Cape Breton Regional Municipal Council

ADDENDUM
to
Public Hearing Held
February 20, 2018

Zoning Amendment Application – 1037 Chris Skidmore, East Bay Highway, Big Pond (PIDs 15327539, 15327547, 15327554, and 15327562:

Written Submissions Received at the Public Hearing:

MY NAME IS ROY MAC INNIS
I RESIDE IN BIG POND CENTRE

MR. MAYOR AND COUNCILLORS

WHY I OPPOSE ZONING AMENDMENT #1037

THE PROPERTY I FARM IS ADJACENT TO THE OPPOSED RV

PARK. SINCE SEPT. 8, 1866, WHEN IT WAS GRANTED TO PETER AND STEPHEN MAC KINNION, THIS LAND HAS BEEN FARMED. IN 1982 I DECIDED THAT I WOULD FARM FULL TIME. I PLOUGHED FIELDS THAT HAD NOT SEEN A PLOUGH IN OVER 60 YEARS. I BASICALLY FARMED ALL OF BIG POND CENTRE. I HAD AS MANY AS 65 HEAD OF CATTLE. I HAVE CUT AND SOLD HAY, RAISED AND SOLD BEEF FROM MY FARM. I HAVE EMPLOYED LOCAL STUDENTS, I HAVE SUPPORTED LOCAL BUSINESS AND PROVIDED A VERY HEALTHY PRODUCT. IT IS IMPORTANT TO NOTE: SMALL FARMING IS GOOD FOR A COMMUNITY AND CONTRIBUTES TO THE LOCAL ECONOMY.

I WOULD LIKE TO BRING TO YOUR ATTENTION SOME POINTS FROM THE NOVA SCOTIA "ENVIRONMENTAL GOALS AND SUSTAINABLE PROSPERITY ACT" .

PART 3- PAGE 2
FOUNDATION AND PRINCIPLES OF ACT
(2)B ENVIRONMENTALLY SUSTAINABLE ECONOMIC DEVELOPMENT THAT RECOGNIZES THE ECONOMIC VALUE OF THE PROVINCE'S ENVIRONMENTAL ASSETS IS

ESSENTIAL TO THE LONG-TERM PROSPERITY OF THE PROVINCE.
(2)C THE ENVIRONMENT AND THE ECONOMY OF THE PROVINCE ARE A SHARED RESPONSIBILITY OF ALL LEVELS OF GOVERNMENT, THE PRIVATE SECTOR AND ALL PEOPLE OF THE PROVINCE.

PART 4-PAGE 5
LONG TERM OBJECTIVES OF PROVINCE:
(2)(t) LOCAL FOOD CONSUMPTION IS SUPPORTED AND ENCOURAGED, WITH THE GOAL OF 20 PER CENT OF THE MONEY SPENT ON FOOD BY NOVA SCOTIANS BEING SPENT ON LOCALLY PRODUCED FOOD BY 2020.

(2)U LOCAL FOOD PRODUCTION IS SUPPORTED AND ENCOURAGED, WITH THE GOAL OF INCREASING THE NUMBER OF LOCAL FARMS BY 5% BY 2020.

MY NIECE AND I STARTED ORGANIC FARMING LAST SPRING AND THE PLAN FOR 2018 IS TO DOUBLE THE NUMBER OF GARDENS, WE HAVE ALREADY PURCHASED ANOTHER GREENHOUSE AND WE WILL NEED TO HIRE SUMMER STUDENTS TO WORK WITH US IN THE GARDENS. THE PLAN IS TO SELL AT THE FARMERS MARKET AND WE ARE CONSIDERING A ROADSIDE STAND TO SELL PRODUCE AND EGGS FROM THE FREE RANGE HENS. WE ARE ENCOURAGED BY THE FEED BACK THAT WE HAVE RECEIVED FROM THE LOCAL COMMUNITY.

I WOULD LIKE COUNCIL TO UNDERSTAND THE PRODUCT WE ARE PRODUCING CONTRIBUTES TO THE CAPE BRETON ECONOMY

I WOULD LIKE TO TALK ABOUT THE ADVERSE AFFECT OF FUMES THAT WILL BLOW ACROSS THE FARM.

THE PLANNING DEPARTMENT STATED IN ITS EVALUATION #2: DUST AND FUMES EMANATING FROM THE SITE: "THERE IS NO REASON TO BELIEVE THAT FUMES EMANATING FROM THE SITE WOULD BE A PROBLEM", THIS I WILL REFUTE.

THE ORGANIC GARDENS WILL BE APPROXIMATELY 15M TO 20M FROM THE RV'S AND THE HAY FIELDS WILL BE 12M FROM THE RV'S.

THE FUMES WILL OCCUR WITHIN 20M TO 200M OR MORE AND THIS IS INFLUENCED BY THE PREVAILING WINDS THAT COME FROM THE WEST BLOW ACROSS MY FARM , WHICH IS ON THE EAST SIDE OF THE PROPOSED RV PARK.

FUMES FROM THE CAMPGROUND EMANATING FROM GAS AND DIESEL TRUCKS, DIESEL GENERATORS, PROPANE FROM RV'S, BBQ'S AND FIRE PITS (BURNING PLASTICS, BEER CANS) PRODUCE A TOXIC COCKTAIL, THAT WILL LAND ON PLANTS AND WILL BE ABSORBED BY THE PLANTS AND THE SOIL. THESE FUMES IF THEY LAND IN THE BROOK THEY CAN BE CARRIED OUT TO THE BRAS D'OR LAKE.

THE MAIN CONSTITUENTS OF VEHICLE EMISSIONS ARE CARBON DIOXIDE, NITROGEN OXIDES, VOLATILE ORGANIC COMPOUNDS(EG. BENZENE, TOLENE) AND PARTICULATES. CARBON MONOXIDE FROM CAR EXHAUST IS POISONOUS TO HUMANS AND WILL STUNT THE GROWTH OF PLANTS. PLANTS AND ANIMALS INCLUDING THOSE CULTIVATED OR RAISED FOR AGRICULTURE, MAY ACCUMULATE TOXINS AT LEVELS THAT POSE HEALTH

HAZARDS, INCLUDING THOSE FOR HUMANS THAT CONSUME EXPOSED ORGANISMS.

THE ENVIRONMENT TAKES A BRUTAL IMPACT FROM THE CHEMICAL COMPOUNDS RELEASED INTO THE AIR. THERE ARE OBVIOUS EFFECTS, LIKE THE DEPLETION OF THE OZONE LAYER AND LESS OBVIOUS EFFECTS SUCH AS DAMAGE TO PLANTS.THE LEAVES OF PLANTS CAN CLOG WITH THE PARTICLES RELEASED FROM VEHICLE EMISSIONS MAKING IT HARD FOR THE PLANT TO PHOTOSYNTHESIZE.

IT IS SCIENTIFICALLY PROVEN THAT FUMES AFFECT THE DEVELOPMENT AND GROWTH OF PLANTS.THE ORGANIC GARDENS WILL NOT ATTAIN RECOGNIZED CERTIFICATION AND IT WOULD NOT BE MORALLY OR ETHICALLY RIGHT TO SELL TO OUR CUSTOMERS, A PRODUCT THAT IS CONTAMINATED.

WHAT FACTS WERE PRESENTED TO SHOW THAT FUMES FROM THIS CAMPGROUND WILL NOT ADVERSELY AFFECT THE ORGANIC FARM RIGHT NEXT DOOR?

WHAT FACT BASED INFORMATION HAS BEEN PROVIDED REGARDING THE RISK OR KNOWN ADVERSE EFFECTS ON THE ENVIRONMENT (INCLUDING ITS EFFECT ON SENIORS AND CHILDREN, SPECIES AT RISK AND THEIR HABITATS) AS A RESULT OF FUMES?

WHAT SCIENCE AND ENGINEERING METHODOLOGIES WERE USED TO DETERMINE THAT ONLY ASPHALT COVERED ROADS ARE SUFFICIENT TO MITIGATE THE ADVERSE EFFECTS OF FUMES? WHAT ABOUT PREVAILING WINDS?

HAVE ANY MITIGATION MEASURES BEING SUBMITTED TO ADDRESS OTHER ADVERSE EFFECTS OF FUMES EMANATING FROM NUMEROUS FIRE PITS, PROPANE AND DIESEL?

IN CLOSING, I REMIND COUNCIL, THAT THE DIRECTOR OF PLANNING, HAS POINTED OUT THAT YOU ARE TO ONLY CONSIDER PART 2-17E WHEN MAKING YOUR DECISION.

PART 2-17E EMPHASIZES THAT THE EVALUATION OF THE PROPOSAL SHOULD BE CONSIDERED SPECIFICALLY FROM THE PERSPECTIVE OF DUST AND FUMES EMANATING FROM THE SITE.

COUNCIL HAS A RESPONSIBILITY TO PROTECT ME. IF THIS GOES AHEAD CONTINUING ORGANIC FARMING WILL LIKELY NOT HAPPEN.

I HAVE PROVIDED SCIENTIFIC INFORMATION TO HELP YOU WITH YOUR DECISION. VOTE, NO, TO THIS AMENDMENT. THANK YOU.

References

Ashenden, T. W., Ashmore, M., Bell, J. N. B., Bignal, K., Binnie, J., Cape, J. N., ... & Honour, S. (2003). Impacts of vehicle emissions on vegetation. WIT Transactions on The Built Environment, 64.

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Impacts of vehicle emissions on vegetation

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Abstract

A system has been constructed which provides stable, realistic urban atmospheres with pollutant mixtures at concentrations and proportions relevant to those found at roadsides in urban areas. This system has been used in conjunction with a range of field sites to assess the impacts of urban pollution mixtures on a broad range of plant species of contrasting morphological and functional types. Impacts of pollution treatments have been assessed in terms of visible injury symptoms, growth, rates of stomatal conductance, senescence, and leaf surface characteristics. Our data clearly demonstrate that levels of pollutant mixtures typical of urban areas do have species-specific, direct effects on plant growth and may make plants susceptible to other environmental stresses.

1 Introduction

The main constituents of vehicle emissions are carbon dioxide (CO_2) nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs eg benzene, toluene) and particulates. Urban environments always contain complex mixtures of these pollutants and they are often present at high concentrations. Potentially, these urban pollutant 'soups' may have direct toxic effects on vegetation or increase susceptibility of plants to other environmental stresses. While previous research has examined the effects of individual components of urban pollution on plants, there is a dearth of information impacts of pollutant mixtures. Some field-based studies have shown symptoms of damage to plants

Good

The Effects of Air Pollution on Plants and Animals

Submitted by knorrell on Mon, 10/18/2010 - 3:24pm

The Effect of Vehicle Exhaust on Plants and Humans

One of the main contributors of air pollution is vehicle exhaust. When a vehicle is on, whether in motion or idling, exhaust is released from the tailpipe. There are some cities that try to reduce the amount of exhaust released from idling buses. In the greater Philadelphia area for example, there are signs posted at bus stops that ask the drivers to turn off the bus if they are going to wait for a specific amount of time. But, there are vehicles other than public transportation buses that cause air pollution. As Delaney et al. stated in their article, "Transit industry gears up and responds to climate challenges", most of land transportation vehicle emissions - 85% - belong to personal automobiles (2009). Since automobiles are the main contributors to transportation emissions relative to surface vehicles, commuting greatly impacts the effect of exhaust on the people and the environment around the cars. Drivers spend 1-1.5 hours per day traveling; mainly due to commuting, (Zurrbier et al., 2010). People spend a large chunk of time commuting in cars, or other diesel or petrol fueled vehicles, which significantly increases the likelihood that they are inhaling the vehicle exhaust from their own vehicle and the vehicles around them, (Zurrbier et al., 2010). Related or unrelated to the statistics about commuting, the mortality rate, due to air pollution, is 50,000 deaths per year in the United States (Palmgren et al., 2003). This number might increase in the future; the amount of diesel cars on the road is increasing as the years continue, (Rudell et al., 1999).

50,000 deaths/yr U.S. Air Pollution

Diesel exhaust is composed of many chemical compounds: carbon monoxide (CO), nitric oxide (NO), nitrogen dioxide (NO_2), hydrocarbons (HCs), and aldehydes," (Rudell et al., 1999). The particles that are emitted from petrol and diesel engines can be large to ultrafine particles in size. The particles are created in the engine, the exhaust pipe, or directly after release at high temperatures, (Palmgren et al., 2003). These compounds, or particles, are released into the air from vehicles and are inhaled by humans and other animals. In the Soll-Johannin et al. paper, the authors described the particles as a formation of "incomplete combustion of fossil fuels," (1998). The incomplete combustion particles vary in their adverse effects on animals. Some particles are not as harmful as other particles; the toxicity depends on the size of the particles. The larger the diameter the more harmful the particle is in human lungs, (Schwartz, 2000).

It is easy to imagine that the more a person works near roads with heavy traffic the more particles that they will inhale during their lifetime. But, the workers do not, necessarily, need to be outside to experience the effects of the particles. Rudell et al. found out in their paper that "drivers of lorries, buses, cars, and heavy equipment vehicles are exposed to the exhaust through the air inlet of the vehicle," (1999). It is harder to avoid the particles that are emitted from your vehicle and the vehicles around you when they are seeping in through the air inlet of your automobile. The particles not only impact the driver, but the passengers as well. In public transportation buses and school buses, the passengers are just as harmed as the driver. In fact, the school bus is a major component of the inhaled diesel particulate matter for a child, (Marshall & Behrentz, 2005).

inhaling exhaust particles

For children that do not ride school buses, the location of their homes or daycare centers is a major contribution to the levels of inhaled diesel particulate matter. In their study, Burr et al. showed a positive association between air pollution from heavy traffic on the street of residence and respiratory disorders in the children, (2004). While children are more susceptible to the effects of air pollution because of "their higher breathing rates, and developing lungs and immune system," does not mean that adults should ignore the warnings, (Housten et al., 2006). Adults can acquire illnesses from air pollution like children.

Compared to children, adults are around air pollution for longer periods of time, due to commuting. Even though adults have a lower breathing rate, and stronger lungs and immune systems, they are not invincible against air pollution. For individuals of all ages, air pollutants have a strong association with negative effects on the respiratory health of an individual. Some symptoms of air pollution contamination in individuals are: problems with the eyes, nose, and throat, labored breathing, coughing, phlegm, wheezing, and headaches, (Rudell et al., 1999). While these symptoms seem mild and benign, long term exposure to high levels of air pollution can cause chronic disease, (Burr et al., 2004). It does not take much to be exposed to air pollution. The particles move with the air. In Philadelphia, Pennsylvania, airborne particles, at common concentrations for the city, were associated with daily deaths, (Schwartz, 2000).

The airborne particles that move with the wind and are inhaled by animals are deposited in the lungs and will stay in the lungs for long periods of times, up to several months, (Palmgren et al., 2003). There is a large possibility that exhaust is carcinogenic in human beings. A carcinogenic pathogen increases the likelihood that the possessor of the substance will develop cancer. Soll-Johanning et al. found an increased risk of 25% for cancer, a 60% increase for men and a 160% increase for women who were exposed to air pollution for long periods of time, (1998). Drivers of buses, trucks, and heavy equipment, for their job, have increased risk of developing cancer the longer they work at their jobs. Jobs, on average, last 8 hours per day and 5 days a week. Drivers of vehicles are constantly exposed to the carcinogens when they are just traveling. Driving as a part of their jobs increases the time individuals are exposed to the air particles from their exhaust.

Human beings are not the only organisms affected by vehicle exhaust. "Motor vehicles emit a complex mixture of airborne pollutants, many of which may have ecological effects," (Bignal et al., 2008). The environment takes a brutal impact from the chemical compounds released into the air. There are obvious effects, like the depletion of the ozone layer and less obvious effects such as damage to plants. The leaves of plants can get clogged with the particles released from vehicle emissions making it hard for the plant to photosynthesize. Many plants are killed off by vehicle exhaust. On the edge of highways there is a certain distance before plants start to grow with vigor.

Plants photosynthe

Bignal et al. experimented on the effect of vehicle emissions and bryophyte plants near roadways. Near highly used roads there were more nitrogen-tolerant plants than in areas further from the road; vehicle emissions release nitrogen into the atmosphere. The ions emitted by vehicles do not last long in plumes in the air. Near busy roads some of the exhaust falls to the ground in soot particles, which can affect the plants, (Jayaratne et al., 2010). As noted in the Bignal et al. experiment the bryophytes were not found in highly urbanized areas close to pollution sources, because of the high concentrations of smoke and sulfur dioxide, (2008). Even if the plants still exist in the locations near highly traveled roads they, similarly to humans, have increased susceptibility to environmental stresses, (Bignal et al., 2008).

Even though the impacts of vehicular emissions are widely studied, people still use vehicles for a majority of their trips. Projjal Dutta, the Director of Sustainability for the Metropolitan Transportation Authority for New York City, believes that "Americans have not been connecting the dots between transportation and CO_2 emissions," (Delaney et al., 2009). The problem is not the lack of proof, but, the willingness of the global population to connect vehicular transportation with harmful chemical compound emissions.

CHAPTER 7 OF THE ACTS OF 2007
amended 2012, c. 42

An Act Respecting Environmental Goals and Sustainable Prosperity

Table of Contents

(The table of contents is not part of the statute)

Short title

1 This Act may be cited as the *Environmental Goals and Sustainable Prosperity Act*. 2007, c. 7, s. 1.

Interpretation

2 In this Act,

(a) "emission target" means an emission target set out in this Act or established by the regulations;

(b) "greenhouse gas" means any of the following gases:

(i) carbon dioxide,

(ii) methane,

(iii) nitrous oxide,

(iv) hydrofluorocarbons,

(v) perfluorocarbons, and

(vi) sulphur hexafluoride;

(c) "legally protected" means dedicated, in a legally recognized manner, primarily to the protection of biodiversity and natural processes, and includes

(i) designated, established or protected under an enactment, including the *Wilderness Areas Protection Act*, the *Special Places Protection Act*, the *Provincial Parks Act*, the *Canada Wildlife Act* and the *Canada National Parks Act*,

(ii) subject to a conservation easement under the *Conservation Easements Act*, and

(iii) held by a non-governmental charitable land trust;

(d) "Minister" means the Minister of Environment;

(e) "net loss of wetlands" means net loss of wetland area and function, including habitat;

(f) "Round Table" means the Round Table established pursuant to the *Environment Act*;

(g) "sustainability" means meeting current human needs without undermining the capacity of the environment to provide for those needs over the long term;

(h) "sustainable prosperity" means seizing today's opportunities without compromising tomorrow, while working together for a strong, competitive economy, a healthy environment and vibrant, thriving communities. 2007, c. 7, s. 2; 2012, c. 42, s. 2.

Foundation and principles of Act

3 (1) This Act builds on the foundation that the Province has achieved as a world leader in

(a) recycling programs and in managing waste to protect the environment; and

(b) leading-edge innovation in environmentally sustainable technologies.

(2) This Act is based on the following principles:

(a) the health of the economy, the health of the environment and the health of the people of the Province are interconnected;

(b) environmentally sustainable economic development that recognizes the economic value of the Province's environmental assets is essential to the long-term prosperity of the Province;

(c) the environment and the economy of the Province are a shared responsibility of all levels of government, the private sector and all people of the Province;

(ca) to achieve objectives that span both environmental and economic aims, government departments need to collaborate across the Province using a whole systems approach;

(d) the environment and economy must be managed for the benefit of present and future generations, which is in keeping with the Mi'kmaq concept of *Netukulimk*, defined by the Mi'kmaq as the use of the natural bounty provided by the Creator for the self-support and well-being of the individual and the community by achieving adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity or productivity of our environment;

(e) innovative solutions are necessary to mutually reinforce the environment and the economy;

(f) a long-term approach to planning and decision-making is necessary to harmonize the Province's goals of economic prosperity and environmental sustainability;

(g) the management of goals for sustainable prosperity, such as emission reduction, energy efficiency programs, climate change adaptation and increasing the amount of legally protected land will preserve and improve the Province's environment and economy for future generations. 2007, c. 7, s. 3; 2012, c. 42, s. 3.

Long-term objectives of Province

4 (1) The long-term environmental and economic objective of the Province is to achieve sustainable prosperity and to this end to

(a) establish clear goals that foster an integrated approach to environmental sustainability and economic well-being; and

(b) work towards continuous improvement in measures of social, environmental and economic indicators of prosperity.

(2) To achieve the long-term objectives set forth in subsection (1), the Province's environmental and economic goals in the areas of cleaner energy, climate change adaptation, healthy air and water, leadership in sustainable practices, protection of biodiversity and sustainable management of natural assets are to ensure that

(a) the Province adopts and implements a framework to support a transition to cleaner sources and sustainable uses of energy to produce greater economic, social and environmental benefits for Nova Scotians by supporting and enabling

(i) energy efficiency and conservation to assist in energy affordability and competitiveness through increased productivity,

(ii) sustainable transportation options,

(iii) increased renewable energy,

(iv) enhanced use of natural gas to displace oil and coal, and

(v) enhanced innovation through globally competitive energy research and development;

(b) of the total electricity needs of the Province,

(i) 18.5 per cent is obtained from renewable energy sources by 2013,

(ii) 25 per cent is obtained from renewable energy sources by 2015, and

(iii) 40 per cent is obtained from renewable energy sources by 2020;

(c) an updated energy efficiency rating system for new and existing homes is available in the *Nova Scotia Building Code Regulations* made under the *Building Code Act*;

(d) all new residential dwelling units constructed in the Province after January 1, 2011 are required to meet energy conservation measures adopted in the *Nova Scotia Building Code Regulations* made under the *Building Code Act*;

(e) the Province continues to work with other levels of government on national emissions standards for greenhouse gases and air pollutants from new motor vehicles, such as the standards adopted by the State of California;

(f) greenhouse gas emissions are, by 2020, at least 10 per cent below the levels that were emitted in 1990, as outlined in the *New England Governors/Eastern Canadian Premiers Climate Change Action Plan 2001*;

(g) emissions of nitrogen oxides are reduced by

(i) 20 per cent by 2009,

(ii) 28 per cent by 2015, and

(iii) 44 per cent by 2020,

relative to emissions in 2000;

(h) sulphur dioxide emissions are reduced by

(i) 50 per cent by 2010,

(ii) 58 per cent by 2015, and

(iii) 75 per cent by 2020,

relative to the 1995–2005 emission allocation;

(i) mercury emissions are reduced to no more than

(i) 110 kilograms by 2010,

(ii) 100 kilograms by 2011,

(iii) 85 kilograms by 2013,

(iv) 65 kilograms by 2014, and

(v) 35 kilograms by 2020;

(j) the Province meets and maintains the *Canada-wide Standards for Particulate Matter (PM) and Ozone* established by the Canadian Council of Ministers of the Environment for airborne fine-particulate matter by 2010;

(k) the Province meets and maintains the *Canada-wide Standards for Particulate Matter (PM) and Ozone* established by the Canadian Council of Ministers of the Environment for ground-level ozone by 2010;

(l) municipal public drinking-water supplies meet the Province's 2012 treatment standards by 2020;

(m) a comprehensive water-resource management strategy is developed by 2010 and implemented accordingly;

(n) wastewater treatment facility discharges undergo at least primary treatment by 2020;

(o) the solid-waste disposal rate is no greater than 300 kilograms per person per year by 2015 through measures that include the development of new programs and product stewardship regulations;

(p) septage treatment facilities are operated in accordance with the *Guidelines for the Handling, Treatment and Disposal of Septage* as of 2011;

(q) a sustainable procurement policy for the Province is developed and adopted by 2009 and implemented accordingly, including by integrating sustainable procurement criteria into Provincial government purchasing and promoting adoption of this approach to the greater public sector in the Province;

(r) a government facility is constructed as a demonstration facility in accordance with leading energy efficient design standards by 2015 and used to foster sustainable building practices;

(s) the Province develops a strategy by 2014 to advance the growth of the green economy, and implements the strategy accordingly;

(t) local food consumption is supported and encouraged, with the goal of 20 per cent of the money spent on food by Nova Scotians being spent on locally produced food by 2020;

(u) local food production is supported and encouraged, with the goal of increasing the number of local farms by 5 per cent by 2020;

(v) at least 12 per cent of the total land mass of the Province is legally protected by 2015;

Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities

STEPHEN C. TROMBULAK* AND CHRISTOPHER A. FRISSELL†

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Abstract: *Roads are a widespread and increasing feature of most landscapes. We reviewed the scientific literature on the ecological effects of roads and found support for the general conclusion that they are associated with negative effects on biotic integrity in both terrestrial and aquatic ecosystems. Roads of all kinds have seven general effects: mortality from road construction, mortality from collision with vehicles, modification of animal behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotics, and increased use of areas by humans. Road construction kills sessile and slow-moving organisms, injures organisms adjacent to a road, and alters physical conditions beneath a road. Vehicle collisions affect the demography of many species, both vertebrates and invertebrates; mitigation measures to reduce roadkill have been only partly successful. Roads alter animal behavior by causing changes in home ranges, movement, reproductive success, escape response, and physiological state. Roads change soil density, temperature, soil water content, light levels, dust, surface waters, patterns of runoff, and sedimentation, as well as adding heavy metals (especially lead), salts, organic molecules, ozone, and nutrients to roadside environments. Roads promote the dispersal of exotic species by altering habitats, stressing native species, and providing movement corridors. Roads also promote increased hunting, fishing, passive harassment of animals, and landscape modifications. Not all species and ecosystems are equally affected by roads, but overall the presence of roads is highly correlated with changes in species composition, population sizes, and hydrologic and geomorphic processes that shape aquatic and riparian systems. More experimental research is needed to complement post-hoc correlative studies. Our review underscores the importance to conservation of avoiding construction of new roads in roadless or sparsely roaded areas and of removal or restoration of existing roads to benefit both terrestrial and aquatic biota.*

Revisión de los Efectos de Carreteras en Comunidades Terrestres y Acuáticas

Resumen: *Las carreteras son una característica predominante y en incremento de la mayoría de los paisajes. Revisamos la literatura científica sobre los efectos ecológicos de las carreteras y encontramos sustento para la conclusión general de que las carreteras están asociadas con efectos negativos en la integridad biótica tanto de ecosistemas terrestres como acuáticos. Las carreteras de cualquier tipo ocasionan siete efectos generales: mortalidad ocasionada por la construcción de la carretera; mortalidad debida a la colisión con vehículos; modificaciones en la conducta animal; alteración del ambiente físico; alteración del ambiente químico; dispersión de especies exóticas e incremento en el uso de áreas por humanos. La construcción de carreteras elimina a organismos sésiles y a organismos de lento movimiento, lesiona a organismos adyacentes a la carretera y altera las condiciones físicas debajo ella misma. Las colisiones con vehículos afectan la demografía de muchas especies tanto de vertebrados como invertebrados; las medidas de mitigación para reducir la pérdida de animales por colisiones con vehículos han sido exitosas solo de manera parcial. Las carreteras alteran la conducta animal al ocasionar cambios en el rango de hogar, movimientos, éxito reproductivo, respuesta de escape y estado fisiológico. Las carreteras cambian la densidad del suelo, temperatura, contenido de agua en el suelo, niveles de luz, polvo, aguas superficiales, patrones de escurrimiento y sedimentación, además de agregar metales pesados (especialmente plomo), sales, moléculas orgánicas, ozono y nutrientes a los ambientes que atraviesan. Las carreteras promueven la dispersión de especies exóticas al alterar los hábi-*

frogs Crossing Rd

Paper submitted February 8, 1999; revised manuscript accepted July 21, 1999.

plant community structure, especially in communities dominated by lichens and mosses (Auerbach et al. 1997). Although most sediment enters water bodies through overland flow or mass failure, dust from highly trafficked roads can serve as a source of fine sediments, nutrients, and contaminants to aquatic ecosystems (Gjessing et al. 1984).

Roads and bridges can alter the development of shorelines, stream channels, floodplains, and wetlands. Because of the energy associated with moving water, physical effects often propagate long distances from the site of a direct road incursion (Richardson et al. 1975). Alteration of hydrodynamics and sediment deposition can result in changes in channels or shorelines many kilometers away, both down- and up-gradient of the road crossing. The nature of such responses to channel and shoreline alteration is not always predictable; it may depend on the sequence of flood and sedimentation events after the alteration is made. Roads on floodplains can redirect water, sediment, and nutrients between streams and wetlands and their riparian ecosystems, to the detriment of water quality and ecosystem health. Roads are among the many human endeavors that impair natural habitat development and woody debris dynamics in forested floodplain rivers (Piégay & Landon 1997).

Road crossings commonly act as barriers to the movement of fishes and other aquatic animals (Furniss et al. 1991). Although many headwater populations of salmonid fishes are naturally migratory, they often persist today as fragmented headwater isolates, largely because of migration barriers created by road crossings and other human developments that fail to provide for fish passage (Kershner et al. 1997; Rieman et al. 1997). Salmonids and other riverine fishes actively move into seasonal floodplain wetlands and small valley-floor tributaries to escape the stresses of main-channel flood flows (Copp 1989), but valley-bottom roads can destroy or block access to these seasonally important habitats (Brown & Hartman 1988). Persistent barriers may encourage local selection for behaviors that do not include natural migration patterns, potentially reducing both the distribution and productivity of a population.

Roads directly change the hydrology of slopes and stream channels, resulting in alteration of surface-water habitats that are often detrimental to native biota. Roads intercept shallow groundwater flow paths, diverting the water along the roadway and routing it efficiently to surface-water systems at stream crossings (Megahan 1972; Wemple et al. 1996). This can cause or contribute to changes in the timing and routing of runoff (King & Tennyson 1984; Jones & Grant 1996; Ziemer & Lisle 1998), the effects of which may be more evident in smaller streams than in larger rivers (Jones & Grant 1996). Hydrologic effects are likely to persist for as long as the road remains a physical feature altering flow routing—often long after abandonment and revegetation of the road surface. By altering surface or subsurface flow, roads can destroy and create wetland habitats.

Changes in the routing of shallow groundwater and surface flow may cause unusually high concentrations of runoff on hillslopes that can trigger erosion through channel downcutting, new gully or channel head initiation, or slumping and debris flows (Megahan 1972; Richardson et al. 1975; Wemple et al. 1996; Seyedbagheri 1996). Once such processes occur, they can adversely affect fishes and other biota far downstream for long periods of time (Hagans et al. 1986; Hicks et al. 1991). Roads have been responsible for the majority of hillslope failures and gully erosion in most steep, forested landscapes subject to logging activity (Furniss et al. 1991; Hagans et al. 1986). Because most of these more catastrophic responses are triggered by the response of roads during infrequent, intense storm events, lag times of many years or decades pass before the full effects of road construction are realized.

Chronic effects also occur, however. The surfaces of unpaved roads can route fine sediments to streams, lakes, and wetlands, increasing the turbidity of the waters (Reid & Dunne 1984), reducing productivity and survival or growth of fishes (Newcombe & Jensen 1996), and otherwise impairing fishing (Buck 1956). Existing problem roads can be remediated to reduce future erosion potential (e.g., Weaver et al. 1987; Harr & Nichols 1993). The consequences of past sediment delivery are long-lasting and cumulative, however, and cannot be effectively mitigated (Hagans et al. 1986).

Alteration of the Chemical Environment

More has been written about the effects of roads on the chemical environment than on all other effects combined. Maintenance and use of roads contribute at least five different general classes of chemicals to the environment: heavy metals, salt, organic molecules, ozone, and nutrients.

A variety of heavy metals derived from gasoline additives and road deicing salts are put into the roadside environment. The most widely documented is lead, but others include aluminum, iron, cadmium, copper, manganese, titanium, nickel, zinc, and boron (Garcia-Miragaya et al. 1981; Clift et al. 1983; Gjessing et al. 1984; Oberts 1986; Araratyan & Zakharyan 1988).

Heavy metal contamination exhibits five patterns. First, the amount of contamination is related to vehicular traffic (Goldsmith et al. 1976; Dale & Freedman 1982; Leharne et al. 1992). Second, contamination of soils, plants, and animals decreases exponentially away from the road (Quarles et al. 1974; Dale & Freedman 1982). Most studies indicate that contamination declines within 20 m but that elevated levels of heavy metals often occur 200 m or more from the road. The pattern of decline is influenced

by prevailing wind patterns (Haqus & Hameed 1986). Once metals reach aquatic environments, transport rates and distances increase substantially (Gjessing et al. 1984).

Third, heavy metals can be localized in the soil, either close to the surface if downward transport has not occurred (Indu & Choudhri 1991) or deep below the surface if pollution levels in the past exceeded those in the present (Byrd et al. 1983). Transportation and localization is largely affected by the physical properties of the soil (Yassoglou et al. 1987). Metals and other persistent chemicals fixed to soils may become remobilized once they are inundated or transported to freshwater environments by wind, water, or gravity.

Fourth, heavy metals accumulate in the tissues of plants (Datta & Ghosh 1985; Beslaneev & Kuchmazokova 1991) and animals (Collins 1984; Birdsall et al. 1986; Grue et al. 1986). As with soil, contamination of plant tissue occurs up to at least 200 m from a road and is greatest for individuals along roads with high traffic volume.

Fifth, heavy metal concentrations in soil decline over time where use of leaded gasoline has been stopped and surface-water flow carries the metal ions away (Byrd et al. 1983; Tong 1990). After they leave the terrestrial environment, however, the mobilized metals may cause additional harm to aquatic biota. Also, some of the processes of metal demobilization may be reversed rapidly if environmental conditions, such as acidity of the soils, sediments, or water, change (Nelson et al. 1991).

Deicing salts, particularly NaCl but also $CaCl_2$, KCl, and $MgCl_2$, contribute ions to the soil, altering pH and the soil's chemical composition (Bogemans et al. 1989). As with lead, discontinuation of the use of deicing salts allows plants damaged by salt stress to recover (Leh 1990). The effects on aquatic biota of temporary surges of salt that often accompany runoff from roads to surface and groundwaters have received little study. Deicing salts on roadways elevate chloride and sodium concentrations in streams (Molles & Gosz 1980; Hoffman et al. 1981; Peters & Turk 1981; Mattson & Godfrey 1994) and in bogs, where road salts can alter patterns of succession in aquatic vegetation (Wilcox 1986). Accumulation of salts from chemicals used for road deicing or dust control can disrupt natural stratification patterns and thus potentially upset the ecological dynamics of meromictic lakes (Hoffman et al. 1981; Kjensmo 1997).

Organic pollutants such as dioxins and polychlorinated biphenyls are present in higher concentrations along roads (Benfenati et al. 1992). Hydrocarbons may accumulate in aquatic ecosystems near roads (Gjessing et al. 1984). In one stream along a British highway, numerous contaminants were present at elevated levels in the water column and sediments, including copper, zinc, and various hydrocarbons, but polycyclic aromatic hydrocarbons associated with stream sediments accounted for most of the observed toxicity to aquatic amphipods (Maltby et al. 1995). Comparatively little research has focused on the questions of the fate and effects of the organic chemicals associated with roads.

Vehicles produce ozone, which increases the concentration of this harmful molecule in the air, especially in areas where vehicle exhaust accumulates (Flueckiger et al. 1984). Roads are also especially important vectors of nutrients and other materials to aquatic ecosystems, because the buffering role normally played by riparian vegetation (Correll et al. 1992) is circumvented through direct runoff of materials in water and sediment where roads abut or cross water bodies. Water moving on and alongside roadways can be charged with high levels of dissolved nitrogen in various forms, and sediment brings a phosphorus subsidy when it reaches surface waters. Road deicing salts are an additional source of phosphorus (Oherts 1986). The degree to which roads directly contribute to eutrophication problems in aquatic ecosystems has been little investigated. Because roads deliver nutrients that originate in the contributing slope area, the nutrient burden is probably largely controlled by surrounding vegetation and land use. An increased density of road crossings of water bodies can be expected to increase delivery of nutrients.

The alteration of the chemical environment by roads results in a number of consequences for living organisms. First, in the terrestrial environment the chemical composition of some woody plants changes in response to pollution. These changes include increased concentrations of chemicals produced by plants, such as terpenoids, which help them resist the toxic effects of pollution (Akimov et al. 1989) and salts (Bogemans et al. 1989), and decreased production of other chemicals, such as soluble protein and chlorophyll *a*, which are necessary for plant function (Banerjee et al. 1983).

Second, organisms may be killed or otherwise displaced as a result of chemical exposure. Virtually all measures of soil biotic diversity and function decline in contaminated soil, including abundance, number of species, species composition, index of species diversity, index of equability, and bulk soil respiration (Muskett & Jones 1981; Guntner & Wilke 1983; Krzysztofiak 1991).

Third, the growth (Petersen et al. 1982) and overall physical health (Flueckiger et al. 1984; Moritz & Breitenstein 1985) of many plants is depressed, even to the point of death (Fleck et al. 1988). The sensitivity of plants to pollutants may change during development; for example, seedlings are more sensitive to salt than are adults (Liem et al. 1984), which influences juvenile recruitment. Pollutants may affect plant health by damaging fine roots, mycorrhizae (Majdi & Persson 1989), and leaves (Simini & Leone 1986) and by changing salt concentrations in plant tissues (Northover 1987). Secondary effects on plant health include decreased resistance to pathogens (Northover 1987), causing further declines. In aquatic environments, plant (and animal) assemblages

may change due to direct and indirect responses to nutrient increases and due to growth suppression or mortality caused by other chemicals introduced by roads.

Fourth, plants (Graham & Kalman 1974; Nasralla & Ali 1985; Dickinson et al. 1987; Guttormsen 1993) and animals (Robel et al. 1981; Collins 1984; Harrison & Dyer 1984; Krzysztofiak 1991; Marino et al. 1992), including those cultivated or raised for agriculture, may accumulate toxins at levels that pose health hazards, including those for humans that consume exposed organisms (Jarosz 1994).

Fifth, increased concentrations near roadsides of some pollutants, particularly salt, attract large mammals, putting them more at risk of being killed by vehicles (Fraser & Thomas 1982). Spills of edible products from trucks and trains also attract wildlife to roadsides. Finally, evolutionary processes may be affected through altered selection pressures that result in local differentiation of populations of both plants (Kiang 1982) and animals (Minoranskii & Kuzina 1984).

Spread of Exotic Species

Roads provide dispersal of exotic species via three mechanisms: providing habitat by altering conditions, making invasion more likely by stressing or removing native species, and allowing easier movement by wild or human vectors. It is often difficult to distinguish among these factors. Soils modified during road construction can facilitate the spread of exotic plants along roadsides (Greenberg et al. 1997). Some exotic plants establish themselves preferentially along roadsides and in other disturbed habitats (Wester & Juvik 1983; Henderson & Wells 1986; Tyser & Worley 1992; Wein et al. 1992). The spread of exotic diseases (Dawson & Weste 1985; Gad et al. 1986) and insects (Pantaleoni 1989; Schedl 1991) is facilitated by increased density of roads and traffic volume. Road construction that alters the canopy structure of forests promotes invasion by exotic understory plants, which affects animal communities (Gaddy & Kohlsaat 1987). Some roadside verges have been invaded by maritime plants because of their ability to tolerate saline soil (Scott & Davison 1982). Feral fruit trees are found preferentially along roadsides, and some populations are maintained solely by seeds in fruit waste thrown from vehicles (Smith 1986).

Exotic species are sometimes introduced along roadsides for the purpose of erosion control (Niordson 1989). Native species are now more widely preferred for this purpose, but Dunlap (1987) argues that in some cases the need for rapid establishment of plant cover requires the use of exotic species.

In another form of deliberate introduction, roads provide easy access to streams and lakes for fishery managers to stock nonnative hatchery fish (Lee et al. 1997), which adversely affect native biota and disrupt aquatic ecosystems in many ways (Allan & Flecker 1993). Unsanctioned, illegal, and unintentional introductions of fishes, mollusks, plants, and other aquatic organisms also occur frequently (Allan & Flecker 1993), and they are facilitated by public road access to water bodies.

The dispersal of a biological agent such as a pathogen along a roadway can affect both terrestrial and aquatic ecosystems far from the road. In northern California and southwest Oregon, for example, vehicle traffic and roadway drainage along logging and mining roads during the wet season disperse spores of an exotic root disease (*Phythoptera lateralis*) that infects the endemic Port Orford cedar (*Chamaecyparis lawsoniana*; Zobel et al. 1985). Transfer of the water-borne spores from forest roads into headwater stream crossings can result in the infection and nearly complete mortality of Port Orford cedars along a much larger network of downstream channel margins and floodplains, even deep inside otherwise roadless areas. The progressive loss of this important conifer species from riparian ecosystems may engender substantial long-term consequences for the integrity of stream biota, including endangered salmon species, for which the Port Orford cedar provides shade, large and long-lasting coarse woody debris, and stabilization of channels and floodplains.

Changes in Human Use of Land and Water

Roads facilitate increased use of an area by humans, who themselves often cause diverse and persistent ecological effects. New roads increase ease of access by humans into formerly remote areas. Perhaps more important, roads often increase the efficiency with which natural resources can be exported. At least three different kinds of human use of the landscape, made increasingly possible by roads, can have major ecological effects: hunting and fishing, recreation, and changes in use of land and water.

Roads open up areas to increased poaching and legal hunting. Hunting reduces population sizes of many game species, including brown bear (*Ursus arctos*; Camarra & Parde 1990), Iberian lynx (Ferreras et al. 1992), wolves (Fuller 1989), black bear (Manville 1983), and Egyptian mongooses (*Herpestes ichneumon*; Palomares & Delibes 1992). Roads also increase both legal and illegal fishing in streams and lakes. Native fish populations in previously inaccessible areas are often vulnerable to even small increases in fishing effort. Increased fishing then often gives rise to public demand for fish stocking as an attempt to artificially compensate for the effects of unsustainable harvest, at the further expense of native fishes and other species (e.g., Gresswell & Varley 1988).

aquatic ecosystems than in terrestrial systems. Even where only a small percentage of the land's surface is directly occupied by roads, few corners of the landscape remain untouched by their off-site ecological effects. The breadth of these effects cannot be appreciated unless one takes a broadly transdisciplinary view of ecosystems and biological communities.

Road design, management, and restoration need to be more carefully tailored to address the full range of ecological processes and terrestrial and aquatic species that may be affected. Deliberate monitoring is necessary to ensure that projects have robust ecological benefits and minimal adverse effects and that they are cost-efficient relative to their actual benefits (e.g., Weaver et al. 1987). Of course, such assessments require time and money that are usually unavailable. Most funds used to remediate problem roads are earmarked for actual field operations and are not available to support such assessment and monitoring. Few of the experts building roads or "restoring" them are trained to recognize and address the full spectrum of ecological issues that we have identified. Moreover, by their nature roads have systemic ecological effects that, even if recognized, cannot be overcome.

If a broad view of the ecological effects of roads reveals a multiplicity of effects, it also suggests that it is unlikely that the consequences of roads will ever be completely mitigated or remediated. Thus, it is critical to retain remaining roadless or near-roadless portions of the landscape in their natural state. Because of the increasing rarity of roadless areas, especially roadless watersheds, conservation efforts cannot rely entirely on protection of existing natural areas. But neither can conservation efforts depend entirely on tenuous and unexamined assumptions about the capability of site- and species-specific mitigation and remediation measures to reduce the ecological consequences of existing and proposed roads.

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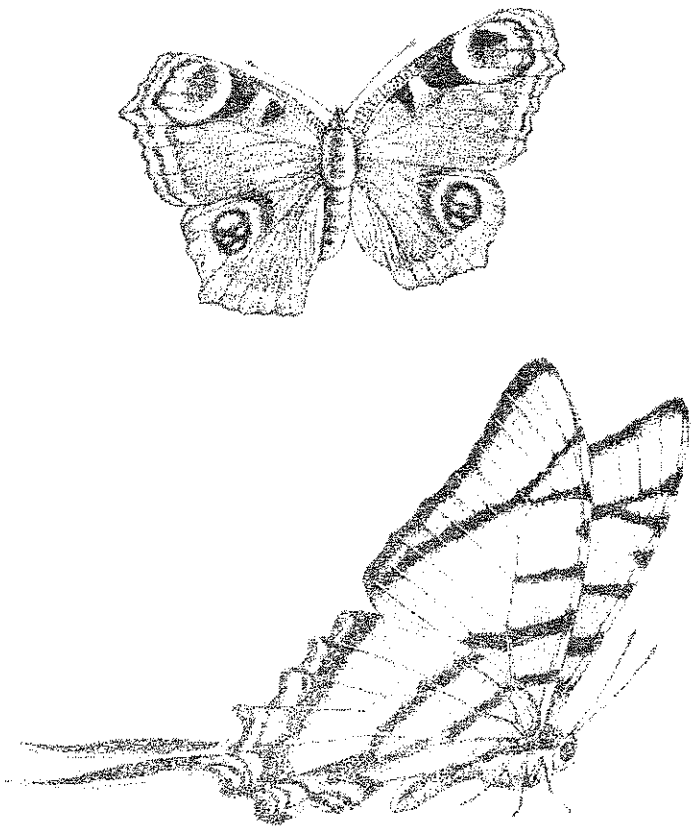

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4. For known floodplains that have not been mapped under the Canada-Nova Scotia Flood Damage Reduction Program, planning documents should be, at a minimum, reasonably consistent with the provisions applicable to the *Floodway Fringe*.

5. Development contrary to this statement may be permitted provided a hydrotechnical study, carried out by a qualified person, shows that the proposed development will not contribute to upstream or downstream flooding or result in a change to ~~flood water~~ [floodwater] flow patterns.

STATEMENT OF PROVINCIAL INTEREST REGARDING AGRICULTURAL LAND

GOAL

To protect agricultural land for the development of a viable and sustainable agriculture and food industry.

BASIS

The preservation of agricultural land is important to the future of Nova Scotians.

Agricultural land is being lost to non-agricultural development.

There are land-use conflicts between agricultural and non-agricultural land uses.

APPLICATION

This statement applies to all active agricultural land and land with agricultural potential in the Province.

PROVISIONS

1. Planning documents must identify agricultural lands within the planning area.

2. Planning documents must address the protection of agricultural land. Measures that should be considered include:

   (a) giving priority to uses such as agricultural, agricultural related and uses which do not eliminate the possibility of using the land for agricultural purposes in the future. Non-agricultural uses should be balanced against the need to preserve agricultural land;

   (b) limiting the number of lots. Too many lots may encourage non-agricultural development. The minimum size of lots and density of development should be balanced against the need to preserve agricultural land;

   (c) setting out separation distances between agricultural and new non-agricultural development to reduce land-use conflicts;

   (d) measures to reduce topsoil removal on lands with the highest agricultural value.

3. Existing land-use patterns, economic conditions and the location and size of agricultural holdings means not all areas can be protected for food production, e.g., when agricultural land is located within an urban area. In these cases, planning documents must address the reasons why agriculture lands cannot be protected for agricultural use. Where possible, non-agricultural development should be directed to the lands with the lowest agricultural value.

I feel CBRM is not protecting my farm. It is not following this statement.

STATEMENT OF PROVINCIAL INTEREST REGARDING INFRASTRUCTURE

GOAL

To make efficient use of municipal water supply and municipal wastewater disposal systems.

BASIS

All levels of government have made significant investment in providing municipal water supply and municipal wastewater disposal infrastructure systems.

Unplanned and uncoordinated development increases the demand for costly conventional infrastructure.

APPLICATION

All communities of the Province.

PROVISIONS

1. Planning documents must promote the efficient use of existing infrastructure and reduce the need for new municipal infrastructure. Measures that should be considered include:
   (a) encouraging maximum use of existing infrastructure by enabling infill development on vacant land and higher density development;
   (b) discouraging development from leapfrogging over areas served by municipal infrastructure to unserviced areas;
   (c) directing community growth that will require the extension of infrastructure to areas where serving costs will be minimized. The use of practical alternatives to conventional wastewater disposal systems should be considered;
   (d) identifying known environmental and health problems related to inadequate infrastructure and setting out short and long-term policies to address the problems including how they will be financed.

2. Where on-site disposal systems are experiencing problems, alternatives to the provision of conventional wastewater disposal systems should be considered. These include the replacement or repair of malfunctioning on-site systems, the use of cluster systems and establishing wastewater management districts.

ZONING GUIDELINES WITHIN THE MPS

MPS PART 1 QUOTE:

Communities in the Rural Cape Breton Zone are "prized for their ***clean environment*** and should integrate new development in ***sustainable*** ways so as to ***minimize impacts and protect the privacy*** rural living has to offer. "

DISCUSSION

We BELIEVE that zoning is designed to be a fair practice to protect the permanent residents in any given zone.

We chose to live in this zone. Build our homes in this zone. That choice was not based on the services that the CBRM provides. We pay our taxes. But for those tax dollars, We do have access to a municipal water supply or municipal sewer service. Some do not have snow removal or road repairs. We do not have driveway delivery. Most do not have driveway garbage removal. We have a **volunteer** Fire Service. We pay our taxes in order to support the CBRM and enjoy our quiet, rural setting. We consider this a contract with the CBRM to protect our zone. We pay our taxes to maintain this agreement. Yes we are few, it doesn't seem like a lot of property owners will be impacted, however, that is the very definition of our zone- low density.

MPS PART 2 QUOTE

"Our island's tourists are looking for the type of atmosphere a small inn provides".

DISCUSSION

The MPS **PART 2** states
"**only "Small Scale Tourist Accommodation Businesses" are acceptable in residential neighbourhoods."**

"The island's tourism industry is sophisticated enough to gage the aspirations of the prospective tourist with a high degree of accuracy. Our island's tourists are looking for the type of atmosphere a small inn provides".

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development must rely on best business practises in order to ensure the feasibility and longevity of the business. This development is not only out of sync with the local area, it is out of sync with the vision for the future of tourism. Nova Scotia Tourism has produced a lengthy document called **Tourism Accommodation Needs Assessment : Final Report**. Basically its objective was to identify the accommodation-related opportunities and constraints that must be addressed in order to achieve a growth in tourism revenues.

Facts from this report : Overall, with seasonal site nights included, the provincial campgrounds occupancy rate for May – Oct 2016 remains modest at 52%. This is up from 43% in 2011. What type of experience is the new tourist looking for? Inns and B&Bs are a growth industry. Glamping is the newest trend in accommodation, and most popular with the younger generation. These are camping cabins, tree houses, and luxury tents with a relatively high price tag related to the uniqueness of the experience. They are typically a lower density accommodation that offer privacy in the natural habitats.

This RV Park is completely out of step with that vision for growth in our tourist industry.

MPS PART 2 QUOTE:

" If the streetscape is primarily residential and low density, it must be considered differently"

This proposed RV Park falls under the Sales/Service Business Development in Part 2 of the MPS.

DISCUSSION

In this MPS , a hierarchy of site compatibility factors is used to determine the suitability of a site chosen for such business development. Quote **"If the streetscape of the level 1 street along a particular sector is primarily residential and low density, it must be considered differently than a street where more of a mix is in evidence. The influencing aspects of this factor include uniformity and density of development"**

This site plan calls for a total of 605 sites, with an average of 3 persons per site, this would result in a total of over 1800 persons, an increase in the population of this area by 12 times. A population comparable to the size of the Town of Dominion- Urban development in a rural community, without the necessary infrastructure.
Big Pond will be populated with swimmers, paddlers, all sorts of watercraft, ATVs, snowmobiles, hikers and pets. There is virtually no way to contain this overflow of population onto our properties. Weekend events, such as music concerts, will swell the population of this park to even greater proportions.

High density developments should not be inserted into rural residential neighbourhoods, they do not belong together they do not mix. The rural zone was developed to protect the privacy that rural living has to offer. Most RV parks are not situated in single dwelling residential zones for that reason. They are simply not compatible.
RV parks and campgrounds belong in wilderness, tourist and commercial zones, and most existing RV Parks are located in such zones, where services and amenities are easily available.
The insertion of this development within the boundaries of a rural residential zone, in the middle of single dwelling properties, will disrupt the quality of the personal lifestyles and freedoms of all neighbouring residents. Residents who bought or built their homes, (and pay their taxes) in this zone based on the promise of a clean, peaceful, private environment. This development will forever change the landscape of our community.

MPS Part 5 - POLICY 13.a
QUOTE:

"Amusement Parks...are only permitted in rural communities with extensive setback and buffering provisions whereby a combination of distance, topography and vegetation will protect residential development."

In Part 5 the MPS it states: pp 5.11

"Outdoor recreational facilities that encourage boisterous behavior (eg amusement park) are inherently loud, and/or pose a danger to surrounding development if not properly sited, and present their own unique site of land use conflicts. The boisterous atmosphere encouraged .....and the scale of activity makes such facilities a potentially obnoxious type of development. While (they) do capitalize on the growing tourism industry, studies conducted on behalf of Tourism Cape Breton, suggest (that) the type of tourists attracted to Cape Breton do not frequent such venues. As well, rural CB communities along the Bras d'Or Lakes, the Atlantic, and the Mira River have long been attractions as 'cottage country' and rural Cape Breton is also being touted as a retirement destination. The placid atmosphere expected from such commitments can be adversely affected by a poorly sited amusement park. If not located along sectors of Level 1 or 2 rural routes with a large percentage of business development, they are to be channeled to rural locations with EXTENSIVE SETBACKS and BUFFERING PROVISIONS whereby a combination of distance, topography, and vegetation will protect residential development."

This is proposed to be a large scale outdoor, recreational facility with zip lines, a water park, concerts, mini golf, atv trails, snowmobiling, tennis. This is more like an American style Amusement Park.

The dimensions of the proposed site simply do not allow for **adequate setbacks or buffering provisions**.

SUMMARY

These campers attracted to this park have left their quiet homes and are out seeking adventure, stimulation, excitement. They are looking for the fun and excitement that this outdoor recreational facility. This development would be better placed on a large expanse of land where **distance, topography and vegetation will protect residential development.**

We have all chosen this RCB zone as our home, our quiet place of respite.
We have a fundamental right to our quality of life. This development will impact our peaceful, quiet lifestyle. The community will be overcrowded, the night sky will be illuminated, the quiet will be shattered, our properties at risk. The sanctuary provided to us by our current RCB zoning will be irrevocably altered.

Given all of these policies outlined in the Municipal Planning Strategy, how can we allow such a large, high density park to even be considered for placement in a primarily residential, low density neighbourhood?

We are grounded here, literally. We cannot pick up our homes and move on if something disagreeable enters our neighborhood. The RVs in this proposed campground can pull up stakes at a moments' notice and move away from an annoying neighbour, a noisy environment, a stagnant, polluted pond.

This RV Park is not only out of sync with the low density, peaceful, visually appealing landscape of our Community, it is completely out of sync with the mind set of the local population. It is out of sync with the vision for the future of tourism in Cape Breton. It is out of sync with the vision for sustainable development for the Bras dOr Lake watershed.

CLEAN ENVIRONMENT OF RURAL ZONE = WATER QUALITY OF THE POND

MPS quote

Communities **within the RCB zone** "are prized for their ***CLEAN ENVIRONMENT*** and should integrate new development in ***sustainable*** ways so as to ***minimize impacts and protect the privacy*** rural living has to offer. "

FACTS

Many of the residents of Big Pond Centre live directly on the shores of Lochmore Harbour and others enjoy its view and the pleasures of paddling its waters and watching the wildlife. It goes without saying that the pristine quality of this body of water is crucial to our peaceful enjoyment and quality of life here, and any long lasting, negative impacts on this body of water will result in the loss of our enjoyment, possibly impacting our property values further.. This development poses a very large, very real threat to the local environment.

The Bras d'Or Lake Esturay system has been designated a **UNESCO Biosphere Reserve.** One of only 16 in Canada. It took A lot of effort by many volunteers to obtain this designation.

One of the main reasons that the Bras d'Or Lakes can boast good water quality is the very low resident populations along its shores. East Bay has the largest population of the Bras d'Or watershed area and coincidentally research has shown that it is currently one of the most stressed sections of the Bras d'Or Lakes with regards to water quality. Sewage has been identified as an issue since studies began in 1981. This proposal adds a staggering amount of population to this area. The risk of sewage contamination is increased to the point of inevitability.

Lochmore Harbour is a Barachois pond, one of 400 in the Lakes. These ponds are believed to be a filtering system for the waters that flow into the Lakes, thereby protecting the water quality of the Lakes. It is of paramount importance to protect this Pond and its salt water marshes. The average water depth has historically been 6-9 feet, and erosion over time has created extensive changes. The natural, tidal flushing of the Pond has been significantly reduced as a result. The site for this proposed development is not only inside this pond, it is at the head of this pond in a horseshoe shaped harbor, at the furthest point from what remains of the opening.

RISKS

Population- This proposal adds a staggering amount of population to this area. approx 1200-2400 ppl

Municipal Planning Strategy Policy- Part 8 Section 5

"The CBRM shares a responsibility with all other Cape Breton Island municipalities and the province of Nova Scotia to protect the drainage basin of the Bras d'Or Lakes from pollution. Contemporary historical development has compromised its ecosystem."

Municipal Planning Strategy Storm Water Management pg 9.10 and 9.11 states

"It is a combination of the delicate balance of volume and timing that influences the severity of a flood. Man made development comprised of impervious surfaces exacerbates this subtle balance of volume and timing, first by the removal of vegetation and secondly by the construction of impervious surfaces" (MSP 9.10, 9.11)

Rain Events

Phase 1 of the site plan for this development, will change approximately 6 acres of natural woodland, fields and marshes into approximately 6 acres of impervious surfaces - paved roadways, RV sites, parking lots, tennis courts, and buildings. This hardscape will create the possibility of dangerous volumes of precipitation runoff, carrying high levels of nutrients, organic matter and toxins, such as automobile fluids, herbicides and fertilizers, household cleaners, deicing salts and heavy metals, directly into the pond. RVs also get washed regularly and these cleaning products will be added to the run off. Deicing salts on roads increase the chloride and sodium concentrations in nearby streams and bogs , where they can alter the pattern of succession in aquatic vegetation

Development of phases 2 and 3 have the potential to triple this risk.

This situation will undoubtedly subject the pond to the potential nutrient poisoning (described by Dr. Hatcher.) WHICH LEADS TO ALGAL BLOOMS WHICH CAN LEAD TO hypoxia OF THE POND

Dr. Bruce Hatcher, University Chair in Marine Ecosystem Research at CBU, has been studying the Lochmore Harbour barrachois pond for the past 6 years. His opinion is that the low exchange rate of water between the shallow, enclosed pond and the East Bay of the Bras d'Or Lake renders the Pond susceptible to the accumulation of new inputs of nutrients and organic matter. Resultant blooms of algae, and decomposition of organic matter, has the potential to consume most of the dissolved oxygen in the contained water (ie. Hypoxia), thereby rendering the ecosystem fatal to air breathing organisms, including fish and oysters. He explained that rising water temperature in the Bras d'Or Lake exacerbates the onset of hypoxic conditions in enriched water bodies, and could transition Lochmore Harbour to an anoxic dead zone if nutrient loading was markedly increased. This situation already exists in some other confined water bodies in the Bras d'Or Lakes. Dr. Hatcher recently attended a conference in the NE United States where 80 scientists spent an entire day discussing the proliferation of hypoxic waters in estuaries around the entire coast of North America. (Approved quote by Dr Hatcher)

Oysters (and other bottom feeding shellfish) are known to help maintain the health of the pond by consuming the dead organic matter so that the pond waters do not have to use their oxygen stores to break down the dead plant matter. Salt water marshes are also critical in avoiding hypoxia. Rather than encouraging the proliferation of oysters, this RV development would put them at a higher risk. The development will also negatively impact the salt water marshes.

Septic Field – the risk is unimaginable for such a large septic field. CAN IT POSSIBLY FUNCTION PERFECTLY? Even if it does, the natural by products will be leech into the pond and create havoc with the delicate balance of nutrients. Nutrient poisoning increased risk of algal blooms.

Ammonia and urea are identified as nutrients which can feed these events, the concentration of human urine in this pond will increase dramatically.

Sea grass and eel beds are prominent throughout the pond, excellent for shellfish and fish, but making it unfavourable for swimming unless dredging or raking were to happen. This proposed RV Park boasts floating docks, boats, an extensive beach area, water play areas and swimming, so it would appear that the plan is to alter this fragile, aquatic environment.

Watercraft- The proposed marina will introduce a plethora of watercraft into the pond. Recreational watercraft are known to disturb the bottom sediments in shallow waters. This not only creates turbidity in the water but has a negative effect on bottom dwelling marine life as well as frog and fish reproduction. Silt creation increases water temperature to which fish are sensitive, and can clog fish gills. Sediment adds large amounts of potentially harmful nutrients to the water, such as phosphorous, which also causes algal blooms. Wakes from watercraft have also been known to exacerbate shoreline erosion and distribute invasive plants. (adkaction.org/Prevent Shoreline Erosion and Preserve Natural Shorelines)

Sand - This site plan calls for the import of sand along 1000 feet of shoreline. Precipitation run off will carry this sand into the Pond creating greater silting problems.

Garbage - No matter how carefully the Park attempts to contain garbage on site, winds will blow lids off cans, winds are very opportunistic and will pick up any unattended piece of paper or plastic and deposit it on the surface of the pond. Those same winds will carry that garbage across the pond's surface onto local properties or submerge it into the fragile waters of the pond. Who will be responsible for the clean up of this mess?

NOISE

On a backdrop of silence any sound becomes noise

Good afternoon my name is David Moffatt and I thank the Mayor, Councillors, Director Gillis, Planner Neville and staff for the opportunity to talk to you today.

I hope to make your decision an easy one.

I have lived in the CBRM, my entire life, with the exception of a six year period, while I attended Dalhousie University to obtain my Masters in Audiology. I'm an Audiologist. A hearing specialist. I've been a hearing specialist for almost 40 years. I know hearing and I know noise.

"Noise is defined as loud, discordant or disagreeable sound. More commonly, in an environmental context, noise is defined simply as any unwanted sound.

There will be many sources of noise emanating from this proposed development:

-- Yelling, Hooting, Hollering and Squealing. The sound of huge groups of people playing on the shores, or in the water will be amplified and echo over the water's surface.

--Motorized Watercraft - Watercraft such as jetskis are most manoeuvrable and most fun at high speeds. Due to the small size of the pond, these watercraft will be circling over and over and over .-- Annoying, repetitive, chronic noise,

-- Barking dogs

--Air Conditioners-- Most RVs are equipped with air conditioners which generate noise, as well as those in the proposed buildings.

--Recreational Vehicles,(such as snowmobiles, and ATVs) will generate considerable, constant monotonous noise. This park is advertising all such activities. What will happen to our winter solitude when snowmobiles, ATVs and trail bikes come down to the frozen pond to race around our shorelines?

--Vehicular noise from RVs and trucks with large, predominantly diesel motors

--Recreational activities – Tennis, Zip Lines, Water Splash Park, Swimming Pool – all of these outdoor activities generate noise

--Pumps – pool, hot tub, septic system pumps

--Lawn mowers, lawn trimmers, and other yard maintenance vehicles or equipment.

--Public Address systems

--Music –. Radios/TVs at each site, private parties. Worse yet, the developer's plan includes an amphitheatre for performances and festivals. These are multi day events that usually extend well into the early morning hours. This will result in chronic, annoyingly high noise levels.

These sources of noise are cumulative, not individual instances, and they will be chronic, all day, all evening and all year round, carried and amplified over the calm waters of the pond and natural amphitheatre–like topography

"Noise pollution affects both health and behavior. Unwanted sound can damage psychological and physiological health. Noise pollution can cause hypertension, high stress levels, sleep disturbances, and other harmful effects. Sound becomes unwanted when it either interferes with normal activities such as sleep or conversation, or disrupts or diminishes one's quality of life.

Noise also is a threat to other species in marine and terrestrial ecosystems alike.

Sound is more likely to be perceived as annoying noise, if the natural, ambient sound levels are characteristically low. Because Big Pond currently enjoys a very peaceful, quiet environment, any sound will be perceived as nuisance noise.

Numerous environmental factors determine the level or perceptibility of a sound at a given point of reception.

Distance- There are 49 properties within 500 meters of this proposed development (Planner Neville)

Higher temperatures - tend to increase the speed of sound. Coincidentally the high season for this park will be during the highest ambient temperatures. Summertime noises also have the greatest potential for causing annoyance because of open windows and increased outdoor activities.

Water - "Sound waves travel more slowly through cooler air temperatures. The air just above the water's surface is cooler than the air slightly higher up, so sound waves further from the water will be faster than those below them. The difference in speed causes the expanding sphere of sound to change shape, flattening into a wall or even focusing the sound downwards. That's why sound travels further over water, less is lost up into the air, meaning more of it ends up at ear level". (No Secrets by the Lakeside/ Inspiring Science.net) This phenomenon also allows for a more distant propagation of sound/noise.

Sound waves skimming the water's surface can add to the amplification effect if the water is calm. Due to the sheltered topography of this pond, these waters are most often calm. Swimmers in and near the water will create greater perceived noise. The main attraction and therefore the central gathering place for campers will be on or beside the water's edge. If only 20% of the campers were to participate in or supervise their childrens' water activities, that translates into 250-350 people. These campers will be participating in activities which all inherently call for raised voices.

Topography - Sound is affected by the surrounding terrain, vegetation and structures of the landscape. The layout of this proposed Park, with 1000 feet of open shoreline, and RV sites rising up a steep, hillside slope, makes it impossible to create a buffer zone to contain the noise pollution. Currently the sloping, forested mountainside and reflective pond surface create an amphitheatre like setting which amplifies and disburses sound throughout the area. Following development , replacement of the natural vegetation with asphalt roads, paved RV sites, parking lots, tennis courts, and buildings, noise will be further amplified and projected from these hard surfaces.

How can these many, varied sources and levels of noise be adequately mitigated? No amount of buffering will mitigate this noise over the water. The only effective mitigation measure is distance. But this noise maker will require a far greater distance than any of the landscape here can provide. Because of the amplification properties of the natural topography and the water, greater distance is required for sound mitigation. There is not enough distance to nearby homes and the site plan is too confined to allow for sufficient setbacks. This proposed development is simply in the wrong place. The Noise pollution will have a devastating effect on the presently quiet landscape of Big Pond.

Unlike the RVs in this proposed campground, our homes do not have wheels. We cannot hook up our trucks and leave. We chose to live in the peaceful environment of a rural Cape Breton Zone. We did not bargain for this, this noise filled park is being thrust upon us, into the midst of our peace and privacy.

MPS 17 e QUOTE

"if zone provisions cannot be established that provide reasonable protections to residential development in proximity the application should be denied"

The answer here is easy- say NO to the Ceilidh on the Lake. Say NO to the Party on the Lake. Honor the promise of a rural zone. Say NO to noise pollution and urban development with its amphitheatre, it's festivals and it's water park in a rural neighbourhood.

Specifically - 17 E of the CBRM Municipal Planning Strategy states that you must

"***mitigate any adverse affects the development will have on low density residential development in proximity. If zone provisions cannot be established that provide reasonable protections to residential development in proximity the application should be denied."***

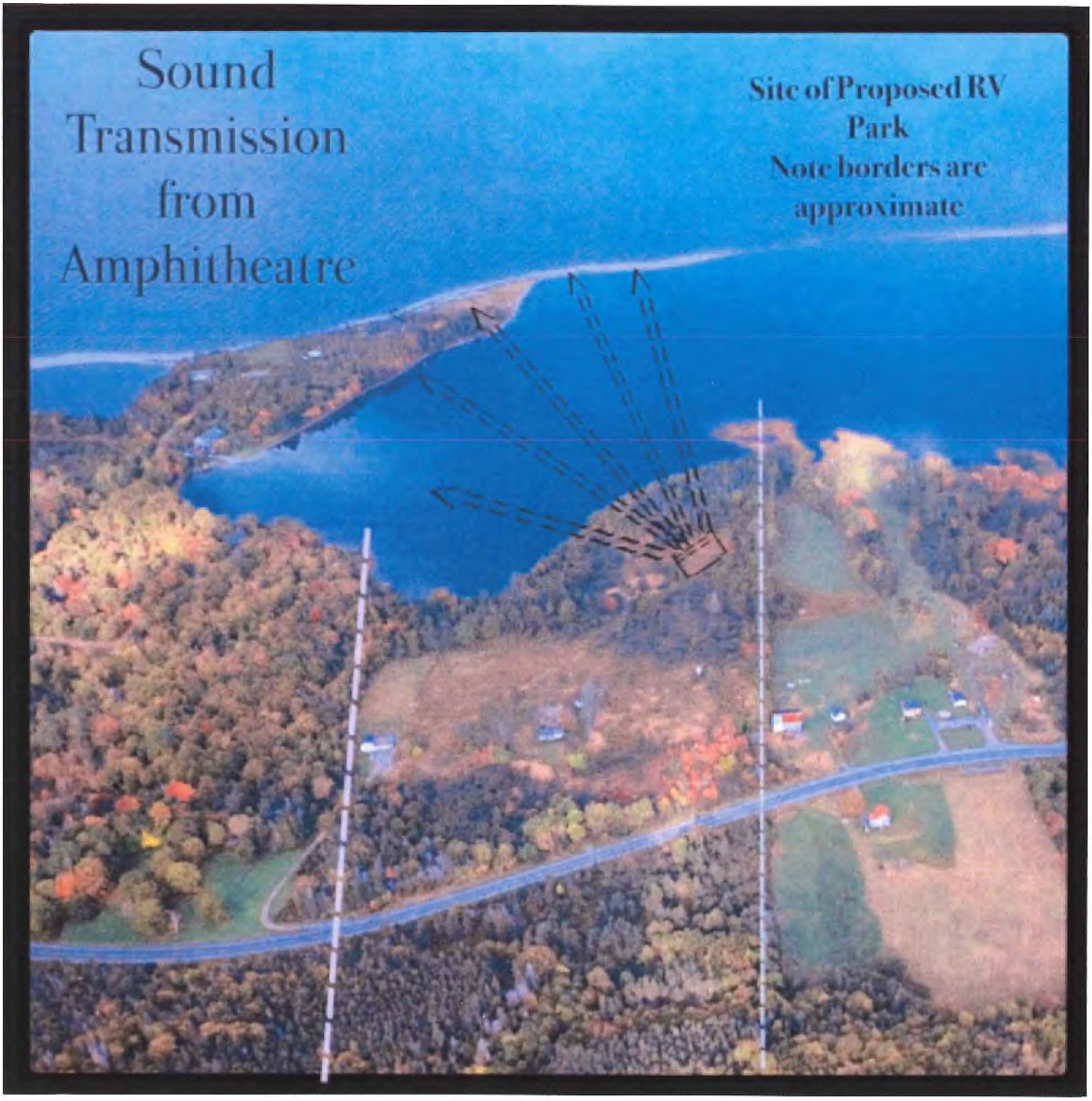
More specifically this means evaluating the proposal from the perspective of noise emanating from the development.

You have but one choice.

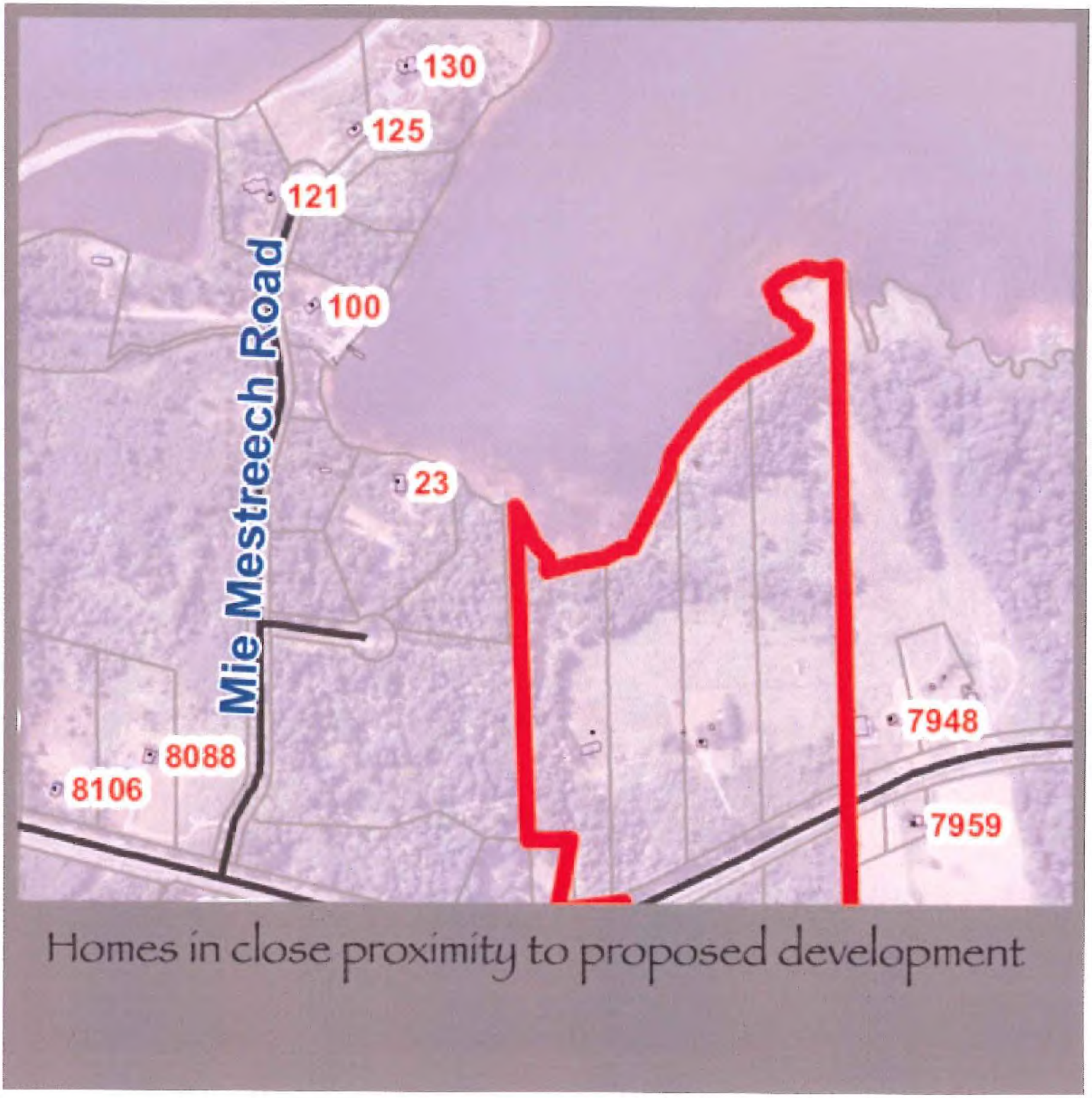
So there it is -your decision is an easy one because of noise you must vote no to this zoning amendment.

Submitted by

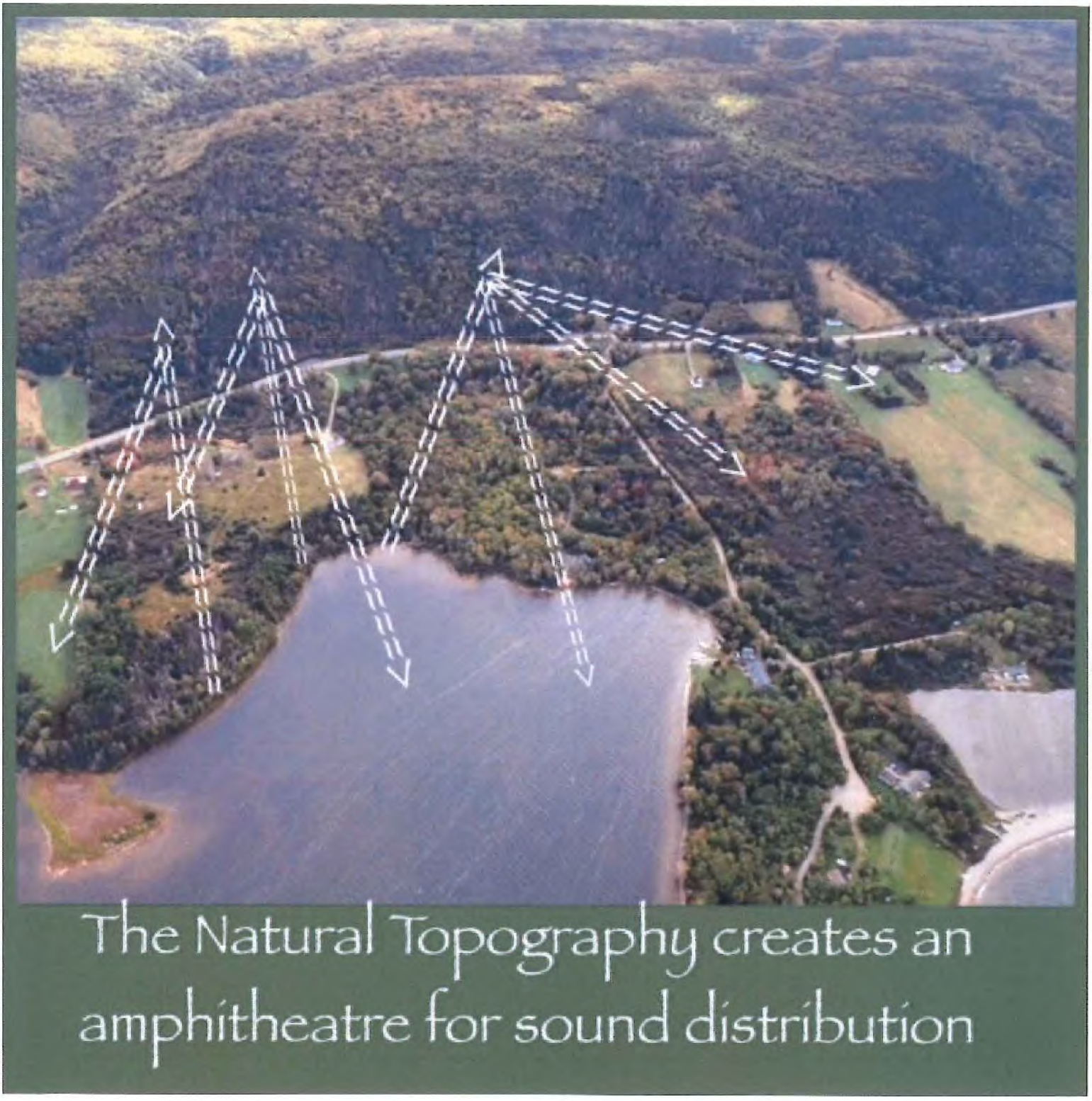
David Moffatt M.Sc. Aud


Sound Transmission from Amphitheatre
Site of Proposed RV Park
Note borders are approximate

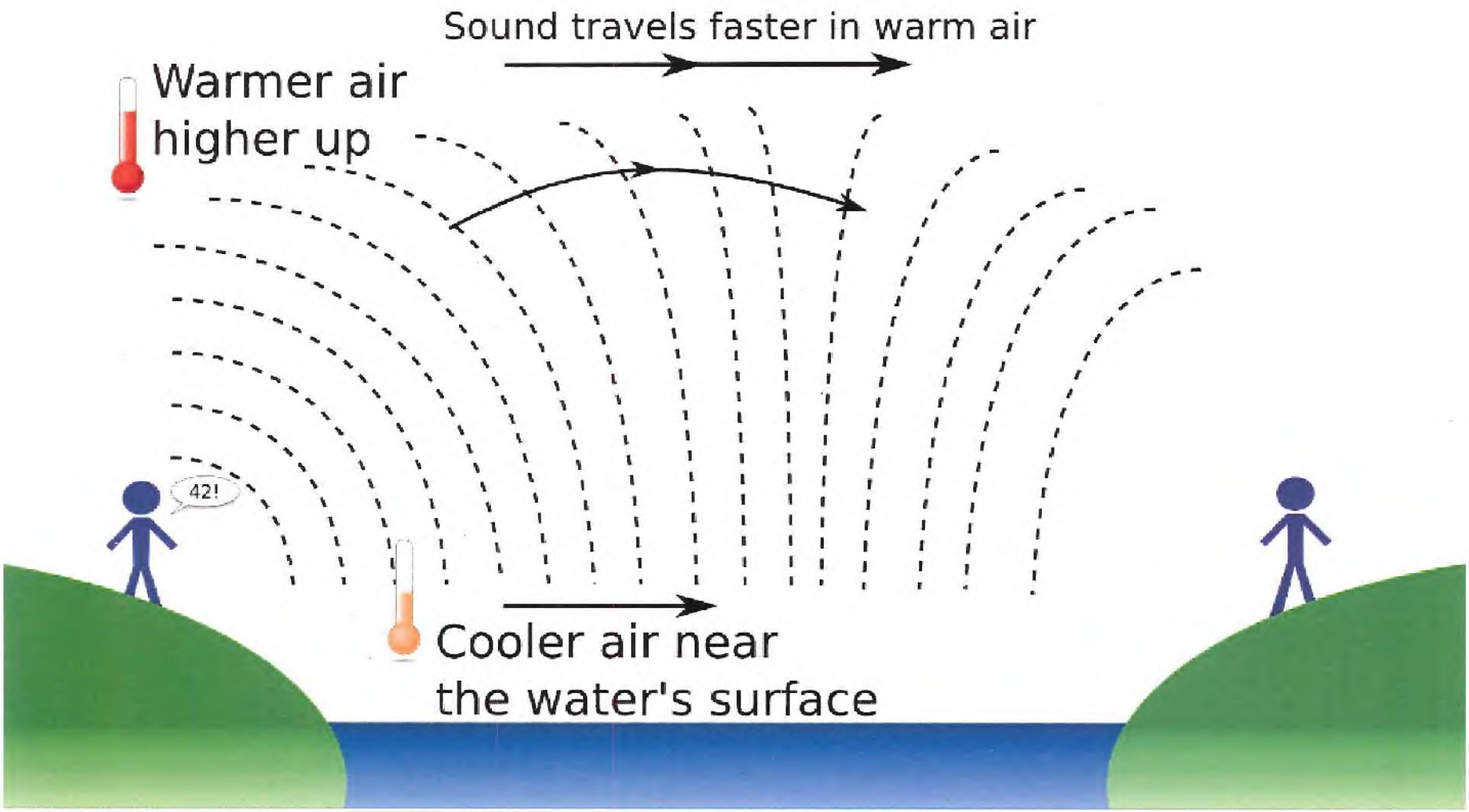

Sound Transmission from Shoreline activities
Site of Proposed RV Park
Note borders are approximate



Homes in close proximity to proposed development



The Natural Topography creates an amphitheatre for sound distribution


Sound travels faster in warm air
Warmer air
higher up
42!
Cooler air near
the water's surface

Mike Britten BSc Eng. (Chemical)

Presentation Highlights

Process
- Environmental Assessment
- Wetlands
- Weaknesses and comparisons in Provincial Legislation

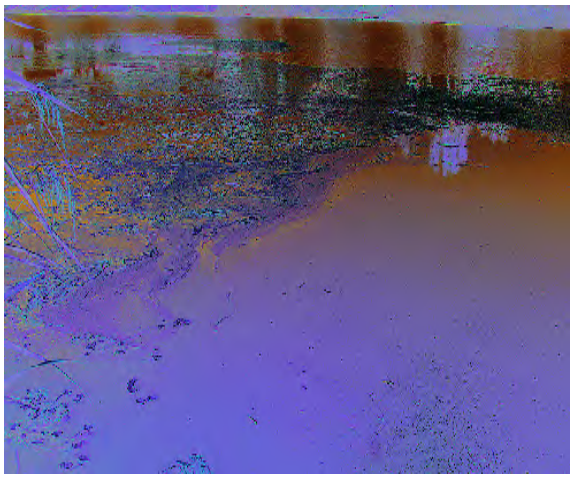
Environmental Concerns on Lochmore Harbour
- Endangered species
- Migration of contaminants
- Increase Human Activity

With respect to this zone amendment application, I understand that you as Council need to consider Part 2 policy 17e, with regard **only** to the following criteria:

Visual Compatibility
Dust or Fumes
Traffic

However in my opinion, as elected officials of CBRM and forward thinkers you need to consider a more detailed approach.

An environmental assessment is the process that anticipates the potential impacts of a proposed project **before being carried out** promoting responsible sustainable development



Wetland

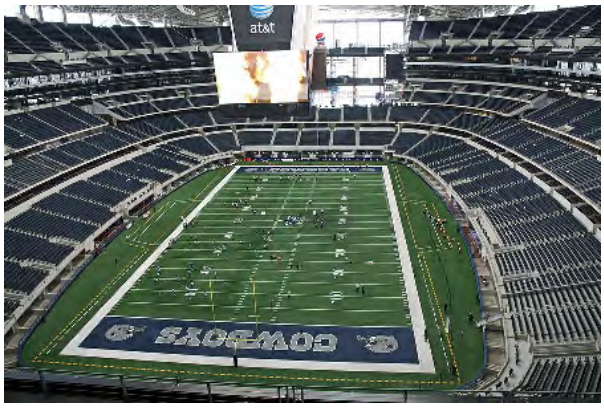
Land commonly referred to as marsh, swamp, fen or bog that either periodically or permanently has a water table at, near or above the land's surface.

Wetland vs Beach

In part as per page 5.11 of the MPS:
Swimming and bathing beaches aren't manufactured. Only the right combination of sand and accessible water make a successful beach.

NOVA SCOTIA

An Environmental Assessment is **only** required for this project if a total of 2 ha (4 football fields) or more of any wetlands are altered or destroyed.



X 4

EA Required

No EA Required

Environmental Assessment May Not be Required for this Project ?

No Environmental Assessment - approvals will be administered only by:

- Nova Scotia Department of Environment (onsite sewage treatment, storm water management and water withdrawal)
- Nova Scotia Department of Transportation and Infrastructure Renewal (traffic study)

Furthermore, the following departments will not be part of the process

- NS Dept. of Natural Resources (endangered Species)
- Dept. of Fisheries & Aquaculture (oysters)
- Fisheries and Oceans Canada (fish kill)
- NS Dept. of Agriculture (organic farm)
- NS Dept. of Health (water quality)
- NS Dept. of Environment (adverse & environmental effects)
- NS Dept. of Transportation and Infrastructure Renewal (movement of farm equipment)
- Local Municipal Office (by-laws)
- Communities, Culture and Heritage (Cultural, Heritage, Historical, Archaeological, Unesco)
- Environment and Climate Change Canada (Sea level rise)
- Canadian Environmental Assessment Agency (Federal Financing - ACCOA)
- Non-Government Organizations First Nations (CEPI)
- Service Nova Scotia and Municipal Relations (permitting)

OTHER ATLANTIC PROVINCES

- **New Brunswick:** All major recreational or tourism developments, must be reviewed with respect to potential environmental impacts. For your information a RV Park in Shediac is still under review since 2014 with 86 issues yet to mitigated as of July 2017.
- **Prince Edward Island:** All major recreational or tourism developments must be reviewed with respect to potential environmental impacts.
- **NEWFOUNDLAND AND LABRADOR:** All major recreational or tourism developments, must be reviewed with respect to potential environmental impacts. where the area of the land to be developed is more than 10 hectares (25 acres)

Environmental Concerns on Lochmore Harbour

This project may cause adverse affects to the Bras D'or Lakes by increasing the concentration of contaminants in Lochmore Harbour.

Source of contaminants

- Nutrient poisoning
- Solvents and detergents
- Pharmaceutical Substances (Plastics)
- Prescription & Non-prescription drugs
- Hydrocarbons from oil and gas
- Destruction of plant and marine life from increased human interaction with the Pond and Lake

Big Pond Endangered Species

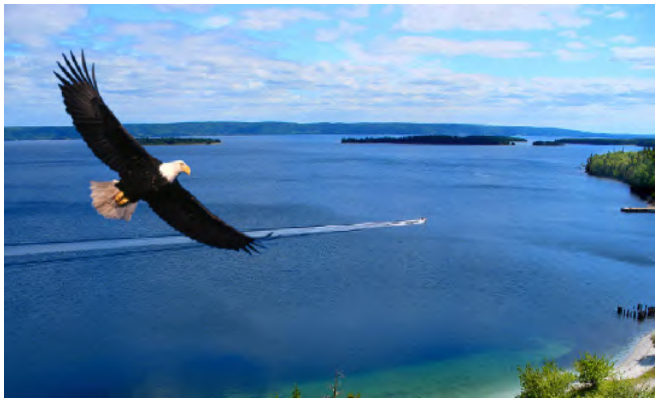
Canada Lynx Endangered (2002)

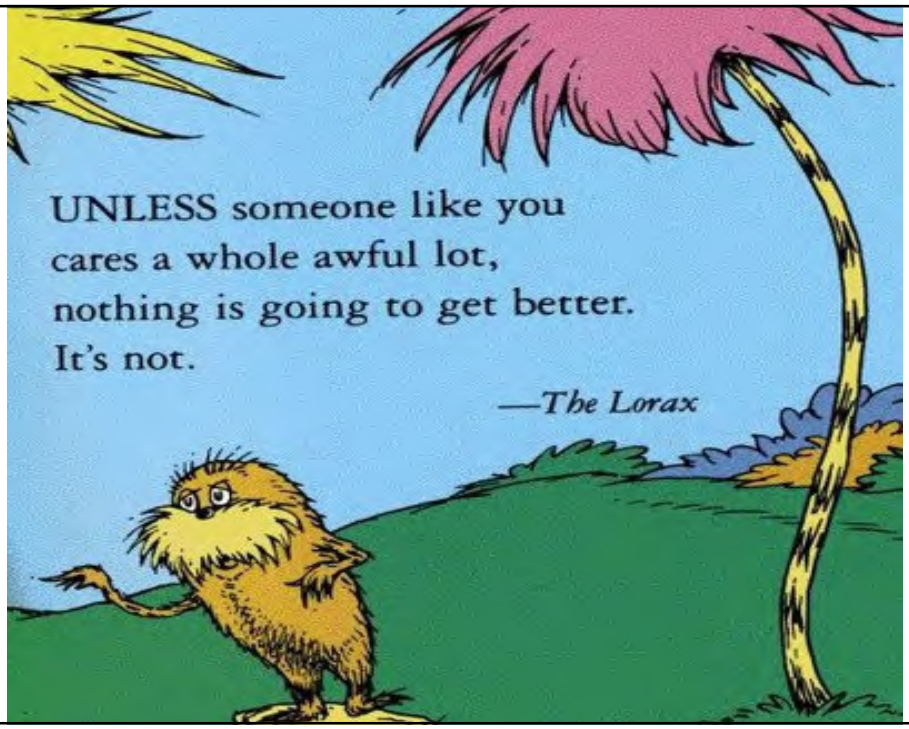
Barn Swallow Endangered (2013)

Piping Plover Endangered (2000)

Without an Environmental Assessment the ***Endangered Species Act*** for the province of Nova Scotia will **not** be initiated.

Cape Breton was once known for the most toxic site in North America:
Don't let this happen to the Bras D'or Lakes





In my opinion:

YOU MUST VOTE NO TO AMENDMENT 1037

My name is Paula MacInnis

our home is on the adjacent

property to the proposed project.

Mayor and Council

A poorly sited campground in the midst of rural development could adversely affect the privacy of the permanent residents. It is for this reason that campgrounds are not permitted as-of-right in Rural CBRM.

So by amending the rural zone you are not stopping residents from being affected you are merely condoning the adverse affects on the people and the environment. Less privacy, less visual compatibility, an increase in noise, fumes, dust, and higher risk for environmental damage are merely consequences of the increase of the population density in the area.

We are located in the UNESCO Biosphere Reserve Bras d'Or Lakes, which has zoning schemes for sustainable development in the Biosphere. We are 1 of 18 Biospheres in Canada, what protection is given this designation? 21 Biosphere Reserves were withdrawn from the World Network Of Biosphere Reserves in 2017.

Spirit of the Lake

In the last few years all the Mi'kmaq communities, municipal, provincial, and federal agencies and citizens with an interest or responsibility in the Bras d'Or watershed have banded together to work on a management plan for the Lakes. A unique declaration, the Bras d'Or Charter, was signed by all these groups, which committed them to the Bras d'Or Lakes Collaborative Environmental Planning Initiative (CEPI). The spirit of the Charter is the collaboration: one eye on our past history and teachings, and one eye on modern science (Two Eyed Seeing). All agencies and peoples work together, bringing their statutes, expertise, and interests to the group. Information and ideas are shared.

Mi'kmaq Elders brought the Medicine Wheel to the project. A wheel of four quadrants: Knowledge, Action, Spirituality and Feelings. For the Bras d'Or system and the project to be healthy, the four quadrants must be in

A RISK WORTH TAKING

Tourist Accommodation Needs Assessment – Final Report

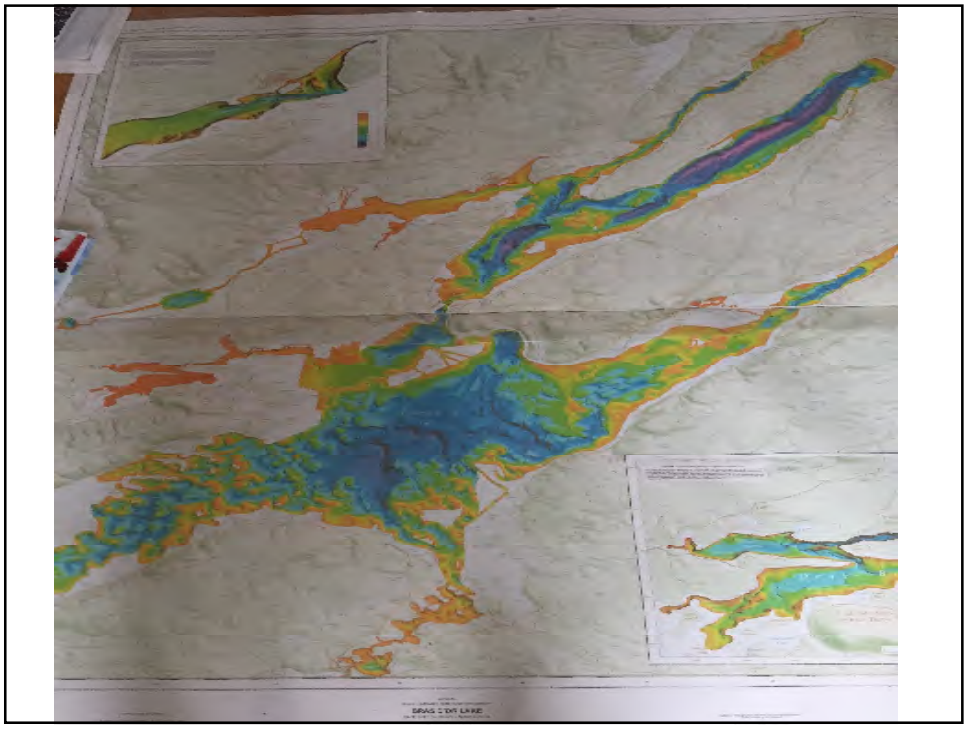
Prepared by Group ATN Consulting Inc. for the Government of Nova Scotia

Available October 2017

Demand All Cape Breton Campgrounds 2006-2015

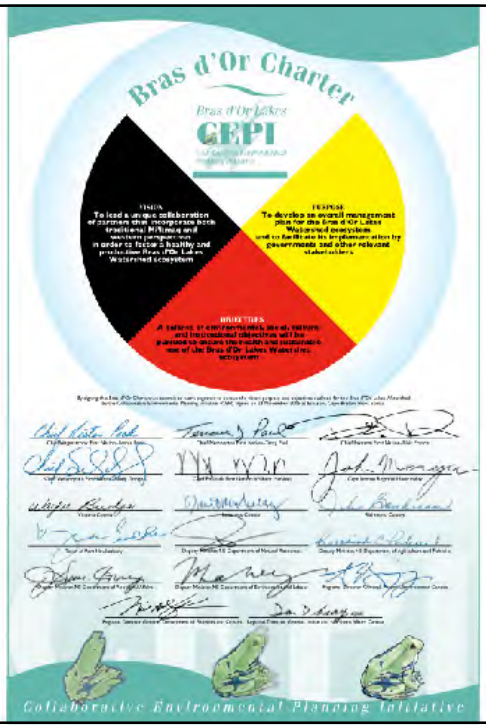
Year	Site Nights Sold	Occupancy %
2006	155,100	38
2007	152,900	37
2008	142,600	37
2009	154,500	40
2010	165,000	42
2011	141,904	35
2012	130,261	34
2013	154,182	42
2014	152,392	41
2015	159,326	41

Chart A: long-term low occupancy rates and accompanying lack of growth in nights sold



United Nations
Educational, Scientific and
Cultural Organization

Bras d'Or Lake
Biosphere Reserve
Association



MUNICIPAL PLANNING STRATEGY

of the

CAPE BRETON REGIONAL MUNICIPALITY

CBRM Municipal Planning Strategy MPS 8.7

CONSIDER INTERMUNICIPAL SOLUTIONS TO ADDRESS PROBLEMS AND PROVIDE INFRASTRUCTURE

A **CAS Registry Number**, or **CAS Number**, is a unique numerical identifier assigned by the Chemical Abstracts Service (CAS) to every chemical substance described in the open scientific literature.

The Registry maintained by CAS is an authoritative collection of disclosed chemical substance information. It currently identifies more than 129 million organic and inorganic substances and 67 million protein and DNA sequences.

Transport Canada, which I know well, in conjunction with other countries and international organizations, has classified, and continues to classify substances as dangerous goods for the purposes of requirements that must be met **in order to be transported**. I was in charge of that Transport Canada Directorate.

A main tool used internationally in establishing safety standards for all modes of transport and other government departments is the equation:

RISK = PROBABILITY*CONSEQUENCES

Here, probability is the probability of an event and consequences are the consequences of the event that could occur to people, property or the environment. (An event can occur all at once such as the derailment and burning of a railway tank-car, or over time from a slow release of dangerous goods into the environment.)

Based on risk concerns, Transport Canada imposes more severe transportation safety requirements for substances that, without these more severe transportation safety requirements, would pose a higher risk ... regardless of which of probability or consequences contributes to the higher risk.

With respect to the proposed trailer park under discussion, we do not currently know what the full impact will be on the lagoon or on the lake beyond the lagoon. That is, we do not know the full nature or size of any involved risk.

Easy question: Is it possible that the oyster beds within the lagoon will no longer be viable?

Hard question: Given the proposed size of activity, what impacts over time will be possible beyond the lagoon?

Important question: Could any such impacts beyond the lagoon affect the designation of the Bras d'Or Lakes as a biosphere reserve?

This third question is a big question that bothers me. Surely there must be extraordinary care to ensure, prior to any approvals to proceed with any development of a water park etc., that the Bras d'Or Lakes biosphere will not be adversely affected now or in the future, such that the biosphere designation could be called into question.

Please, let's have a full study, to be offered for public review, before any approvals are granted.

CEILIDH *on the* LAKES

RV CAMPGROUND

THE DEMAND IS THERE!
NIGHTS SPENT AT CAMPGROUNDS IN NOVA SCOTIA HAVE INCREASED 49% FROM 2015 TO 2017.

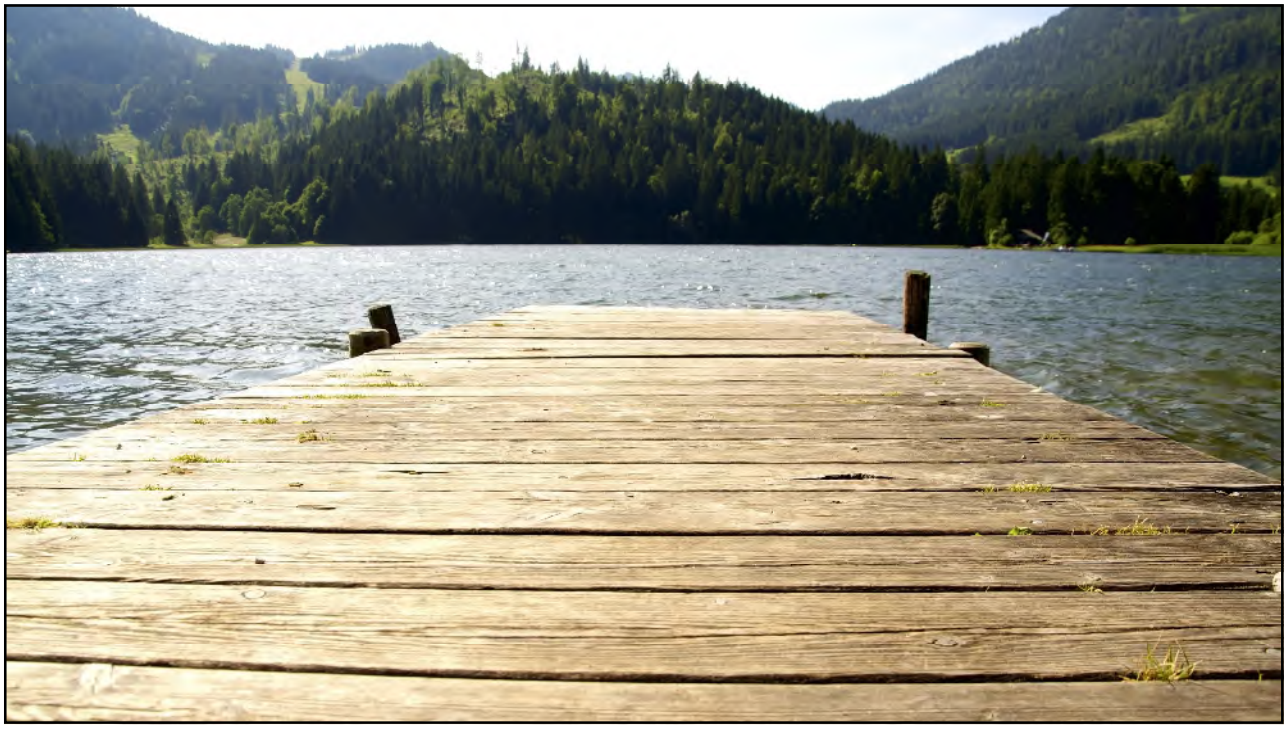
SOURCE: TOURISM NS

PROVIDING LOCAL RESIDENTS WITH NEW, EXCITING EXPERIENCES ON THE ISLAND


PROJECT RENDERING


PROJECT RENDERING

PROVIDING EMPLOYMENT TO LOCAL RESIDENTS AND CONTRACTS TO LOCAL BUSINESSES




INVESTING MILLIONS INTO
THE LOCAL ECONOMY


COMMITTED TO OBSERVING
ENVIRONMENTAL REGULATIONS FOR
DEVELOPMENT AND MANAGEMENT


SHOWCASING LOCAL TALENT THROUGH
SPONSORED EVENTS IN THE AMPITHEATRE


SUPPORTING LOCAL CULTURES THROUGH
EXPERIENCE PARTNERSHIPS

CEILIDH ON THE LAKES IS A GETAWAY
FOR THE ENTIRE FAMILY


ESCAPE YOUR BUSY LIFE AND EXPERIENCE
WHAT IT'S LIKE TO BE A KID AGAIN


VISIT US ON FACEBOOK @CEILIDHONTHELAKES