; the true difficulty is that a considerable portion of agricultural land in the DWK is actually surrounded by residential neighbourhoods and are, by all accounts, well within the developed portions of the DWK (Appendix B-Zoning Map). Although Tweed Inc. is sited next to residential zones, residential uses are incompatible adjacent uses for differences in built form but more importantly for concerns regarding negative externalities, introducing concerns that LULUs create. Perceptions of safety, potentially negative health or environmental impacts, and concerns regarding property values may cause the public to oppose siting medical marihuana production facilities in this zone.

Despite the difficulties of siting the medical marihuana production land use, Planners 1 and 2 included agriculture as a zone to incorporate medical marihuana production. This was partially due to the fact that this land use is similar to other farming practices such as mushroom farming. More significantly, the edict from the Agricultural Land Commission including medical marihuana production as an agricultural use was the reason behind the inclusion of this land use in the agricultural zone.

Looking to the examples of ‘other’ practice, two of the municipalities included medical marihuana production as a land use within their agricultural zones: the District of Summerland
and the District of Maple Ridge. Having two municipalities include this land use in their agricultural zone shows that this zone may be a good fit for a medical marihuana production use.

Finally, the minimum parcel size in the agricultural zone is 40,000 m$^2$, with a maximum coverage of 35%. A facility that is 10,000 m$^2$ would comfortably fit on a minimum sized parcel.

The Service Commercial Zone (C4) is purposed to accommodate traffic oriented commercial business. This land use is more removed from most residential neighbourhoods, however, their proximity to other commercial business may create siting issues seen with other LULUs. Business owners would in particular be concerned for decreasing property values, odour pollution affecting their commerce, and the attraction of crime to their business.

From Zoning Bylaw No. 0154 permitted uses under this zone include an agricultural market, a bulk fuel depot, commercial storage, a food bank, a funeral establishment, a hotel, an office, a recycling depot, a restaurant, and a vehicle washing facility. These uses have in common that their business is conducted on the premise, with the clientele coming to the business to purchase an item or service. This is not consistent with the medical marihuana production land use that is required by MMPR to ship their product to their clientele and cannot operate a storefront.

Neither Planners mentioned commercial zones during discussion. This is telling, as commercial zones are typically reserved for on premise shopping and transactions between business and client.

In regard to the examples of ‘other’ practice, none of the five municipalities have included the use of medical marihuana production in a commercial zone. The City of Chilliwack amended their definition of ‘warehouse’ in order to prevent medical marihuana production under this use, an interesting point to note as ‘warehouse’ is a permitted use in this zone.

Allowing a medical marihuana production facility of 10,000 m$^2$ would require a parcel of 15,385 m$^2$ (maximum parcel coverage is only 65%), which is much greater than the minimum parcel size of 500 m$^2$. This doesn’t disqualify this zone outright; it simply shows that the scale of medical marihuana production is typically much greater than what is expected in this zone.

The Light Industrial (I1) zone is generally removed from residential neighbourhoods, making a number of the LULU siting concerns less of an issue. The public will be less concerned with
health impacts or reduction on property values if this land use is introduced with other less desirable uses. This zone also has a number of large trucks and other heavy equipment vehicles operating here, making traffic this use would introduce a non-issue in this zone. Finally, as there are often other odourous uses in these zones, medical marihuana production would not be a noticeable introduction. Light industrial parcels are typically serviced with municipal water and sewer, which is necessary for medical marihuana production facilities. The permitted uses in this zone are in keeping with the medical marihuana production use. Uses in this zone include a freight or distribution outlet, heavy equipment sales, rental and repair, a heliport facility, industry (general), outdoor storage, and warehouses.

Both Planners suggested an industrial zone as the most appropriate zone for medical marihuana production to take place. This was due to the fact that uses in the light industrial zone are compatible with medical marihuana production, both in terms of built form and the lessened impact of negative externalities such as odour pollution.

Of the five municipalities examined as ‘other’ practices, all but one included medical marihuana production in at least one of their industrial zones. The exception is the District of Maple Ridge, a municipality that only incorporated medical marihuana production on ALR lands.

Allowing a medical marihuana production facility that is 10,000 m² in this zone would require a parcel that is 13,333 m² (maximum coverage is 75%). As with the Service Commercial (C4) zone, the minimum parcel size in this zone is much smaller than the required 13,333 m² at 400 m², however, medical marihuana production is still compatible with this zone, both in terms of built form and in terms of the impacts of negative externalities.

The final zone under consideration is also an industrial zone, Rural Industrial (I6). This zone has fewer permitted uses than the I1 Light Industrial zone, and has a larger minimum lot size (4000 m²) but a lower maximum coverage of 35% (I1 has a minimum lot size of 400 m² with a maximum coverage of 75%). As with the I1 zone, many of the concerns as a LULU of siting this land use are lessened. Like the I1 zone, most examples of ‘other’ practice included the production of medical marihuana in industrial zones.

Allowing a medical marihuana production facility that is 10,000 m² in this zone would require a parcel that is 28,571 m² due to the small maximum coverage. An additional concern for this
zone is that land in the I6 zone is typically at the edge of the DWK, and possibly not serviced by water or municipal sewer.*

4.2.2 What does a specialized zone for medical marihuana production include?

Municipalities have within their purview the power to incorporate the production of medical marihuana into their community through their zoning bylaw as they see fit. One way is through a specialized zone that includes only medical marihuana production as a permitted use. By creating a specialized zone for this land use, the municipality retains a significant amount of control over where and when a medical marihuana production facility can be placed. This is done through a site-specific zoning amendment. The process of a site-specific zoning amendment requires, among other things, compliance with the Official Community Plan, public notification, professional opinion from staff planners, and council consideration. This is a possible option for the District of West Kelowna. It should be noted that municipalities often employ this strategy when they are attempting to exclude a land use. That is not the intent of the DWK, however it is important to consider all possibilities to find the best way to incorporate the production of medical marihuana.

Should the District decide to incorporate medical marihuana production using a specialized zone, Council and Staff should be aware that this would announce the locations of the medical marihuana production facilities to the general public and, more importantly, potential criminals. The zoning map would show the parcels that have been zoned for medical marihuana production, possibly creating issues of security.

A specialized zone for the production of medical marihuana first requires the establishment of a purpose. Following the style of Zoning Bylaw No. 0154, the purpose of this specialized could be as simple as “to accommodate the production of medical marihuana and its associated uses”.

Permitted uses are then necessary; included as a permitted would be medical marihuana production. Accessory uses such as a business office, testing lab, and storage facility would also

*It is possible to include a new land use in multiple zones with identical setbacks, heights, lot coverage, and other regulations by including them in a General Regulations sections so they would apply in any zone. The advantage to this approach is consistency and simplicity across the zoning bylaw. However, considering each individual zone may allow for the inclusion of medical marihuana production in a way that is more adaptable to each specific zone. Additionally, the Agricultural zone requires larger setbacks than other zones, and this approach can reflect that without encumbering this land use in other zones.
be required based on MMPR legislation. It is possible that other permitted uses would be included if the DWK felt that was appropriate.

Regulations are then needed. Minimum parcel size must be determined. From the functional land use analysis a minimum parcel size of 5,000 m$^2$ would be appropriate, as most existing facilities are greater than this. A smaller minimum parcel size would allow for the option of a smaller facility if the owner felt that was appropriate. Looking to the examples of ‘other’ practice, of the 17 permitted zones across the five municipalities only four zones have smaller minimum parcel sizes. Most have no minimum size or have minimum parcel sizes of 1 ha or greater. Larger minimum lot sizes may also be beneficial in mitigating LULU concerns. Larger parcels would lessen odour pollution of neighbouring parcels. This is supported by the City of Kamloops which banned medical marihuana production in multi-tenant buildings.

Once minimum parcel size has been established, setbacks, maximum building height, and coverage must be determined. Greater setbacks mitigate LULU concerns and reduce the impact of the odour pollution negative externality. Setbacks of 30 m or greater along the front, rear, and sides would be most appropriate.

As the production of medical marihuana is an indoor process and does not require much space to produce a single plant, multi-story buildings can be used for this land use. A maximum height that is two storeys or 12.0 m would allow for a facility that could fit onto a smaller parcel, rather than being a one storey facility.

Allowing for more than one storey creates a situation where floor area ratio must also be considered. As such, if the floor area ratio were set at 1.0, with a maximum of two storeys, it would ensure the efficient use of land yet maintain compatibility with the existing urban form. Combining lot coverage with floor area ratio will help ensure a contained building that can be easily monitored, that does not interfere with surrounding uses.

Finally, following in the footsteps of the City of Kamloops, multi-tenant buildings should be avoided for the production of medical marihuana. Multi-tenant facilities make security monitoring more difficult, particularly if other tenants operate businesses that attract customers to the business. There is also concern for the mitigation of odour pollution. Multi-tenant buildings would be more difficult to prevent the odour from entering neighbouring businesses.
4.2.3 WHERE WOULD A SPECIALIZED ZONE FOR MEDICAL MARIHUANA PRODUCTION BEST FIT THE URBAN LANDSCAPE OF THE DISTRICT OF WEST KELOWNA?

Once a specialized zone has been created for the production of medical marihuana, understanding where this zone best fits in terms of compatible land uses and similar built form is an important next step. For ease of readership, this fictitious zone will be called Specialized Zone-SP1.

From Land Use Planning Made Plain (2003) there are twelve general criteria in siting a land use such as the production of medical marihuana with four that are directly relevant. The four relevant criteria are:

1) The site should be level or less than five percent grade and outside of environmentally sensitive areas and flood plains;
2) Utilities should be available at the site;
3) The use should be compatible with surrounding uses with consideration given to prevailing winds and amenity factors both within and adjoining the site; and,
4) The site should be located with uses that mitigate off-site nuisance such as noise, odour, traffic, and waste-storage.

Criteria number one has this land use on a relatively flat parcel. The topography of the DWK includes a number of steep hills and mountains thereby excluding a portion of the potentially available parcels. Medical marihuana production facilities are typically 10,000 m² or greater. Having a building this size on a sloped parcel would be impractical; however, if a smaller facility is being proposed, site specific consideration should be given to grade when considering a zoning amendment to SP1.

Criteria number two involves utilities that service the land use. Critically important to the production of medical marihuana is access to electricity. Marihuana production requires large amounts of electricity to regulate room temperature and to operate horticulture bulbs. To this end, medical marihuana production must be sited in an area that is already developed or that can be easily and reliably connected to hydro. The second service of critical importance to the

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52 Leung, H. L. (2003). Land use planning made plain. University of Toronto Press. Pg 120
production of medical marihuana is access to municipal sewer service. Municipal sewer services have the ability to treat the waste water from medical marihuana production facilities while septic tanks have the potential to leach fertilizer into the soil and groundwater.

Two separate types of land uses are compatible with the production of medical marihuana (criteria number three): agricultural and industrial. Agricultural land is compatible in that some farming practices (such as mushroom farming or animal husbandry) occur in large buildings similar to what is needed for the production of medical marihuana. Industrial uses are compatible because they often occur in large structures, may require a considerable amount of utilities (medical marihuana production requires a large amount of electricity), and is on or near transport routes. Transport routes are needed to import packaging material and for transporting the medical marihuana product to its users.

Finally, nuisance producing land uses such as medical marihuana (production of odour pollution) are often sequestered to similar areas, typically industrial zones. Additionally, enough space is required on the lot to be able to house the entire medical marihuana production facility, including testing areas and storage space.

To this end, parcels that are amended to be included in the SP1 zone would ideally be parcels that are on or near agricultural land or industrial land, zones that are both typically flat. It would be preferable for the parcels to be away from residential and commercial land uses to prevent any off-site nuisance odour from contaminating non-compatible uses.
5.0 RECOMMENDATIONS

The previous chapter discussed the data that has been collected to understand the most appropriate inclusion of medical marihuana production for the District of West Kelowna into Zoning Bylaw No. 0154. This chapter discusses these findings in terms of offering practical suggestions in doing this.

5.1 AMENDING EXISTING DEFINITIONS

The District of West Kelowna currently does not have a definition for medical marihuana production therefore the use falls under the permitted uses of both *agriculture, general* and *greenhouse or plant nursery*. This creates issues with consistency in terms of allowing medical marihuana to occur in several zones, some under the former permitted use, some under the latter permitted use, and some zones under both permitted uses.

Having medical marihuana production as an undefined use also creates a situation where this land use is now permitted in residential zones (rural residential zones RU1-RU5) as *agriculture, general*, despite the fact that the MMPR were enacted to remove this use from residential zones. A simple solution to this problem is to amend the definitions section of Zoning Bylaw No. 0154 to include a definition for medical marihuana production.

A definition for medical marihuana production should include a description of the type of activities that can occur with this use as well as a direct reference to the legislation that regulates this use. An example of a definition of medical marihuana production is a combination of the definitions from the Municipality of North Cowichan and the District of Maple Ridge. The definition should be similar to the following:

“a facility, licensed by the Federal Government, used solely for the production, manufacturing, processing, testing, packaging, and shipping of marihuana and marihuana products for medical purposes as authorized under the *Controlled Drugs and Substances Act (Canada)*”.

To ensure complete clarification, the definitions of *agriculture, general* and *greenhouse or plant nursery* should be amended to include the clause “with the exception of the production of
medical marihuana”. Including this amendment will make clear to that medical marihuana production has its own specific definition and is not encompassed by any other alternative use.

5.2 ALLOWING MEDICAL MARIHUANA PRODUCTION ON ALL LAND WITHIN THE AGRICULTURAL LAND RESERVE

The Agricultural Land Reserve (ALR) is a provincial zone that is administered by the Agricultural Land Commission (ALC). ALR land has farming practices as their priority use with all other uses being controlled by the ALC.53 The ALC, being a provincial entity, has jurisdiction of ALR land thereby subjugating local zoning bylaws on any and all ALR land.

An informational bulletin released by the ALC and amended in January 2014 states medical marihuana production is an appropriate use of ALR land as it constitutes farming practice as defined by the Agricultural Land Commission Act. This act defines farm use as:

“An occupation or use of land for farm purposes, including farming of land, plants and animals and any other similar activity designated as farm use by regulation, and includes a farm operation as defined in the Farm Practices Protection (Right to Farm) Act.”54

A number of municipalities examined are not including medical marihuana production within their agricultural zones, however the District of West Kelowna should allow the production of medical marihuana on all ALR land to avoid legal challenge to their zoning bylaw. This could be as simple as amending the purpose of the Agricultural Zone (A1) from ‘to accommodate agricultural operations and related activities located on parcels that are typically within the Agricultural Land Reserve’ to ‘to accommodate agricultural operations and related activities located on parcels that are typically within the Agricultural Land Reserve and includes the production of medical marihuana on Agricultural Land Reserve parcels’.

Should more clarity and specificity be required, amending the permitted uses in which ALR land falls to include medical marihuana production as a permitted with the stipulation that it is on ALR land only is sufficient, similar to the District of Maple Ridge. By allowing medical

marihuana production on ALR land the DWK is avoiding potential legal problems that could arise from contravening the ALC and the *Farm Practices Protection (Right to Farm) Act*.

Although medical marihuana production should be allowed on ALR parcels, this use is not compatible. Required utilities are often not present on agricultural parcels and the parcels that are serviced are typically within the developed areas of the DWK, often adjacent to residential areas (Appendix B-Zoning Map). To mitigate odour pollution, the setbacks should be increased significantly when medical marihuana production facilities are sited next to residential zones. A setback of 100 m from parcel lines adjacent to residential zones, similar to that of the *agriculture, intensive* use, would help reduce the impact of negative externalities of medical marihuana production on adjacent residential land uses.

### 5.3 Most Appropriate Zones for the Production of Medical Marihuana

Nine zones currently allow for the production of medical marihuana in Zoning Bylaw No. 0154. These zones include agricultural (A1), rural residential (RU1-RU5), commercial (C4), and industrial (I1 and I6). Rural residential zones are not the most appropriate as the MMPR legislation was enacted to prevent the production of medical marihuana in dwelling places on residential land. Although this use would not occur indoors, this is not the best suited zone for medical marihuana production.

The Service Commercial (C4) zone is not ideal due to its smaller parcel sizes and possibility for multi-tenant buildings. Small parcel sizes create issues with incompatible land uses such as a medical marihuana production facility and a hotel. Both small parcel sizes and multi-tenant buildings pose an issue in regard to odour pollution; permitting this use in a zone where there is a high possibility of causing off-site nuisance through odour pollution. Finally, this zone does not offer the most compatible uses to a medical marihuana production facility.

There are two possible industrial zones: the Light Industrial (I1) and Rural Industrial (I6) zones. These zones both permit compatible uses, both provide the opportunity for large parcels, and both are either sited with like uses or are more removed from residential and commercial zones to prevent off-site nuisance pollution from both odour and traffic. However, the Light Industrial (I1) zone is the most appropriate of the two zones as it is typically closer to major routes and is
already serviced by utilities. Despite this, both of these zones should allow the production of medical marihuana as a permitted use.

The remaining zone is the Agriculture (A1) zone. The A1 zone should also have a medical marihuana land use permitted (with increased setbacks to 100 m when this land use is adjacent to residential zones) because the Agricultural Land Commission has deemed the production of medical marihuana an acceptable farm use on Agricultural Land Reserve parcels.

5.4 Incorporation into Zoning Bylaw No. 0154 vs Site Specific Amendments

The District of West Kelowna has the opportunity to incorporate the medical marihuana production land use in the manner that best fits the District. The DWK should incorporate this land use in the Light Industrial (I1), Rural Industrial (I6), and Agricultural (A1) zones. These zones offer compatible uses while mitigating concerns from siting locally undesirable land uses.

The DWK could also incorporate the medical marihuana land use through site specific amendments. This is not advised. Although allowing medical marihuana production through site specific amendments allows greater control by the DWK, this would create a burden on the DWK as potential facility owners enter applications and make for a considerably greater waiting period for the applicant. Site specific amendments require District Council approval and public notification, not to mention considerable administrative work for both the DWK and the applicant. Allowing medical marihuana production as a permitted use in one or more specific zones allows for a streamlined process for both planning staff and applicants.

The more serious concern in incorporating a medical marihuana production facility through a site specific amendment is that it would announce the location of the facility, both in the application process and in the future in the form of zoning maps. This would be very problematic for medical marihuana production facilities as they take care to keep their location secretive to prevent crime.
6.0 Conclusions

This report was completed in response to the enactment of the *Marihuana for Medical Purposes Regulations* by Health Canada in the summer of 2013. These regulations exist as the sole governing legislation of medical marihuana production since the *Medical Marihuana Access Regulations* were repealed April 1, 2014.

This report has examined the incorporation of the medical marihuana production land use into the District of West Kelowna. Based on a functional land use analysis, thorough literature review, policy analysis, ‘other’ practice review, and planner interviews, the three research questions have been addressed. The most appropriate existing zones from Zoning Bylaw No. 0154 were found to be the Light Industrial (I1), Rural Industrial (I6), and Agricultural (A1). These are not the same zones that permit mushroom farming due to the difference in input requirements; they have the most compatible uses and best mitigate issues concerning the siting of locally undesirable land uses of the production of medical marihuana.

The second question asked what a new zone for the production of medical marihuana would include. A specialized zone would require a purpose that speaks to the land use as well as the legislation that governs it, permitted uses that would allow medical marihuana production and its associated activities, and setbacks that would prevent off-site nuisance in the form of odour pollution.

The final research question examined where in the District of West Kelowna the medical marihuana land use best fits. This land use would be best on relatively flat land, away from flood plains and environmentally sensitive areas. Access to transportation routes and utilities are a requirement. Siting this land use with compatible uses and away from uses that it would disturb is also crucial.

Despite the lack of best practice, this report examined ‘other’ practices - municipalities in the province of British Columbia that have incorporated medical marihuana production in varying forms. However, the lack of best practice was not to the detriment of this research; the diversity by which these municipalities incorporated this land use acted as examples for the District of West Kelowna.
Planning for medical marihuana production would benefit from future research that focusses on including more case studies and the development of best practices to offer a standard for the incorporation of this land use into a zoning bylaw.
7.1 Appendix A- Interview Questions

Interview Questions

Which zone do you think is the most fitting for this land use? Why?

Would a specialized new zone (like Chilliwack) be the best option?

Is the agricultural land the best place for this zone considering it has to occur indoors?

What would a definition for medical marihuana production include?

Where in a municipality is this land use best suited?

Has there been any public feedback?

Have potential medical marihuana production facility businesses been participating in this process?

Do you have any concerns regarding this land use?

What is the approximate size of these operations?

Any other information you would like to share with me that you think will benefit this study?
7.2 *Appendix B*

See map on opposite page.


Gerring, J. (2004). What is a case study and what is it good for?. *American political science review*, 98(2), 341-354.


