**R.J. Burnside & Associates Limited** 15 Townline Orangeville ON L9W 3R4 CANADA
**telephone** (519) 941-5331 **fax** (519) 941-8120 **web** www.rjburnside.com

BURNSIDE
[THE DIFFERENCE IS OUR PEOPLE]

June 5, 2020

**Via: Email**

Tracey Atkinson, BES MCIP RPP
CAO
Township of Mulmur
758070 2nd Line E
Mulmur, ON L9V 0G8

Dear Tracey:

**Re: Mulmur Community Energy Plan - Comment and Response**
**Project No.: 300041822.0000**

R.J. Burnside & Associates (Burnside) are pleased to provide an updated response to comments dated April 10, 2020 concerning the Draft CEP reports. Comments were sourced by C (Council), R (Resident), E (Energy Committee) or S (Staff) and are featured in bold text. Although many of our response comments remain the same, they have been updated in some cases to reflect changes to the final reports provided.

## General Comments

**Displeased with the content. (C)**

We appreciate your feedback and we hope that the following comments respond to the comments which follow. Many of the content comments would be applicable if Burnside was conducting a full climate change greenhouse gas (GHG) report. We were not producing this type of report. As noted in the application for funding, report title and content this is a Community Energy Plan (CEP). This has been explained in all of our public and Council briefings. The CEP is focused only on energy use of all types for the Mulmur community. The CEP reports do comment on the GHG production associated with different community energy uses and we have explained that these estimated GHG emissions only relate to direct energy use or consumption. There were challenges in estimating energy consumption simply because the data does not exist, was not consistently collected or supplied by the responsible agencies. In the development of the CEP Burnside followed the guidance provided in the PCP Protocol: Canadian Supplement to the International Emissions Analysis Protocol.

We quote the introductory statement from the Protocol:

> *"The PCP program is based on the premise that in order to effectively manage GHG emissions, local governments must first measure and report. Accurate and reliable GHG measurement enables local governments to identify energy and*

> *emissions-intensive activities with their communities and provides policy and decision-makers with a set of verifiable metrics upon which targeted and prioritized action can be based. Community-wide GHG measurement also provides local government and community stakeholders with the necessary baseline information to monitor, evaluate, and compare performance over time. For these reasons, GHG inventorying is often seen as the foundation of a climate change or community energy strategy."*

This is what Burnside provided in the CEP reporting and it is accurate and verifiable as could be provided under the program approved by the FCM, Ontario Ministry of Energy and the Township.

## Specific Comments

**The data that was used to collect the information was from public sources and there should have been a more thorough and up to date survey. (C)**

A formal survey by Environics (a professional research firm) that would have been statistically accurate was proposed in the original application for funding. The purpose of this survey would have been to obtain more direct information from Township residents. The survey cost was not approved by the funding agencies, so Burnside had to use the best available information sources. Other survey methods, unless conducted using professional social science methods, would not have provided statistically accurate data which would have allowed us to project findings to the larger community. We made recommendations in our findings about this specific issue for future work.

**I do not feel that this report is specific enough to Mulmur. Some of the data is over ten years old and very little is specific to Mulmur. (C)**

The report and data are specific to Mulmur, but assumptions had to be made in some circumstances based on available information. If this work had been conducted in another municipality the results would have been different. The research conclusions and data findings originate from GIS analysis of the specific make-up of the community, various government sources, municipal and MPAC information coupled. Most of the basic information for residential energy was collected from a survey conducted by NRCan from 2011. If more recent data was available it was used, however this was not always the case.

**The report needs to have Mulmur and baseline data. (C)**

This is exactly what was accomplished. Our study utilized local data that was available and sufficiently accurate for analysis. The CEP Volume 1 Appendices provide very detailed information on the methodology used, sources and calculations that went into the energy and GHG calculations found in the report.

**Agricultural data needs to be enhanced. (C)**

On the basis of the agricultural lands available Burnside provided energy estimates for tractor use and agricultural buildings. Because this was an energy study, other agricultural data was not included, for example: methane from livestock production, and carbon capturing from agricultural fields and forests. For some perspective on the estimates of GHG production in Mulmur vs Canadian Agricultural sources please compare the CEP, Volume 1 of the draft report, Figure 3-2, page 20 with Figure 1-2, on page 12. Emissions from agriculture makes up a smaller percentage of total emissions than compared with transportation and buildings (which include residential buildings). Figure 2-2 been added associated data to show agricultural, forested and other land use for future reference.

**Implementation grant was denied. How are we going to implement this at a reduced cost? Report needs to reflect the cost limitations and propose cost effective solutions. (S)**

The grant applied for was for energy manager funding and was not approved. The County of Dufferin similarly applied but was not funded. This funding was for energy auditing which is a component of the Local Improvement Charges (LIC) program. It would not have provided the needed funding to develop the LIC program itself.

Burnside provided a cost estimate to the Township in an email dated January 14, 2020. This estimate was specifically to develop the LIC program and included the legal assistance that would be required to provide advice to Council, help develop a bylaw and formal legal agreements as well as program details for the public. The estimate was for about $45,000. Burnside proposed that we apply to the Federation of Canadian Municipalities (FCM) for funding to develop the program. We also pointed out that once the LIC program is established it allows all development costs to be recovered over time. Municipal staff advised that funding to develop the program would require a small tax increase to fund the proposed budget and therefor the program would not be included in the 2020 budget. The Volume 1 report recommendations mention that any expenditures to develop programs can be recovered under LIC.

During subsequent discussions with FCM representatives 2 other funds were suggested as potential sources of funding to help implement the CEP recommendations. Both of these funding programs would require a percentage contribution by Mulmur. Burnside was again advised by staff that no money was available in 2020 for this purpose so we did not apply on Mulmur's behalf. The one FCM fund would supply 75% of the total cost and final submission date is in June 2020. The other program would provide 30% funding to make the changes proposed energy conservation measures at the North Dufferin Community Centre. This particular program was discussed in the CEP Volume 2 report and changes were made to the report to make the proposed changes eligible for the funding.

Burnside remains available to help make the needed applications for funding to develop the recommendations of the CEP.

**Forest data needs to be included. (C)**

As pointed out this is an energy study and not a full GHG study. We have updated the report to reference the estimated (based on GIS data) amount of agricultural land vs. forested and other areas as per Figure 2-2 in Volume 1. This could provide useful information for future reference.

**Report needs to include clear recommendations that can be brought forward in a useable format for the public. (C)**

The CEP provides clear recommendations to encourage development and implementation of both energy conservation and renewable energy programs. The next step to implement the plan would provide much simpler program information to the public. Simple energy conservation and renewable energy suggestions were provided in handouts during the public information session on September 28, 2019 and have bene provided on Mulmur's website since that time. Furthermore, this information and more can also be found in the CEP, Volume 1, Section 9.0 Recommendations

**The age of the houses is accurate but as there is insufficient information relating to home improvements, the ages of the houses is almost irrelevant. (C)**

The ages of the houses were in the data sets we accessed in the municipal MPAC information. However, records of home improvements were incomplete in the available data. Some of this information was in the MPAC data sets but not useful because the information was not detailed enough to give accurate adjustments. For example, some residential structures had records of renovations, but the renovation information was not detailed enough to determine their energy use impacts for the report. Solar data provided by the Township did not align with our ArcMap survey verification on solar PV systems installed in Mulmur, and therefore it was determined to not include this data into the total energy consumption/generation assessment. Burnside noted that a number of properties had solar installed. Other information pertaining to geothermal or other existing energy reducing measures was either too inaccurate or unavailable.

We assume that some of these renewable energy or energy conservation project improvements may not have required building permits or were not disclosed to the Township. Our team had proposed to gather sample information through the proposed survey by Environics which unfortunately was not approved.

**The transportation information is again not specific to our township, with estimates based on Ontario data. (C)**

Burnside obtained road study data from Mulmur, but in consultation with our transportation professionals determined that it could not provide the data needed for our travel estimates. Also, a Dufferin County survey tracking typical travel of Mulmur residents was reviewed to gain perspective on typical travel by residents. The study estimates were provided based on the population of Mulmur and assumptions about average number of vehicles and type in potential use.

**Farming is a major factor for Mulmur and yet the report fails to provide sufficient data in this area. (C)**

Please see our earlier comments concerning the energy related agriculture assessment in Mulmur.

**Forests are another major feature of Mulmur and has a significant effect on the Net Zero. Again, there is no data on the quantity of the forests and the effect that is has on our township. (C)**

There seems to be some confusion about our proposed Net Zero goals. These goals are based on GHG associated only with energy use. If the goals were based on all GHG emissions, then the contribution of forests would be important to consider since they are known to provide GHG reductions during their growth period. However, If the trees are cut and burned the GHG reduction is lost. The benefit of trees and other vegetation during this growth period to get GHG reduced as soon as possible is of considerable value. One of our CEP recommendations is to consider more tree planting.

**Suggestions for energy savings are provided, but this information could have easily been sourced. (C)**

The comment that follows may address this point.

**To educate our residents on energy saving options is not a complicated process and information can be obtained from various sources. (C)**

We agree that it does not have to be a complicated process and that often the information is available from various sources. For low cost items such as switching to LED lighting the decision to change to the more efficient lighting may not be difficult since the initial investments are typically affordable and benefits usually described by the vendors. The challenge for most will be making decisions on which of the more expensive and more complicated changes will benefit them the most in the short and long term. The benefit of a professional energy audit such as Burnside performed on the North Dufferin Community Centre is an example. The estimated cost of each option was considered, its feasibility, energy savings, and estimated payback period provided. In general, energy saving options such as increased insulation, windows, and doors will benefit home or business owners through reduced heating and cooling costs. What they will not know without a professional assessment in their specific situation is how long it may take to get the return on that investment due to reduced energy costs.

The CEP, Volume 2 Demonstration Projects Report provides some project example information to help residents make some of those decisions for the more complicated and expensive projects.

**The consultants were very well compensated to provide Mulmur with a report specific to Mulmur residents, the town offices and the NDCC. The report was to provide the township with information relating to current energy uses and GHG emissions. (C)**

The reports do provide the Township with the best information available to estimate current energy use in the whole of the Mulmur community and establish a baseline.

The Municipal government energy use estimates were based on actual data supplied by the Township. Burnside's work program provided much more than the typical CEP since we felt it was important to show the community the benefits of the demonstration projects included in Volume 2. Most of the other CEP studies that we examined did not do this additional work but still had comparable budgets. The data generated does establish a baseline of energy use and the associated GHG emissions against which future energy consumption can be measured. Accuracy of these projections should improve if the estimates are assessed every five years as proposed.

As most Councilors know Burnside worked hard at our cost to obtain 100% funding for this project from both the FCM and Provincial governments. The Township also supplied some in kind services. Although not required Burnside also provided a considerable amount of in-kind work on the project. At this point we have provided in kind consulting services toward the project well in excess of $15,000.00.

The production of this CEP once approved by Council will enable the Township to obtain additional funding from the Federal (FCM or NRCan) and perhaps the Provincial governments to support and enable implementation of various energy conservation and renewable energy activities in Mulmur. We understand that this funding opportunity will not exist for those municipalities who have not satisfied the prerequisite work such as this CEP. For example, there are FCM funding programs that will provide 75% of the total cost to implement plans. There is 30% funding for capital improvements now available at the North Dufferin Community Centre due to the energy audit Burnside prepared as part of the Demonstration Projects report. Yet we note that some of the NDCC energy improvements included in our study are possibly proceeding without making use of this funding. These opportunities for funding would not be available to the Township without an approved CEP, Energy Audit or similar plans.

**There is some information in this report that is specific to Mulmur: Age of houses, Type of heating, Details on NDCC – some outdated in this report. (C)**

All of the energy consumption and GHG emission estimates generated in the CEP report is specific to Mulmur and the study used relevant methodologies and data sources to develop the CEP estimates. We utilized the most up to date data that was available to undertake the work. We would have preferred to have detailed data on every building and energy user in Mulmur, but the data just does not exist. That is why we made our recommendations in the CEP, Volume 1, Section 10.0, starting at page 66.

**If we are to set hard target goals for GHG emissions, we need to know where we are starting, and I do not believe that we have sufficient specific data to allow us to determine our goals. We have no data for the following: the home improvements already made to houses; the number of EV currently owned in Mulmur; Net Zero effect of our forests; Effect of farming on our GHG emissions; Effect of wood burning on GHG emissions. C**

We agree that some of the local data such as individual home improvements are not known because the data does not at this time exist in a form that could be used in the study. For example, and as noted previously, the MPAC data may indicate (in some cases) that home improvements have been made but the data does not provide details that would allow researchers to determine the energy reductions from the noted improvement.

It was impossible to determine from this data if there was any impact on energy consumption at the property. Neither was there was there sufficient budget to conduct door to door surveys or a proper statistical social research study. Even data supplied by Hydro One was not sufficiently accurate to be useful since it appeared that property information from outside Mulmur Township boundaries was included. Burnside went to considerable effort to verify and validate the data and even generated detailed postal codes for Mulmur. This information was supplied to Hydro One who, contrary to their earlier comments, would not supply electrical use data broken down by the postal codes supplied. They also would not provide data on a property basis since this would contravene personal privacy law. Burnside had similar issues in our attempt to obtain use of fuel oils and propane from suppliers. Burnside staff who live in the vicinity used some of our own staff household data to help verify and validate our data findings based on heating source, house sizes and age. The County of Dufferin and other consultants have apparently had similar difficulties in obtaining data from Hydro One.

As a result, Burnside had to calculate energy consumption provided by other credible research sources and apply this data to Mulmur. All of the calculations and data sources can be found referenced in the report with details in the appendices. This is the reason for our CEP, Volume 1 recommendations in Section 10. In particular, we strongly recommend that the Township act on recommendation 10.2. Statistics Canada has the legal ability to require production of personal data needed to properly assess energy consumption and the associated GHG emissions including transportation information. This date would then be available in aggregated form to provide a more detailed assessment for all municipalities. Other suggestions were offered should this recommendation not be acted on by the Federal government.

Even though Burnside had these challenges the results documented in the CEP report can be relied on at this time to establish goals. Burnside proposed goals for GHG emissions related to the calculated GHG emissions associated with Mulmur's energy consumption. As we stated in the CEP, Volume 1 page 52, "Although this study focuses on energy conservation, we recommend that the priority targets at this time for a Net Zero future (by 2040) relate to GHG emissions. Moving from current energy consumption using carbon-based fuels to clean energy consumption…". We recognize this approach does not include all of the GHG emissions that would be produced in Mulmur, but it sets aspirational goals that will be more easily measurable and targets the largest generators of GHG in the Township. Burnside felt that if the goals were based only on energy use it is likely that they will rise over time.

We determined with respect to the study's stated purposes that what is important in this respect is the source of the energy use. If the energy is produced by polluting sources such as carbon-based fuels this is not helpful in preventing climate change. However, if the energy use can be based on Ontario's current mix of electricity which is relatively clean compared to some other provinces this would be a better choice for energy use. Better still if Mulmur residents and businesses can generate their own electrical energy with renewable sources such as solar PV systems then of the original study purpose set out in the CEP, Volume 1 page 9, Section 1.1 can potentially be realized.

**There is some very good information contained in this report. I am only commenting on what I believe are major flaws and omissions relating to their comments, estimates and recommendations. This was a long, time consuming and expensive report to produce and I do believe that in its current state it will not provide the Council and our residents with the information required to move forward to make GHG target reductions and be able to accurately reassess our position in 5 years. (C)**

We disagree! The study was not to be completed until February 2021, so we are well ahead of schedule. One hundred percent (100%) of the cost was funded by the FCM and a small portion by the Province. Mulmur staff contributed some in kind work as did Burnside. So, this study directly cost Mulmur taxpayer nothing. The funding provided would have been used by other municipalities if Mulmur's application had not been approved.

All of the information needed to move forward and achieve the purpose and goals of the CEP has been provided. They are measurable and reasonable. The CEP should not be viewed as a static document. Reasonable goals have been set and the recommendations if acted on will provide the support and tools to enable change. The CEP can evolve over time and there is the opportunity to updated it every five years with new data and document progress. We leave it to Mulmur if they wish to approve the work.

**The formal report needs to reduce jargon and be drafted for the average consumer/reader. (E)**

The CEP is intended to be a technical report for the benefit of Council and its public. By necessity it does include some acronyms and technical terms. We believe that we have explained all of these where we had to use them to readers. The Executive Summary document was produced to provide a quick reference to the study results.

The next step proposed is to implement the findings of the report and in particular find funding to help enable the energy conservation and renewable energy program proposed including the LIC program. As part of that implementation we anticipated production of a program focused on easy to manage information and applications for the Mulmur public at large.

**Materials should clearly articulate practical, immediately accessible concrete actions at the household level and such information should be made graphic at a household level. (E/S)**

These materials were provided at the public information session in September 2019. They are posted on the Mulmur website under the title, Community Energy Plan Solutions.

Those and others are also included in the CEP recommendations. Graphical examples would be a great idea for the next phase of the program proposed.

**Scenarios that illustrate energy savings for the homeowner with approximate costs of the action/equipment, and any available support programs would be of interest and value, versus attempting to sell a comprehensive initiative targeting propane, gasoline and diesel consumption resulting from heating, commuting and farming. (E)**

That is exactly what was provided in the CEP Volume 1 and in particular in Volume 2, Demonstration Projects Report. The Volume 2 report illustrates potential energy savings for the homeowners. The Volume 3, North Dufferin Community Centre Energy Audit example would be more applicable to a larger business or commercial operation and illustrates the value of an energy audit. We were not trying to sell anything but provide objective information. Indeed, in the Volume 2 report on page 19 we concluded that, “A smaller household with a reduced energy demand may benefit more from a propane furnace as there are less associated fuel costs.”

## Specific Comments

| Volume | Page | Comment | Source |
|---|---|---|---|
| 1 | 9 | **Purpose of study:**<br>- **Improve energy efficiency**<br>- **Reduce energy consumption and greenhouse gas emissions**<br>- **Study the impact of future growth on energy needs**<br>- **Foster renewable energy production and economic development**<br>**Plan used as a reference tool to track and compare Mulmur (typo) energy consumption and emissions in future years and set goals for reduction of GHG emissions…. Tool for educational purposes …. Place to obtain additional information.**<br>Correction of Mulmur spelling has been made in the final report. | C |
| 1 | 9 | **– third paragraph – Murmur – s/b "Mulmur" (please do a search, spell check and grammar check)**<br>Additional spell check and grammar has been completed for the final report. | C |
| 1 | 12 | **… act as a baseline for monitoring if the goals and targets are being met.**<br>**Study Limitations: not captured in study**<br>- **Livestock**<br>- **Harvesting wood products**<br>We are not clear on what correction is requested. Those two items are already included as well as other limitations. Burnside has also included a paragraph stating that GHG sinks such as forested areas have not been included. | C |
| 1 | 12 | **Introduction, Para. 1.4, sub-para. 1.4.1 Vision. In my view these are not Vision Statements but address the scope of the document. Offered is a sample Vision Statement for your consideration - it should identify where you ideally want to get to, align with your ultimate goal. "By no later than 31/12/2040 the Municipality of Mulmur will have achieved Net Zero GHG Emissions from the engagement/participation of 95 percent residents including Business Owners. The Municipality of** | E |

| Volume | Page | Comment | Source |
|---|---|---|---|
| | | **Mulmur will be recognised among the top 10[or better] in the Province for GHG emission reduction."**<br><br>Section 1.4.2 Mulmur 2040 Vision Statement has been added as outlined above. | |
| 1 | 15 | **1.6.2. The Climate Emergency**<br><br>**Mulmur may wish to make a declaration on climate emergency, similar to other municipalities and the federal gov't. I believe that we are not to call it an 'Emergency' as that has implications for 'Emergency Procedures" as was noted at our last Council Meeting.**<br><br>The CEP report only states that, "Mulmur may wish to consider a similar declaration." The choice is left to Mulmur! We are only pointing out that others have made declarations. This matter is left to Mulmur Council to consider. | C |
| 1 | 19 | **Housing Stock Age**<br><br>**Although this is very interesting, relevant and specific information, there is so much information missing that the age of the houses is almost useless information. See more comments relating to page 24.**<br><br>**The chart is visually interesting to review. I would also like to have a chart with the actual numbers relating to the age of the houses.**<br><br>We have revised the map to include the number of houses per each age range in the final report. The age of the houses is relevant to the energy consumption. | C |
| 1 | 22 | **Figure 3.3 Transportation Emissions from Fuel Consumed**<br><br>**"Mulmur's energy consumption and emissions was determined by total vehicle kilometers traveled (VTK) within the Township with assumptions on the characteristics and fuel efficiencies of the vehicles."**<br><br>**'MPAC indicates Mulmur has 1864 households in 2018.' (Appendix A, pg. 3). Reliable and current data.** | C |

| Volume | Page | Comment | Source |
|---|---|---|---|
| | | **Calculations for VKT is based on Ontario averages from 2009. Not only is this data over 10 years old, it is the average for Ontario (I assume both rural and urban settings).**<br><br>**I don't see how these calculations which are so general and include rural and urban driving are going to give us a reasonably accurate picture of transportation emissions for Mulmur.**<br><br>Please see our earlier comments concerning the transportation energy use and GHG emissions. We realize that some of the basics used were from earlier studies, but it was the best information that was available for this assessment. | |
| 1 | 24 | **3.2.2 Residential Fuel Sources**<br><br>**The PCP protocol (which has been used throughout this document) recommends assessing emissions released from wood burning. This information is 'not recorded' in this report. In a rural community where many of the residences burn wood, not recording this information is a significant omission.**<br><br>Burnside was following the PCP Protocol as noted. Contrary to the above statement under the protocol wood burning is not recorded as recommended by this Protocol. Wood is often considered a renewable source (biogenic origin) and may be excluded from the GHG inventory. Not including wood can benefit Mulmur if it is not included in the GHG goals assessment. | C |
| 1 | 24 | **3.2.3 Residential Building Age**<br><br>**We have no indication as to any improvements that have been done on the older houses. Many farm houses are on geothermal, have installed new windows, increased insulation, etc. and therefore would not be less efficient than newer homes (as noted in the report).**<br><br>**The report indicates that older houses typically are less efficient than newer homes due to age, old windows, poor insulation etc. The report then indicates that newer homes are much bigger and therefore use more energy. This comment then contradicts the previous statement relating to older homes. So which homes really use more energy?**<br><br>Burnside did not have the information to determine if the older buildings had received improvements that would positively impact their energy use. The records generally do not exist. If it is found in future years | C |

| Volume | Page | Comment | Source |
|---|---|---|---|
| | | that improvements have been made and energy use has decreased this will help Mulmur achieve the goals it sets. This is one of the data gaps that improved census data in future years will hopefully solve.<br><br>Our findings confirmed that generally older residential buildings were less energy efficient that newer homes per square foot. The older buildings were generally smaller and although less energy efficient require less energy use because of their size. Newer residential buildings are constructed to improved building codes and are more energy efficient per square foot, but because many of these homes have a larger square footage to heat and cool in total they may use as much or more total energy than the older homes. If newer homes were built to the same size as the older homes, there would be a net reduction of energy use if the homes were compared. It was an interesting finding. Older homes that install energy efficient measures can reduce their energy use. Newer homes that are already energy efficient can reduce their energy use by building smaller homes with less space to heat and cool or potentially add renewable energy such as solar panels to reduce their net energy use. Government policies and programs could help drive these changes. | |
| 1 | 34 | **3.3 Community Agricultural Sector Energy Consumption and GHG Emissions**<br><br>**"[The report] provides estimates of tractor fuel used and electricity used from barn lighting…" but not total estimates generated from this sector on enteric fermentation and manure management.**<br><br>**As a rural farming township, the report fails to provide sufficient information on the farming sector. This is a major omission.**<br><br>As explained previously this is an energy study not a GHG study. Its not an omission for an energy study the CEP report explains that these sources were not included and explains why. The study has added a further recommendation to undertake a GHG study in the future with a CEP update. | C |
| 1 | 51 | **5.1 Proposed CEP Goals for Mulmur 2018 to 2040**<br><br>**Net zero – The report notes that Mulmur "benefits from the consideration of carbon sinks due largely to its forested areas…", but it does not comment specifically on our numerous forests and its specific effect on the Net zero emissions.** | C |

| Volume | Page | Comment | Source |
|---|---|---|---|
| | | **It states we should "look at our transportation sector – reduction in vehicle hydrocarbon fuel consumption and conversion to EV's." We have no data relating specifically to Mulmur with respect to the number of EV's in the township.**<br><br>**"Protecting the environment – CEP's and associated energy conservation plans can consequently drive significant emission reductions…. However hard targets must be set by Council if these goals are to be achieved…"**<br><br>**I have a problem in setting these 'hard targets' when I do not believe that we have sufficient, current and specific data for our baseline.**<br><br>Burnside appreciates Council's concern, but many municipalities are in the same position of having imperfect data upon which to set a baseline. Burnside has added GIS estimates of the total land area in agricultural production versus the land area forested for the final report in figure 2.2 of Section 2.0 This data can be used in the future if a dedicated GHG inventory is undertaken for future CEP updates to understand the complex relationships of forests and agriculture to GHG emissions.<br><br>During the next monitoring period if our recommendations are followed some better information should be available to assess EV and other energy conservation activities. These are aspirational goals for Mulmur. It may be that in five or ten years the goals will change with improved data. | |
| 1 | 56 | **8.0 CEP conclusions – 6th line - "that" s/b "than"**<br><br>Updated. | C |
| 1 | 66 | **10.0 Measuring Net Zero Success**<br><br>**"…best estimates of current energy consumption and GHG emissions." The omission of the effects of the forested lands on the Net Zero and the omission of the farming data is a significant flaw in these 'best estimates.'**<br><br>The aspirational goals are proposed on the basis of energy consumption and the related GHG emissions. This is not a comprehensive GHG climate change report as we have stated it is an energy use study with the associated GHG emissions identified. So, it is not an omission. Our recommendations target the most significant GHG emissions of the community. This focus can be changed in the future if the Township | |

| Volume | Page | Comment | Source |
|---|---|---|---|
| | | wishes, but this CEP study provides a great start for the community. If it is approved, it could also allow the Township to be eligible for future funding programs as mentioned previously.<br><br>Figure 2.2 shows total land use for the Township of Mulmur. Data was not available and was out of the scope of the study to calculate net GHG emissions resulting from non-energy related effects in forested and agricultural lands. If in the future a specific GHG emissions and inventory study is undertaken in Mulmur this figure can assist in determining the GHG emissions from these land uses. | |
| 1 | 67 | **10.2 – Recommendations to Statistics Canada**<br><br>**The next census is 2021. It is recommended that a letter be sent to request additional information on personal energy conservation. This is a very timely action item and should be addressed immediately if we even want it to be considered for the 2021 census.**<br><br>Agreed! This is an action item for the Township. Along with the final submission we have included a draft letter to be sent to Statistics Canada with copies to other relevant federal government Ministers. | C |
| 1 | 67 | **10.3 Survey by Social Research Firm**<br><br>**The report recommends that if we are not successful with the census request, a properly designed survey carried out by a social research firm is necessary to provide statistically valid data, "that can be used to assess and evaluate community success and achieve the stated goals." As we currently have no 'statistically valid data' specific to Mulmur, once again, I do not see how we can set targets without accurate baseline data.**<br><br>As has been noted in response to several of the previous comments the CEP baseline data in the reports can be relied on for the initial goal setting exercise. That does not mean that these aspirational goals and the baseline cannot in the future be modified as data improves. | **C** |

| Volume | Page | Comment | Source |
|---|---|---|---|
| **2** | **12** | **table 1 – NDC Energy Efficiency Recommendations Item 7- water conservation low flow fixtures – upgrading is based on their chart in Vlm 3, page 33, indicating the number of people in the building (and could be taking showers - I presume). When I asked the staff at the NDCC, there are some of the older men's teams that use the shower and they are in and out in seconds and the water consumption is very limited. I don't know if the consultant asked about the use of the showers or just assumed that they are being well used and consuming a large quantity of water.**<br>**Item 10 – New Zamboni Hot Water System – the NDCC has purchased a new hot water system and the purchase of the new tank was in the budget at the start of the year. I don't know if the consultant spoke with staff regarding these issues, because it would have been noted that the tanks were to be replaced.**<br><br>These are recommendations and if the Township has detailed information that changes the assessment and choices for action we are in full support. There was funding up to 30% for energy conservation improvements based on our audit, but there are prerequisites that must be met. We did find some additional activities that would help qualify the NDCC for this benefit that have been included in the final report. Updated charts have been included in the final report that would help to qualify the Township for funding. Burnside staff did speak with the arena manager. We were aware of the proposal for a new tank but completed the report on the basis of what was existing at the time. We included all opportunities that might be eligible for funding grants. | **C** |

Yours truly,

**R.J. Burnside & Associates Limited**

Lyle Parsons,
Vice President, Environmental
LP:kl

Spencer Brown, P.Eng., C.E.A
Project Engineer & Certified Energy Auditor
SB:kl

Jim Walls, P.Geo., QPESA
Senior Geoscientist