THE CORPORATION OF THE CITY OF GRAND FORKS
AGENDA - COMMITTEE OF THE WHOLE MEETING
Monday January 26th, 2015, 9:00am
7217 4th Street - City Hall

	ITEM	SUBJECT MATTER	RECOMMENDATION
1	**CALL TO ORDER**		
	The Mayor called the meeting to order at 9:00am		
2	**COMMITTEE OF THE WHOLE AGENDA**		
	Agenda	January 26th, 2015	Adoption of Agenda
3	**REGISTERED PETITIONS AND DELEGATIONS**		
	Jim Leslie, Marvin Wyers, and Wendy Brisco - The Kootenay's Medicine Tree Delegation-The Kootenay's Medicine Tree.pdf	Request of Council to publicly support local access to medical cannabis and its derivate products.	THAT COTW recommend Council receive for discussion purposes.
	Cindy Alblas - Christina Gateway Community Development Association Delegation-Christina Gateway Community Dev. Assoc.(Jan. 26th mtg.).pdf	The Christina Gateway Community Development Association intends to move forward with the collection of a Municipal Regional District sales tax as a way to bring direct marketing dollars to the Boundary Region, which would allow the region to create a Destination Marketing Organization (DMO).	THAT COTW recommend to Council to receive the presentation from Cindy Alblas of the Christina Gateway Community Development Association
	Laurie Grant - Wildsafe Coordinator Delegation - WildsafeBC - GrandForks_2014.pdf	Deer Management Workshop update - January 12th, 2015, Richmond BC	THAT COTW recommend to Council to receive the information regarding the Deer Management workshop as presented by Laurie Grant.
4	**PRESENTATIONS FROM STAFF**		
	Acting Chief Administrative Officer RFD - Acting CAO - Procedure Bylaw Excerpts & Respectful Workplace Policy.pdf	Procedure Bylaw Excerpts and Respectful Workplace Policy	THAT COTW receive the presentation from the Acting CAO regarding the Procedure Bylaw Excerpts and the Respectful Workplace Policy.

	Manager of Operations Memo - Mgr. of Operations - Water Meter Project Status Report.pdf	Universal Water Meter Project Status	THAT COTW recommend Council receive the Water Meter Status update report from the Manager of Operations.
	Acting Corporate Officer RFD - Corporate Services - Discussion & Direction to Staff on Amendment to Bylaw 1946.pdf 2015-Proposed Amend to Procedure Bylaw.docx By1946 Grand Forks Procedure Bylaw, 2013.pdf	Discussion and direction to staff Notice regarding amendments to Procedure Bylaw No. 1946, 2013	THAT COTW recommends Council direct staff to give notice in accordance with sections 94 and 124 of the Community Charter, advising the public of the proposed amendments to Procedure Bylaw No. 1946, 2013.
	Monthly highlight reports from Department Managers Chief Financial Officer DECEMBER 2014.doc Development & Engineering.doc Fire Chief.doc Corporate & Community Services.doc Building & Bylaw Services.doc Operations.docx	Staff request for Council to receive the monthly activity report from department managers	THAT COTW receives the monthly activity reports.
5	**REPORTS AND DISCUSSION**		
6	**PROPOSED BYLAWS FOR DISCUSSION**		
	Chief Financial Officer RFD - CFO - Bylaw 2009 - 2015 Electrical Rates Amendment.pdf	Bylaw 2009 - Electrical Utility Regulatory Amendment Bylaw	THAT COTW recommends Council gives first three readings to Bylaw 2009 - Electrical utility Regulatory Amendment Bylaw at the February 10th Regular Meeting.
7	**INFORMATION ITEMS**		
8	**CORRESPONDENCE ITEMS**		
9	**LATE ITEMS**		
10	**REPORTS, QUESTIONS AND INQUIRIES FROM MEMBERS OF THE COUNCIL (VERBAL)**		
11	**QUESTION PERIOD FROM THE PUBLIC**		

12 **BUDGET PRESENTATION**

Chief Financial Officer Jan 26, 2015 COTW - 2015-2019 Financial Plan discussions.pdf	2015 Operating Budget presentations	Receive for information

13 **IN-CAMERA RESOLUTION**

Acting CAO	Immediately following the COTW meeting, Council will hold an In-Camera Meeting	THAT COTW recommends Council convene an In-Camera meeting as outlined under Section 90 of the Community Charter to discuss matters in a closed meeting which are subject to section 90 (1) (e) Acquisition, disposition or expropriation of Land or Improvements that could reasonably be expected to harm the interests of the Municipality; Be it further resolved that persons, other than members, officers, or other persons to who council may deem necessary to conduct city business, will be excluded from the in-camera meeting.

14 **ADJOURNMENT**

Council Delegations

Background

Council for the City of Grand Forks welcomes public input and encourages individuals and groups to make their views known to Council at an open public meeting.

Council needs to know all sides of an issue, and the possible impacts of any action they make take, prior to making a decision that will affect the community. The following outline has been devised to assist you in preparing for your presentation, so that you will understand the kind of information that Council will require, and the expected time frame in which a decision will be forthcoming. Council may not make a decision at this meeting.

Presentation Outline

Presentations may be a maximum of 10 minutes.

Your Worship, Mayor Taylor, and Members of Council, I/We are here this evening on behalf of The Kootenay's Medicine Tree

to request that you consider publicly supporting local access to medical cannabis and its derivate products.

The reason(s) that I/We are requesting this action are:

Our our 4 month old medical cannabis dispensary is making a big positive difference in our residents lives. Trail RCMP say we must shut down; we are looking for tolerance like in Vernon + Kelowna.

I/We believe that in approving our request the community will benefit by:

Maintaining current access to safe, tested, cannabis products. Helping local residents facing cancer and other serious illness from driving to Kelowna

(over)

Council Delegations (cont.)

I/We believe that by not approving our request the result will be:

We may be forced to close by the Trail RCMP all the seriously ill people we help will lose access to medicine that stops seizures, fights cancer, and allows pain relief without opiate addiction

In conclusion, I/we request that Council for the City of Grand Forks adopt a resolution stating: We support, in principle, safe local access to medical cannabis and its derivative products, as according to current science and patient experience these non-smokable products help our local citizens face and treat many very serious, chronic or terminal health conditions.

Name: Jim Leslie, Marvin Wyers, Wendy Brisco

Organization: The Kootenay's Medicine Tree

Mailing Address: PO Box 574, Grand Forks V0H1H0
(Including Postal Code)

Telephone Number: 250-442-8248 / 778-984-4420

Email Address: info@kootenaysmedicinetree.ca

The information provided on this form is collected under the authority of the Community Charter and is a matter of public record, which will form a part of the Agenda for a Regular Meeting of Council. The information collected will be used to process your request to be a delegation before Council. If you have questions about the collection, use and disclosure of this information contact the "Coordinator" City of Grand Forks.

Form may be submitted by email to: info@grandforks.ca

From: [redacted]<info@kootenaysmedicinetree.ca> January-07-15 1:43:34 PM

Subject: The Kootenay's Medicine Tree Request for Delegation Status January 26 2014

To: [redacted]**Info City of Grand Forks**

Attachments: [redacted] TKMT Delegation to Grand Forks City Council Request.pdf / Uploaded File (2M)

The Kootenay's Medicine Tree Medical Cannabis Dispensary

~ACCESS – COMPASSION - EDUCATION~

Mission Statement:

To provide access to safe, standardized, and reliable medical cannabis and related products including cannabis derivates (capsules, creams, oils, concentrates, suppositories, etc) to those who suffer from chronic or terminal illness(es).

Basic data:

Total members to date – 120

Average age of a member – Between 50 and 70 years of age

Common medical conditions of our members:

- Alzheimer's disease, Parkinson's disease, Cancer, Chronic Non-Cancer Pain, Arthritis, Fibromyalgia, Pharmaceutical drug addiction, Alcohol addiction, Crohns disease, Irritable bowel syndrome, Glaucoma, Epilepsy, Chronic inflammation, Lupus, Stroke, Anxiety, Depression, Psoriasis, Asthma, Multiple Sclerosis, Hepatitis C

Common medical conditions of our child members:

- Severe epilepsy, infantile spasms, cancer, autism

Standardized Medical Cannabis and Hemp products examples:

Cannabidiol (CBD) oil – 275mg CBD/1ml, 300mg CBD/1ml, 375mg CBD/1ml
Hayley's Comet THC/CBD Oil – 202mg THC and 201mg CBD/1ml (1:1 ratio oil)
Phoenix Tears Cannabis Oil – 650mg THC /1ml, 850mg THC/1ml
Cannatonic Cannabis Capsules – 120mg THC and 1.67mg CBD per capsule
Purple Kush Cannabis Capsules – 67mg THC, 1.2mg CBG, 2.9mg CBN per capsule
Super Lemon Haze Capsules – 60mg THC, 3.2mg CBG, 1.8mg CBN per capsule
Cannabidiol (CBD) capsules – 33mg CBD, 6.4mg THC, .22mg CBN per capsule
Cannabidiol (CBD) Grapeseed oil tincture – 6.3mg CBD, .3mg THC, .03mg CBN/ml
THCA Grapeseed Oil Tincture – 12.9mg THCA, 2mg THC, .4mg CBC per ml
Phoenix Tears Topical Salve – 975mg THC per 15ml jar
THC/CBD Lotions - 125mg THC and 60mg CBD per 30ml jar

THC/CBD body butters - 125mg THC 60mg CBD per 30ml jar
CBD infused honey - .75mg CBD per gram of honey, 90mg CBD in 120g jar
THC/CBD infused honey - .9mg THC and .62mg CBD per gram/honey, 108mg THC and 74mg CBD per jar
THC infused honey - .33mg THC per gram of honey, 39.6mg THC per jar

Testing of products is completed via High Performance Liquid Chromatography (HPLC) and Gas Chromatograph (GS) via 3 different labs

Contact information:

Jim Leslie (Director)
Marvin Wyers (Director)
Wendy Brisco (Director)

The Kootenay's Medicine Tree
PO Box 574
#4 – 1960 68 Avenue
Grand Forks, B.C.
V0H 1H0
250-442-8248
www.kootenaysmedicinetree.ca

The Kootenay's Medicine Tree:

Medical Marijuana and Cannabinoid Summary Sheet

1) Marijuana (cannabis) has been used safely by humans for thousands of years. In all of recorded history there is **no record of even 1 death being caused by cannabis use alone**.
2) Marijuana contains **cannabinoids**, like THC (tetrahydrocannabinol), compounds that occur naturally in the plant and are responsible for the vast medical benefits.
3) All humans and animals have their own **"endogenous cannabinoid system" (ECS)**. This system makes its own version of THC inside our bodies and controls functions like mood, memory, appetite, sleep, reproduction, pain, and movement. The ECS allows humans to survive in an ever changing world/environment.
4) **THC (tetrahydrocannabinol) benefits** – kills cancer cells, controls pain, reduces nausea and vomiting, helps insomnia, anti-inflammatory, opens airways in lungs, reduces blood pressure, protects nerve cells
5) **CBD (cannabidiol) benefits** – kills cancer cells, reduces seizures, reduces anxiety, anti-inflammatory, anti-oxidant, reduce addiction to other drugs, **non-psychoactive (no high)**
6) Medical marijuana can replace many prescription drugs and **reduce the use of opiate medications like Oxy-Neo and Morphine**
7) Medical marijuana can be vaporized, smoked, eaten in capsules/baked goods/tinctures, applied topically to the skin, or used as a suppository. Eating medical marijuana displays the best long term therapeutic effects noticed to date.
8) Medical Marijuana can be used to treat a wide range of chronic and terminal illnesses/symptoms including: Chronic Pain, Cancer, Alzheimer's disease, Parkinson's Disease, Huntington's disease, Chronic Anxiety, Depression, Arthritis, Multiple Sclerosis, Gastro-intestinal Disorders, Psoriasis/Eczema, ALS

*****Many physicians do not know these basic facts – Help Educate Them and Take Ownership Over Your Own Health*****

Cannabis, Cannabinoids, and Human Health: Further Information

Cannabinoid Signalling Group – Complutense University, Madrid, Spain
http://www.bbm1.ucm.es/cannabis/index_en.htm

The Canadian Consortium for the Investigation of Cannabinoids
http://www.ccic.net/

Canadians for Safe Access – Medical Cannabis Research
http://safeaccess.ca/research/

Center for Medicinal Cannabis Research – University of California
http://www.cmcr.ucsd.edu/

Leaf Science – News, Scientific Studies on Medicinal uses of Cannabis
http://www.leafscience.com/

Project CBD
http://www.projectcbd.org/

NORML – Clinical Applications for Cannabis & Cannabinoids
http://norml.org/pdf_files/NORML_Clinical_Applications_for_Cannabis_and_Cannabinoids.pdf

International Association for Cannabinoid Medicines
http://www.cannabis-med.org/

Health Canada – Marihuana Medical Access Program
http://www.hc-sc.gc.ca/dhp-mps/marihuana/index-eng.php

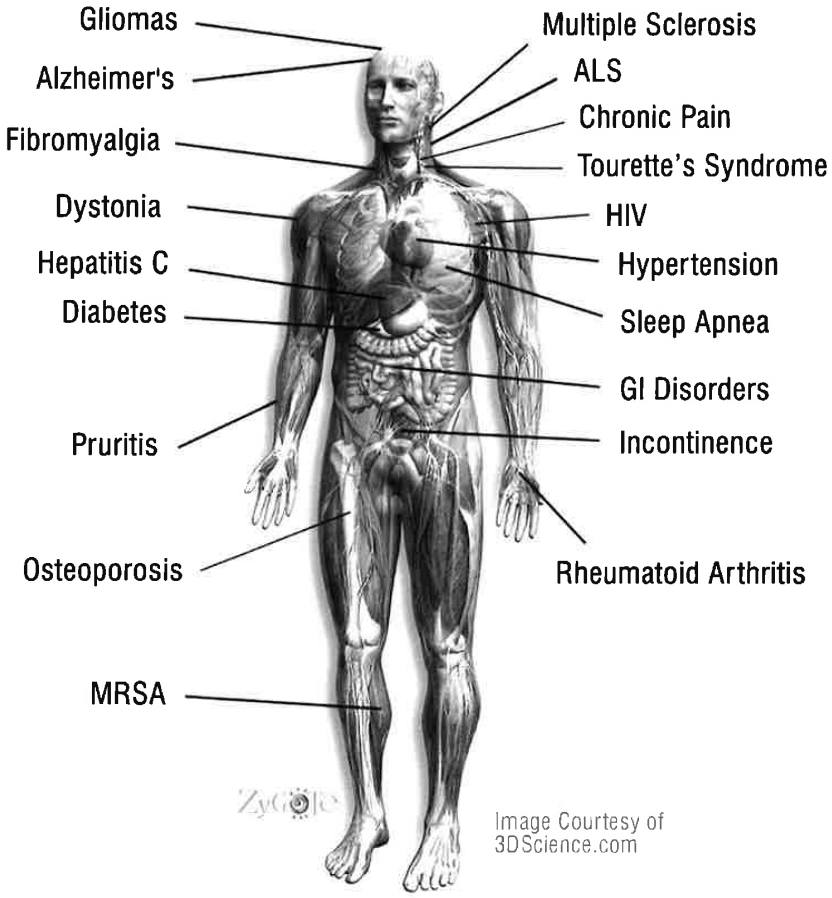
For questions about safe, local access to medical cannabis or further information:

The Kootenay's Medicine Tree Inc.
Grand Forks, B.C.
www.life-line.ca
info@kootenaysmedicinetree.ca
250-442-8248

Emerging Clinical Applications for Cannabis and Cannabinoids:

A Review of the Recent Scientific Literature

Fourth Edition



Paul Armentano
Deputy Director
NORML Foundation
Washington, DC

NORML

Working to Reform Marijuana Laws

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Introduction

Despite the ongoing political debate regarding the legality of medicinal marijuana, clinical investigations of the therapeutic use of cannabinoids are now more prevalent than at any time in history.

For example, in February 2010 investigators at the University of California Center for Medicinal Cannabis Research publicly announced the findings of a series of randomized, placebo-controlled clinical trials on the medical utility of inhaled cannabis. The studies, which utilized the so-called 'gold standard' FDA clinical trail design, concluded that marijuana ought to be a "first line treatment" for patients with neuropathy and other serious illnesses.

Among the studies conducted by the Center, four assessed smoked marijuana's ability to alleviate neuropathic pain, a notoriously difficult to treat type of nerve-pain associated with cancer, diabetes, HIV/AIDS, spinal cord injury, and many other debilitating conditions. Each of the trials found that cannabis consistently reduced patients' pain levels to a degree that was as good or better than currently available medications.

Another study conducted by the Center's investigators assessed the use of marijuana as a treatment for patients suffering from multiple sclerosis. That study determined that "smoked cannabis was superior to placebo in reducing spasticity and pain in patients with MS, and provided some benefit beyond currently prescribed treatments."

Around the globe similarly controlled trials are also taking place. A 2010 review by researchers in Germany reports that since 2005 there have been 37 controlled studies assessing the safety and efficacy of marijuana and its naturally occurring compounds, involved a total of 2,563 subjects. By contrast, most FDA-approved drugs go through far fewer trials involving far fewer subjects.

While much of the renewed interest in cannabinoid therapeutics is a result of the discovery of the endocannabinoid regulatory system (which we describe in detail later in this booklet), some of this increased attention is also due to the growing body of testimonials from medicinal cannabis patients and their physicians. Nevertheless, despite this influx of anecdotal reports, much of the modern investigation of medicinal cannabis remains limited to preclinical (animal) studies of individual cannabinoids (e.g. THC or cannabidiol) and/or synthetic cannabinoid agonists (e.g., dronabinol or WIN 55,212-2) rather than clinical trial investigations involving whole plant material. Predictably, because of the US government's strong public policy stance against any use of cannabis, the bulk of this modern cannabinoid research is taking place outside the United States.

As clinical research into the therapeutic value of cannabinoids has proliferated – there are now an estimated 20,000 published papers in the scientific literature analyzing marijuana and its

constituents — so too has investigators' understanding of cannabis' remarkable capability to combat disease. Whereas researchers in the 1970s, 80s, and 90s primarily assessed cannabis' ability to temporarily alleviate various disease symptoms — such as the nausea associated with cancer chemotherapy — scientists today are exploring the potential role of cannabinoids to modify disease.

Of particular interest, scientists are investigating cannabinoids' capacity to moderate autoimmune disorders such as multiple sclerosis, rheumatoid arthritis, and inflammatory bowel disease, as well as their role in the treatment of neurological disorders such as Alzheimer's disease and amyotrophic lateral sclerosis (a.k.a. Lou Gehrig's disease.) In fact, in 2009 the American Medical Association (AMA) resolved for the first time in the organization's history "that marijuana's status as a federal Schedule I controlled substance be reviewed with the goal of facilitating the conduct of clinical research and development of cannabinoid-based medicines."

Investigators are also studying the anti-cancer activities of cannabis, as a growing body of preclinical and clinical data concludes that cannabinoids can reduce the spread of specific cancer cells via apoptosis (programmed cell death) and by the inhibition of angiogenesis (the formation of new blood vessels). Arguably, these latter trends represent far broader and more significant applications for cannabinoid therapeutics than researchers could have imagined some thirty or even twenty years ago.

THE SAFETY PROFILE OF MEDICAL CANNABIS

Cannabinoids have a remarkable safety record, particularly when compared to other therapeutically active substances. Most significantly, the consumption of marijuana – regardless of quantity or potency -- cannot induce a fatal overdose. According to a 1995 review prepared for the World Health Organization, "There are no recorded cases of overdose fatalities attributed to cannabis, and the estimated lethal dose for humans extrapolated from animal studies is so high that it cannot be achieved by … users."

In 2008, investigators at McGill University Health Centre and McGill University in Montreal and the University of British Columbia in Vancouver reviewed 23 clinical investigations of medicinal cannabinoid drugs (typically oral THC or liquid cannabis extracts) and eight observational studies conducted between 1966 and 2007. Investigators "did not find a higher incidence rate of serious adverse events associated with medical cannabinoid use" compared to non-using controls over these four decades.

That said, cannabis should not necessarily be viewed as a 'harmless' substance. Its active constituents may produce a variety of physiological and euphoric effects. As a result, there may be some populations that are susceptible to increased risks from the use of cannabis, such as adolescents, pregnant or nursing mothers, and patients who have a family history of mental illness.

Patients with Hepatitis C, decreased lung function (such as chronic obstructive pulmonary disease), or who have a history of heart disease or stroke may also be at a greater risk of experiencing adverse side effects from marijuana. As with any medication, patients should consult thoroughly with their physician before deciding whether the medicinal use of cannabis is safe and appropriate.

HOW TO USE THIS REPORT

As states continue to approve legislation enabling the physician-supervised use of medicinal marijuana, more patients with varying disease types are exploring the use of therapeutic cannabis. Many of these patients and their physicians are now discussing this issue for the first time, and are seeking guidance on whether the therapeutic use of cannabis may or may not be advisable. This report seeks to provide this guidance by summarizing the most recently published scientific research (2000-2010) on the therapeutic use of cannabis and cannabinoids for 19 clinical indications:

* Alzheimer's disease
* Amyotrophic lateral sclerosis
* Chronic Pain
* Diabetes mellitus
* Dystonia
* Fibromyalgia
* Gastrointestinal disorders
* Gliomas
* Hepatitis C
* Human Immunodeficiency Virus
* Hypertension
* Incontinence
* Methicillin-resistant Staphyloccus aureus (MRSA)
* Multiple sclerosis
* Osteoporosis
* Pruritus
* Rheumatoid arthritis
* Sleep apnea
* Tourette's syndrome

In some of these cases, modern science is now affirming longtime anecdotal reports of medicinal cannabis users (e.g., the use of cannabis to alleviate GI disorders). In other cases, this research is highlighting entirely new potential clinical utilities for cannabinoids (e.g., the use of cannabinoids to modify the progression of diabetes.)

The conditions profiled in this report were chosen because patients frequently inquire about the therapeutic use of cannabis to treat these disorders. In addition, many of the indications included in this report may be moderated by cannabis therapy. In several cases, preclinical data and clinical indicates that cannabinoids may halt the progression of these diseases in a more efficacious manner than available pharmaceuticals.

For patients and their physicians, let this report serve as a primer for those who are considering using or recommending medicinal cannabis. For others, let this report serve as an introduction to the broad range of emerging clinical applications for cannabis and its various compounds.

Paul Armentano
Deputy Director
NORML | NORML Foundation
Washington, DC
January 7, 2011

* The author would like to acknowledge Drs. Dale Gieringer, Dustin Sulak, Gregory Carter, Steven Karch, and Mitch Earleywine, as well as Bernard Ellis, MPH, former NORML interns John Lucy, Christopher Rasmussen, and Rita Bowles, for providing research assistance for this report. The NORML Foundation would also like to acknowledge Dale Gieringer, Paul Kuhn, and Richard Wolfe for their financial contributions toward the publication of this report.

** Important and timely publications such as this are only made possible when concerned citizens become involved with NORML. For more information on joining NORML or making a donation, please visit: http://www.norml.org/join. Tax-deductible donations in support of NORML's public education campaigns should be made payable to the NORML Foundation.

Foreword

Gregory T. Carter, MD

Department of Rehabilitation Medicine
University of Washington School of Medicine

Marijuana is a colloquial term used to refer to the dried flowers of the female *Cannabis Sativa* and *Cannabis Indica* plants. Marijuana, or cannabis, as it is more appropriately called, has been part of humanity's medicine chest for almost as long as history has been recorded.

All forms of cannabis plants are quite complex, containing over 400 chemicals. Approximately 60 of these chemicals are classified as cannabinoids. Among the most psychoactive of the cannabinoids is delta-9-tetrahydrocannabinol (THC), the active ingredient in the prescription medications dronabinol (Marinol) and naboline (Cesamet). Other major cannabinoids include cannabidiol (CBD) and cannabinol (CBN), both of which are non-psychoactive but possess distinct pharmacological effects.

Cannabis was formally introduced to the United States Pharmacopoeia (USP) in 1854, though written references regarding the plant's therapeutic use date back as far as 2800 B.C. By 1900, cannabis was the third leading active ingredient, behind alcohol and opiates, in patent medicines for sale in America. However, following the Mexican Revolution of 1910, Mexican immigrants flooded into the United States, introducing to American culture the recreational use of marijuana. Anti-drug campaigners warned against the encroaching, so-called "Marijuana Menace," and alleged that the drug's use was responsible for a wave of serious, violent criminal activity. In 1937, after testimony from Harry Anslinger -- a strong opponent of marijuana and head of the Federal Bureau of Narcotics in the 1930s -- and against the advice of the American Medical Association, the Marijuana Tax Act was pushed through Congress, effectively outlawing all possession and use of the drug.

At the time of the law's passage, there were no fewer than 28 patented medicines containing cannabis available in American drug stores with a physician's prescription. These cannabis-based medicines were produced by reputable drug companies like Squibb, Merck, and Eli Lily, and were used safely by tens of thousands of American citizens. The enactment of the Marijuana Tax Act abruptly ended the production and use of medicinal cannabis in the United States, and by 1942 cannabis was officially removed from the *Physician's Desk Reference.*

Fortunately, over the past few decades there has been a significant rebirth of interest in the viable medicinal uses of cannabis. Much of the renewed interest in cannabis as a medicine lies not only in the drug's effectiveness, but also because of its remarkably low toxicity. Lethal doses in humans have not been described. This degree of safety is very rare among modern medicines, including

most over-the-counter medications. As a result, the National Institutes of Health (NIH), the National Academy of Sciences Institute of Medicine, and even the US Food and Drug Administration have all issued statements calling for further investigation into the therapeutic use of cannabis and cannabinoids.

The discovery of an endogenous cannabinoid system, with specific receptors and ligands, has progressed our understanding of the therapeutic actions of cannabis from folklore to valid science. It now appears that the cannabinoid system evolved with our species and is intricately involved in normal human physiology -- specifically in the control of movement, pain, reproduction, memory, and appetite, among other biological functions. In addition, the prevalence of cannabinoid receptors in the brain and peripheral tissues suggests that the cannabinoid system represents a previously unrecognized ubiquitous network in the nervous system.

Cannabinoid receptor sites are now known to exist in the nervous systems of all animals more advanced than hydra and mollusks. This is a result of at least 500 million years of evolution. The human body's neurological, circulatory, endocrine, digestive, and musculoskeletal systems have now all been shown to possess cannabinoid receptor sites. Indeed, even cartilage tissue has cannabinoid receptors, which makes cannabis a prime therapeutic agent to treat osteoarthritis. Cannabinoids have been shown to produce an anti-inflammatory effect by inhibiting the production and action of tumor necrosis factor (TNF) and other acute phase cytokines, which also makes them ideal compounds to treat the autoimmune forms of arthritis. It is now suggested by some researchers that these widely spread cannabinoid receptor systems are the mechanisms by which the body maintains homeostasis (the regulation of cell function), allowing the body's tissues to communicate with one another in this intricate cellular dance we call "life." With this knowledge of the widespread action of cannabinoids within all these bodily systems, it becomes much more easy to conceptualize how the various forms of cannabinoids might have a potentially therapeutic effect on diseases ranging from osteoarthritis to amyotrophic lateral sclerosis (ALS).

Another one of the exciting therapeutic areas that cannabis may impact is chronic pain. Cannabinoids produce analgesia by modulating rostral ventromedial medulla neuronal activity in a manner similar to, but pharmacologically distinct from, that of morphine. This analgesic effect is also exerted by some endogenous cannabinoids (anandamide) and synthetic cannabinoids (methanandamide). Ideally, cannabinoids could be used alone or in conjunction with opioids to treat people with chronic pain, improve their quality of life, and allow them to return to being a productive citizen.

When discussing the therapeutic use of cannabis and cannabinoids, opponents inevitably respond that patients should not smoke their medicine. Patients no longer have to. Medicinal cannabis patients who desire the rapid onset of action associated with inhalation, but who are concerned about the potential harms of noxious smoke can dramatically cut down on their intake of

carcinogenic compounds by engaging in vaporization rather than smoking. Cannabis vaporization limits respiratory toxins by heating cannabis to a temperature where cannabinoid vapors form (typically around 180-190 degrees Celsius), but below the point of combustion where noxious smoke and associated toxins (e.g., carcinogenic hydrocarbons) are produced (near 230 degrees Celsius). This eliminates the inhalation of any particulate matter and removes the health hazards of smoking. In clinical trials, vaporization has been shown to safely and effectively deliver pharmacologically active, aerosolized cannabinoids deeply into the lungs, where the rich vascular bed will rapidly deliver them to tissues throughout the body.

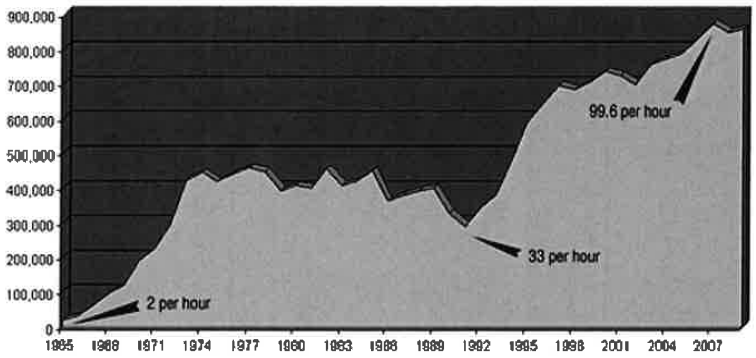
The following report summarizes the most recently published scientific research on the therapeutic use of cannabis and cannabinoids for more than a dozen diseases, including Alzheimer's, amyotrophic lateral sclerosis, diabetes, hepatitis C, multiple sclerosis, rheumatoid arthritis, and Tourette's syndrome. It is my hope that readers of this report will come away with a fair and balanced view of cannabis -- a view that is substantiated by scientific studies and not by anecdotal opinion or paranoia. Cannabis is neither a miracle compound nor the answer to everyone's ills. However, it does appear to have remarkable therapeutic benefits that are there for the taking if the governmental barriers for more intensive scientific study are removed.

The cannabis plant does not warrant the tremendous legal and societal commotion that has occurred over it. Over the past 30 years, the United States has spent billions in an effort to stem the use of illicit drugs, particularly marijuana, with limited success. Many very ill people have had to fight long court battles to defend themselves for the use of a compound that has helped them. Rational minds need to take over the war on drugs, separating myth from fact, right from wrong, and responsible, medicinal use from other less compelling behavior.

The medicinal marijuana user should not be considered a criminal in any state. Most major medical groups, including the Institute of Medicine, agree that cannabis is a compound with significant therapeutic potential whose "adverse effects ... are within the range of effects tolerated for other medications." Over a decade ago, the Drug Enforcement Administration (DEA) studied the medicinal properties of cannabis. After considerable study, DEA Administrative Law Judge Francis L. Young concluded: "The evidence clearly shows that marijuana is capable of relieving the distress of great numbers of very ill people, and doing so with safety under medical supervision. ... It would be unreasonable, arbitrary and capricious for the DEA to continue to stand between those sufferers and the benefits of this substance."

NORML

Working to Reform Marijuana Laws



Annual Marijuana Arrests in the US 1965-2009

NORML
The National Organization for the Reform of Marijuana Laws
norml.org

Despite this conclusion, over a decade later the DEA and the rest of the federal government persist in their policy of total prohibition. Nevertheless, the scientific process continues to evaluate the therapeutic effects of cannabis through ongoing research and assessment of available data. With regard to the medicinal use of cannabis, our legal system should take a similar approach, using science and logic as the basis of policy making rather than relying on political rhetoric and false perceptions regarding the alleged harmful effects of recreational marijuana use.

Introduction to the Endocannabinoid System

Dustin Sulak, DO
Maine Integrative Healthcare

As you read this review of the scientific literature regarding the therapeutic effects of cannabis and cannabinoids, one thing will become quickly evident: cannabis has a profound influence on the human body. This one herb and its variety of therapeutic compounds seem to affect every aspect of our bodies and minds. How is this possible?

In my integrative medicine clinic in central Maine, we treat over a thousand patients with a huge diversity of diseases and symptoms. In one day I might see cancer, Crohn's disease, epilepsy, chronic pain, multiple sclerosis, insomnia, Tourette's syndrome and eczema, just to name a few. All of these conditions have different causes, different physiologic states, and vastly different symptoms. The patients are old and young. Some are undergoing conventional therapy. Others are on a decidedly alternative path. Yet despite their differences, almost all of my patients would agree on one point: cannabis helps their condition.

As a physician, I am naturally wary of any medicine that purports to cure-all. Panaceas, snake-oil remedies, and expensive fads often come and go, with big claims but little scientific or clinical evidence to support their efficacy. As I explore the therapeutic potential of cannabis, however, I find no lack of evidence. In fact, I find an explosion of scientific research on the therapeutic potential of cannabis, more evidence than one can find on some of the most widely used therapies of conventional medicine.

At the time of writing, a PubMed search for scientific journal articles published in the last 20 years containing the word "cannabis" revealed 7,704 results. Add the word "cannabinoid," and the results increase to 15,899 articles. That's an average of more than two scientific publications per day over the last 20 years! These numbers not only illustrate the present scientific interest and financial investment in understanding more about cannabis and its components, but they also emphasize the need for high quality reviews and summaries, such as the document you are about to read.

How can one herb help so many different conditions? How can it provide both palliative and curative actions? How can it be so safe while offering such powerful effects? The search to answer these questions has led scientists to the discovery of a previously unknown physiologic system, a central component of the health and healing of every human and almost every animal: the endocannabinoid system.

What Is The Endocannabinoid System?

The endogenous cannabinoid system, named after the plant that led to its discovery, is perhaps the most important physiologic system involved in establishing and maintaining human health. Endocannabinoids and their receptors are found throughout the body: in the brain, organs, connective tissues, glands, and immune cells. In each tissue, the cannabinoid system performs different tasks, but the goal is always the same: homeostasis, the maintenance of a stable internal environment despite fluctuations in the external environment.

Cannabinoids promote homeostasis at every level of biological life, from the sub-cellular, to the organism, and perhaps to the community and beyond. Here's one example: autophagy, a process in which a cell sequesters part of its contents to be self-digested and recycled, is mediated by the cannabinoid system. While this process keeps normal cells alive, allowing them to maintain a balance between the synthesis, degradation, and subsequent recycling of cellular products, it has a deadly effect on malignant tumor cells, causing them to consume themselves in a programmed cellular suicide. The death of cancer cells, of course, promotes homeostasis and survival at the level of the entire organism.

Endocannabinoids and cannabinoids are also found at the intersection of the body's various systems, allowing communication and coordination between different cell types. At the site of an injury, for example, cannabinoids can be found decreasing the release of activators and sensitizers from the injured tissue, stabilizing the nerve cell to prevent excessive firing, and calming nearby immune cells to prevent release of pro-inflammatory substances. Three different mechanisms of action on three different cell types for a single purpose: minimize the pain and damage caused by the injury.

The endocannabinoid system, with its complex actions in our immune system, nervous system, and all of the body's organs, is literally a bridge between body and mind. By understanding this system we begin to see a mechanism that explains how states of consciousness can promote health or disease.

In addition to regulating our internal and cellular homeostasis, cannabinoids influence a person's relationship with the external environment. Socially, the administration of cannabinoids clearly alters human behavior, often promoting sharing, humor, and creativity. By mediating neurogenesis, neuronal plasticity, and learning, cannabinoids may directly influence a person's open-mindedness and ability to move beyond limiting patterns of thought and behavior from past situations. Reformatting these old patterns is an essential part of health in our quickly changing environment.

What Are Cannabinoid Receptors?

Sea squirts, tiny nematodes, and all vertebrate species share the endocannabinoid system as an essential part of life and adaptation to environmental changes. By comparing the genetics of cannabinoid receptors in different species, scientists estimate that the endocannabinoid system evolved in primitive animals over 600 million years ago.

While it may seem we know a lot about cannabinoids, the estimated twenty thousand scientific articles have just begun to shed light on the subject. Large gaps likely exist in our current understanding, and the complexity of interactions between various cannabinoids, cell types, systems and individual organisms challenges scientists to think about physiology and health in new ways. The following brief overview summarizes what we do know.

Cannabinoid receptors are present throughout the body, embedded in cell membranes, and are believed to be more numerous than any other receptor system. When cannabinoid receptors are stimulated, a variety of physiologic processes ensue. Researchers have identified two cannabinoid receptors: CB1, predominantly present in the nervous system, connective tissues, gonads, glands, and organs; and CB2, predominantly found in the immune system and its associated structures. Many tissues contain both CB1 and CB2 receptors, each linked to a different action. Researchers speculate there may be a third cannabinoid receptor waiting to be discovered.

Endocannabinoids are the substances our bodies naturally make to stimulate these receptors. The two most well understood of these molecules are called anandamide and 2-arachidonoylglycerol (2-AG). They are synthesized on-demand from cell membrane arachidonic acid derivatives, have a local effect and short half-life before being degraded by the enzymes fatty acid amide hydrolase (FAAH) and monoacylglycerol lipase (MAGL).

Phytocannabinoids are plant substances that stimulate cannabinoid receptors. Delta-9-tetrahydrocannabinol, or THC, is the most psychoactive and certainly the most famous of these substances, but other cannabinoids such as cannabidiol (CBD) and cannabinol (CBN) are gaining the interest of researchers due to a variety of healing properties. Most phytocannabinoids have been isolated from *cannabis sativa*, but other medicinal herbs, such as *echinacea purpura*, have been found to contain non-psychoactive cannabinoids as well.

Interestingly, the marijuana plant also uses THC and other cannabinoids to promote its own health and prevent disease. Cannabinoids have antioxidant properties that protect the leaves and flowering structures from ultraviolet radiation - cannabinoids neutralize the harmful free radicals generated by UV rays, protecting the cells. In humans, free radicals cause aging, cancer, and impaired healing. Antioxidants found in plants have long been promoted as natural supplements to prevent free radical harm.

Laboratories can also produce cannabinoids. Synthetic THC, marketed as dronabinol (Marinol), and nabilone (Cesamet), a THC analog, are both FDA approved drugs for the treatment of severe nausea and wasting syndrome. Some clinicians have found them helpful in the off-label treatment of chronic pain, migraine, and other serious conditions. Many other synthetic cannabinoids are used in animal research, and some have potency up to 600 times that of THC.

Cannabis, The Endocannabinoid System, And Good Health

As we continue to sort through the emerging science of cannabis and cannabinoids, one thing remains clear: a functional cannabinoid system is essential for health. From embryonic implantation on the wall of our mother's uterus, to nursing and growth, to responding to injuries, endocannabinoids help us survive in a quickly changing and increasingly hostile environment. As I realized this, I began to wonder: can an individual enhance his/her cannabinoid system by taking supplemental cannabis? Beyond treating symptoms, beyond even curing disease, can cannabis help us prevent disease and promote health by stimulating an ancient system that is hard-wired into all of us?

I now believe the answer is yes. Research has shown that small doses of cannabinoids from marijuana can signal the body to make more endocannabinoids and build more cannabinoid receptors. This is why many first-time marijuana users don't feel an effect, but by their second or third time using the herb they have built more cannabinoid receptors and are ready to respond. More receptors increase a person's sensitivity to cannabinoids; smaller doses have larger effects, and the individual has an enhanced baseline of endocannabinoid activity. I believe that small, regular doses of marijuana might act as a tonic to our most central physiologic healing system.

Many physicians cringe at the thought of recommending a botanical substance, and are outright mortified by the idea of smoking a medicine. Our medical system is more comfortable with single, isolated substances that can be swallowed or injected. Unfortunately, this model significantly limits the therapeutic potential of cannabinoids.

Unlike synthetic derivatives, herbal marijuana may contain over one hundred different cannabinoids, including THC, which all work synergistically to produce better medicinal effects and less side effects than THC alone. While marijuana is safe and works well when smoked, many patients prefer to use a vaporizer or cannabis tincture. Scientific inquiry and patient testimonials both indicate that herbal marijuana has superior medicinal qualities to synthetic cannabinoids.

In 1902 Thomas Edison said, "There were never so many able, active minds at work on the problems of disease as now, and all their discoveries are tending toward the simple truth that you can't improve on nature." Cannabinoid research has proven this statement is still valid.

So, is it possible that medical marijuana could be the most useful remedy to treat the widest variety of human diseases and conditions, a component of preventative healthcare, and an adaptive support in our increasingly toxic, carcinogenic environment? Yes. This was well known to the indigenous medical systems of ancient India, China, and Tibet, and as you will find in this report, is becoming increasingly well known by modern science. Of course, we need more human-based research studying the effectiveness of marijuana, but the evidence base is already large and growing constantly, despite the DEA's best efforts to discourage cannabis-related research.

Does your doctor understand the benefit of medical cannabis? Can he or she advise you in the proper indications, dosage, and route of administration? Likely not. Despite the two largest physician associations (American Medical Association and American College of Physicians) calling for more research, the Obama administration promising not to arrest patients protected under state medical cannabis laws, a 5,000 year history of safe therapeutic use, and huge amount of published research, most doctors know little or nothing about medical cannabis.

This is changing, in part because the public is demanding it. People want safe, natural, and inexpensive treatments that stimulate our bodies' ability to self-heal and help our population improve its quality of life. Medical cannabis is one such solution. This summary is an excellent tool for spreading the knowledge and helping to educate yourselves and your healthcare providers on the scientific evidence behind the medical use of cannabis and cannabinoids.

Alzheimer's Disease

Alzheimer's disease (AD) is a neurological disorder of unknown origin that is characterized by a progressive loss of memory and learned behavior. Patients with Alzheimer's are also likely to experience depression, agitation, and appetite loss, among other symptoms. Over 4.5 million Americans are estimated to be afflicted with the disease. No approved treatments or medications are available to stop the progression of AD, and few pharmaceuticals have been FDA-approved to treat symptoms of the disease.

A review of the recent scientific literature indicates that cannabinoid therapy may provide symptomatic relief to patients afflicted with AD while also moderating the progression of the disease.

Writing in the February 2005 issue of the *Journal of Neuroscience,* investigators at Madrid's Complutense University and the Cajal Institute in Spain reported that the intracerebroventricular administration of the synthetic cannabinoid WIN 55,212-2 prevented cognitive impairment and decreased neurotoxicity in rats injected with amyloid-beta peptide (a protein believed to induce Alzheimer's). Additional synthetic cannabinoids were also found to reduce the inflammation associated with Alzheimer's disease in human brain tissue in culture. "Our results indicate that ... cannabinoids succeed in preventing the neurodegenerative process occurring in the disease," investigators concluded.[1] Follow up studies by investigators demonstrated that the administration of the nonpsychotropic plant cannabinoid cannabidiol (CBD) also mitigated memory loss in a mouse model of the disease.[2]

Investigators at The Scripps Research Institute in California in 2006 reported that THC inhibits the enzyme responsible for the aggregation of amyloid plaque — the primary marker for Alzheimer's disease — in a manner "considerably superior" to approved Alzheimer's drugs such as donepezil and tacrine. "Our results provide a mechanism whereby the THC molecule can directly impact Alzheimer's disease pathology," researchers concluded. "THC and its analogues may provide an improved therapeutic [option] for Alzheimer's disease [by]... simultaneously treating both the symptoms and the progression of [the] disease."[3]

More recently, investigators at Ohio State University, Department of Psychology and Neuroscience, reported that older rats administered daily doses of WIN 55,212-2 for a period of three weeks performed significantly better than non-treated controls on a water-

maze memory test. Writing in the journal *Neuroscience* in 2007, researchers reported that rats treated with the compound experienced a 50 percent improvement in memory and a 40 to 50 percent reduction in inflammation compared to controls.[4]

Previous preclinical studies have demonstrated that cannabinoids can prevent cell death by anti-oxidation.[5] Some experts believe that cannabinoids' neuroprotective properties could also play a role in moderating AD.[6] Writing in the September 2007 issue of the *British Journal of Pharmacology*, investigators at Ireland's Trinity College Institute of Neuroscience concluded, "[C]annabinoids offer a multi-faceted approach for the treatment of Alzheimer's disease by providing neuroprotection and reducing neuroinflammation, whilst simultaneously supporting the brain's intrinsic repair mechanisms by augmenting neurotrophin expression and enhancing neurogenesis. ... Manipulation of the cannabinoid pathway offers a pharmacological approach for the treatment of AD that may be efficacious than current treatment regimens."[7]

In addition to potentially modifying the progression of AD, clinical trials also indicate that cannabinoid therapy can reduce agitation and stimulate weight gain in patients with the disease. Most recently, investigators at Berlin Germany's Charite Universitatmedizin, Department of Psychiatry and Psychotherapy, reported that the daily administration of 2.5 mg of synthetic THC over a two-week period reduced nocturnal motor activity and agitation in AD patients in an open-label pilot study.[8]

Clinical data presented at the 2003 annual meeting of the International Psychogeriatric Association previously reported that the oral administration of up to 10 mg of synthetic THC reduced agitation and stimulated weight gain in late-stage Alzheimer's patients in an open-label clinical trial.[9] Improved weight gain and a decrease in negative feelings among AD patients administered cannabinoids were previously reported by investigators in the *International Journal of Geriatric Psychiatry* in 1997.[10] Additional study of the use of cannabinoids and Alzheimer's would appear to be warranted.

Additional study assessing the use of cannabinoids for Alzheimer's would appear to be warranted.

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Amyotrophic Lateral Sclerosis (ALS)

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease, is a fatal neurodegenerative disorder that is characterized by the selective loss of motor neurons in the spinal cord, brain stem, and motor cortex. An estimated 30,000 Americans are living with ALS, which often arises spontaneously and afflicts otherwise healthy adults. More than half of ALS patients die within 2.5 years following the onset of symptoms.

A review of the scientific literature reveals an absence of clinical trials investigating the use of cannabinoids for ALS treatment. However, recent preclinical findings indicate that cannabinoids can delay ALS progression, lending support to anecdotal reports by patients that cannabinoids may be efficacious in moderating the disease's development and in alleviating certain ALS-related symptoms such as pain, appetite loss, depression and drooling.[1]

Writing in the March 2004 issue of the journal *Amyotrophic Lateral Sclerosis & Other Motor Neuron Disorders*, investigators at the California Pacific Medical Center in San Francisco reported that the administration of THC both before and after the onset of ALS symptoms staved disease progression and prolonged survival in animals compared to untreated controls.[2]

Additional trials in animal models of ALS have shown that the administration of other naturally occurring and synthetic cannabinoids can also moderate ALS progression, but not necessarily impact survival.[3-4] One recent study demonstrated that blocking the CB1 cannabinoid receptor did extend life span in an ALS mouse model, suggesting that cannabinoids' beneficial effects on ALS may be mediated by non-CB1 receptor mechanisms.[5]

Preclinical data has also shown that cannabinoids are neuroprotective against oxidative damage both *in vitro*[6] and in animals.[7] Cannabinoids' neuroprotective action may be able to play a role in moderating ALS, which is characterized by excessive glutamate activity in the spinal cord.[8] At least one cannabinoid, delta-9-THC, has been shown to protect cultured mouse spinal neurons against excitotoxicity.[9]

As a result, experts are calling for clinical trials to assess cannabinoids for the treatment of ALS. Writing in the *American Journal of Hospice & Palliative Medicine* in 2010, a team of

investigators reported, "Based on the currently available scientific data, it is reasonable to think that cannabis might significantly slow the progression of ALS, potentially extending life expectancy and substantially reducing the overall burden of the disease." They concluded, "There is an overwhelming amount of preclinical and clinical evidence to warrant initiating a multicenter randomized, double-blind, placebo-controlled trial of cannabis as a disease-modifying compound in ALS."[10]

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Chronic Pain

As many as one in five Americans lives with chronic pain.[1] Many of these people suffer from neuropathic pain (nerve-related pain) -- a condition that is associated with numerous diseases, including diabetes, cancer, multiple sclerosis, and HIV. In most cases, the use of standard analgesic medications such as opiates and NSAIDS (non-steroidal anti-inflammatory drugs) is ineffective at relieving neuropathic pain.

Survey data indicates that the use of cannabis is common in chronic pain populations,[2] and several recent FDA-designed clinical trials indicate that inhaled marijuana can significantly alleviate neuropathic pain. These include: A pair of randomized, placebo-controlled clinical trials demonstrating that smoking cannabis reduces neuropathy in patients with HIV by more than 30 percent compared to placebo.[3-4] (Additional details on these studies appear in the HIV section of this book.); a 2007 University of California at San Diego double-blind, placebo-controlled trial reporting that inhaled cannabis significantly reduced capsaicin-induced pain in healthy volunteers;[5] a 2008 University of California at Davis double-blind, randomized clinical trial that reported both high and low doses of inhaled cannabis reduced neuropathic pain of diverse causes in subjects unresponsive to standard pain therapies;[6] and a 2010 McGill University study finding that smoked cannabis significantly improved measures of pain, sleep quality, and anxiety in participants with refractory pain for which conventional therapies had failed.[7]

Preclinical data indicates that cannabinoids, when administered in concert with one another, are more effective at ameliorating neuropathic pain than the use of a single agent. Investigators at the University of Milan reported in 2008 that the administration of single cannabinoids such as THC or CBD produce limited relief compared to the administration of plant extracts containing multiple cannabinoids, terpenes (oils), and flavonoids (pigments).

Researchers concluded: "[T]he use of a standardized extract of Cannabis sativa ... evoked a total relief of thermal hyperalgesia, in an experimental model of neuropathic pain, ... ameliorating the effect of single cannabinoids," investigators concluded. ... "Collectively, these findings strongly support the idea that the combination of cannabinoid and non-cannabinoid compounds, as present in [plant-derived] extracts, provide significant advantages in the relief of neuropathic pain compared with pure cannabinoids alone."[8]

In 2009, an international team of investigators from the United Kingdom, Belgium, and Romania affirmed these preclinical findings in a clinical study of intractable cancer pain patients. They concluded: "[I]n this study, the THC/CBD extract showed a more promising efficacy profile than the THC extract alone. This finding is supported by evidence of additional synergy between THC and CBD. CBD may enhance the analgesic potential of THC by means of potent inverse agonism at CB2 receptors, which may produce anti-inflammatory effects, along with its ability to inhibit immune cell migration. ... These results are very encouraging and merit further study."[9]

Additional clinical trials assessing inhaled cannabis and chronic pain remain ongoing.[10]

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Diabetes Mellitus

Diabetes mellitus is a group of autoimmune diseases characterized by defects in insulin secretion resulting in hyperglycemia (an abnormally high concentration of glucose in the blood). There are two primary types of diabetes. Individuals diagnosed with type 1 diabetes (also known as juvenile diabetes) are incapable of producing pancreatic insulin and must rely on insulin medication for survival. Individuals diagnosed with type 2 diabetes (also known as adult onset diabetes) produce inadequate amounts of insulin. Type 2 diabetes is a less serious condition that typically is controlled by diet. Over time, diabetes can lead to blindness, kidney failure, nerve damage, hardening of the arteries, and death. The disease is the third leading cause of death in the United States after heart disease and cancer.

A search of the scientific literature reveals no clinical investigations of cannabis for the treatment of diabetes, but does identify a small number of preclinical studies indicating that cannabinoids may modify the disease's progression and provide symptomatic relief to those suffering from it.[1-2] A 2006 study published in the journal *Autoimmunity* reported that injections of 5 mg per day of the non-psychoactive cannabinoid CBD significantly reduced the incidence of diabetes in mice. Investigators reported that 86% of untreated control mice in the study developed diabetes. By contrast, only 30% of CBD-treated mice developed the disease.[3] In a separate experiment, investigators reported that control mice all developed diabetes at a median of 17 weeks (range 15-20 weeks), while a majority (60 percent) of CBD-treated mice remained diabetes-free at 26 weeks.[4]

Other preclinical trials have demonstrated cannabinoids to possess additional beneficial effects in animal models of diabetes. Writing in the March 2006 issue of the *American Journal of Pathology*, researchers at the Medical College of Virginia reported that rats treated with CBD for periods of one to four weeks experienced significant protection from diabetic retinopathy.[5] This condition, which is characterized by retinal oxygen deprivation and a breakdown of the blood-retinal barrier, is the leading cause of blindness in working-age adults.

Cannabinoids have also been shown to alleviate neuropathic pain associated with the disease. A pair of studies published in the journal *Neuroscience Letters* in 2004 reported that mice administered a cannabis receptor agonist experienced a reduction in diabetic-related tactile allodynia (pain resulting from non-injurious stimulus to the skin) compared to non-treated controls.[6-7] The findings suggest that "cannabinoids have a potential beneficial effect on experimental diabetic neuropathic pain."

A 2001 trial demonstrated that delta-9-THC could moderate an animal model of the disease by reducing artificially-elevated glucose levels and insulitis in mice compared to non-treated controls.[8] Most recently, an international team of researchers from the United States, Switzerland, and Israel reported in the Journal of the American College of Cardiology that the administration of CBD reduces various symptoms of diabetic cardiomyopathy (weakening of the heart muscle) in a mouse model of type 1 diabetes. Authors concluded, "[T]hese results coupled with the excellent safety and tolerability profile of CBD in humans, strongly suggest that it may have great therapeutic potential in the treatment of diabetic complications."[9]

With the incidence of diabetes steadily increasing in both the adult and juvenile population, it would appear that further cannabinoid research is warranted in the treatment of this disease.

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Dystonia

Dystonia is a neurological movement disorder characterized by abnormal muscle tension and involuntary, painful muscle contractions. It is the third most common movement disorder after Parkinson's disease and tremor, affecting more than 300,000 people in North America.

A small number of case reports and preclinical studies investigating the use of cannabis and cannabinoids for symptoms of dystonia are referenced in the recent scientific literature. A 2002 case study published in the July issue of the *The Journal of Pain and Symptom Management* reported improved symptoms of dystonia after smoking cannabis in a 42-year-old chronic pain patient. Investigators reported that subject's subjective pain score fell from 9 to zero (on a zero-to-10 visual analog scale) following cannabis inhalation, and that the subject did not require any additional analgesic medication for the following 48 hours. "No other treatment intervention to date had resulted in such dramatic overall improvement in [the patient's] condition," investigators concluded.[1]

A second case study reporting "significant clinical improvement" following cannabis inhalation in a single 25-year-old patient with generalized dystonia due to Wilson's disease was documented by an Argentinian research team in the August 2004 issue of the journal *Movement Disorders*.[2]

Also in 2004, a German research team at the Hannover Medical School reported successful treatment of musician's dystonia in a 38-year-old professional pianist following administration of 5 mg of THC in a placebo-controlled single-dose trial.[3] Investigators reported "clear improvement of motor control" in the subject's affected hand, and noted, "[Two] hours after THC intake, the patient was able to play technically demanding literature, which had not been possible before treatment." Prior to cannabinoid treatment, the subject had been unresponsive to standard medications and was no longer performing publicly. "The results provide evidence that ... THC intake ... significantly improves [symptoms of] ... focal dystonia," investigators concluded.

By contrast, a 2002 randomized, placebo-controlled study investigating the use of the synthetic oral cannabinoid naboline (Cessamet) in 15 patients afflicted with generalized and segmental primary dystonia did not show a significant reduction in dystonic symptoms.[4] Investigators speculated that this result may have been dose-related, and that administration of a higher dosage may have yielded a different outcome.

At least one recent preclinical trial indicates that both synthetic cannabinoids as well as high doses of the natural non-psychoactive cannabinoid cannabidiol (CBD) could moderate the disease progression of dystonia in animals.[5] Limited references regarding the use of cannabinoids for dystonia in humans[6] and animals[7] in the 1980s and the 1990s also appear in the scientific literature. It would appear that additional, larger clinical trials are warranted to investigate the use of cannabis and cannabinoids for this indication.

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Fibromyalgia

Fibromyalgia is a chronic pain syndrome of unknown etiology. The disease is characterized by widespread musculoskeletal pain, fatigue, and multiple tender points in the neck, spine, shoulders, and hips. An estimated 3 to 6 million Americans are afflicted by fibromyalgia, which is often poorly controlled by standard pain medications.

Fibromyalgia patients frequently self-report using cannabis therapeutically to treat symptoms of the disease,[1-2] and physicians – where legal to do so – often recommend the use of cannabis to treat musculoskeletal disorders.[3-4] To date however, there are few clinical trials assessing the use of cannabinoids to treat the disease.

Writing in the July 2006 issue of the journal *Current Medical Research and Opinion*, investigators at Germany's University of Heidelberg evaluated the analgesic effects of oral THC in nine patients with fibromyalgia over a 3-month period. Subjects in the trial were administered daily doses of 2.5 to 15 mg of THC, but received no other pain medication during the trial. Among those participants who completed the trial, all reported a significant reduction in daily recorded pain and electronically induced pain.[5]

A 2008 study published in the *The Journal of Pain* reported that the administration of the synthetic cannabinoid nabilone significantly decreased pain in 40 subjects with fibromylagia in a randomized, double-blind, placebo-controlled trial. "As nabilone improved symptoms and was well-tolerated, it may be a useful adjunct for pain management in fibromyalgia," investigators concluded.[6] A separate 2010 trial performed at McGill University in Montreal reported that low doses of nabilone significantly improves sleep quality in patients diagnosed with the disease.[7]

Previous clinical and preclinical trials have shown that both naturally occurring and endogenous cannabinoids hold analgesic qualities,[8-11] particularly in the treatment of pain resistant to conventional pain therapies. (Please see the 'Chronic Pain' section of this book for further details.) As a result, some experts have suggested that cannabinoids are applicable for the treatment of chronic pain conditions such as fibromyalgia, and have theorized that the disease may be associated with an underlying clinical deficiency of the endocannabinoid system.[12]

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Gastrointestinal Disorders

Gastrointestinal (GI) disorders, including functional bowel diseases such as irritable bowel syndrome (IBS) and inflammatory bowel diseases such as Crohn's disease and colitis, afflict more than one in five Americans, particularly women. While some GI disorders may be controlled by diet and pharmaceutical medications, others are poorly moderated by conventional treatments. Symptoms of GI disorders often include cramping, abdominal pain, inflammation of the lining of the large and/or small intestine, chronic diarrhea, rectal bleeding, and weight loss.

Although several anecdotal reports[1-2] and a handful of case reports[3-4] exist in the scientific literature supporting the use of cannabinoids to treat symptoms of GI disorders, virtually no clinical trial work has been performed in this area, aside from a 2007 clinical study assessing the impact of oral THC on colonic motility.[5]

However, numerous preclinical studies demonstrate that activation of the CB1 and CB2 cannabinoid receptors exert biological functions on the gastrointestinal tract.[6] Effects of their activation in animals include suppression of gastrointestinal motility,[7] inhibition of intestinal secretion,[8] reduced acid reflux,[9] and protection from inflammation,[10] as well as the promotion of epithelial wound healing in human tissue.[11] As a result, many experts now believe that cannabinoids and/or modulation of the endogenous cannabinoid system represents a novel therapeutic target for the treatment of numerous GI disorders — including inflammatory bowel diseases, functional bowel diseases, gastro-oesophagael reflux conditions, secretory diarrhea, gastric ulcers, and colon cancer.[12-14]

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Gliomas/Cancer

Gliomas (tumors in the brain) are especially aggressive malignant forms of cancer, often resulting in the death of affected patients within one to two years following diagnosis. There is no cure for gliomas and most available treatments provide only minor symptomatic relief.

A review of the modern scientific literature reveals numerous preclinical studies and one pilot clinical study demonstrating cannabinoids' ability to act as antineoplastic agents, particularly on glioma cell lines.

Writing in the September 1998 issue of the journal *FEBS Letters*, investigators at Madrid's Complutense University, School of Biology, first reported that delta-9-THC induced apoptosis (programmed cell death) in glioma cells in culture.[1] Investigators followed up their initial findings in 2000, reporting that the administration of both THC and the synthetic cannabinoid agonist WIN 55,212-2 "induced a considerable regression of malignant gliomas" in animals.[2] Researchers again confirmed cannabinoids' ability to inhibit tumor growth in animals in 2003.[3]

That same year, Italian investigators at the University of Milan, Department of Pharmacology, Chemotherapy and Toxicology, reported that the non-psychoactive cannabinoid, cannabidiol (CBD), inhibited the growth of various human glioma cell lines *in vivo* and *in vitro* in a dose dependent manner. Writing in the November 2003 issue of the *Journal of Pharmacology and Experimental Therapeutics Fast Forward*, researchers concluded, "Non-psychoactive CBD ... produce[s] a significant anti-tumor activity both *in vitro* and *in vivo*, thus suggesting a possible application of CBD as an antineoplastic agent."[4]

In 2004, Guzman and colleagues reported that cannabinoids inhibited glioma tumor growth in animals and in human glioblastoma multiforme (GBM) tumor samples by altering blood vessel morphology (e.g., VEGF pathways). Writing in the August 2004 issue of *Cancer Research*, investigators concluded, "The present laboratory and clinical findings provide a novel pharmacological target for cannabinoid-based therapies."[5]

More recently, investigators at the California Pacific Medical Center Research Institute reported that the administration of THC on human glioblastoma multiforme cell lines decreased the proliferation of malignant cells and induced cell death more rapidly than did the administration of WIN 55,212-2. Researchers also noted that THC selectively targeted

malignant cells while ignoring healthy ones in a more profound manner than the synthetic alternative.[6]

Most recently, Guzman and colleagues reported that THC administration decreases recurrent glioblastoma multiforme tumor growth in patients diagnosed with recurrent GBM. In the first ever pilot clinical trial assessing the use of cannabinoids and GBM, investigators found that the intratumoral administration of THC was associated with reduced tumor cell proliferation in two of nine subjects. "The fair safety profile of THC, together with its possible anti-proliferative action on tumor cells reported here and in other studies, may set the basis for future trials aimed at evaluating the potential antitumoral activity of cannabinoids," investigators concluded.[7] Several additional investigators have also recently called for further exploration of cannabis-based therapies for the treatment of glioma.[8-10]

In addition to cannabinoids' ability to moderate glioma cells, separate studies demonstrate that cannabinoids and endocannabinoids can also inhibit the proliferation of other various cancer cell lines, including breast carcinoma,[11-15] prostate carcinoma,[16-18] colorectal carcinoma,[19] gastric adenocarcinoma,[20] skin carcinoma,[21] leukemia cells,[22-23] nueroblastoma,[24] lung carcinoma,[25-26] uterus carcinoma,[27] thyroid epithelioma,[28] pancreatic adenocarcinoma,[29-30] cervical carcinoma,[31] oral cancer,[32] biliary tract cancer (cholangiocarcinoma),[33] and lymphoma.[34-35]

Studies also indicate that the administration of cannabinoids, in conjunction with conventional anti-cancer therapies, can enhance the effectiveness of standard cancer treatments.[36] Most recently, investigators at the University of California, Pacific Medical Center reported that cannabinoids possess synergistic anti-cancer properties -- finding that the administration of a combination of the plant's constituents is superior to the administration of isolated compounds alone.[37]

Consequently, many experts now believe that cannabinoids "may represent a new class of anticancer drugs that retard cancer growth, inhibit angiogenesis and the metastatic spreading of cancer cells."[38-39]

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Hepatitis C

Hepatitis C is a viral disease of the liver that afflicts an estimated four million Americans. Chronic hepatitis C is typically associated with fatigue, depression, joint pain and liver impairment, including cirrhosis and liver cancer.

Patients diagnosed with hepatitis C frequently report using cannabis to treat both symptoms of the disease as well as the nausea associated with antiviral therapy.[1-2] An observational study by investigators at the University of California at San Francisco (UCSF) found that hepatitis C patients who used cannabis were significantly more likely to adhere to their treatment regimen than patients who didn't use it.[3] Nevertheless, no clinical trials assessing the use of cannabinoids for this indication are available in the scientific literature.

Preclinical data indicates that the endocannabinoid system may moderate aspects of chronic liver disease[4-5] and that cannabinoids may reduce inflammation in experimental models of hepatitis.[6] However, other clinical reviews have reported a positive association between daily cannabis use and the progression of liver fibrosis (excessive tissue build up) and steatosis (excessive fat build up) in select hepatitis C patients.[7-9]

As a result, experts hold divergent opinions regarding the therapeutic use of cannabinoids for hepatitis C treatment. Writing in the October 2006 issue of the *European Journal of Gastroenterology*, investigators from Canada and Germany concluded that cannabis' "potential benefits of a higher likelihood of treatment success [for hepatitis c patients] appear to outweigh [its] risks."[10] By contrast, other experts discourage the use of cannabis in patients with chronic hepatitis until further studies are performed.[11-15]

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Human Immunodeficiency Virus (HIV)

The human immunodeficiency virus is a retrovirus that invades cells in the human immune system, making it highly susceptible to infectious diseases. According to the World Health Organization, over 500,000 Americans have died from HIV/AIDS and over one million US citizens are living with the disease.

Survey data indicates that cannabis is used by as many one in three North American patients with HIV/AIDS to treat symptoms of the disease as well as the side-effects of various antiretroviral medications,[1-4] with one recent study reporting that more than 60 percent of HIV/AIDS patients self-identify as "medical cannabis users."[5] Patients living with HIV/AIDS most frequently report using cannabis to counter symptoms of anxiety, appetite loss, and nausea, and at least one study has reported that patients who use cannabis therapeutically are 3.3 times more likely to adhere to their antiretroviral therapy regimens than non-cannabis users.[6]

Clinical trial data indicates that cannabis use does not adversely impact CD4 and CD8 T cell counts,[7-8] and may even improve immune function.[9-10]

In 2007, investigators at Columbia University published clinical trial data in 2007 reporting that HIV/AIDS patients who inhaled cannabis four times daily experienced "substantial ... increases in food intake ... with little evidence of discomfort and no impairment of cognitive performance." They concluded, "Smoked marijuana ... has a clear medical benefit in HIV-positive [subjects]."[11]

That same year, investigators at San Francisco General Hospital and the University of California's Pain Clinical Research Center reported in the journal *Neurology* that inhaling cannabis significantly reduced HIV-associated neuropathy compared to placebo. Researchers reported that inhaling cannabis three times daily reduced patients' pain by 34 percent. They concluded, "Smoked cannabis was well tolerated and effectively relieved chronic neuropathic pain from HIV-associated neuropathy [in a manner] similar to oral drugs used for chronic neuropathic pain."[12]

In 2008, researchers at the University of California at San Diego reported similar findings. Writing in the journal *Neuropsychopharmacology*, they concluded: "Smoked cannabis ... significantly reduced neuropathic pain intensity in HIV-associated ... polyneuropathy compared to placebo, when added to stable concomitant analgesics. ... Mood disturbance,

physical disability, and quality of life all improved significantly during study treatment. ... Our findings suggest that cannabinoid therapy may be an effective option for pain relief in patients with medically intractable pain due to HIV."[13]

As a result, many experts now believe that "marijuana represents another treatment option in [the] health management" of patients with HIV/AIDS.[14]

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Hypertension

High blood pressure, or hypertension, afflicts an estimated 1 in 4 American adults. This condition puts a strain on the heart and blood vessels and greatly increases the risk of stroke and heart disease.

Emerging research indicates that the endogenous cannabinoid system plays a role in regulating blood pressure, though its mechanism of action is not well understood.[1] Animal studies demonstrate that anandamide and other endocannabinoids profoundly suppress cardiac contractility in hypertension and can normalize blood pressure,[2-3] leading some experts to speculate that the manipulation of the endocannabinoid system "may offer novel therapeutic approaches in a variety of cardiovascular disorders."[4]

The administration of natural cannabinoids has yielded conflicting cardiovascular effects on humans and laboratory animals.[5-9] The vascular response in humans administered cannabis in experimental conditions is typically characterized by a mild increase in heart rate and blood pressure. However, complete tolerance to these effects develops quickly and potential health risks appear minimal.[10-11]

In animals, cannabinoid administration in animals is typically associated with vasodilation, transient bradycardia and hypotension,[12] as well as an inhibition of atherosclerosis (hardening of the arteries) progression.[13-15] The administration of synthetic cannabinoids have also been shown to lower blood pressure in animals and have not been associated with cardiotoxicity in humans.[16]

At this time, research assessing the clinical use of cannabinoids for hypertension is in its infancy though further investigation appears warranted.[17]

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Incontinence

Urinary incontinence is defined as a loss of bladder control. Incontinence can result from several biological factors, including weak bladder muscles and inflammation, as well as from nerve damage associated with diseases such as multiple sclerosis (MS) and Parkinson's disease. More than one in ten Americans over age 65 is estimated to suffer from incontinence, particularly women.

Several recent clinical trials indicate that cannabinoid therapy may reduce incidents of incontinence. Writing in the February 2003 issue of the journal *Clinical Rehabilitation*, investigators at Oxford's Centre for Enablement in Britain reported that self-administered doses of whole-plant cannabinoid extracts improved bladder control compared to placebo in patients suffering from MS and spinal cord injury.[1]

Investigators at London's Institute for Neurology followed up these initial findings in an open-label pilot study of cannabis-based extracts for bladder dysfunction in 15 patients with advanced multiple sclerosis. Following cannabinoid therapy, "urinary urgency, the number of and volume of incontinence episodes, frequency and nocturia all decreased significantly," investigators determined. "Cannabis-based medicinal extracts are a safe and effective treatment for urinary and other problems in patients with advanced MS."[2]

These findings were confirmed in 2006 in a multi-center, randomized placebo-controlled trial involving 630 patients administered oral doses of cannabis extracts or THC. Researchers reported that subjects administered cannabis extracts experienced a 38 percent reduction in incontinence episodes from baseline to the end of treatment, while patients administered THC experienced a 33 percent reduction, suggesting a "clinical effect of cannabis on incontinence episodes."[3]

Most recently, preclinical data presented at the 2006 annual meeting of the American Urological Association indicated that cannabis analogs can reduce bladder inflammation and bladder over-activity in animals.[4]

In light of these findings, experts have recommended the use of cannabinoids as potential 'second-line' agents for treating incontinence.[5]

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Methicillin-resistant *Staphyloccus aureus* (MRSA)

Many bacterial infections possess multi-drug resistance. Arguably the most significant of these bacteria is methicillin-resistant *Staphyloccus aureus*, more commonly known as MRSA or 'the superbug.' This bacterium is resistant to standard antibiotics, including penicillin. According to the *Journal of the American Medical Association*, MRSA is responsible for nearly 20,000 hospital-stay related deaths annually in the United States.[1]

Published data demonstrates that cannabinoids possess strong antibacterial properties. In 2008, investigators at Italy's Universita del Piemonte Orientale and Britain's University of London, School of Pharmacy assessed the germ-fighting properties of five separate cannabinoids against various strains of multidrug-resistant bacteria, including MRSA. They reported that all of the compounds tested showed "potent antibacterial activity," and that cannabinoids were "exceptional" at halting the spread of MRSA.[2]

A second study published that same year reported that non-cannabinoid constituents in the plant also possess antibacterial properties against MRSA and malaria.[3]

Clinical trials regarding the use of cannabinoids for MRSA have been recommended, with some experts stating, "Cannabis sativa ... represents an interesting source of antibacterial agents to address the problem of multidrug resistance in MRSA and other pathogenic bacteria."[4]

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Multiple Sclerosis

Multiple sclerosis (MS) is a chronic degenerative disease of the central nervous system that causes inflammation, muscular weakness, and a loss of motor coordination. Over time, MS patients typically become permanently disabled, and in some cases the disease can be fatal. According to the US National Multiple Sclerosis Society, about 200 people are diagnosed every week with the disease — often striking those 20 to 40 years of age.

Clinical and anecdotal reports of cannabinoids' ability to reduce MS-related symptoms such as pain, spasticity, depression, fatigue, and incontinence are plentiful in the scientific literature.[1-12] Most recently, investigators at the University of California at San Diego reported in 2008 that inhaled cannabis significantly reduced objective measures of pain intensity and spasticity in patients with MS in a placebo-controlled, randomized clinical trial. Investigators concluded that "smoked cannabis was superior to placebo in reducing spasticity and pain in patients with multiple sclerosis, and provided some benefit beyond currently prescribed treatment."[13] Not surprisingly, patients with multiple sclerosis typically report engaging in cannabis therapy,[14] with one survey indicating that nearly one in two MS patients use the drug therapeutically.[15]

Other recent clinical and preclinical studies suggest that cannabinoids may also inhibit MS progression in addition to providing symptom management. Writing in the July 2003 issue of the journal *Brain*, investigators at the University College of London's Institute of Neurology reported that administration of the synthetic cannabinoid agonist WIN 55,212-2 provided "significant neuroprotection" in an animal model of multiple sclerosis. "The results of this study are important because they suggest that in addition to symptom management, ... cannabis may also slow the neurodegenerative processes that ultimately lead to chronic disability in multiple sclerosis and probably other disease," researchers concluded.[16]

Investigators at the Netherland's Vrije University Medical Center, Department of Neurology, also reported for the first time in 2003 that the administration of oral THC can boost immune function in patients with MS. "These results suggest pro-inflammatory disease-modifying potential of cannabinoids [for] MS," they concluded.[17]

Clinical data reported in 2006 from an extended open-label study of 167 multiple sclerosis patients found that use of whole plant cannabinoid extracts relieved symptoms of pain, spasticity, and bladder incontinence for an extended period of treatment (mean duration of study participants was 434 days) without requiring subjects to increase their dose.[18] Results

from a separate two-year open label extension trial in 2007 also reported that the administration of cannabis extracts was associated with long-term reductions in neuropathic pain in select MS patients. On average, patients in the study required fewer daily doses of the drug and reported lower median pain scores the longer they took it.[19] These results would be unlikely in patients suffering from a progressive disease like MS unless the cannabinoid therapy was halting its progression, investigators have suggested.

In recent years, health regulators in Canada,[20] the United Kingdom,[21] Spain,[22] and New Zealand[23] have approved the prescription use of plant cannabis extracts to treat symptoms of multiple sclerosis. Regulatory approval is the European Union and in the United States remains pending.

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Osteoporosis

Osteoporosis is a degenerative skeletal disease characterized by a deterioration of bone tissue. Patients with osteoporosis are at risk for suffering multiple fractures and other serious disabilities. Approximately 10 million Americans over age 50 suffer from osteoporosis, according to the US Surgeon General's office, and another 34 million are at risk for developing the disease.

Initial references regarding the potential use of cannabinoids to protect against the onset of osteoporosis are available in the scientific literature beginning in the early 1990s.[1] To date, however, no clinical work has taken place investigating the use of cannabis for this indication.

Writing in the January 2006 issue of the *Proceedings of the National Academy of Sciences*, investigators at the Bone Laboratory of the Hebrew University in Jerusalem reported that the administration of the synthetic cannabinoid agonist HU-308 slowed the development of osteoporosis, stimulated bone building, and reduced bone loss in animals.[2] Follow up research published in the *Annals of the New York Academy of Sciences* in 2007 reported that the activation of the CB2 cannabinoid receptor reduced experimentally-induced bone loss and stimulated bone formation.[3] Investigators have previously reported that mice deficient in the CB2 cannabinoid receptor experienced age-accelerated bone loss reminiscent of human osteoporosis.[4]

Scientists now speculate that the main physiologic involvement of specific endocannabinoid receptors (CB2 receptors) is to maintain "bone remodeling at balance, thus protecting the skeleton against age-related bone loss,"[5] leading some experts to believe that cannabinoids may be "A promising target novel target for anti-osteoporotic drug development."[6]

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Pruritus

Itching (pruritus) is a common symptom associated with numerous skin diseases, as well as a secondary symptom of numerous serious conditions such as renal failure and liver disease. Itching, unlike other skin sensations, is generally a result of CNS activities, and typically goes untreated by standard medical therapies.

A review of the scientific literature reveals three clinical trials investigating the use of cannabinoids in the treatment of pruritus. Writing in the August 2002 issue of the *American Journal of Gastroentrology*, investigators from the University of Miami Department of Medicine reported successful treatment of pruritus with 5 mg of THC in three patients with cholestatic liver disease.[1] Prior to cannabinoid therapy, subjects had failed to respond to standard medications and had lost their ability to work. Following evening cannabinoid administration, all three patients reported a decrease in pruritus, as well as "marked improvement" in sleep and were eventually able to return to work. Resolution of depression was also reported in two out of three subjects. "Delta-9-tetrahydrocannabinol may be an effective alternative in patients with intractable cholestatic pruritus," investigators concluded.

The following year, British researchers reported in the June 2003 issue of the journal *Inflammation Research* that the peripheral administration of the synthetic cannabinoid agonist HU-211 significantly reduced experimentally-induced itch in 12 subjects.[2] Investigators had previously reported that topical application of HU-210 on human skin reduced experimentally-induced pain and acute burning sensations.[3]

Most recently, researchers at Wroclaw, Poland's University of Medicine, Department of Dermatology, reported that application of an endocannabinoid-based topical cream reduced uremic pruritus and xerosis (abnormal dryness of the skin) in hemodialysis patients.[4] Three weeks of twice-daily application of the cream "completely eliminated" pruritus in 38 percent of trial subjects and "significantly reduced" itching in others. Eighty-one percent of patients reported a "complete reduction" in xerosis following cannabinoid therapy.

In light of these encouraging preliminary results, some dermatology experts now believe that cannabinoids and the cannabinoid system may represent "promising new avenues for managing itch more effectively."[5]

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Rheumatoid Arthritis

Rheumatoid arthritis (RA) is an inflammatory disease of the joints characterized by pain, stiffness, and swelling, as well as an eventual loss of limb function. Rheumatoid arthritis is estimated to affect about one percent of the population, primarily women.

Use of cannabis to treat symptoms of RA is commonly self-reported by patients with the disease. In a 2005 anonymous questionnaire survey of medicinal cannabis patients in Australia, 25 percent reported using cannabinoids to treat RA.[1] A survey of British medicinal cannabis patients found that more than 20 percent of respondents reported using cannabis for symptoms of arthritis.[2] Nevertheless, few clinical trials investigating the use of cannabis for RA appear in the scientific literature.

In January 2006, investigators at the British Royal National Hospital for Rheumatic Disease reported successful treatment of arthritis with cannabinoids in the first-ever controlled trial assessing the efficacy of natural cannabis extracts on RA.[3] Investigators reported that administration of cannabis extracts over a five week period produced statistically significant improvements in pain on movement, pain at rest, quality of sleep, inflammation, and intensity of pain compared to placebo. No serious adverse effects were observed. Similar results had been reported in smaller, Phase II trials investigating the use of orally administered cannabis extracts on symptoms of RA.[4]

Preclinical data also indicates that cannabinoids can moderate the progression of RA. Writing in the August 2000 issue of the *Journal of the Proceedings of the National Academy of Sciences*, investigators at London's Kennedy Institute for Rheumatology reported that cannabidiol (CBD) administration suppressed progression of arthritis *in vitro* and in animals.[5] Administration of CBD after the onset of clinical symptoms protected joints against severe damage and "effectively blocked [the] progression of arthritis," investigators concluded. Daily administration of the synthetic cannabinoid agonist HU-320 has also been reported to protect joints from damage and to ameliorate arthritis in animals.[6]

Summarizing the available literature in the September 2005 issue of the *Journal of Neuroimmunology*, researchers at Tokyo's National Institute for Neuroscience concluded, "Cannabinoid therapy of RA could provide symptomatic relief of joint pain and swelling as well as suppressing joint destruction and disease progression."[7]

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Sleep Apnea

Sleep apnea is a medical disorder characterized by frequent interruptions in breathing of up to ten seconds or more during sleep. The condition is associated with numerous physiological disorders, including fatigue, headaches, high blood pressure, irregular heartbeat, heart attack and stroke. Though sleep apnea often goes undiagnosed, it is estimated that approximately four percent of men and two percent of women ages 30 to 60 years old suffer from the disease.

One preclinical study is cited in the scientific literature investigating the role of cannabinoids on sleep-related apnea. Writing in the June 2002 issue of the journal of the American Academy of Sleep Medicine, researchers at the University of Illinois (at Chicago) Department of Medicine reported "potent suppression" of sleep-related apnea in rats administered either exogenous or endogenous cannabinoids.[1] Investigators reported that doses of delta-9-THC and the endocannabinoid oleamide each stabilized respiration during sleep, and blocked serotonin-induced exacerbation of sleep apnea in a statistically significant manner. No follow up investigations have taken place assessing the use of cannabinoids to treat this indication. However, several recent preclinical and clinical trials have reported on the use of THC, natural cannabis extracts, and endocannabinoids to induce sleep[2-3] and/or improve sleep quality.[4]

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Tourette's Syndrome

Tourette's syndrome (TS) is a complex neuropsychiatric disorder of unknown etiology that is characterized by involuntary vocal tics. Severity of this condition varies widely among patients. Though there is no cure for Tourette's syndrome, the condition often improves with age. Experts estimate that 100,000 Americans are afflicted with TS.

A review of the scientific literature reveals several clinical trials investigating the use of cannabinoids for the treatment of TS. Writing in the March 1999 issue of the *American Journal of Psychiatry*, investigators at Germany's Medical School of Hanover, Department of Clinical Psychiatry and Psychotherapy, reported successful treatment of Tourette's syndrome with a single dose of 10 mg of delta-9-THC in a 25-year-old male patient in an uncontrolled open clinical trial.[1] Investigators reported that the subject's total tic severity score fell from 41 to 7 within two hours following cannabinoid therapy, and that improvement was observed for a total of seven hours. "For the first time, patients' subjective experiences when smoking marijuana were confirmed by using a valid and reliable rating scale," authors concluded.

Investigators again confirmed these preliminary results in a randomized double-blind placebo-controlled crossover single dose trial of THC in 12 adult TS patients. Researchers reported a "significant improvement of tics and obsessive-compulsive behavior (OCB) after treatment with delta-9-THC compared to placebo."[2] Investigators reported no cognitive impairment in subjects following THC administration[3] and concluded, "THC is effective and safe in treating tics and OCB in TS."[4]

Investigators confirmed these results in a second randomized double-blind placebo-controlled trial involving 24 patients administered daily doses of up to 10 mg of THC over a six-week period. Researchers reported that subjects experienced a significant reduction in tics following long-term cannabinoid treatment,[5] and suffered no detrimental effects on learning, recall or verbal memory.[6] A trend toward significant improvement of verbal memory span during and after therapy was also observed.

Summarizing their findings in the October 2003 issue of the journal *Expert Opinions in Pharmacotherapy*, investigators concluded that in adult TS patients, "Therapy with delta-9-THC should be tried ... if well established drugs either fail to improve tics or cause significant adverse effects."[7]

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NORML

Working to Reform Marijuana Laws

Marinol Versus Natural Cannabis

Pros, Cons and Options for Patients

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NORML

Working to Reform Marijuana Laws

INTRODUCTION

Marinol[1] (dronabinol) is the only US FDA-approved synthetic cannabinoid. It is often marketed as a legal pharmaceutical alternative to natural cannabis.

Marinol is manufactured as a gelatin capsule containing synthetic delta-9-tetrahydrocannabinol (THC) in sesame oil. It is taken orally and is available in 2.5mg, 5mg and/or 10mg dosages. Marinol may be prescribed for the treatment of cachexia (weight loss) in patients with AIDS and for the treatment of nausea and vomiting associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments.

Despite FDA approval,2 Marinol typically provides only limited relief to select patients, particularly when compared to natural cannabis and its cannabinoids. Marinol should remain a legal option for patients and physicians; however, federal and state laws should be amended to allow for those patients who are unresponsive to synthetic THC the ability to use natural cannabis and its cannabinoids as a medical therapy without fear of arrest and/or criminal prosecution. By prohibiting the possession and use of natural cannabis and its cannabinoids, patients are unnecessarily restricted to use a synthetic substitute that lacks much of the therapeutic efficacy of natural cannabis.

I. MARINOL LACKS SEVERAL OF THE THERAPEUTIC COMPOUNDS AVAILABLE IN NATURAL CANNABIS

Chemical compounds in cannabis, known as cannabinoids, are responsible for its numerous therapeutic benefits. Scientists have identified 66 naturally occurring cannabinoids.[3]

The active ingredient in Marinol, synthetic delta-9-tetrahyrdocannabinol (THC), is an analogue of one such compound, THC. However, several other cannabinoids available in cannabis -- in addition to naturally occurring terpenoids (oils) and flavonoids (phenols) -- have also been clinically demonstrated to possess therapeutic utility. Many patients favor natural cannabis to Marinol because it includes these other therapeutically active cannabinoids.

For example, cannabidol (CBD) is a non-psychoactive cannabinoid that has been clinically demonstrated to have analgesic, antispasmodic, anxiolytic, antipsychotic, antinausea, and anti-rheumatoid arthritic properties.[4]

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[1] Marinol is produced and marketed by Unimed Pharmaceuticals, a subsidiary of Solvay Pharmaceuticals.

[2] The FDA approved Marinol in 1985 as a Schedule II controlled substance. By definition, Schedule II drugs adhere to the following criteria: (A) The drug has a high potential for abuse; (B) The drug has a currently accepted medical use in treatment in the United States; (C) Abuse of the drug may lead to severe psychological or physical dependence. In 1999, Marinol was downgraded to a Schedule III controlled substance. By definition, Schedule III drugs adhere to the following criteria: (A) The drug has a potential for abuse less than Schedule I and Schedule II drugs; (B) The drug has a currently accepted medical use in treatment in the United States; (C) Abuse of the drug may lead to moderate or low physical dependence or high psychological dependence.

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Animal and human studies have shown CBD to possess anti-convulsant properties, particularly in the treatment of epilepsy.[5] Natural extracts of CBD, when administered in combination with THC, significantly reduce pain, spasticity and other symptoms in multiple sclerosis (MS) patients unresponsive to standard treatment medications.[6]

Clinical studies also demonstrate CBD to be neuroprotective against glutamate neurotoxicity[7] (i.e. stroke), cerebral infarction[8] (localized cell death in the brain), and ethanol-induced neurotoxicity,[9] with CBD being more protective against glutamate neurotoxicity than either ascorbate (vitamin C) or alpha-tocopherol (vitamin E).[10] Clinical trials have also shown CBD to possess anti-tumoral properties,[11] inhibiting the growth of glioma (brain tumor) cells in a dose dependent manner and selectively inducing apoptosis (programmed cell death) in malignant cells.[12]

Additional cannabinoids possessing clinically demonstrated therapeutic properties include: cannabinol (anticonvulsant[13] and anti-inflammatory[14] activity); cannabichromine (anti-inflammatory[15] and

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antidepressant[16] activity); and cannabigerol (anti-tumoral[17] and analgesic[18] activity). Natural cannabis' essential oil components (terpenoids) exhibit anti-inflammatory properties[19] and its flavonoids possess antioxidant activity.[20] Emerging clinical evidence indicates that cannabinoids may slow disease progression[21] in certain autoimmune and neurologic diseases, including multiple sclerosis[22] (MS), Amyotrophic Lateral Sclerosis[23] (Lou Gehrig's disease) and Huntington's Disease.[24]

Clinical data indicate that the synergism of these compounds is likely more efficacious[25] than the administration of synthetic THC alone.[26] For example, McPartland and Russo write: "Good evidence shows that secondary compounds in cannabis may enhance beneficial effects of THC. Other cannabinoid and non-cannabinoid compounds in herbal cannabis ... may reduce THC-induced anxiety, cholinergic deficits, and immunosuppression. Cannabis terpenoids and flavonoids may also increase cerebral blood flow, enhance

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cortical activity, kill respiratory pathogens, and provide anti-inflammatory activity."[27] In an *in vitro* model of epilepsy, natural cannabis extracts performed better than THC alone.[28] In human trials, patients suffering from multiple sclerosis experienced greater symptomatic relief from sublingual natural cannabis extracts than from the administration of oral THC.[29] In 2005, Health Canada approved the oral spray Sativex[30] -- which contains precise ratios of the natural cannabinoid extracts THC and CBD, among other compounds -- for prescription use for MS-related symptoms.[31]

II. MARINOL IS MORE PSYCHOACTIVE THAN NATURAL CANNABIS

Patients prescribed Marinol frequently report that its psychoactive effects are far greater than those of natural cannabis. Marinol's adverse effects include: feeling "high," drowsiness, dizziness, confusion, anxiety, changes in mood, muddled thinking, perceptual difficulties, coordination impairment, irritability, and depression.[32] These psychoactive effects may last four to six hours.[33] About one-third of patients prescribed Marinol report experiencing one or some of these adverse effects.[34]

Marinol's oral route of administration is responsible, in part, for its heightened psychoactivity compared to inhaled cannabis. Once swallowed, Marinol passes from the stomach to the small intestine before being absorbed into the bloodstream. Following absorption, Marinol passes through the liver where a significant proportion of the drug is metabolized into other chemicals.[35] One of these chemicals, 11-hydroxy-THC, may be four to five times more potent than natural THC,[36] and is produced in greater quantities.[37] Thus, patients

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[27] J. McPartland and E. Russo. 2002. Cannabis and cannabis extracts: greater than the sum of their parts. *Journal of Cannabis Therapeutics*. p. 103.

[28] The Pharmaceutical Journal. "Cannabis herb may have advantages over THC in epilepsy." July 19, 2003.

[29] Comparison of results from: D. Wade et al. 2004. Do cannabis-based medicinal extracts have general or specific effects on symptoms in multiple sclerosis? A double-blind, randomized, placebo-controlled study on 160 patients. *Multiple Sclerosis* (See specifically: Abstract: Spasticity VAS scores were significantly reduced by cannabis-based medicinal extracts in comparison with placebo.) and J. Zajicek et al. 2003. Cannabinoids for treatment of spasticity and other symptoms related to multiple sclerosis. *Lancet*. 362: 1517-26 (See specifically: Abstract: Treatment with [oral cannabis extract or THC] did not have a beneficial effect on spasticity.)

[30] http://www.drugdevelopment-technology.com/projects/sativex/

[31] Canada News Wire. "Sativex: Novel cannabis derived treatment for MS pain now available in Canada by prescription." June 20, 2005.

[32] *Physician's Desk Reference: 43rd edition*. Medical Economics Company. 1989: 1859-1860.

[33] *Physician's Desk Reference: 52nd edition*. Medical Economics Company. 1998: 2353-2355.

[34] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and medicine: Assessing the Science Base*. p. 203.

[35] J. Morgan and L. Zimmer, *Marijuana Myths, Marijuana Facts: A Review of the Scientific Evidence*. The Lindesmith Center. 1997: 18-19.

[36] L. Lemberger et al. 1973. Comparative pharmacology of delta-9-THC and its metabolite 11-0H-Delta-9-THC. *Journal of Clinical Investigation* 54: 2411-2417 and M. Perez-Reyes et al. 1972. Intravenous injection in man of delta-9-

administered Marinol experience the psychoactive effects of both THC and 11-hydroxy-THC, greatly increasing the likelihood that they will suffer from an adverse psychological reaction. By comparison, only minute quantities of 11-hydroxy-THC are produced when cannabis is inhaled.[38] Moreover, Marinol lacks the compound cannabidiol, which possesses anxiolytic activity and likely modifies and/or diminishes much of THC's psychoactivity in natural cannabis.[39]

III. CANNABIS VAPORIZATION OFFERS ADVANTAGES OVER ORALLY ADMINISTERED THC

Vaporization is an alternative method of cannabis administration that holds distinct advantages over both smoking and oral administration. Cannabis vaporization suppresses respiratory toxins by heating cannabis to a temperature where cannabinoid vapors form (typically around 180-190 degrees Celsius), but below the point of combustion where noxious smoke and associated toxins (i.e., carcinogenic hydrocarbons) are produced (near 230 degrees Celsius).[40] Although a comprehensive review of cannabis and health conducted by the National Academy of Sciences Institute of Medicine found "no conclusive evidence that marijuana causes cancer in humans, including cancers usually related to tobacco use,"[41] studies have found that heavy cannabis smokers face a higher risk of contracting bronchitis and respiratory illnesses.[42] This risk is likely not due to the inhalation of cannabinoids, but rather to the exposure of noxious smoke. Because vaporization can deliver therapeutic doses of cannabinoids while reducing the users intake of pyrolytic smoke compounds, it is considered to be a preferred and likely safer method of cannabis administration than smoking.[43]

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tetrahydrocannabinol and 11-hydroxy-delta-9-tetrahydrocannabinol. *Science* 177: 633-635 as cited by J. Morgan and L. Zimmer, *Marijuana Myths, Marijuana Facts: A Review of the Scientific Evidence*.

[37] L. Growing et al. 1998. Therapeutic use of cannabis: clarifying the debate. *Drug and Alcohol Review*. 17: 445-452.

[38] Ibid; J. Morgan and L. Zimmer, *Marijuana Myths, Marijuana Facts: A Review of the Scientific Evidence*, 19.

[39] G. Carter et al. 2004. Medical marijuana: emerging applications for the management of neurologic disorders. *Physical Medicine and Rehabilitation Clinics of North America;* L. Growing et al. 1998. Therapeutic use of cannabis: clarifying the debate. *Drug and Alcohol Review;* A. Zuardi et al. 1982. Action of cannabidiol on the anxiety and other effects produced by delta-9-THC in normal subjects. *Psychopharmacology* 76: 245-250; G. Karinol et al. 1974. Cannabidiol interferes with the effects of delta-9-tetrahydrocannabinol in man. *European Journal of Pharmacology* 28: 172-177.

[40] D. Gieringer et al. 2004. Cannabis vaporizer combines efficient delivery of THC with effective suppression of pyrolytic compounds. *Journal of Cannabis Therapeutics* 4: 7-27.

[41] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 199; See also: M. Hashibe et al. 2005. Epidemiologic review of marijuana use and cancer risk. *Alcohol* 35: 265-275; K. Rosenblat et al. 2004. Marijuana use and risk of oral squamous cell carcinoma. *Cancer Research* 64: 4049-4054; D. Ford et al. 2001. Marijuana use is not associated with head, neck or lung cancer in adults younger than 55 years: Results of a case cohort study. In: National Institute on Drug Abuse (Eds) *Workshop on Clinical Consequences of Marijuana: Program Book*. National Institutes of Health: Rockville, MD: p. 10.

[42] M. Polen et al. 1993. Health care use by frequent marijuana smokers who do not smoke tobacco. *Western Journal of Medicine* 158: 596-601; D. Tashkin. 1993. Is frequent marijuana smoking hazardous to health? *Western Journal of Medicine* 158: 635-637.

[43] D. Gieringer et al. 2004. Cannabis vaporizer combines efficient delivery of THC with effective suppression of pyrolytic compounds. *Journal of Cannabis Therapeutics*.

In practice, cannabis vaporization offers considerable advantages over oral THC consumption. While the oral ingestion of Marinol avoids the potential risks of smoking, it has other significant drawbacks. Because of synthetic THC's poor bioavailability, only 5-20 percent of an oral dose ever reaches the bloodstream[44] and the drug may not achieve peak effect until four hours after dosing.[45] Moreover, because Marinol is metabolized slowly, its therapeutic and psychoactive effects may be unpredictable and vary considerably, both from one person to another, and in the same person from one episode of use to another.[46] By contrast, cannabis vaporization delivers cannabinoids to the bloodstream almost instantaneously.[47] Vaporization's rapid onset also allows patients to self regulate their dosage of cannabinoids by immediately ceasing inhalation when/if their psychoactive effects become unpleasant.[48] After oral administration of Marinol, patients have no choice but to experience the full psychoactive effects of the dose consumed. These dysphoric effects may last several hours.

Because of its rapid onset, vaporized cannabis is more desirable than Marinol for patients requiring a fast-acting therapeutic agent, such as those combating oncoming attacks of nausea, seizures or muscle spasms. Cannabis vaporization also offers a unique advantage to patients suffering from nausea and vomiting because it allows them an alternative delivery route to swallowing. Cancer and HIV/AIDS patients often report that their stomachs cannot hold down Marinol capsules during bouts of severe nausea[49] and many rely on natural cannabis and cannabinoids for symptom control.[50] In a 1994 survey of oncologists, respondents ranked synthetic THC ninth on a list of available antiemetic medications.[51] In another survey of oncologists, 44 percent of respondents said that they believed natural cannabis to be more efficacious than oral synthetic THC; only 13 percent of respondents rated Marinol more effective.[52] A 1997 survey of physicians found that a

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[44] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 203; L. Growing et al. 1998. Therapeutic use of cannabis: clarifying the debate. *Drug and Alcohol Review*.

[45] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 203.

[46] S. Calhoun et al. 1998. Abuse potential of dronabinol. *Journal of Psychoactive Drugs*. 30: 187-196; J. Morgan and L. Zimmer, *Marijuana Myths, Marijuana Facts: A Review of the Scientific Evidence*, p. 19.

[47] Ibid; National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. "The poor solubility of Marinol in aqueous solutions and its high first-pass metabolism in the liver account for its poor bioavailability; only 10-20% of an oral dose reaches the systemic circulation. The onset of action is slow; peak concentrations are not attained until two to four hours after dosing. In contrast, inhaled marijuana is rapidly absorbed. ... Variations in individual responses is highest for oral THC and bioavailability is lowest."

[48] L. Growing et al. 1998. Therapeutic use of cannabis: clarifying the debate. *Drug and Alcohol Review*.

[49] Of Marinol's patient population, only about 10 percent use it to combat cancer-related nausea. National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 204.

[50] E. Woolridge et al. 2005. Cannabis use in HIV for pain and other medical symptoms. *Journal of Pain and Symptom Management* 29: 358-67.

[51] R. Schwartz and R. Beveridge. 1994. Marijuana as an antiemetic drug: how useful today. Opinions from clinical oncologists. *Journal of Addictive Diseases* 13: 53-65.

[52] R. Doblin and M. Kleiman. 1991. Marijuana as an anti-emetic medicine: a survey of oncologists' attitudes and experiences. *Journal of Clinical Oncology* 19: 1275-1290.

majority preferred megestrol acetate over Marinol as an appetite stimulant in patients with HIV/AIDS.[53]

As a result of Marinol's slow onset and poor bioavailablity, scientists are now in the process of developing a new formulation of pulmonary dronabinol, delivered with a pressurized metered dose inhaler.[54] In a Phase I study, pulmonary Marinol delivered via an inhaler provided rapid systemic absorption. Unlike oral synthetic THC, it's possible that pulmonary Marinol "could offer an alternative for patients when a fast onset of action is desirable."[55] However, FDA approval of pulmonary Marinol and/or its inhaler remains years away. Sativex, an oral cannabis spray consisting of natural cannabinoid extracts, has greater bioavailability and is faster acting than oral synthetic THC. Clinical trials comparing its bioavailability and time of peak onset compared to vaporized cannabis have not been performed, though anecdotal reports indicate that vaporized cannabis and its cannabinoids likely possess greater bioavailability and are faster acting than the Sativex spray.

IV. MARINOL IS MORE EXPENSIVE THAN NATURAL CANNABIS

Synthetic THC is a costly and difficult compound to manufacture.[56] Much of this cost is passed on to the patient consumer, particularly if the full cost of Marinol (approximately $200 to $800 per month,[57] depending on the dosage) is borne out of pocket. Patients, particularly those with chronic conditions, often report that Marinol's market cost limits their use of the drug.[58] Doctors also report that Marinol's high cost dissuades them from prescribing it to patients. In one survey of HIV/AIDS specialists, among respondents who had never prescribed Marinol to their patients, 33 percent cited the high cost of the drug as the reason.[59] Natural cannabis, even at its inflated black market value, often remains far less costly for patients than oral synthetic THC.[60]

V. PATIENTS ULTIMATELY PREFER NATURAL CANNABIS TO MARINOL

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[53] National Institutes of Health. 1997. *Report of the Workshop on the Medical Utility of Marijuana*. Washington, DC as cited by L. Growing et al. 1998. Therapeutic use of cannabis: clarifying the debate. *Drug and Alcohol Review*.

[54] Medical News Today. "New synthetic delta-9-THC Inhaler offers safe, rapid delivery, Phase I study." April 17, 2005.

[55] Ibid.

[56] Presentation of Unimed Pharmaceuticals Senior Vice President Robert Dudley before the National Academy of Sciences, Institute of Medicine. Washington, DC: February 24, 1998.

[57] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 207; Morgan and L. Zimmer, *Marijuana Myths, Marijuana Facts: A Review of the Scientific Evidence*, p. 21; Medical Marijuana ProCon.org <http://www.medicalmarijuanaprocon.org/pop/cost.htm>

[58] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 206.

[59] L. Growing et al. 1998. *Therapeutic Uses of Cannabis*. Drug and Alcohol Services Council: South Australia.

[60] National Academy of Sciences, Institute of Medicine. 1999. *Marijuana and Medicine: Assessing the Science Base*. p. 207; Medical Marijuana ProCon.org <http://www.medicalmarijuanaprocon.org/pop/cost.htm>

In the 1970s and 1980s, several states conducted patient trials[61] of natural cannabis' effectiveness as an anti-emetic in cancer patients unresponsive to conventional therapies. Some state protocols allowed patients to choose between inhaled cannabis[62] and synthetic THC. In those studies which compared natural cannabis to dronabinol, inhaled cannabis was equal to or better than the oral administration of synthetic THC.[63]

For example, researchers at the Tennessee Board of Pharmacy found a "23 percent higher success rate among those patients smoking than among those patients administered THC capsules" in the treatment of nausea and/or vomiting associated with cancer chemotherapy.[64]

Researchers in New Mexico observed similar findings. "When the routes of [drug] administration were analyzed separately, it was found that inhalation was far superior to ingestion: 90.39 percent of the patients in the group that inhaled the marijuana showed improvement while only 59.65 percent of the patients in the group that orally ingested the delta-9-THC showed improvement," they concluded.[65]

Researchers at the California Board of Pharmacy found that inhaled cannabis and oral THC produced similar results in patients. However, physicians still rated natural cannabis as slightly more effective than oral THC as an anti-emetic.[66]

A 1988 New York State pilot study comparing inhaled cannabis to oral THC in cancer chemotherapy patients who were unresponsive to standard antiemetic agents found: "Twenty-nine percent of patients who failed oral THC responded to the cigarette form. ... Our results demonstrate that inhalation marijuana is an effective therapy for the treatment of nausea and vomiting due to cancer chemotherapy."[67]

Today, several patient populations continue to use natural cannabis and its cannabinoids in large numbers despite its illegality and the availability of Marinol. A 2005 British survey of more than 500 HIV/AIDS patients found that one-third of respondents use natural cannabis for symptomatic relief, with more than 90 percent of

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61 State research trials regarding natural cannabis were discontinued by 1985, after the FDA approved Marinol.

62 The cannabis distributed in these trails was manufactured and provided by the US National Institute on Drug Abuse (NIDA). Cannabis was provided to patients in the form of a cigarette.

63 R. Musty and R. Rossi. 2001. Effects of smoked cannabis and oral delta-9-tetrahydrocannabinol on nausea and emesis after cancer chemotherapy: a review of state clinical trials. *Journal of Cannabis Therapeutics*. 1: 29-56. "The data reviewed here suggested that the inhalation of THC appears to be more effective than the oral route. ... Patients who smoked marijuana experienced 70-100% relief from nausea and vomiting, while those who used THC capsules experienced 76-88% relief."

64 Board of Pharmacy, State of Tennessee. 1983. *Annual Report: Evaluation of Marijuana and Tetrahydrocannabinol in Treatment of Nausea and/or Vomiting Associated with Cancer Therapy Unresponsive to Conventional Anti-Emetic Therapy: Efficacy and Toxicity*. p. 5.

65 Behavioral Health Services Division. 1983. *The Lynn Pierson Therapeutic Research Program: A Report on Progress to Date*. Health and Environment Department: New Mexico. p. 4.

66 California Research Advisory Panel. 1986. *Seventeenth Annual Report of the Research Advisory Panel*, p. 9-10.

67 V. Vinciguerra et al. 1988. Inhalation marijuana as an antiemetic for cancer chemotherapy. *New York State Journal of Medicine* 88: 525-527.

them reporting that it improves their appetite, muscle pain and other symptoms.[68] A previous US survey found that approximately one out of four patients with HIV had used natural cannabis medicinally in the past month.[69]

Cannabis use is also prevalent among patients with neurologic disorders. Nearly four out of ten Dutch patients with prescriptions for "medical grade cannabis" (cannabis provided by Dutch pharmacies with a standardized THC content of 10.2 percent) use it to treat MS or spinal cord injuries, according to survey data published in 2005 in the journal *Neurology*.[70] Perceived efficacy is greater among respondents who inhale cannabis versus those who ingest it orally, the study found.[71]

A 2002 British survey of MS patients found that 43 percent of respondents used natural cannabis therapeutically, with about half admitting they used it regularly.[72] Seventy-six percent said they would do so if cannabis were legal.[73] A Canadian survey of MS patients found that 96 percent of respondents were "aware cannabis was potentially therapeutically useful for MS and most (72 percent) supported [its] legalization for medicinal purposes."[74] Sixteen percent of respondents answered that they use natural cannabis for medical purposes to treat symptoms of anxiety/depression, spasticity and chronic pain.[75]

A more recent Canadian survey published in *Neurology* reported that 14 percent of MS[76] patients and 21 percent of respondents with epilepsy had used medical cannabis in the past year.[77] Among epileptics, twenty-four percent of respondents said that they believed that cannabis was an effective therapy for the disease.[78] A 2002 survey of patients with Parkinson's Disease (PD) found that 25 percent of respondents had tried cannabis, with nearly half of those saying that it provided them symptomatic relief.[79]

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[68] E. Woolridge et al. 2005. Cannabis use in HIV for pain and other medical symptoms. *Journal of Pain and Symptom Management*.

[69] D. Prentiss et al. 2004. Patterns of marijuana use among patients with HIV/AIDS followed in a public health care setting. *Journal of Acquired Immune Definiciency Syndromes* 35: 38-45

[70] R. Gorter et al. 2005. Medical use of cannabis in the Netherlands. *Neurology* 64: 917-919.

[71] Ibid.

[72] Reuters News Wire. "Marijuana helps MS patients alleviate pain, spasms." August 19, 2002.

[73] Ibid.

[74] S. Page et al. 2003. Cannabis use as described by people with multiple sclerosis. *Canadian Journal of Neurological Sciences* 30: 201-205.

[75] Ibid.

[76] A. Clark et al. 2004. Patterns of cannabis use among patients with multiple sclerosis. *Neurology* 62: 2098-2100.

[77] D. Gross et al. 2004. Marijuana use and epilepsy. *Neurology* 62: 2095-2097.

[78] Ibid.

[79] Reuters News Wire. "Pot may ease Parkinson's symptoms -- Czech study." November 13, 2002.

CONCLUSION

Oral synthetic THC, legally available by prescription as Marinol, often provides only limited relief to a select group of patients, particularly when compared to natural cannabis and its cannabinoids. Patients often experience minimal relief from Marinol and many experience unwanted side effects. In addition, many physicians are hesitant to prescribe the drug, and some patients are unable to afford it. Despite Marinol's legality, many patient populations continue to risk arrest and criminal prosecution to use natural cannabis medically, and most report experiencing greater therapeutic relief from it.

The active ingredient in Marinol is a synthetic analogue of only one of the compounds in cannabis that is therapeutically beneficial to patients. By prohibiting the possession and use of natural cannabis and its cannabinoids, patients are unnecessarily burdened to use a synthetic substitute that lacks much of the therapeutic efficacy of natural cannabis and its cannabinoids.

Marinol should remain a legal option for patients and physicians and the development of additional cannabis-based pharmaceuticals should be encouraged. However, federal and state laws should be amended to allow for those patients who are unresponsive to synthetic THC, or simply desire an alternative to oral dronabinol, the ability to use natural cannabis and its cannabinoids as a legal medical therapy without fear of arrest and/or criminal prosecution.

Council Delegations

Background

Council for the City of Grand Forks welcomes public input and encourages individuals and groups to make their views known to Council at an open public meeting.

Council needs to know all sides of an issue, and the possible impacts of any action they make take, prior to making a decision that will affect the community. The following outline has been devised to assist you in preparing for your presentation, so that you will understand the kind of information that Council will require, and the expected time frame in which a decision will be forthcoming. Council may not make a decision at this meeting.

Presentation Outline

Presentations may be a maximum of 10 minutes.

Your Worship, Mayor Taylor, and Members of Council, I/We are here this evening on behalf of Christina Gateway Community Development Assc.

to request that you consider having a representative from the Municipality attend the upcoming meeting with accommodators on the projected February 3 , 2015 at Community Futures.

The reason(s) that I/We are requesting this action are:

We currently have over 50% support of the accommodators in the Boundary region who are willing to collect the 2% Municipal Regional District Tax, which could allow our region to create a Destination Marketing Organization (DMO) which would bring in money to directly market our region. In order to apply you must have 51% of support from accomodators with 4 rooms or more, however a stronger majority will ensure a successful application. By showcasing success stories of other DMOs from across BC as well as having the support of our community partners and stakeholders we will gain a stronger majority.

I/We believe that in approving our request the community will benefit by:

knowing that you support the movement to increase tourism in our region. Increased tourism to our region directly supports the economic development of our communities and helps to create a marketing 'footprint' in the Boundary.

(over)

Council Delegations (cont.)

I/We believe that by not approving our request the result will be:

a non-cohesive municipal approach, which will effect the region. In order to create a Destination Marketing Organization in this region we must have support from all municipalities across the region.

In conclusion, I/we request that Council for the City of Grand Forks adopt a resolution stating: that on the projected date of Febuary 3, 2015, a time to be determined, at Community Futures Grand Forks, a representative from the the municipality will attend the meeting with the accomodators, from across the region, in support of the implementation of the Municipal Regional District Tax. If you are able to report at this meeting how money collected could potentially be leveraged with the municipality for direct marketing opportunities this would be of great benefit.

Name: Cindy Alblas

Organization: Christina Gateway Community Development Association

Mailing Address: 1675 Hwy #3 Christina Lake, BC V0H 1E2
(Including Postal Code)

Telephone Number: 250-447-6165 or 250-447-9771

Email Address: cindy@christinalake.ca

The information provided on this form is collected under the authority of the Community Charter and is a matter of public record, which will form a part of the Agenda for a Regular Meeting of Council. The information collected will be used to process your request to be a delegation before Council. If you have questions about the collection, use and disclosure of this information contact the "Coordinator" City of Grand Forks.

N:Forms/Delegation form

Form may be submitted by email to: info@grandforks.ca

I am the project coordinator for Christina Gateway Community Development Association, and have been conducting a Boundary wide tourism survey, to find common threads amongst our region and to inform the accommodators of the opportunity of utilizing the Municipal Regional District sales tax as a way to bring direct marketing dollars to our region. In order to create a Destination Marketing Organization (DMO) we would need the support of at least 51% of accommodators. Currently we have 9 signatures of the 20 accommodators that have 4 rooms or more. We are beginning to lean towards the support of this in this region. At this point we would like to bring together all the accommodators of the region to further discuss how this could be of benefit and would like to request the delegation of a representative for the projected January gathering, which will be at Community Futures. We are also enlisting the support on regional levels, as well as surrounding Destination Marketing Organizations, Community Futures, The Boundary Chamber,as well as The Thompson Okanogan Tourism Association and Destination BC. Attached are the survey results and our action plan to moving forward. I would be more then happy to give a report and your next council meeting as well.

Sincerley,
Cindy Alblas
Project Coordinator
Christina Gateway Community Development Association
250-447-9771

Boundary Tourism Marketing Survey Results and Action Plan

A tourism research survey is currently ongoing within the Boundary. Common threads are emerging. Opportunities to directly market our region are available to us.

Common Threads throughout our Region

- 100% of accommodators surveyed would like to see their shoulder season increase.
- 95% of accommodators surveyed, guests use the Trans Canada trail, which runs through our entire region.
- 90% of accommodators surveyed feel they do not have proper trail information
- 95% surveyed would like to see more promotion of outdoor activities from hiking and biking, to activities for people with poor mobility's to nature tourism and guided excursions.
- 100 % of accommodators surveyed would like to see improved promotion of area.
- 100% surveyed believe our main opportunity for tourism in our Region is our unique landscape and beauty of our area.

Main Challenges Facing our Region from survey Include:

- Financial Climate, aging population, loss of industry to keep young families in rural communities, high taxes, insurance, cable, phone rates, difficult for seasonal rural businesses.
- Seasonal tourism-lack of promotion for shoulder and low season.
- Lack of promotion for our Region –improved signage with more visual representation of our area.
- Under marketed hidden gems such as Wilgress Lake, Cascade Gorge Fallsetc.
- Lack of safe loading and unloading zones and signage for tubing, an extremely popular activity throughout the entire Boundary.
- Lack of signage and care to the Trans Canada Trail in some areas. The trail is a huge marketing opportunity as it runs through all our communities in our Region.
- Lack of communication with fellow accommodators and tourism groups within communities and the Boundary.
- Lack of restaurants and events and evening entertainment to promote overnight stays.
- Lack of programs and things to do for youth in area.
- Lack of proper infrastructure in some areas including sewage and water.

Main Opportunities For Increased Tourism in our Region from the survey Include:

- The unique landscape and beauty of our area where people can come to get away from it all.
- Develop promotion and awareness of our region, so many hidden gems with many marketing opportunities.
- Highway 3 is a beautiful road to travel in summer/shoulder seasons, over 3 million people travel this road/ year.
- Trans-Canada trail and Kettle River run through the Boundary, this unifies this region, and could be a major marketing tool for our area.
- Greater networking between communities and businesses throughout the Boundary.
- Quieter, less congested then surrounding areas, back country adventure land
- With many outdoor activities including, mountain biking, hiking, swimming, tubing, wake boarding, paddle boarding, kayaking, boating, canoeing, downhill skiing, snowmobiling, snowboarding, snowshoeing , cross country skiing, golfing, motor biking, ATV riding, Para-sailing, horseback riding, rock climbing, fishing, Fly-fishing, hunting, exercise parks, play parks and swimming pools and arenas, adventure tours, Boundary Country has the potential to market this all.

Top 3 Marketing Suggestions from Accommodators:

1. **Developing the Shoulder Season**
2. **Market The Boundary as a Destination**
3. **Promotion of Events , Festivals & Guided Walks**

Suggestions for Direct Marketing from survey Include:

- Increased signage, directing people to scenic points within their community, such as tubing, waterfalls, scenic vistas, historical landmarks, trails, lakes, water sports, tours and adventures such as boat and Fly-Fishing guided tours to historical site tours etc More signage also within our region along Hwy3, West from the Okanogan, and East from Creston, to US along our borders, into Spokane.
- Brochures/Maps/Trail Maps/online linking of all sites/calendars for Boundary Country.
- Greater Networking between communities and businesses within Boundary Country, create a Business Blog.
- Boundary Branded Information-Unify our Region, create a Boundary commercial.
- Developing this Region as a Destination.
- Direct marketing to other Visitor Information Centres across BC , Alberta , as well as US and Europe. Target specific groups such as cyclists and bikers , ATV Groups, kayakers, boaters, eco-adventurists groups, seniors and RV groups across the province, country and outward.
- Set Up Boundary-Online Booking Agency.
- Boundary Dollars.
- Create a "What to do around the Boundary List" available in every accommodation & visitor info in Boundary.
- Showcase our rich Cultures and History in each community across our region. From the gold rush days in Phoenix and the mining and railroad history to the Doukobour Culture to First Nations and Metis to Japanese internment camp history to the original settlers, our region is full of history and culture and stories to tell.
- Market attractions, Events and Sports Tournaments in our area, to bring in more visitors and overnight stays.
- Beautify our communities to create a unified region. Create clearly defined borders for each community in our region, and unify in between, including the businesses on the edge of town as well.

Next Steps: How to create an action plan to move forward and increase Tourism within the Boundary?

- Come together with all Accommodators across the Boundary to discuss opportunities and challenges tourism faces in our region. Coming this January 2015.
- Create a Destination Marketing Organization (DMO) through the collection of the Municipal and Regional District Sales Tax, allowing our region to directly market our area.
- Join the 90% of BC accommodators who have proved that direct marketing organizations have helped to put them on the map and create a footprint in their region which is visible throughout the province, country and worldwide.

How can we create a footprint here in the Boundary?

- Support the implementation of the MRDT tax in our region and sign the support documentation.
- Consider joining the Destination Marketing Organization Board, and help to make important decisions regarding the direct marketing opportunities of The Boundary.

Currently we have received 50% of the support needed to implement the MRDT in this region and would like to encourage you to look at our action plan and consider joining the movement here in The Boundary, and begin creating a Destination Marketing Organization Plan for our Region.

Remember when choosing to support the Municipal Regional District Sales Tax in our region , you are only signing on for 5 Years. Once the 5 years pass, you can evaluate how it has increased your business and choose to re-sign.

Potential Business Plan Overview for Municipal Regional District Sales Tax

Project lead: Christina Gateway Community Development Association

Consult and Enlist Support from the following:

- Boundary Chamber of Commerce
- Christina Gateway Community Development Association
- Community Futures
- Christina Lake Tourism Society
- Destination BC
- Potential Champions among the Accommodation Providers
- TOTA (Thompson Okanogan Tourism Association
- Visitor Centres for Rock Creek, Midway, Greenwood, Grand Forks, and Christina Lake
- Representative from the three Regional Districts and four Municipalities

Projected Time line to Submit Application March 2015.
Plan Period would be for 5 Years.

The main goal of the collection of the Municipal Regional District Sales Tax is to increase bed stays in the shoulder season through direct marketing of our Region.

In our region, through the collection of the Municipal Regional District Tax, it is projected that our regions Destination Marketing Organization would collect between $10-15, 000.

*****It is our goal to keep this process open and transparent, and to involve all of you in every step along the way. This is being pursued because there is desire from the majority of accommodators in this region to increase your shoulder season. Collectively we have the option to make a difference and put Boundary Country on the map. We want you to be involved and to understand the process of creating our 'footprint' here in our region.**

Allocation of Funds Projection:

70% of funds would go to direct marketing of our region for the purpose of increasing bed stays in our region. Increasing promotion of our area through direct marketing in this region, using the suggestions made from the ongoing survey and enlisting the support of a Destination Marketing Organization(DMO) which will then decide where the money will be spent first.

30% of funds will go to administrative costs. As much as we would like to see every dollar go to the direct marketing, this does require some people hours to pull it all together. Basic administrative costs will be budgeted and kept totally transparent. We will utilize existing infrastructures available to us through our partners and keep all administrative costs to a minimum to allow maximum potential for marketing our region.

Boundary Country is part of the 10% of BC Accommodators who do not benefit from the direct marketing tool of collecting the 2% MRDT. Remember funds can also be leveraged to get further funding on Municipal and Regional levels and Government programs & grants as well as Community funding organizations within the Boundary, the province and within each of our communities of the region.

Action Plan: Steps to Take To Create a Destination Marketing Organization (DMO)

1) Completion of a tourism study that evaluates tourism opportunities within the 'footprint.'

2) Consult with and enlist the support of the Municipal/Regional District Governments, Chamber of Commerce, Community Futures & and other stakeholders. (e.g. Tourism associations/accommodators) for the establishment of a tourism entity for the 'footprint'.

3) Host a Communities Accommodators meeting bringing together all interested groups at which time a formal presentation would be made outlining the overall direct and indirect benefits of Tourism to the communities involved. January 2015.

4) Create a working steering committee (max: 4 or 5 people) made up of one representative from the Municipal/Regional District, one or two representatives from the Chamber of Commerce and/or Community Futures & one or two representatives from private sector accommodators or tourism sector Associations. The committee would be tasked with 'managing' this initiative to the point when the Tourism DMO is created and for assigning responsibility for the handling of the following steps.

5) The Committee will develop an interim tourism business plan for the footprint. This document will initially be used to solicit the remaining support needed of the accommodators (step 6) and once the Accommodator 51%-51% support is achieved, becomes the working document submitted to BC Government as part of MRDT municipality/Regional District Tax) application process.

6) Working with the Accommodators (with 4 rooms or more) within the footprint, enlist their support and their commitment by agreeing to collect the 2% MRDT Hotel tax. (Accommodation Sector in support of the hotel room tax Form –) This requires51% of the total accommodators with 51% of the total rooms to 'sign on' before proceeding with application).

7) The Committee will have to determine whether the DMO is to operate as a not-for-profit registered Society or as some other type of entity. (e.g.: as an extension of the Boundary Chamber of Commerce with its own working committee) Whatever entity makes up the DMO, we will ensure proper transparency, MOU and Governance and/or By-Laws outlining the mandate and how it will operate.

8) The Committee will submit a request to the Municipality/Regional District to initiate the MRDT tax process with supporting documentation (interim business plan/documentation signed by the accommodators/MOU/By-laws or operating guidelines).

9) The Regional District will then submit an application to the BC Ministry of Finance for the government to collect the MRDT tax. Once approved by the government and the tax is being collected, this tax will be remitted to the Regional District, who, in turn, will transfer the funds to the DMO and becomes its operating budget together with any other sources of it funds it receives.

10) Every 5 Years accommodators will need to re-sign the support document to collect the MRDT, for another 5 year period. This allows you the option to choose whether collecting the tax was of benefit to your business.

WildSafeBC Year End Report 2014

Grand Forks, BC

Prepared by: Laurie Grant, WildSafeBC Community Coordinator

Photo: Laurie Grant

BRITISH COLUMBIA CONSERVATION FOUNDATION

GRAND FORKS BC

Executive Summary

WildSafeBC launched the first season ever for Grand Forks, BC. The season began on December 16, 2013 with a major focus on reducing wildlife-human conflict (primarily deer). The program endeavors to reduce human-wildlife conflict through education, innovation and cooperation. The new WildSafeBC Community Coordinator (WSBCCC), Laurie Grant, worked to keep attractant management at the forefront of resident's minds through educational displays, door-to-door visits, presentations with field experts, media releases, and a community Facebook page.

Figure 1 WildSafeBC Grand Forks Coordinator, Laurie Grant.

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Highlights from the 2014 Season

The launch of the WildSafeBC program in Grand Forks was welcomed by many residents who said it was a useful expenditure by the city. Residents were glad to see the program offering information on many species of wildlife and felt that it was an important, value-added vehicle for offering education. Keeping WildSafeBC and its messages of attractant management in the public eye was the focus this season as well as providing concrete solutions to human-wildlife conflict using the following tools:

Presentations

"Let's Talk About…" presentations were developed for a wide range of audiences this season to provide monthly public insight into the reasons human-wildlife conflict occurs and what we can do to reduce it (Figure 2). WildSafeBC Grand Forks gave the following presentations at the Grand Forks and District Public Library:

- Deer Proof Gardening
- Hiking Safety
- Rattlesnakes
- Bears and Electric Fencing
- Deer and Lyme Disease

Figure 2 "Let's Talk About Rattlesnakes" presentation at Grand Forks and District Library, 2014.

Presentations for Kids

The BC school strike made classroom presentations impossible, therefore Rattlesnake presentations were developed for a youth at the Grand Forks and District Library by special request:

Reading Club 4-6 year-olds Reading Club 9-12 year-olds General- kids of all ages

Displays

Educational displays at local events also proved to be an effective part of the program's delivery, visited with interest by locals and visitors to Grand Forks. Each event showcased a professional display of WildSafeBC educational materials including: species brochures for black bear, coyote, cougar, deer, rattlesnake and raccoon; a multi-species poster; a banner; a stand-up display; and a folding display, all usually housed under a colorful tent. The season also showcased a growing collection of wildlife props including: a white-tailed deer skull replica, toy models of a buck, doe and fawn, a scat identifier tool, rubber scat models of white tail deer, mule deer and cougar, a variety of reference books and occasionally a stuffed bear and prehistoric bear paw replica. It was a great place to discuss local wildlife issues with residents. People shared their own wildlife sightings and stories and were able to access information and solutions for their attractant challenges. The display was also a big hit with kids of all ages (Figure 3) – offering kids a temporary wildlife tattoos, muli-purpose bookmarks and take-home animal species crafting. WildSafeBC spent 30 days at the following local events:

- Partner's in Parenting Conference (Mar)
- Grand Forks Farmer's Market (Jun–Oct)
- Grand Forks Fall Fair (August)
- Rock Creek Fall Fair (September)
- Where the Wild Things Are (August)
- Harvest Festival (September)
- Doukhobor Flour Mill (July-September)
- Airport Appreciation Day (August)

Figure 3 Display at "Where The Wild Things Are" event, August 2014.

Media Coverage

WildSafeBC Grand Forks appeared in print in the Grand Forks Gazette 12 times; online in the Boundary Sentinel 5 times; as well as many local event calendars and interviewed by local radio twice. The Coordinator developed the WildSafeBC Grand Forks Facebook page, the local chapter of WildSafeBC where residents can discuss (in a respectful manner) all matters related to human-wildlife conflicts in Grand Forks. The readership increased weekly to a total of 118 likes.

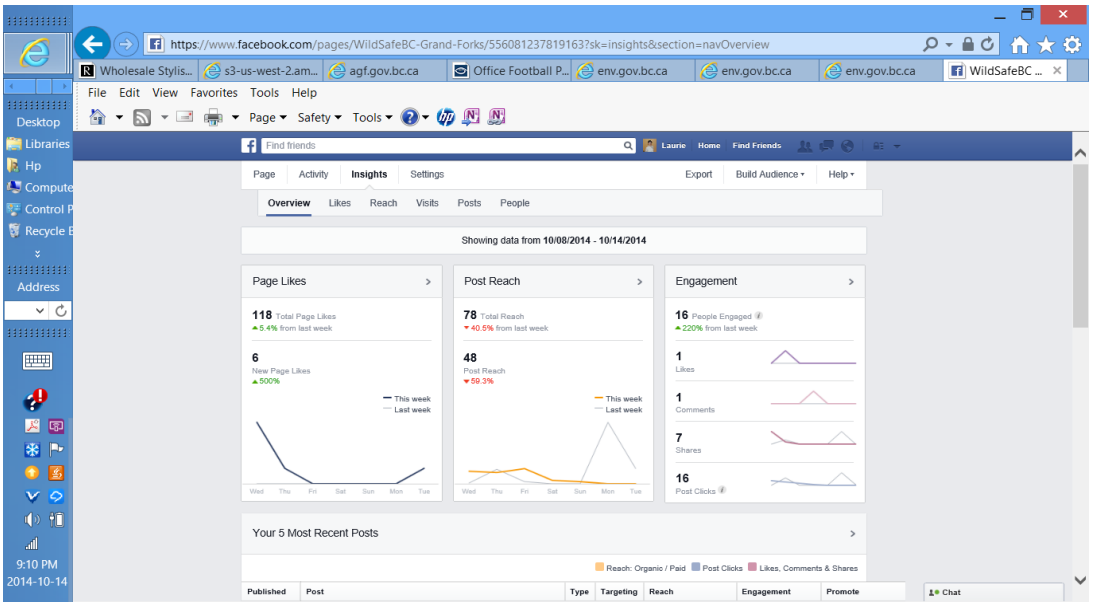

Figure 4 WildSafeBC Grand Forks Facebook page weekly insights, Oct 14, 2014.

Deer Committee

The Coordinator provided monthly reports at the Grand Forks Deer Committee meetings and participated in semi-annual Deer Counts. With the Coordinator's input, the Deer Committee made recommendations to city council for: increasing signage (Don't Feed the Deer); a question of a deer cull for voters at the upcoming election; and collaring 9 deer to monitor GPS signals for their movements in the city.

Door-to-Door and Garbage Tagging

The Coordinator visited neighborhoods that were reported to have animal-human conflict with brochures and information. Residents were happy to see that education was being offered and eager to discuss the problems. The Coordinator also conducted garbage tagging, leaving a bright yellow "Bear Attractant" sticker on bins put out too early. This education will hopefully play a role in reduced bear conflicts next season.

Wildlife Alert Reporting Program (WARP)

The Coordinator invited the community to participate in the Wildlife Alert Reporting Program (WARP) where individuals can report animal wildlife sightings and set up notifications for email alerts and an opportunity to participate in a private Grand Forks Group.

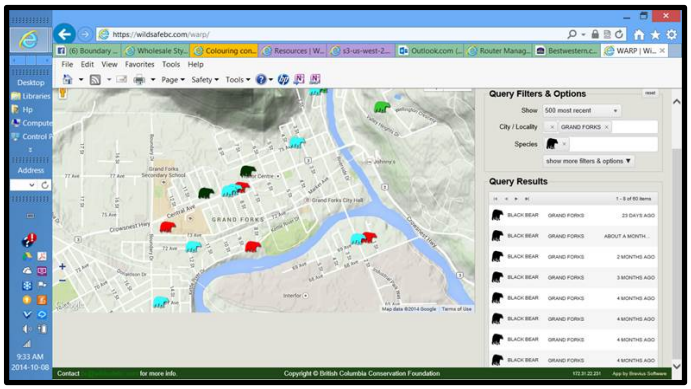

Figure 4 Wildlife Alert Reporting Program (WARP) bear activity, 2014.

Volunteering

West Kootenay Bear Conflict Working Group (WKBCWG) - WildSafeBC Grand Forks attended a meeting of the WKBCWG, an initiative of local bear biologists and the Conservation Officer Service. Meetings are held bi-annually with the goal of identifying solutions to human-bear conflict and collaborating to find ways of implementing those solutions.

Rural Communities Conference - WildSafeBC booth at the educational event that culture, education and a plethora of wonderful ideas to take home and share with my community.

Grand Forks Education Garden - WildSafeBC Grand Forks sits on the volunteer board working to develop a local education garden.

Doukhobor Flour Mill – set up display offering human-wildlife conflict to visitors and locals of the community while volunteering at the mill.

Challenges of the 2014 Season

Unsecured garbage/compost and unpicked fruit were the largest attractant problems for bears in 2014. WildSafeBC hopes that the door-to-door visits, public presentations, Facebook discussions and published press releases assist to educate residents to reduce the attractants available to wildlife in our community in the future.

Deer-feeding residents, availability of unfenced plants, and lack of deterrents were the largest attractant problems for deer in 2014. The issue remains a challenge as many feeders are resistant to change without bylaw enforcement.

Deer-vehicular collisions remain high in Grand Forks. The main highway through town is under the jurisdiction of the Provincial not Municipal government. Frequent collisions with deer causes thousands of dollars of property damage, high insurance rates and unnecessary species death.

Goals for 2015

Looking forward to the 2015 season, WildSafeBC hopes to continue to collaborate with community partners to make concrete solutions available for local wildlife attractant issues through education by:

- Continueing to build on and forge new relationships with community groups, local businesses and other non-profit groups with the goal of making WildSafeBC a familiar and integral part of our community.
- Update the Bear Hazard Assessment and Human-Bear Conflict Management Plans for Grand Forks and the surrounding area.
- Extend the WildSafeBC Program to include the rural residential areas of Grand Forks in Area D and offer educational programs for the ATV club and visitors to their new multi-use facilities.
- Continue to offer education to a wide range of audiences, offering human-wildlife conflict presentations targeting wildlife species that cause concern locally.

Acknowledgements

WildSafeBC Grand Forks is grateful for the generous support the program receives from its sponsors, partners and volunteers. Thanks to our sponsors: City of Grand Forks and the British Columbia Conservation Foundation. Our community partners have provided invaluable support and guidance. Thank you to: Staff at City Hall; Mayor Brian Taylor and City of Grand Forks Councillors; The Grand Forks Deer Committee; Conservation Officer Dave Webster, The Grand Forks and District Public Library Staff (Avi Siberstein, Lizanne Eastwood); Jenny Coleshill; Boundary Neighborhood Watch (Lorraine Dick); Grand Forks ATV Club, (Doug Zorn); The Boundary Sentinel (Shara Cooper); Grand Forks Gazette (Craig Lindsay, Della Mallette); The Goat and EZRock (radio), BCCF Staff (WSBC Provincial Coordinator Frank Ritcey, Barb Waters, Jen Bellhouse, Roseanna Neidziejko and Tami Kendall; West Kootenay Bear Conflict Working Group and other WSBC Community Coordinators across the province.

Finally, thank you to all those residents who and refrained from feeding wildlife and those who made an effort this season to remove wildlife attractants from their properties. Let's keep wildlife wild and our communities safe!


WILD
SAFE
BC
British Columbia Conservation Foundation

REQUEST FOR DECISION

— COMMITTEE OF THE WHOLE —

To:	Committee of the Whole
From:	Acting Chief Administrative Officer
Date:	January 16th, 2015
Subject:	Procedure Bylaw Excerpts and Respectful Workplace Policy
Recommendation:	**RESOLVED THAT** the Committee of the Whole recommends to Council to receive the presentation with regard to the Procedure Bylaw Excerpts and Respectful Workplace Policy for information purposes.

BACKGROUND: The attached excerpts of the procedure bylaw are meant to highlight the guidelines for members of the public and the media to observe and follow when speaking to Council. Additionally, some of the highlighted areas demonstrate behavioral requirements in respect to the elected office setting.

Also attached, is a copy of the City's Respectful Workplace Policy and follows WorkSafeBC requirements and guidelines. The highlighted areas speak to the non-toleration of harassment and its application to all, which includes staff, Council, and residents alike. The "workplace" applies to all venues where City workers, staff and Council may be located, including the field. This policy may also be viewed on the City's website under "Policies".

It is important that this information be re-introduced from time to time as a guideline to all stakeholders within our community.

Benefits or Impacts of the Recommendation:

General:	Important information for staff, Council and the public to interact respectfully
Strategic Impact:	N/A
Financial:	N/A
Policy/Legislation:	Policy and Bylaw, as adopted by Council
Attachments:	1) Excerpts from Procedure Bylaw No. 1946-Pages 8, 9 & 10; 2) Respectful Workplace Policy No. 616

OPTIONS: **1. COTW COULD CHOOSE TO SUPPORT THE RECOMMENDATION.**
2. COTW COULD CHOOSE TO NOT SUPPORT THE RECOMMENDATION.

1)

(2) At least 72 hours before a scheduled meeting of a COTW, the Corporate Officer must give further public notice of the meeting by leaving copies of the agenda, including all background information, at the reception counter at City Hall for the purpose of making them available to members of the public:

(3) At least two (2) working days before a scheduled meeting of a COTW, the Corporate Officer must deliver a copy of the agenda to each member electronically to each member of Council's City email system.

(4) At least 24 hours before:

(a) an unscheduled meeting of a COTW;

the Corporate Officer must give advance public notice of the time, place and date of the meeting by way of a notice posted in the posting locations.

10.2 **Conduct and Debate of COTW Meetings**

The following rules apply to COTW Meetings:

a) a motion is not required to be seconded;
b) a member may speak any number of times on the same question;
c) a member must not speak longer than a total of 10 minutes on any one question;
d) the public and media, in attendance, may ask questions with regard to each topic as they are addressed, and must not speak longer than 5 minutes on any one topic; An addendum to these rules and procedures may be established by resolution of Committee of the Whole from time to time.
e) the public and media, in attendance, may ask questions that **do not** pertain to any topic discussed within the agenda during the "Question Period" section of the meeting; must not speak longer than 5 minutes on non-agenda topics and must not refer to any in-camera or personnel issues; An addendum to these rules and procedures may be established by resolution of Committee of the Whole from time to time.

PART 8 - OTHER MATTERS REGARDING MEETINGS

11. **Meetings Outside Municipality**

(1) A meeting may be held outside the Municipality if the Council passes a resolution to that effect.

11.1 **Attendance of Public at Meetings**

(1) Subject to sections 90 and 133 of the Act, all Council meetings must be open to the public.

(2) Where Council wishes to close a meeting to the public, it may do so by adopting a resolution in accordance with section 92 of the Act.

(3) This section applies to meetings of bodies referred to in section 145 of the Act, including, without limitation:

(a) COTW, select or standing committees of Council;
(b) The board of variance;
(c) The court of revision;
(d) An advisory committee, or other advisory body, established by Council under the Act, or any other legislation.

11.2 **Participation of Public at Council/Committee of the Whole Meetings**

(1) The public and media may participate in the Committee of the Whole meetings in accordance with Section 10.2 (e) & (f), in addition to the Question Period within a Regular Meeting.

(2) From the close of nominations preceding a general local election or by-election, the Petitions and Delegations portion of regular Council meetings and COTW meetings shall be suspended until the meeting of Council following the election unless the delegation is representing an Advisory Committee to Council.

11.3 **General Conduct for all Meetings**

(1) No member or person attending the meeting may interrupt a member who is speaking, except that a Councillor may raise a point of order.

(2) No member or person attending the meeting may cause a disturbance, disrupt or in any manner delay the conduct of business at a meeting.

(3) No member or person permitted or invited to speak on any matter coming before the Council or a committee may use rude or offensive language or, by tone or manner of speaking, express a point of view or opinion or make an allegation which, directly or indirectly, reflects upon the public conduct or private character of any person.

11.4 **Removal of Those Behaving Improperly**

(1) The Mayor or other person presiding may expel from a meeting of Council any person he or she considers guilty of improper conduct.

(2) If a person resists or disobeys an order of the Mayor or other person presiding to leave a meeting of Council, that person may be removed by the Corporate Officer or other City Staff member present at the meeting, or, if necessary, by a peace officer at the direction of the Mayor or other person presiding.

(3) In addition to its application to Council meetings, the ability of the person presiding to expel persons he or she considers guilty of improper conduct also applies to meetings of the following:

(1) COTW, select or standing committees of Council;
(2) The board of variance;
(3) The court of revision;
(4) An advisory committee, or other advisory body, established by Council under the Act, or any other legislation.

11.5 **Adjournment of Meeting**

(1) The Council may at any time by resolution adjourn any meeting to a date, time and location specified in the resolution.

(2) Council Meetings shall adjourn no later than 11:00 p.m. unless an extension beyond that time is determined by Unanimous Resolution of the Council.

11.6 **Cancellation of Meetings**

(1) The Council may, by resolution, cancel any regular meeting and/or COTW Meeting. The Corporate Officer must give public notice of cancellation of any regular and/or COTW meeting by posting notice of cancellation in a place accessible to the public at the location for the regular meeting.

11.7 **Acting Mayor**

(1) At the first regular meeting held in December each year, or at an inaugural meeting held under section 5, or as soon after those

2)

CITY OF GRAND FORKS			
POLICY TITLE:	Respectful Workplace Policy	POLICY NO:	616
EFFECTIVE DATE:	April 28th, 2014	SUPERSEDES:	
APPROVAL:	Council	PAGE:	1 of 6

PURPOSE:

The purposes of the Respectful Workplace are:

- to formalize the responsibility and commitment of the City of Grand Forks to ensure that all employees, elected officials, volunteers, residents, customers and visitors enjoy a workplace and service environment that is free from any form of discrimination or harassment (including sexual harassment).

- to establish that the City of Grand Forks promotes a work environment in which all employees, elected officials and volunteers are treated with respect and dignity and can contribute to a productive and professional atmosphere.

- To ensure that all employees, elected officials and volunteers understand what is meant by a respectful workplace and know what to do to ensure that a respectful workplace is created and maintained at the City of Grand Forks.

- To provide processes and procedures to handle complaints and remedy situations when workplace discrimination, harassment or conflict, as defined by this policy, occurs.

Nothing in this Policy should be construed as depriving employees covered under the collective agreement of CUPE Local 4728, of their rights under the collective agreement. The intention is for this policy to work in conjunction with any language on discrimination contained in the collective agreement.

IMPLICATIONS OF POLICY:

GENERAL

What is a respectful workplace?

- A respectful workplace is one which is free from discrimination and harassment as prohibited by the BC Human Rights Code. Discrimination and harassment are not tolerated at the City of Grand Forks. All employees, elected officials, volunteers, residents, customers and visitors at the City of Grand Forks shall have a respectful experience free from discrimination and harassment.
- A respectful workplace is a workplace where each employee, elected official, volunteer, resident, customer and visitor feels comfortable and is treated fairly and civilly by others. All employees, elected officials and volunteers of the City of

Grand Forks are expected to conduct themselves in a friendly, courteous and professional manner. The philosophy which must be shared by employees, elected officials and volunteers of the City of Grand Forks, is "treat others as you would have them treat you". Employees and elected officials are expected to consider the feelings and pride of others and to respect their unique backgrounds and contributions.

- A respectful workplace promotes cooperative and collaborative behaviors including healthy group dynamics and proactive problem solving.

Each member of management and elected official at the City of Grand Forks will act as a model for his/her staff and will perform his/her supervisory duties in a respectful, non-discriminatory way.

In order to foster a respectful workplace, everyone at the City of Grand Forks must understand that this policy applies to all. Every employee, elected official and volunteer must accept his or her responsibility and accountability to ensure that a discrimination and harassment free work and service environment exists at the City of Grand Forks.

Our Commitment to Employment Equity

The City of Grand Forks incorporates the intent of the respectful workplace policy in its hiring practices. The City of Grand Forks promotes equal access to jobs, promotions, transfers, pay increases, training and development opportunities, and other aspects of employment to all individuals.

The City of Grand Forks will provide fair and equal opportunities to all employees and prospective employees. The City of Grand Forks will employ people who are capable of carrying out the work available, regardless of their ethnicity, gender, culture, religion, age or affiliations.

How Do We Define Respectful Communication

English is the language for communicating about the work of the business. While employees may speak in a language other than English at work, each employee must be aware of how their choice of language is affecting others. If an individual in a group does not understand the language being spoken, he/she may feel excluded and uncomfortable. This is contrary to the spirit of a respectful workplace, which promotes a workplace where employees feel comfortable and included.

What is Discrimination

Discrimination refers to unfair, differential treatment of individuals or groups and is prohibited by law. Discrimination may be intentional or unintentional and often stems from prejudice and/or stereotypes we have of others. Discrimination can result in one individual or group having an advantage over another. Discrimination can cause an individual or group to be excluded from activities, which they have the right to be included in.

All employees, elected officials and volunteers at the City of Grand Forks are protected from discrimination in employment by the BC Human Rights Code on the following grounds: race, color, ancestry, place of origin, religion, marital status, family status, physical or mental disability, sex, sexual orientation, age, political belief or unrelated criminal or summary conviction.

All residents and visitors who access the services provided by the City of Grand Forks are protected from discrimination by the BC Human Rights Code on the following grounds: race, color, ancestry, place of origin, religion, marital status, family status physical or mental disability, sex or sexual orientation of that person or class of persons.

What is Harassment

Harassment is a type of discrimination. It is a serious violation of fundamental human rights. Harassment means engaging in a course of annoying comment or conduct that is known or ought reasonably to be known to be unwelcome, and is tied to a prohibited ground of discrimination. It is behavior which causes distress and serves no legitimate work related purpose. Harassment attacks a person's dignity, health and well being. It is unwarranted comment or conduct that humiliates, intimidates, excludes, isolates and undermines the individual's self esteem due to membership in a protected group. It can be a single incident (in the case of physical contact) or a pattern of repeated incidents directed against an individual or group. Whether intentional or unintentional, harassment demonstrates a lack of respect for the individuality and the dignity of those it targets.

Harassment behaviour includes, but is not limited to:

- Physical threats or intimidation
- Words, gestures, actions or jokes which may humiliate, degrade or abuse
- Distribution or displaying of offensive pictures or materials, including materials on computers.

What is Sexual Harassment

Sexual harassment is a type of discrimination under the BC Human Rights Code. Sexual harassment is uninvited and unwelcome conduct this is sexual in nature that may detrimentally affect the work or service environment or lead to adverse job related or other consequences for the victim of harassment. The term "sexual harassment" has come to be used to identify those kinds of sexual coercion and exploitation of women and men in a formal or structured relationship in which we have an expectation that the relationship has nothing to do with sex or sexuality.

Sexual harassment behavior includes, but is not limited to:

- Remarks, jokes, innuendoes or derogatory or demeaning comments regarding someone's body, appearance, physical or sexual characteristics or clothing;

- Displaying of sexually offensive or derogatory pictures, cartoons or other material;
- Unwelcome questions or sharing of information regarding a person's sexuality, sexual activity or sexual orientation;
- Sexual solicitation or advance made by a person in a position to confer, grant, or deny a benefit or advancement to the victim of harassment;
- **Unwanted** physical contact of any kind.

What is Criminal Harassment

Criminal harassment may be defined as adverse differential treatment of an individual or individuals which involves assault, damage to personal property or company property, and stalking.

What is a Poisoned Environment

Harassment can "poison" the work environment for the victim of harassment as well as for others who share the work environment. A "poisoned" work environment is one which is hostile, intimidating or offensive. Comments or actions of a co-worker or a supervisor may create a poisoned environment. This unethical behavior and/or actions make the workplace uncomfortable and can interfere with productivity and interactions of the work group. The poisoned environment forms an unequal term or condition of employment and is therefore a violation of the right to be free from discrimination.

ORGANIZATIONAL:

The City of Grand Forks Official Harassment Complaint Procedure is outlined in Council Policy 605 – Harassment Policy.

What About Workplace Conflict

Discrimination and harassment are specific types of conflicts which are prohibited by the BC Human Rights Code. There are many other types of conflicts that can arise in the workplace that are not dealt with by the BC Human Rights Code. For the purpose of this Policy, these other types of conflicts are dealt with as "Workplace Conflict".

Getting along with co-workers or supervisors may not always be easy, but making an effort to resolve conflict at work should be a goal of all employees at the City of Grand Forks. It is the expectation of the City of Grand Forks that each employee will try his/her best to get along with his/her co-workers. This means:

- Respect the fact that others may be different from you and that they may have a different approach or way of doing something than you do.
- Be aware of the fact that how you act can impact others in the workplace.
- Avoid talking negatively, gossiping or being judgmental about your co-workers. This type of behavior encourages conflict in the workplace, and is not consistent with the goals of the Respectful Workplace Policy.

- If you are not sure if your behavior is welcome, ask.

Workplace Violence

Employees must not engage in any improper activity or behavior or violent behavior in the Workplace that might create or constitute a hazard to them or any other person.

Improper activity or behavior includes the attempted exercise by a person towards another person in the workplace of any physical force or violence so as to cause injury and includes any threatening statement or behavior which gives a person reasonable cause to believe he or she is at risk of injury. Improper activity or behavior also includes physically or mentally bullying, tormenting or other demeaning behaviors towards another person.

Workplace Bullying

Workplace bullying can be defined as a conscious, willful and deliberate hostile activity intended to harm.

Bullying usually involves repeated incidents or a pattern of behavior that is intended to intimidate, offend, degrade or humiliate a particular person or group of people.

Bullying can also be described as the assertion of power through aggression.

Bullying or other aggressive or demeaning behaviors towards others are contrary to a respectful workplace and will not be tolerated at the City of Grand Forks. Individuals who are found to be bullying or otherwise tormenting others, either physically or mentally, will be subject to discipline.

Workplace Conflict Complaint Procedure

If someone is behaving in a way that makes you feel uncomfortable at work, or if you are having a conflict with someone at work, you are encouraged to try and speak with the person directly and discuss the matter with him/her. If you do not feel comfortable dealing with the individual directly, you should speak to the Chief Administrative Officer (and a union official, if he/she wishes) who will assist you in resolving the situation. If the complaint involves the Chief Administrative Officer, the complaint should be reported another Manager.

If you see others behaving in a way that is inappropriate or disrespectful, try and speak to the person(s) involved or bring the matter to the attention of the Chief Administrative Officer.

Workplace Conflict Discipline Procedure

All employees are subject to the following disciplinary procedures:

- First contravention: verbal warning followed up with a letter which will be placed in the employee's personnel file;
- Second contravention: one day work suspension without pay;
- Third contravention: one week work suspension without pay;
- Fourth contravention: termination of employment.

THE CORPORATION OF THE CITY OF GRAND FORKS

MEMORANDUM

TO: **Mayor and Council**

FROM: **Roger Huston, Manager of Operations**

DATE: **January 26, 2015**

SUBJECT: **Universal Water Metering Project Status**

BACKGROUND

In 2013, City of Grand Forks (City) council gave direction to staff to implement the Universal Water Metering project, which consisted of completing residential water meter installations. A Request for Expression of Interest (RFEOI) Pre-qualification of Proponents was initiated in January 2014 for Water Meter Supply and Installation. This RFEOI closed on January 30, 2014.
On February 27, 2014, two firms were pre-qualified to participate in a request for proposal (RFP) for the supply and installation of water meters for the City of Grand Forks. Those being:

- Neptune Technology Group (Canada) Ltd
- Corix Utilities Inc.

Subsequently, a RFP for the Universal Water Metering Project was initiated and on April 15, 2014 a recommendation of award was given that the City of Grand Forks enter into contract negotiations with Neptune Technology Group (Canada) Ltd (Neptune) for the supply and installation of universal residential water meters. An agreement was signed off between the City and Neptune on July 8, 2014 with the Notice To Proceed given on August 6, 2014. Residential water meter installations began on September 2, 2014.
It should be noted that the City of Grand Forks determined that three options for water meter installations are available for homeowners as part of the installation phase of the project. These being, typical inside meter installation, touch pad installation and outside pit meter installation (City approval required). Attached are 2 forms Neptune utilized as part of their program submission for the homeowner to acknowledge, Irrigation sign-off and potential line freeze.

Several timelines are important to note throughout the Universal Water Metering Project. The agreement with Neptune is valid until substantial completion is met on or before the completion date of August 31, 2015. This will allow outside pit meter installations during the milder weather months of the spring and summer of 2015.

The City of Grand Forks Water Regulation Bylaw No. 1973 adopted on August 18, 2014, states in Section 11.1:

> If an Owner fails to install a Water Meter as required by this bylaw, the City may, upon giving notice to the Owner, install a Meter Pit and Water Meter at the Curb Stop at the sole cost of the Owner. Prior to and including July 31, 2015 the Owner will be responsible for the difference in cost between in-home installation and Meter Pit installation. After July 31, 2015, the Owner will be responsible for all costs associated with installation.

This is important to note as concern was raised that the City would be implementing a $2500 fine if water meters were not installed, which in fact, the $2500 refers to the average cost of an outside pit meter installation, but true estimates for pit meters vary from job to job and will be determined at time of installation with the homeowner.

DISCUSSION

The City of Grand Forks council approved a budget of $1.3m for the Universal Water Metering project. With a total account of 1651 residential installations to be performed, the following table delivers the progress to date:

1.	Meters installed	1163 (70.4%)
2.	Meters found (installed previously)	21 (1.3%)
3.	Outside pit recommendations (Spring 2015)	146 (8.8%)
4.	Inside meter install committed (Spring 2015)	115 (7.0%)
		1445 (87.5%)

To date, a total cost of $702,892, has been expensed relating to the project's budget, leaving a balance of $597,108. According to the proposal submitted by Neptune, they have made their allotted requirements to engage the homeowners for a water meter install and have returned the remaining 206 accounts back to the City who have not committed for an install. These accounts may be subject to the terms of Section 11.1 of the Water Regulation Bylaw No.1973.
As a result, Neptune's deliverables of the water meter installation timeline schedule and the communication engagement commitment submitted in their proposal being met, this phase of the contract was mutually concluded on December 1, 2014. The spring of 2015 will see the committed 115 inside meter

installs and 146 recommended outside pit meter installations proceeding. The scope of work and subsequent costs of these installs are to be determined before this process commences. Staff suggests that before the Universal Water Metering program prepares to revitalize in the spring, the City endeavor to prepare a communication plan to the residents of Grand Forks in hopes of completing a successful project.

NEPTUNE
TECHNOLOGY GROUP

Water Meter Installation/Irrigation Sign-Off

Homeowner Name: _____

Homeowner Address: _____

RE: City of Grand Forks Universal Water Metering Program

Dear Valued Customer,

During the City of Grand Forks Universal Water Metering Program, to collect accurate water usage data, it is important that all the water to your property runs through the new water meter being installed in your home. This requires that all outdoor water uses, including landscape or residential irrigation, be supplied after the water meter from the water service inside your home. In the event that your irrigation system (or any other connection) is connected to your water service line between the new meter in your home and the municipal water supply line in the street, your account will be referred back to the City of Grand Forks for further consideration.

> *Note: This does not apply to agricultural irrigation connections which have a separate dedicated water service line that is turned off seasonally. These connections may be receiving a separate water meter.*

The water meter technician will advise you where the meter will be located and it is your responsibility to notify the technician if you are aware of any water use that would not be captured by the meter.

We thank you again for your ongoing cooperation.

Sincerely,

Jocelyn Murphy
Project Manager
Neptune Technology Group

I, _____, declare that to the best of my knowledge, I do not have any water connections prior to where the meter is to be installed in my basement or crawlspace.

Date: _____

Signature: _____

NEPTUNE
TECHNOLOGY GROUP

Potential Line Freeze Detected Notice

Upon visiting your home it was found that your water meter is vulnerable to cold temperatures and may be at risk of freezing if temperatures fall below zero.

It is the property owner's responsibility to protect both water pipes and water meters from any freezing damage.

The City of Grand Forks is responsible for the maintenance and/or repair of water service lines from the water main in the street to the outside shut off valve located at the property line. The Homeowner is responsible for the water service line from the property line to the house/mobile home and all pipes that are inside the house/mobile home, including the water meter.

It is important that the Homeowner takes any necessary precautions before the threat of freezing temperatures increase the possibility of frozen and broken water lines on their property. If this occurs, it can mean an interruption of your water service, property damage, as well as damage to the meter. Replacing of a frozen water meter may incur a service and replacement charge.

Below are some tips and precautionary measures you could use to better protect your meter and pipes:

- Cover any exposed pipes in cold areas with insulating material and or heat tape.
- Block air passages into crawl spaces
  Check crawl spaces to be sure pipes are protected. Seal air passages.
- Secure basements against the cold
  Plug up drafty cracks and repair broken window panes.
- Check outside faucets
  Remove hoses from outside faucets and check the washers to be sure there are no leaks which could freeze and back up into the household plumbing.

When possible, please contact a licensed plumber to advise you in the best way to insure your water lines and water meter are protected from freezing.

Signing of this letter acknowledges that the homeowner has been informed of possible freezing of their meter and that he/she is aware that he/she is responsible for protecting the water meter from freezing.

Signed by _____Date_____

Signature_____

REQUEST FOR DECISION

— COMMITTEE OF THE WHOLE —

To:	Committee of the Whole
From:	Corporate Services
Date:	January 16, 2015
Subject:	Discussion and Direction to Staff on Amendment to Procedure Bylaw No. 1946, 2013
Recommendation:	**RESOLVED THAT** the Committee of the Whole recommends Council direct staff to give notice in accordance with sections 94 and 124 of the Community Charter, advising the public of the proposed amendments to Procedure Bylaw No. 1946, 2013.

BACKGROUND: At the December 15th Regular Meeting of Council, Council was given a Notice of Motion regarding amending the City of Grand Forks Procedure Bylaw No. 1946, 2013, by Councillor Christine Thompson. Prior to any amendment to the Procedure Bylaw, Council, in accordance with section 124 of the Community Charter, must not consider adoption of the amended bylaw unless advertised notice has been given to the public, regarding the intention to adopt the amended Procedure Bylaw.

Benefits or Impacts of the Recommendation:

General:	Proceeding with the recommendation to publish notice of Council's intent to adopt the amended Bylaw will meet the requirements of the Community Charter.
Financial:	No impact
Policy/Legislation:	Section 124 of the Community Charter requires that Council publish notice in two consecutive issues of a newspaper, advising of the intent to amend Bylaw No. 1946, 2013
Attachments:	Council Procedure Bylaw No. 1946, 2013

Recommendation:	**RESOLVED THAT the Committee of the Whole recommends Council direct staff to give notice in accordance with section 94 and 124 of the Community Charter, advising the public of proposed amendments to Procedure Bylaw No. 1946, 2013.**

REQUEST FOR DECISION

— COMMITTEE OF THE WHOLE —

OPTIONS:

1. **COTW COULD CHOOSE TO SUPPORT THE RECOMMENDATION.**
2. **COTW COULD CHOOSE TO NOT SUPPORT THE RECOMMENDATION.**
3. **COTW COULD CHOOSE TO REFER THE REPORT BACK TO STAFF FOR MORE INFORMATION.**

Department Head or CAO	Chief Administrative Officer

PROPOSED AMENDMENT TO COUNCIL PROCEDURE BYLAW NO. 1946, 2013

RESOLVED THAT the City of Grand Forks Procedure Bylaw No. 1946 be amended to include the following:

1. Written reports from members of Council attending conferences, seminars or workshops that extend beyond one day out of the City, must be included on the Regular Meeting Agenda no later than the second Regular Meeting of Council following the conclusion of such conference, seminar or workshop. At the discretion of Council, failure to provide such written report may result in the offending member of council not being authorized to attend future conferences, seminars or workshops.
2. Verbal reports from members of Council attending conferences, seminars or workshops lasting one full day or less will be accepted.

   BE IT FURTHER RESOLVED that the Order of Business at Regular Meetings, Section 12.3(1) be amended to reflect these changes.

City of Grand Forks

Council Procedure Bylaw No. 1946, 2013

CITY OF GRAND FORKS

A BYLAW TO GOVERN MEETINGS OF THE COUNCIL OF THE CITY OF GRAND FORKS BYLAW NO. 1946, 2013

WHEREAS under Section 124 of the Community Charter, Council must by bylaw establish the procedures to be followed by Council and Council Committees in conducting their business;

NOW, THEREFORE, the Council of the City of Grand Forks in open meeting assembled **ENACTS** as follows:

PART 1 – INTERPRETATION

1. **Definitions**

(1) In this bylaw:

"Act" means the Community Charter, SBC 2003, Chapter 26, as amended.

"Committee" means a Standing, Select, or other Committee of Council, but does not include COTW (Committee of the Whole)

"COTW" means Committee of the Whole.

"Council" means the governing and executive body of the City of Grand Forks constituted as provided in the Act.

"Councillor" means a member of the Council.

"Councillor's address" means the residential address or the mailing address if this is different, given to the Corporate Officer by each Councillor in the nomination documents they filed for the local government office they were elected to.

"Inaugural meeting" means the meeting at which the members elected at the most recent general local election are sworn in.

"In-camera meeting" refers to a closed meeting in accordance with Section 90 of the Community Charter.

"member" means the Mayor or a Councillor.

"municipality" means the City of Grand Forks.

"posting locations" means the notice board at the north entrance (Market Avenue entrance) of City Hall and the Regular Council meeting place.

"Special meeting" means a meeting of the Council other than a Regular or Inaugural meeting.

"Corporate Officer" means the person assigned by Council the responsibility of corporate administration pursuant to Section 148 of the Act.

2. **Incorporation Of Acts' Definitions**

(1) Any definition in the Act which is incorporated into this bylaw has the meaning given to it in the Act as of the date of adoption of this bylaw.

3. **Interpretation of Bylaw**

(1) Reference in this bylaw to:

(a) a numbered "section" or "part" is a reference to the correspondingly numbered section or part of this bylaw;
(b) the plural is to be considered to be a reference also to the singular, unless the context otherwise requires; and
(c) unless the context otherwise dictates, a resolution or vote of the Council is a reference to a resolution or vote passed by the affirmative vote of a majority of the Councillors present and entitled to vote on the matter.

4. **Citation**

(1) This bylaw may be cited for all purposes as the **"City of Grand Forks Council Procedure Bylaw No. 1946, 2013".**

PART 2 – INAUGURAL MEETING

5. **Inaugural Meeting**

(1) The first Regular Council meeting following a general local election must be held on the first Monday in December following the general local election, provided that the election occurs the third Saturday in November. In the likelihood that the proposed legislation passes in the future and the election is scheduled to occur the third week in October, the first Regular Council meeting following the general local election may be held on the first Monday in November therein.

PART 3 - REGULAR MEETINGS

6. Time and Location of Regular Meetings

(1) Commencing following the Inaugural meeting of a new Council, Regular meetings are scheduled by resolution of Council adopted at the first Regular meeting in December, or as soon as practicable thereafter. In the likelihood that the proposed legislation passes in the future and the election is scheduled to occur the third week in October, Regular meetings would be scheduled by resolution of Council adopted at the first Regular meeting in November, or as soon as practicable thereafter.

(2) Regular meetings of Council are to begin at 7:00 PM or such other time as is fixed by resolution of the Council from time to time.

(3) Regular meetings of Council are to take place within City Hall unless, by resolution, Council has chosen another location specified in the resolution.

(4) Despite subsections 6 (1), (2) and (3), no Regular meeting is to be held if the meeting has been cancelled by a resolution of Council passed at a previous meeting.

(5) The Corporate Officer is hereby authorized to vary the start time of Regular meetings scheduled to commence at 7:00 PM to reflect the amount of Council business, or to cancel them entirely if such meeting is not required.

(6) The Corporate Officer is hereby authorized to cancel such other meetings as are considered unnecessary for the reason of lack of business and shall post notice of such cancellation in accordance with Section 6.1

6.1 Notice of Regular Council Meetings

(1) At least 72 hours before a regular meeting of Council, the Corporate Officer must give public notice of the time, place and date of the meeting by way of a notice posted in the posting locations, being the bulletin board on the north entrance of City Hall and the City of Grand Forks Website. The City of Grand Forks Website posting will include all background information.

(2) At least 72 hours before a Regular meeting of Council, the Corporate Officer must give further public notice of the meeting by leaving copies of the agenda, including all background information, at the reception counter at City Hall for the purpose of making them available to members of the public:

(3) At least two (2) working days before a Regular meeting of Council, the Corporate Officer must deliver a copy of the agenda and all background information to each member of Council, electronically to each member of Council's City email box.

(4) The Corporate Officer must:

(a) post in the posting locations, and

(b) publish in accordance with Section 94 of the Act at least once a year a schedule of the date, time and place of Regular Council meetings.

(5) If the agenda for the meeting contains a proposal to close all or part of the meeting to the public, the notice must state the basis under the Act on which the portion of the meeting is to be closed, but the notice must not otherwise describe the matter in respect of which the meeting is to be closed.

6.2 **Postponement for Statutory Holiday**

(1) If the Monday is a statutory holiday, the Regular meeting which would otherwise be held on that Monday must be held at the usual time on the next day which is not a statutory holiday, a Saturday or a Sunday.

6.3 **Quorum**

(1) A quorum of the Council is a majority of Councillors on the Council, including the Mayor, as per Section 129 of the Act.

6.4 **Postponement If No Quorum**

(1) If there is no quorum of Councillors at the location for Regular meetings within 30 minutes after the usual time for a Regular meeting, or a quorum is lost during a meeting:

(a) the Corporate Officer shall record in the Minute Book the names of the members present at the expiration of such thirty minutes;

(b) the members present must direct that the Regular meeting be held or continued

(i) the same hour the following night, or
(ii) on the date of the next scheduled Regular meeting.

(c) all business on the agenda for that Regular meeting not dealt with at that Regular meeting is incorporated in the agenda for the Regular meeting held on the earlier of the dates referred to in sub clause (b) (i) or (ii).

6.5 **Cancellation If No Quorum**:

(1) Notwithstanding Section 6.4, if the Corporate Officer knows in advance that there will not be a quorum present at the location for a regularly scheduled meeting of Council she/he may cancel the Regular meeting and they shall use reasonable efforts to give advance public notice of the cancellation of the Regular meeting by posting notice of the cancellation in the posting locations.

PART 4 - SPECIAL MEETINGS

7. **Notice of Special Council Meetings**

(1) Except where notice of a Special meeting is waived by a unanimous vote of all Council members under Section 127(4) of the Act, at least 24 hours before a Special meeting of Council, the Corporate Officer must:

(a) give advance public notice of the time, place and date of the meeting and describe in general terms the purpose of meeting by way of a notice posted in the posting locations; and

(b) give notice of the special meeting in accordance with Section 127 of the Act.

(2) Where a Special meeting is called and where notice may be waived by a unanimous vote under Section 127(4) of the Act, the Corporate Officer shall use reasonable efforts to give advance public notice of the proposed Special meeting by posting a notice of the proposed meeting in the posting locations.

(3) If the agenda for the meeting contains a proposal to close all or part of the meeting to the public, the notice must state the basis under the *Act* on which the portion of the meeting is to be closed, but the notice must not otherwise describe the matter in respect of which the meeting is to be closed.

7.1 **Postponement If No Quorum**

(1) Section 6.4 applies to Special meetings with the necessary changes, with exception that the Corporate Officer need not give public notice of a cancelled or rescheduled meeting of which Council has resolved to exclude the public as in a Special Meeting to go in-camera.

PART 5 – IN-CAMERA MEETINGS

8. **Notice of In-Camera Meetings**

(1) Notice of Council's intent to conduct an In-camera meeting in accordance with Section 90 of the Community Charter:

(a) by public posting of a Special meeting agenda to go in-camera. The notice must state the basis under the Act on which the portion of the meeting is to be closed, but the notice must not otherwise describe the matter in respect of which the meeting is to be closed. Except where notice of a special meeting to go In-camera is waived by a unanimous vote of all Council members under Section 127(4) of the Act, the Special Meeting to go in-camera must be posted at least 24 hours before a Special meeting of Council.

(a) Where a Special meeting to go in-camera is called and where notice may be waived by a unanimous vote under Section 127(4) of the Act, the Corporate Officer shall use reasonable efforts to give advance public notice of the proposed Special meeting to go in-camera, by posting a notice of the proposed meeting in the posting locations;
   (i)

(b) or by passing a resolution at a Regular, Special or COTW meeting, Council's wishes to go In-camera in accordance with Section 92 of the Community Charter, Council must:
   (i) state publicly, the fact that the meeting or part is to be closed, and
   (ii) state the basis under the applicable subsection of Section 90 on which the meeting or part is to be closed;

(c) or by passing a resolution at a Regular, Special or COTW meeting, Council's wishes to go In-camera in accordance with Section 92 of the Community Charter to a future meeting date, Council must:
   (i) state publicly, the fact that the meeting or part is to be closed and when the meeting is to be held; and
   (ii) state the basis under the applicable subsection of Section 90 on which the meeting or part is to be closed.

8.1 **Postponement If No Quorum**

(2) Section 8 applies to Special meetings to go In-camera with the necessary changes, except that the Corporate Officer need not give public notice of a cancelled or rescheduled meeting in respect of which Council has resolved to exclude the public.

PART 6 – ANNUAL MEETING

9. **Notice of Annual Meeting**

(1) The Corporate Officer must give notice of the Council meeting or other public meeting in respect of which Council has resolved to consider

(a) the annual report prepared under Section 98 of the Act and
(b) submissions and questions from the public,
by giving public notice by
(c) posting notice of the date, time and place of the annual meeting in the posting locations, and
(d) publishing notice of the date, time and place of the annual meeting in accordance with Section 94 of the *Act*.

PART 7 – COMMITTEE OF THE WHOLE MEETINGS

10. **Time and Location of Committee of the Whole Meetings**

(1) Commencing following the Inaugural Meeting of a new Council a Committee of the Whole meeting is to be held as per resolution of Council adopted at the first Regular meeting in December. In the likelihood that the proposed legislation passes in the future and the election is scheduled to occur the third week in October, Committee of the Whole meetings would be scheduled by resolution of Council adopted at the first Regular meeting in November, or as soon as practicable thereafter.

(2) Committee of the Whole (COTW) meetings are to begin at 9:00 AM the day of the first Regular meeting date of each month or such other time as is fixed by resolution of Council from time to time.

(3) COTW are to take place within City Hall unless, by resolution, Council has chosen another location specified in the resolution.

(4) Despite subsections 10.1(1), (2) and (3), no COTW is to be held if the meeting has been cancelled by a resolution of Council passed at a

previous Regular Council meeting.

(5) The Corporate Officer is hereby authorized to cancel such COTW meetings as are considered unnecessary for the reason of lack of business and shall post notice of such cancellation in accordance with Section 10.1(1).

10.1 **Notice of Committee of the Whole Meetings**

(1) At least 72 hours before a scheduled meeting of a COTW, the Corporate Officer must give public notice of the time, place and date of the meeting by way of a notice posted in the posting locations, being the bulletin board on the north entrance of City Hall and the City of Grand Forks Website. The City of Grand Forks Website posting will include all background information.

(2) At least 72 hours before a scheduled meeting of a COTW, the Corporate Officer must give further public notice of the meeting by leaving copies of the agenda, including all background information, at the reception counter at City Hall for the purpose of making them available to members of the public:

(3) At least two (2) working days before a scheduled meeting of a COTW, the Corporate Officer must deliver a copy of the agenda to each member electronically to each member of Council's City email system.

(4) At least 24 hours before:

(a) an unscheduled meeting of a COTW;

the Corporate Officer must give advance public notice of the time, place and date of the meeting by way of a notice posted in the posting locations.

10.2 **Conduct and Debate of COTW Meetings**

The following rules apply to COTW Meetings:

a) a motion is not required to be seconded;
b) a member may speak any number of times on the same question;
c) a member must not speak longer than a total of 10 minutes on any one question;

d) the public and media, in attendance, may ask questions with regard to each topic as they are addressed and must not speak longer than 5 minutes on any one topic; An addendum to these rules and procedures may be established by resolution of Committee of the Whole from time to time.

e) the public and media, in attendance, may ask questions that do not pertain to any topic discussed within the agenda during the "Question Period" section of the meeting; must not speak longer than 5 minutes on non-agenda topics and must not refer to any in-camera or personnel issues; An addendum to these rules and procedures may be established by resolution of Committee of the Whole from time to time.

PART 8 - OTHER MATTERS REGARDING MEETINGS

11. Meetings Outside Municipality

(1) A meeting may be held outside the Municipality if the Council passes a resolution to that effect.

11.1 Attendance of Public at Meetings

(1) Subject to Sections 90 and 133 of the Act, all Council meetings must be open to the public.

(2) Where Council wishes to close a meeting to the public, it may do so by adopting a resolution in accordance with Section 92 of the Act.

(3) This section applies to meetings of bodies referred to in Section 145 of the Act, including, without limitation:

(a) COTW, Select or Standing Committees of Council;
(b) The Board of Variance;
(c) The Court of Revision;
(d) An Advisory Committee, or other advisory body, established by Council under the Act, or any other legislation.

11.2 Participation of Public at Council/Committee of the Whole Meetings

(1) The public and media may participate in the Committee of the Whole meetings in accordance with Section 10.2 (e) & (f), in addition to the Question Period within a Regular Meeting.

(2) From the close of nominations preceding a general local election or by-election, the Petitions and Delegations portion of Regular Council

meetings and COTW meetings shall be suspended until the meeting of Council following the election unless the delegation is representing an Advisory Committee to Council.

11.3 **General Conduct for all Meetings**

(1) No member or person attending the meeting may interrupt a member who is speaking, except that a Councillor may raise a point of order.

(2) No member or person attending the meeting may cause a disturbance, disrupt or in any manner delay the conduct of business at a meeting.

(3) No member or person permitted or invited to speak on any matter coming before the Council or a Committee may use rude or offensive language or, by tone or manner of speaking, express a point of view or opinion or make an allegation which, directly or indirectly, reflects upon the public conduct or private character of any person.

11.4 **Removal of Those Behaving Improperly**

(1) The Mayor or other person presiding may expel from a meeting of Council any person he or she considers guilty of improper conduct.

(2) If a person resists or disobeys an order of the Mayor or other person presiding to leave a meeting of Council, that person may be removed by the Corporate Officer or other City Staff member present at the meeting, or, if necessary, by a peace officer at the direction of the Mayor or other person presiding.

(3) In addition to its application to Council meetings, the ability of the person presiding to expel persons he or she considers guilty of improper conduct also applies to meetings of the following:

(1) COTW, Select or Standing Committees of Council;
(2) The Board of Variance;
(3) The Court of Revision;
(4) An Advisory Committee, or other advisory body, established by Council under the Act, or any other legislation.

11.5 **Adjournment of Meeting**

(1) The Council may at any time by resolution adjourn any meeting to a date, time and location specified in the resolution.

(2) Council Meetings shall adjourn no later than 11:00 p.m. unless an extension beyond that time is determined by Unanimous Resolution of the Council.

11.6 **Cancellation of Meetings**

(1) The Council may, by resolution, cancel any Regular meeting and/or COTW meeting. The Corporate Officer must give public notice of cancellation of any Regular and/or COTW meeting by posting notice of cancellation in a place accessible to the public at the location for the regular meeting.

11.7 **Acting Mayor**

(1) At the first Regular meeting held in December each year, or at an Inaugural meeting held under Section 5, or as soon after those meetings as practicable, Council must in respect of the ensuing calendar year designate from among its member Councillors to serve on a rotating basis as Acting Mayor, to act in the place of the Mayor when the Mayor is absent or otherwise unable to act or when the office of the Mayor is vacant. In the likelihood that the proposed legislation passes in the future and the election is scheduled to occur the third week in October, the designation of Acting Mayor among its Council members would be adopted at the first Regular meeting in November, or as soon as practicable thereafter.

(2) Each Councillor designated under Subsection 11.7(1) must fulfill the responsibilities of the Mayor in the absence of the Mayor.

(3) If both the Mayor and the member designated under subsection 11.7 (1) are absent from the Council meeting, the Council member next on the approved list of Acting Mayors shall be chosen to fulfill the role of Acting Mayor and shall have the same powers and duties as the Mayor in relation to the applicable matter.

PART 9 - PROCEDURE FOR MEETINGS

12. **Authority**

(1) All meetings of the Council and all other matters of practice and procedure not otherwise herein specified shall be governed by Robert's Rules of Order or by any authority whose codification of Canadian Procedure shall be declared by the Parliament of Canada to replace or supersede Robert's Rules of Order.

(2) Notwithstanding the above statement of authority, the Provisions of Division 2 of the *Act* on "Council Proceedings" are to be considered a part of this bylaw and to have the same force and effect by reference as though the same were severally, fully and particularly set forth herein.

12.1 **Mayor To Open Meetings**

(1) If a quorum is present, the Mayor must call the meeting to order; however, where the Mayor is absent, the Councillor designated as Acting Mayor in accordance with Section 11.7 must take the Chair and call the meeting to order.

12.2 **Appointment of Acting Chair**

(1) If a quorum is present but neither the Mayor nor the Acting Mayor are present at the time at which the meeting is scheduled to begin, the Corporate Officer must call the meeting to order and by resolution, the Council must appoint a Councillor to act as Chair for that meeting until the Mayor or Acting Mayor arrives. The Acting Chair of a meeting has the powers and duties of the Mayor in respect of that meeting.

12.3 **Order Of Business At Regular Meetings**

(1) Unless the Mayor or Acting Mayor otherwise directs, the business at all Regular meetings shall be proceeded with in the following order:

a) Call to Order
b) Adoption of Agenda
c) Adoption of Minutes of the last regular meeting
d) Registered Petitions and Delegations
e) Unfinished Business
f) Reports, Questions and Inquiries from Members of Council (verbal)
g) Report – Regional District of Kootenay Boundary
h) Recommendations from Staff for Decision
i) Requests Arising from Correspondence
j) Information Items
k) Bylaws
l) Late Items
m) Questions from the Media and Public
n) Adjournment.

(2) When preparing the agenda prior to the meeting, the Mayor and Corporate Officer may in their discretion:

(a) vary the order set out in Section 12.3 (1) and
(b) delete agenda headings if there is no business under those items.
(c) The order of business specified in Section 12.3(1) and (2) hereof may be varied, as the Council deems necessary.

12.4 **Meeting Agenda**

(1) The Corporate Officer must prepare an agenda for each Regular meeting, which must:

(a) set out each item of business to be dealt with specified in Subsections 12.3(1) and (2);
(b) state the general nature of each item of business to be dealt with at the Regular meeting; and
(c) be made available to each Council member electronically to Council's City email boxes at least two (2) working days before the date on which the Regular meeting is to be held.

(2) The Mayor or the Acting Mayor may choose to review the agendas either in person or by telephone for each meeting, prior to the agenda being circulated in accordance with this bylaw.

12.5 **Petitions and Delegations:**

(1) Petitions and Delegations will be presented to Council at the COTW meetings which are held the first meeting of the month or at an alternative date as deemed by resolution from Council, from time to time

(2) Petitions and Delegations may be considered during Regular meetings if the issue is of a time sensitive nature

12.6 **Notice to Corporate Officer of Petitions and Delegations:**

(1) At least ten (7) working days before the date of the meeting at which:

(a) any person wishing to present a petition to the Council, that person must deliver to the Corporate Officer:
(i) a written request to present the petition and the name and address of the presenter;
(ii) the complete petition; and
(iii) the name and address of each person who has signed the petition.

(b) any delegation who wishes to appear before the Council, the convener of the delegation must deliver to the Corporate Officer a letter which contains:

(i) full particulars of the subject matter to be submitted to Council including any written data which the presenter would like included in the agenda package (in the case of large amounts of data, the Corporate Officer may provide a separate paper copy meant for viewing by the pubic during the course of the meeting instead of inclusion within the agenda); and

(ii) the proposed action, which is within the authority of the City which the delegation wishes the City to take in response to the submission;

(iii) the names and addresses of the persons or the organization comprising the delegation; and

(iv) the name, civic address, email address (if applicable) and telephone number of the person who will speak to the Council on behalf of the delegation;

(v) if a PowerPoint or computer generated presentation forms part of the delegation, arrangements should be made with the Corporate Officer at least three working days prior to the meeting.

(2) No petition or delegation may be presented to appear before or be received by the Council unless Section 12.6 has been complied with, except that the Council may resolve by a simple majority vote to waive compliance with this Section.

(3) There may be a limit of a maximum of three (3) petitions or delegations at a Committee of the Whole Meeting or as determined in accordance with the rules and procedures established by resolution of Council, from time to time.

12.7 **Time Allowed For Petitions And Delegations**

(1) Unless the Council otherwise resolves, the maximum time for presentation of a petition or appearance of a delegation before the Council is 10 minutes, excluding time which members of Council may require to ask questions and seek clarification. This section does not apply to public hearings conducted by the Council under the Act.

12.8 **Adding Correspondence**

(1) Any member of Council, with the consent of the Mayor or Chair, may request the Corporate Officer to add an item of correspondence or business to the agenda three (3) working days prior to the date on which the Regular meeting is to be held.

(2) Any member may request an item of correspondence or business be added as a late item at the date of the Regular meeting of Council before the adoption of the agenda by consent of a majority of Council members after informing Council of the general nature of the correspondence or business and the reason for urgent consideration.

12.9 **Minutes of Meetings**

(1) Minutes of Council meetings must be kept in accordance with Section 97 of the Act.

(2) Minutes of Committee meetings referred to in Section (3) must be kept in accordance with Section 97 of the Act.

(3) Section (2) applies to meetings of:

(a) Select or Standing Committees of Council; and
(b) Any other body composed solely of Council members acting as Council members.

12.10 **Recording and Certification of Minutes Of Council**

(1) The Corporate Officer must cause minutes of every Council meeting to be recorded legibly in a minute book.

(2) The minutes of every Council meeting must be certified as correct by the Corporate Officer and must be signed by the Mayor following the meeting at which the minutes are adopted.

12.11 **Adoption of Minutes**

(1) The minutes of every Council meeting must be adopted by resolution of Council. If each Councillor has received a copy of the minutes of a meeting, those minutes may be adopted by resolution of the Council without their being read to the meeting. The minutes of a meeting may not be adopted until the Corporate Officer makes any changes which the Council has by resolution directed be made, so that the minutes accurately record the meeting.

12.12 **Committee Procedures**

(3) Section 11.3 applies to the general conduct of meetings of:

(Select or Standing Committees of Council;
(any other Committee composed solely of Council members acting in that capacity; and
(Committee of the Whole)

12.13 **Order of Business for Committee of the Whole Meetings**

(1) Unless the Chair or Acting Chair of the Committee of the Whole otherwise directs, the business at all COTW meetings shall be proceeded with in the following order:

a) Call to Order
b) Adoption of Agenda
c) Registered Petitions and Delegations
d) Presentations by Staff
e) Reports and Discussion
f) Proposed Bylaws for Discussion
g) Information Items
h) Correspondence Items
i) Late Items
j) Reports, Questions and Inquiries from Members of Council (verbal)
k) Question Period
l) Adjournment.

(2) When preparing the agenda prior to the meeting, the Mayor and Corporate Officer may in their discretion:

(a) vary the order set out in Section 12.13 (1), and
(b) delete agenda headings if there is no business under those items.

(3) The order of business specified in Section 12.13(1) and (2) hereof may be varied, as the COTW deems necessary.

12.14 **Electronic Meetings**

(1) Subject to the Act

(a) a Special meeting may be conducted by means of electronic or other communication facilities,
(b) a member of Council or a Council Committee who is unable to attend a Council meeting or a Council Committee meeting, as applicable, may participate in the meeting by means of electronic or other communication facilities and the member participating shall be recorded as being in attendance at the meeting.

PART 10 - RULES OF DEBATE

13. **Recognition of Speakers**

(1) A Councillor may speak in a meeting after the Councillor has raised his or her hand and the Mayor has recognized the Councillor. If two or more Councillors raise their hands at the same time, the Mayor may designate the order in which each is to speak. If the Mayor wishes to speak in a meeting, the Mayor need only address the meeting. If a Councillor has raised his or her hand at the same time the Mayor begins to speak, the Mayor may speak first.

13.1 **Manner Of Address By Speakers**

(1) A Councillor must address the Mayor as “Mister Chairman” or “Madame Chairman” as the case may be, or “Your Worship” and must address another Councillor by that Councillor’s surname preceded by “Councillor”.

13.2 **Conduct and Debate**

(1) A member may speak only to a matter being debated by the Council.
(2) Speak only twice to a matter, unless the member is providing clarification on the material or the speech or is asking questions of another member.

(3) Speak for no more than five minutes at a time except with the permission of the presiding Member, may speak longer provided the presiding Member allows equal time to other members who may wish to speak.
(4) A member may not speak to a matter already dealt with by Council.
(5) A member shall not speak unless a motion has been moved and seconded and further once a question has been called.
(6) A member may require a matter being debated or require the presiding member to state the provision of the bylaw or other rule of order be read to the member's information but may not interrupt another member who has the floor.
(7) The presiding member must inform the Council upon which the point of order is decided.

13.3 **Voting By Show Of Hands**

(1) Whenever a vote is called for, the question shall be decided by a show of hands. The presiding member shall call aloud the results of any vote and the names of those members voting contrary to the majority. These names may be entered in the minutes, when requested by the dissenting member.

PART 11 - ADOPTION OF BYLAWS

14. **Proposing Bylaws**

(1) Unless the Council otherwise resolves, the Council may not consider a proposed bylaw unless:

(a) the Corporate Officer has given a copy of it to each Councillor and the Mayor, and
(b) it is on the agenda for the meeting.

14.1 **Adoption Of Bylaws**

(1) The only motion required for the introduction of a bylaw shall be "That the ". . . . . Bylaw" (giving the short title) be now read for the First, Second, or Third Time", whichever the case may be, provided that upon request by any member of the Council the whole or any part of the draft bylaw shall be read before the motion is put.

(2) The only motion necessary for the final passing shall be "That the ". . . . . Bylaw" (giving the short title) be adopted".

14.2 **Reconsideration Of Bylaws**

(1) The Council may reconsider any part or all of a proposed bylaw before its adoption.

PART 12 – DECISIONS OF COUNCIL

15. **Resolutions and Bylaws**

(1) Resolutions, the reading of bylaws and the adoption of bylaws must be dealt with on a motion put by a member and seconded by another member.

15.1 **Reconsideration Of Decisions Of Council**

(1) No bylaw, resolution, proceeding or other decision of Council shall be reconsidered by motion of Council within six (6) months except where the motion to reconsider the matter has received the unanimous consent of the Council. The Mayor has the authority to require that Council reconsider and vote again on a matter that was the subject of a vote in accordance with Section 131 of the Community Charter.

PART 13 – COMMITTEES

16. **Committee Meeting Procedures**

(1) Council meeting procedures stipulated by this bylaw apply to every Standing Committee established by the Mayor and Select or other Committee established by the Council.

16.1 **Reporting to Council by Committees**

(1) A Committee:

(a) may report to the Council at any COTW meeting, or if time sensitive, any Regular meeting of Council; and
(b) must report to the Council when directed by resolution of the Council.

16.2 **Mayor is a Member of All Committees**

(1) The Mayor is an ex-officio member of all Committees and is a voting member to the Committees of which the Mayor is appointed.

PART 14 - GENERAL

17. **Severance**

(1) If any section, subsection, clause or other provision of this bylaw is held to be invalid by a Court of competent jurisdiction, such invalidity does not affect the validity of the remaining portions of this bylaw.

17.1 **Irregularity**

(2) The failure of Council to observe the provisions of this bylaw does not affect the validity of resolutions passed or bylaws enacted by Council.

PART 15 - REPEAL OF EXISTING BYLAW

18. **Repeal Of Existing Bylaw**

City of Grand Forks Council Procedure Bylaw No. 1889, 2009 is hereby repealed.

Read a **FIRST** time this 4th day of February, 2013.

Read a **SECOND** time this 4th day of February, 2013.

Read a **THIRD** time this 4th day of February, 2013.

ADOPTED this 18th day of February, 2013.

_____
Mayor, Brian Taylor

_____
Corporate Officer, Diane Heinrich

C E R T I F I C A T E

I hereby certify the foregoing to be a true and correct copy of Bylaw No. 1946 as passed by the Municipal Council of the Corporation of the City of Grand Forks on the 18th day of February, 2013.

_____

Corporate Officer of the Municipal Council of the Corporation of the City of Grand Forks

MONTHLY HIGHLIGHT REPORTS

DATE : **January 15, 2015**

TO : Committee of the Whole

FROM: Chief Financial Officer

HIGHLIGHTS : For the Month of December, 2014

- Set up new Mayor and Council in payroll, benefits, signing authority
- Met with Rotary Club for Spray Park planning
- Compiling information for year-end Carbon Tax submission
- Packed, prepared and moved back to City Hall end of December
- Preparing for interim audit January 21st and 22nd
- Year-end inventory count
- Hired a Revenue Clerk
- Assisted Victim Services with 2014/2015 Program Budget
- Financial Plan operating meetings with managers and coordinators in preparation for operating presentation January 26th
- 2015 audit scheduled for March 31- April 2, 2015

MONTHLY HIGHLIGHT REPORTS

DATE`: **January 26, 2015**

TO: Council

FROM: Manager of Development & Engineering

HIGHLIGHTS: For the Month of December, 2014

- City Hall Re-Construction Project – Substantially Complete
- City Hall – Organized Move Back to City Hall
- New Subdivision, Development and Servicing Bylaw Received First Three Readings
- New Sewer Regulations Bylaw Received Final Reading
- Received 1 Development Enquiry
- Received 2 Enquiries Regarding City Owned Property for Sale
- Put out an RFP for Asset Management/GIS Software and awarded the project.
- Council Orientation Presentation

MONTHLY HIGHLIGHT REPORTS

DATE : **January 5, 2015**

TO : Committee of the Whole

FROM: Fire Chief

HIGHLIGHTS : For the Month of December, 2014

- Calls for December: 40: 6 Fire, 9 Rescue, 25 First Responder
- Structure Fire – Dec 31 – Contained to room of origin.
- Volunteers – Santa Claus Parade and managed burn barrels for Gyro Park Light-Up.
- Dale/Kevin – Fire Prevention – Occupant loads at School Christmas concerts
- Volunteers – Assistance with Community Christmas Dinner
- Training – First Responder Instructors recertified under Red Cross program.

MONTHLY HIGHLIGHT REPORTS

DATE : **January 26th, 2015**

TO : Committee of the Whole

FROM: Corporate & Community Services

HIGHLIGHTS: For the Month of December 2014

- Organized Council and Staff Christmas Party
- Began preliminary planning for Family Day 2015
- Prepared for the Inaugural Meeting
- Assisted the Manager of Development and Engineering with the move to City Hall
- Organized the New elected officials workshop with Tracey Lorenson for Nelson, Rossland, Castlegar and Grand Forks
- Organized the New Council orientation sessions
- Provided ongoing communications for Public Notices, media releases and events
- Prepared agendas and meeting minutes

MONTHLY HIGHLIGHT REPORTS

DATE : January 26, 2015

TO : Committee of the Whole

FROM: Manager of Building Inspection & Bylaw Services

HIGHLIGHTS : For the Month of December, 2014

- **Bylaw Office Review**
- Working on amendments to the MTI Bylaw schedules
- Working on the Noise Control Bylaw
- Continuing with unsightly property notices
- Began work on a new Sign Bylaw for Grand Forks
- Following up on complaints
- **Building Inspections review**
- December has seen 1 new permit for a single family dwelling issued and 5 permits pending documentation
- 1 Single Family Dwelling
- Total of $3,817,816 in construction value to the end of December
- Several inquires for new housing starts going into 2015

MONTHLY HIGHLIGHT REPORTS

DATE : **January 26, 2015**

TO : Committee of the Whole

FROM: Manager of Operations

HIGHLIGHTS : For the Month of December, 2014

Roads/Parks/Facilities

- Snow removal. Night shift crew operational
- Install catch basin on 9th Street
- Assist in Gyro Park decorations – light-up
- Assist move into City Hall
- Budget preparation for 2015
- Inventory control count

Water/Sewer

- Sanitary sewer main line flushing
- Budget preparation for 2015
- Inventory control count

Electrical

- Continue meter verification foot patrol program
- Inventory control count
- Install Christmas decorations at Gyro Park

REQUEST FOR DECISION

— COMMITTEE OF THE WHOLE —

To:	Committee of the Whole
From:	Chief Financial Officer
Date:	January 10, 2015
Subject:	Bylaw 2009 – Electrical Utility Regulatory Amendment Bylaw
Recommendation:	RESOLVED THAT the Committee of the Whole recommends to Council to give first three readings to Bylaw 2009 – Electrical Utility Regulatory Amendment Bylaw

BACKGROUND:

At the Regular meeting on January 12, 2015 Alex Love, the City's Electrical Utility Consultant presented a memorandum regarding electrical utility rates for 2015.

Mr. Love presented two rate options for Council to consider. Option #1 would see an effective annual increase of 3.5%, or a 4.375% increase for consumption billed beginning March 1, 2015. Option #2 would see an effective annual increase of 2.5%, or 3.125% increase for consumption billed beginning March 1, 2015. Mr. Love has recommended Option #2 as it will meet the revenue requirements

Mr. Love also recommended wording and 2014 rates for manual meter reading. The suggested section has been added to the end of Schedule C.

City of Grand Forks Policy No. 1205 Public Works – Electrical Utility Rate Increases states that rates charged by the City are determined to be 98% of those rates charged by Fortis BC. As Fortis moved to stepped residential rates in 2012 and the City maintained a flat rate, the rate structures are no longer comparable. Staff will be bringing this policy to Council in the near future to discuss and address this issue.

Bylaw 2009 is attached and presents the two options presented by Mr. Love.

Benefits or Impacts of the Recommendation:

General:	The rate increase will enable the utility to meet its revenue requirement
Financial:	Power purchases from Fortis have increased 3.5% for 2015, which constitutes 75% of the Electrical operating budget.
Policy/Legislation:	All electrical rate adjustments are within the scope of Council's legislative authority

REQUEST FOR DECISION

— COMMITTEE OF THE WHOLE —

Attachments: DRAFT Bylaw 2009 – Electrical Utility Regulatory Amendment Bylaw

Recommendation: RESOLVED THAT the Committee of the Whole recommends to Council to give first three readings to Bylaw 2009 – Electrical Utility Regulatory Amendment Bylaw

OPTIONS:

1. **COTW COULD CHOOSE TO SUPPORT THE RECOMMENDATION.**
2. **COTW COULD CHOOSE TO NOT SUPPORT THE RECOMMENDATION.**
3. **COTW COULD CHOOSE TO REFER THE REPORT BACK TO STAFF FOR MORE INFORMATION.**

THE CORPORATION OF THE CITY OF GRAND FORKS

BYLAW NO. 2009

A Bylaw to Amend the
Electrical Utility Regulatory Bylaw No. 1975

WHEREAS in accordance with the Community Charter, Council may, by bylaw, regulate and control the electrical service of the City of Grand Forks and amend rates, terms and conditions under which electricity service will be provided and supplied to all users and for the collection of rates for the service provided;

NOW THEREFORE, Council for the Corporation of the City of Grand Forks in open meeting assembled, **ENACTS**, as follows:

1. This bylaw may be cited, for all purposes, as the **"Electrical Utility Regulatory Amendment Bylaw No. 2009, 2015".**

2. That Schedule "C" of Bylaw No. 1975, be deleted and replaced with a new Schedule "C", which is identified as "Appendix 1", and attached to this bylaw.

3. This bylaw shall come into force and effect, with all consumption billed for periods ended on or after March 1, 2015.

INTRODUCED this 26th day of January, 2015.

Read a **FIRST** time this ____ day of _____.

Read a **SECOND** time this ____ day of _____.

Read a **THIRD** time this ____ day of _____.

FINALLY ADOPTED this ____ day of _____.

_____
Mayor Frank Konrad

_____
Corporate Officer – Sarah Winton

OPTION 1 – 3.5% Annual, 4.375% at March 1st

SCHEDULE C

CITY OF GRAND FORKS
ELECTRICAL UTILITY RATES AND CONNECTION CHARGES

1. Residential Service

Available for residential usage in general including lighting, water heating, spaces heating and cooking.

(a)	Basic minimum service charge:	$17.18/month, plus
(b)	Electrical rate based on the actual consumption:	$0.10797 per KWH

2. Commercial/Industrial/Institutional Service

Available to all ordinary business, commercial, industrial, and institutional customers, including schools and hospitals, where electricity is consumed for lighting, cooking, space heating and single and three-phase motors. Customers requiring primary or secondary service beyond the normal single phase, 200 amp connection may be required to provide the necessary equipment and transformers, which may be situated on their property, at their own cost.

(a)	Basic minimum service charge:	$18.59/month, plus
(b)	Electrical rate per consumption for the first 200,000 KWH or less in a two-month billing period:	$0.11553 per KWH
(c)	Electrical rate per consumption for all usage above 200,000 KWH in a two-month billing period:	$0.08573 per KWH

3. Seasonal Loads (minimum period of service is three months)

Available for irrigation and drainage pumping and other repetitive seasonal loads taking service specifically agreed to by the City. The Customer will be required to provide all necessary service drop improvements including any step-down transformers at their direct cost unless otherwise specifically agreed to in writing by the City.

(a)	Basic minimum service charge:	$17.79/month, plus
(b)	Electrical rate based on the actual consumption:	$0.11553 per KWH

4. Service Charges

(d) Three Phase - Overhead/Underground At Cost

New development, whether residential or commercial, single phase or three phase services, requiring transformers and related equipment, shall be at the sole cost of the developer. All new service installations or upgrading of existing service costs are payable in advance of the installation and are subject to applicable taxes.

4.3 Temporary Construction Service

(a) Temporary service - 100 amp or less $250.00.

The City will make the connection to the City's distribution and install the appropriate meter. The Customer will supply and install all other required equipment

4.4 Meter Checking

All meters shall remain the property of the City and are subject to testing at regular intervals by the Electricity Meters Inspection Branch of the Canada Department of Consumer and Corporate Affairs, or a certified meter inspection facility, responsible for affixing government seals on meters. No seal shall be broken and if found so the account holder will be charged for any costs incurred by the City to rectify the issue.

If a customer doubts the accuracy of the meter serving his/her premises, he/she may request that it be tested. Such requests must be accompanied by a payment of the applicable charge as follows:

(a) Meter removal charge and "in-house" inspection $ 50.00.

(b) Canada Department of Consumer and Corporate Affairs or a certified meter inspection facility, should it become necessary, shall be paid as determined by that Agency along with a $50.00 administration charge.

If the meter fails to comply with the Electricity Meters Inspection Branch requirements and only if the meter is deemed to be overcharging, the City will refund the appropriate amount.

4.5 Estimation of Readings

The City may estimate energy consumption and maximum power demand from the best evidence available where a meter has not been installed or is found to

OPTION 2 – 2.5% Annual, 3.125% at March 1st

SCHEDULE C

CITY OF GRAND FORKS
ELECTRICAL UTILITY RATES AND CONNECTION CHARGES

1. Residential Service

Available for residential usage in general including lighting, water heating, spaces heating and cooking.

(a)	Basic minimum service charge:	$16.97/month, plus
(b)	Electrical rate based on the actual consumption:	$0.10667 per KWH

2. Commercial/Industrial/Institutional Service

Available to all ordinary business, commercial, industrial, and institutional customers, including schools and hospitals, where electricity is consumed for lighting, cooking, space heating and single and three-phase motors. Customers requiring primary or secondary service beyond the normal single phase, 200 amp connection may be required to provide the necessary equipment and transformers, which may be situated on their property, at their own cost.

(a)	Basic minimum service charge:	$18.37/month, plus
(b)	Electrical rate per consumption for the first 200,000 KWH or less in a two-month billing period:	$0.11415 per KWH
(c)	Electrical rate per consumption for all usage above 200,000 KWH in a two-month billing period:	$0.08471 per KWH

3. Seasonal Loads (minimum period of service is three months)

Available for irrigation and drainage pumping and other repetitive seasonal loads taking service specifically agreed to by the City. The Customer will be required to provide all necessary service drop improvements including any step-down transformers at their direct cost unless otherwise specifically agreed to in writing by the City.

(a)	Basic minimum service charge:	$17.57/month, plus
(b)	Electrical rate based on the actual consumption:	$0.11415 per KWH

4. Service Charges

(d) Three Phase - Overhead/Underground At Cost

New development, whether residential or commercial, single phase or three phase services, requiring transformers and related equipment, shall be at the sole cost of the developer. All new service installations or upgrading of existing service costs are payable in advance of the installation and are subject to applicable taxes.

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4.5 Estimation of Readings

The City may estimate energy consumption and maximum power demand from the best evidence available where a meter has not been installed or is found to

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2015-2019 FINANCIAL PLAN REVIEW AGENDA

January 26, 2015 - Committee of the Whole Meeting
Council Chambers - 11:00 A.M.
OPERATING PRESENTATION

1. Chief Administrative Officer Introduction

2. Fee For Service presentations
   - Boundary & District Arts Council
   - Boundary Country Regional Chamber of Commerce
   - Boundary Museum
   - Grand Forks Art Gallery

LUNCH BREAK

3. Chief Financial Officer
   - Fee For Service Summary
   - 2014 operating review
   - 2015 Financial Plan timeline review

4. Operating Budget Presentations
   - Legislative, Administration & Community Services
   - Finance
   - Building Inspection & Bylaw Services
   - Fire Rescue Services
   - Development & Engineering Services
   - Operations – Administration, Roads, Parks, Facilities, Airport
   - Electrical Department
   - Water Department
   - Waste Water Department

5. Chief Financial Officer
   - 2015 Operating Budget summary
   - 2014 RDKB Requisition review
   - Revenue review

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2015 BUDGET TIMELINE

Date(s)	*Responsibility*	*Description of Activity*
In Progress	Department Heads	2015 Operating and Capital Budgets Five Year Financial Plan
December 8, 2014	CFO	Budget Schedule to Council
January 26, 2015 11:00am	COTW Council Workshop	Fee For Service Presentations Operations budget presentations by Managers
February 10, 2015 11:00am	COTW Council Workshop	Capital Budget Presentations by Managers Strategy session to identify Council's prioritization of capital items presented by management and direction of new capital items by Council.
February 23, 2015 11:00am	COTW Council Workshop	Draft Financial Plan Presentation
March 9, 2015	COTW Introduction	Introduce 2015-2019 Financial Plan Bylaw
March 23, 2015	Regular Council Meeting	1st, 2nd and 3rd reading 2015-2019 Financial Plan Bylaw
April 7, 2015	COTW Meeting	Introduce 2015 Tax Rates Bylaw
April 7, 2015	Regular Council Meeting	Adopt 2015-2019 Financial Plan Bylaw
April 20, 2015	Regular Council Meeting	1st, 2nd and 3rd readings 2015 Tax Rates Bylaw
May 4, 2015	Regular Council Meeting	Adopt 2015 Tax Rates Bylaw

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The City of Grand Forks
2015-2019 Financial Plan
LEGISLATIVE, ADMINISTRATION & COMMUNITY SERVICES

Primary Functions

Corporate Administrations main function is to ensure that the corporation is meeting its legislative obligations. The Corporate primary functions include records management and retention of documents, responsibility for preparation of agendas and minutes of Council, provides administrative support for Mayor and Council, and assists in the development of policies, bylaws and contracts.
Community Services falls under the Corporate Services blanket and involves the coordination and leadership of events that are City initiatives and other community events that arise. Communications plays a major factor and has been an additional and important role in the department that provides an integral information exchange with Council, staff and the public.

2015 Objectives & Major Plans

- Records management
- Development and implementation of Corporate Communications Strategy
- Increase Economic Development strategies that promote Open for Business philosophy i.e. extensive advertising campaign, business attraction campaign, community engagement and outreach
- Planning of Community events
- Continued relationship development with the provincial and federal governments

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Administration	
Acting Chief Administrative Officer	1
Acting Corporate Officer	1
Deputy Corporate Officer	vacant
Administrative Assistant	1

The City of Grand Forks
2015-2019 Financial Plan

ADMINISTRATION

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Mayor & Council	195,891	200,189	197,955	201,000				
Legislative Committees	19,021	52,500	36,847	45,000				
Administration	385,863	519,279	531,000	450,000				
Protective Services	37,296	39,614	32,709	38,760				
Fee for Service	216,300	239,900	241,900	238,400				
City Events	0	10,000	7,160	10,000				
Communications	33,391	28,200	22,118	27,000				
Elections	0	20,000	14,036	5,000				

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The City of Grand Forks
2015-2019 Financial Plan
General Government – Financial Services

Primary Functions

The finance department provides financial expertise, reports on the financial affairs, administers financial legislation, and develops and implements financial controls within the organization. The finance department also administers Information Technology and Risk Management for the City.

Financial reporting includes, but is not limited to, the annual financial statements, the annual financial plan, Provincial Reporting - Local Government Data Entry (LGDE) and the Statement of Financial Information (SOFI), GST, PST, and WCB. Internally, the City provides monthly and ad hoc reports for Council and staff.

The finance department provides accounting services including accounts payable/receivable, payroll, bi-monthly utility billing, and cemetery and business license administration. Customer service plays a key role as the Finance department also provides reception and telephone answering services for the City.

2015 Objectives & Major Plans

- Detailed analysis of the entire financial plan to incorporate Asset Management
- Continuing water meter implementation and billing set-up for residential customers
- Begin implementation of Vadim software upgrade including utility e-billing, Vadim E3
- Begin implementation of Asset Management software including electronic timesheets
- Continue green initiative to go digital where possible
- Continue cross training and succession planning
- Continue work on communications to improve operations and customer service

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Chief Financial Officer	1
Accountant/Comptroller	1
Payroll/Payables Clerk	1
Revenue Clerk	1
Accounting Clerk	1
Administrative Assistant	1
TOTAL	**6**

The City of Grand Forks
2015-2019 Financial Plan

FINANCIAL SERVICES

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Finance	315,308	373,963	293,130	353,000				

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The City of Grand Forks
2015-2019 Financial Plan
General Government – Bylaw Services & Building Inspection

Primary Functions

The Building Inspection Office has being working to streamline the building permit process and ensure that all construction within our municipality is code compliant. To date the Building Inspection Office has managed to complete and close 48 building files since July 2, 2013. The Building Inspection Office currently has 92 open building files and 5 pending building files in process. The Building Inspection Office has also issued 51 building permits in 2014 with a construction value of $3,871,816.00.

The Bylaws office will see the City moving forward in updating several more bylaws this year. The City has been successful in cleaning up several unsightly properties this past year. The Bylaw Office will continue to inform the residents with information about the bylaws and enforce the bylaws when required. The City has also been working with the owners of illegally parked vehicles to have them removed from the boulevards without issuing warning letters or tickets.

2014 Objectives & Major Plans

- *To continue with the follow up on Building Permits*
- *To continue with the development of the City's Bylaws*
- *To continue with the cleanup of unsightly properties*
- *To continue with the removal of unlicensed vehicles on the City's boulevards and streets*
- *To proceed with succession planning with the training of a staff member for this position in the future.*

Employees

These functions are currently supported by the following employee compliment (FTE – Full Time Employee). Special projects assistance is sometimes obtained seasonally. In 2015 with budget approval the Building Inspection & Bylaw Enforcement Office would begin with the training of a temporary employee for a period of 8 months in 2015

	FTE
Administration	1.8

2015 Objectives & Major Plans

In 2015, the succession planning for the position of Building Inspection & Bylaw Service would commence. This training would require several months of on the job training with the employee successfully completing the Level 1 Certification in Bylaw Enforcement and in the following year completing the Level 1 Building Officials Certification.

The City of Grand Forks
2015-2019 Financial Plan

BYLAW SERVICES & BUILDING INSPECTION

Administration (Total Variance) **+$75,000.00**

Removal of the burnt out structure located at 721 65th Avenue	$15,000.00
Temporary employee for succession planning	$60,000.00

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Bylaw Services	6,361	80,207	64,561	125,600				
Building Inspection	8,119	90,207	63,573	98,500				

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The City of Grand Forks
2015-2019 Financial Plan
Fire Rescue Services

Primary Functions

Grand Forks Fire/Rescue provides emergency services to the City of Grand Forks and Rural Grand Forks through a contract for service agreement with the Regional District of Kootenay Boundary. The Services provided include; fire suppression, first responder medical, highway rescue, low and high angle rope rescue, swiftwater rescue, confined space rescue, and hazardous materials response. We also perform fire inspection, fire investigation, prevention and education duties in the community as well as being the municipal emergency coordinator assisting the Regional District executing the emergency plan for the city and boundary areas during major events. The fire department responded to 468 emergency callouts in 2014.

2015 Objectives & Major Plans

- *Arrival and place into operation the new platform ladder truck.*
- *Extensive training on platform ladder truck.*
- *Continue Class 3 driver training for volunteers*
- *Implement response callout app program*
- *Review and renew fire services contract with the Regional District of Kootenay Boundary*
- *Continue working on long range fire protection plans for rural area with Regional District of Kootenay Boundary.*
- *Establish a Junior Firefighter Program with Grand Forks Senior Secondary School.*
- *Host Firebells and Fanfare antique apparatus parade and show & shine weekend.*
- *Continue Construction of Fire Training Ground.*
- *Increase volunteer benefits from single to family coverage, augmenting recruitment and retention opportunities.*

Employees

The fire department currently employs two full time staff and 45 volunteer firefighters.

Administration (Total Variance)

2014 expenditures were within budget and are projected to have an increase of 2.01% in 2015

The City of Grand Forks
2015-2019 Financial Plan

FIRE RESCUE SERVICES

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Fire Rescue Operations	391,437	464,705	430,608	474,964				
Fire Fleet	30,181	53,200	50,476	53,600				
Total	**421,618**	**517,905**	**481,084**	**528,564**				

2013 below budget due to wage accrual adjustment

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The City of Grand Forks
2015-2019 Financial Plan
General Government – Development & Engineering

Primary Functions

The Development and Engineering department's primary planning and technical functions are to provide engineering services support to facilities, parks, roads, water, sewer and electrical projects which encompass the Municipality's asset renewal, repair or replacement program both operational and capital. The department also provides development services support for subdivisions and development ensuring compliance with zoning, land use and the visions and guiding principles of the sustainable community plan. The department is committed to providing quality service that enhances and advances quality of life through long term planning for the community, encouraging strategic economic development, promoting tourism and downtown revitalization incentives.

2015 Objectives & Major Plans

- Asset Management – Long Term Implementation Strategy
- Tax Incentive Bylaw Implementation for Downtown Businesses
- Zoning and DCC Bylaw Revisions and Implementation
- Long Term Planning and Design Criteria Policies for Development
- Pending Development and Construction Activity
- Implementation/Co-ordination of Strategic Local and Regional Projects
- Continue to Promote the City of Grand Forks Through the Development Showcase, Economic Profile and "Open for Business" Initiative
- Continue to Build GIS Information to Streamline Day-to-Day Operations
- Continue to Apply for Grant Funding to Secure Funding for Infrastructure Repair, Replacement and Renewal
- Continue to Support Local User Group's Initiatives and Projects

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Manager of Development & Engineering – Sasha Bird	1
Planning Technician – Kathy LaBossiere	1
Engineering Technologist – Dolores Sheets	1
Total FTE's	**3**

The City of Grand Forks
2015-2019 Financial Plan **DEVELOPMENT & ENGINEERING SERVICES**

Total Variance **+$177,000**

Item 1	$95,000	Wage Re-Allocation
Item 2	$50,000	Economic Development
Item 3	$12,000	Software Licensing
Item 4	$10,000	Pending Development Land Assist
Item 5	$ 5,000	Inflation
Item 6	$ 5,000	Airport Subdivision Charges

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Zoning & Planning	140,641	125,175	103,926	156,360				
Economic Development		12,614	15,773	69,200				
Engineering	62,466	126,585	105,927	176,000				
Slag	54,908	0	4,238	6,000				

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The City of Grand Forks
2015-2019 Financial Plan
General Operations

Primary Functions

General operations include maintaining all municipally owned vehicles and equipment, providing repairs and preventative maintenance to all administrative, fire, and public works vehicles and equipment, maintaining all municipal roads, sidewalks and pathways including ice and snow removal, asphalt repairs and paving, catch basin and culvert repairs and cleaning and street sign repairs and maintenance. Also included is maintaining the parks and grounds of all municipally owned properties including structure repairs and lawn and tree maintenance, operating the Municipal Campground and operating and maintaining the Municipal Cemetery.

2015 Objectives & Major Plans

- Install and maintain hanging baskets and planters;
- Replant planters at the entrance to City Park;
- Continue upgrade to exterior of all Park Facility buildings;
- Install drainage systems where required and in accordance with best management practices;
- Complete 3rd year of the 3 year grave restoration program;
- Continue with required alley upgrades;
- Continue upgrades at the Municipal Campground including planting trees;
- Upgrade road and pathway signage throughout the municipality;
- Campground administration re-direction

Several other projects, not limited to the above will be carried out as required and as time, weather and funds permit.

The City of Grand Forks
2015-2019 Financial Plan **GENERAL OPERATIONS**

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Administration	
Public Works Admin Assistant	1
Public Works Foreman	1
Operator 4/Airport	1
Fleet Maintenance Tech	1
Operator 3	2
Operator 2	1
Roads Coordinator	1
Parks Maintenance 3	2
Parks Maintenance 2	1
Parks/Buildings Coordinator	1
TOTAL FTE's	**12**

2014 on budget
2% wage increase for employees in 2015
Inflation factor for materials in 2015

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Administration	639,977	612,945	661,381	619,000				
Transportation Services	584,662	683,649	559,318	575,000				
Parks & Cemetery	755,499	773,676	693,367	710,000				
Facilities	268,178	306,599	245,088	310,000				
Airport	164,557	156,821	156,368	158,500				
Equipment (Fleet)	87,707	171,352						

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The City of Grand Forks
2015-2019 Financial Plan
Electrical Services

Primary Functions

The City of Grand Forks owns and maintains an electrical distribution system within our city limits. Power for our Electrical Utility is purchased from Fortis BC which provides electricity through two substations. Electricity is delivered to our customers through approximately 50 kilometers of electrical lines. Operating and maintaining the electrical utility includes connecting and disconnecting customers, maintaining the street light system, reading electrical meters and general system maintenance, such as, replacement of poles and primary and secondary wires. The electrical department also installs upgrades to the electrical distribution system for all new subdivisions and developments.

2015 Objectives & Major Plans

- Replacement of transformers with PCB's >50ppm;
- Continuation of pole replacement program; Test and treat 550 poles
- Riverside Re-conductor project
- Substation upgrades; Re-closer upgrades
- Meter re-certification – 400 left to do

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Administration	
Power Distribution Coordinator	1
Power Lineman	2
TOTAL FTE'S	**3**

The City of Grand Forks
2015-2019 Financial Plan

ELECTRICAL SERVICES

2014 on budget
2% wage increase for employees in 2015
Inflation factor for materials in 2015

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Electrical Operations	3,454,043	3,858,670	3,639,000	3,879,000				
Electrical Transfer to General	410,000	420,000	420,000	433,000				
Electrical Amortization	39,479	42,000						
Total	**3,903,522**	**3,900,670**						

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The City of Grand Forks
2015-2019 Financial Plan
WATER Services

Primary Functions

The City of Grand Forks Water Department has 1650 water utility customers and is responsible for maintaining 43 kilometers of various sized water mains, inspecting, maintaining and flushing 258 fire hydrants, maintaining over 500 valves, repairing and replacing existing water services, operating and maintaining 5 groundwater wells and 3 chlorination units, operating and maintaining 2 reservoirs, 1 Booster station and 1 PRV station, inspecting and maintaining the cross connection control program, reading commercial and industrial meters and implementing recommendations from the Well/Aquifer Protection Plan.

2015 Objectives & Major Plans

- Completion of the Universal Metering Program;
- Hydrant flushing/repair/refurbishing (color coding) and replacement program;
- Locating and mapping of all water system infrastructure;
- Increase security of all water system infrastructure; ie. Pumphouses not alarmed
- Continued education for water conservation measures; Participate in Drinking Water Week
- Implementing recommendations from the Well and Aquifer Protection Plan. – Increase testing
- Implement and update Cross-Connection Control Program

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Administration	
Water and Sewer Coordinator	0.5
Utilities Operator 2	1
Utilities Operator 1	0.5
TOTAL FTE'S	**2**

The City of Grand Forks
2015-2019 Financial Plan

WATER SERVICES

2014 on budget
2% wage increase for employees in 2015
Inflation factor for materials in 2015

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Water Operating	745,432	777,933	741,331	767,300				
Water Amortization	196,257	200,000						
Total	**941,689**	**977,933**						

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The City of Grand Forks
2015-2019 Financial Plan
Waste Water Treatment Services

Primary Functions

The City of Grand Forks' Wastewater Department provides customer services relating to the wastewater collection system, wastewater treatment plant and combined sewer overflow reduction. These services are designed and managed to protect our local water resources; both our rivers and groundwater. Our wastewater staff is responsible for the operation and maintenance of 36 km of sanitary sewer mains. Staff duties include operation and maintenance of the entire wastewater collection system within the City of Grand Forks – including flushing of sewer mains, operating and maintaining lift stations, the wastewater treatment plant and sewage lagoons, as well as, responding to sewer emergencies 24/7.

2015 Objectives & Major Plans

- Sewer main flushing program;
- Data acquisition of existing sewer infrastructure;
- Inspections and repairs;
- Increase public education to reduce trouble calls to our lift stations;
- Reduce overall storm inflow within the collection system; through I&I Program
- Implement infrastructure main line video inspection program
- Repair existing sanitary sewer service "frequent flyer" issues
- Upgrading existing lift station pump impellers – avoid clog repairs

Employees

These functions are currently supported by the following employee complement (FTE – Full Time Employee).

	FTE
Water and Sewer Coordinator	0.5
Utilities Operator 2	1
Utilities Operator 1	0.5
TOTAL FTE'S	**2**

The City of Grand Forks
2015-2019 Financial Plan

WASTE WATER TREATMENT SERVICES

2014 on budget
2% wage increase for employees in 2015
Inflation factor for materials in 2015

Expenditures	Actual 2013	Budget 2014	Actual 2014	Five Year Financial Plan 2015	2016	2017	2018	2019
Waste Water Operating	624,651	688,046	662,557	672,200				
Waste Water Debt	29,112	103,849	103,849	104,000				
Waste Water Amortization	162,642	165,000						
Total	**816,405**	**956,895**						