GREEN ENERGY AND CLIMATE CHANGE WORKING GROUP AGENDA

Friday, April 14th, 2023 – 2:30 p.m.
Municipal Office – Council Chambers – 217 Harper Road

Chair, Councillor Greg Hallam

1. CALL TO ORDER

2. AMENDMENTS/APPROVAL OF AGENDA

3. DISCLOSURE OF PECUNIARY INTEREST AND/OR CONFLICT OF INTEREST AND GENERAL NATURE THEREOF

4. APPROVAL OF MINUTES

i) **Minutes – March 17th , 2023** – *attached, page 4.*

Suggested Recommendation:
***"THAT**, the minutes of the Green Energy and Climate Change Working Group Meeting held on March 17th, 2023 be approved as circulated."*

5. DELEGATIONS & PRESENTATIONS

None.

6. BUSINESS

i) **Climate Action Plan Update**

- Waste Composition Study Results – Bob Argue
  - CIF-Year-6-Residental-Waste-Composition-Study-Feb-2023.pdf (thecif.ca) – see page 36.
  - Small and rural communities climate action guidebook (website-files.com)

- Building Conditions Assessment Report – Bob Argue – *attached, page 11.*

ii) **Communications**

- Lanark County Climate Change Committee Update – Noelle Reeve
- Should Tay Valley Declare a Climate Emergency? – Peter Nelson - *attached, page* 17.
- National Building Code update on Energy Efficiency – Doug Barr - *attached, page* 21.
- Suggestions for Educating Residents and Council – All

7. NEW/OTHER BUSINESS

None.

8. NEXT MEETING DATE AND PROPOSED AGENDA ITEMS

Next Meeting: June 9th, 2023

9. DEFERRED ITEMS

**The following items will be discussed at the next and/or future meeting:*

- *None at this time*

10. ADJOURNMENT

MINUTES

GREEN ENERGY AND CLIMATE CHANGE WORKING GROUP MINUTES

Friday, March 17, 2023
2:30 p.m.
Council Chambers

ATTENDANCE:

Members Present:	Councillor, Greg Hallam Councillor, Angela Pierman Bob Argue Jennifer Dickson Douglas Barr Gilbert Rossignol Peter Nelson
Members Absent:	David Poch
Staff Present:	Noelle Reeve, Planner Allison Playfair, Building & Planning Administrative Assistant, Recording Secretary Janie Laidlaw, Deputy Clerk (left at 2:42 p.m.)

1. CALL TO ORDER

The meeting was called to order at 2:34 p.m.
A quorum was present.

2. APPOINTMENT OF CHAIR

Councillor Greg Hallam was appointed as Chair of the Green Energy and Climate Change Working Group.

3. AMENDMENTS/APPROVAL OF AGENDA

The agenda was approved as presented.

4. DISCLOSURE OF PECUNIARY INTEREST AND/OR CONFLICT OF INTEREST AND GENERAL NATURE THEREOF

None at this time.

5. APPROVAL OF MINUTES

i) Minutes –September 16, 2022

The minutes of the Green Energy and Climate Change Working Group Meeting held on September 16th, 2022, were approved as presented.

6. DELEGATIONS & PRESENTATIONS

None.

7. COMMITTEE ORIENTATION

The Deputy Clerk explained the orientation package that was handed out to the Working Group Members. The Working Group Members read the Code of Conduct and signed the forms.

The Deputy Clerk left the meeting at 2:42 p.m.

8. BUSINESS

i) Introductions

The Working Group Members introduced themselves and expressed their personal areas of interest within the Terms of Reference for the Working Group for this term. These priorities included:

- implement the Climate Action Plan;
- increase recycling and composting;
- become a centre of knowledge and expertise;
- provide strong aspirational targets for the Township to aim for;
- no new fossil fuel based purchases going forward;
- educate residents.

During the introduction of the Members, it was discussed that a Member who is not able to attend in person should be able to attend virtually.

ii) **Climate Action Plan Update - Noelle Reeve, Planner**

- Targets – Progress

  The Planner explained pie charts in the Climate Action Plan, adopted by Council in 2020, including the Municipal Green House Gas Emissions by sector on page 17 of the Climate Action Plan, the Municipal Energy Consumption by source on page 18, and the Community Greenhouse Gas Emissions by sector on page 19.

  The Planner also reviewed the Essential Actions in the Climate Action Plan. She noted that the Federal government has funding to help implement the actions of the Plan.

- Targets - Priorities Discussion

  The Planner updated the Working Group on new reports that had been presented to Council in the last few months that the Working Group can use to help the Township achieve its Greenhouse Gas reduction and energy savings goals.

  Building Conditions Assessment Report

  The Planner asked the Working Group to review the report and to offer suggestions on how any of the work proposed could be undertaken to reduce energy use and emissions. The Working Group discussed that future replacement of building components or total replacement should use the Climate Lens Tool to ensure that lifecycle costing, including the increases in the price of carbon, is provided to Council. Any suggestions the Working Group have should be emailed to the Planner who will then forward the information to the Public Works Manager.

  It was noted that Lanark County had not used life cycle costing in its analysis to replace the gas boilers in three of their housing units. They had moved a motion to use gas boilers without considering the more cost effective, energy efficient alternative of air source heat pumps that also provide air conditioning in the summer and decrease Greenhouse gases. Reeve Rainer will be speaking to County Council on March 22, 2023 on this matter.

  The Planner is to email the information to the Working Group for the meeting that is to be held at the County of Lanark on March 22, 2023 regarding the air source heat pumps versus gas boilers.

Asset Management Plan

The Planner commented that the Treasurer and Public Works Manager will be presenting the Asset Management Plan to Council as well as the 10-Year Capital Plan in April. The Asset Management Plan sets out the replacement timeline for all the Township assets (e.g., vehicles, tools, equipment as well as buildings) so it is a very important document for the Working Group to be aware of so that it can provide suggestions and recommendations for energy savings and greenhouse gas reduction.

Councillor Angela Pierman recommended that the Planner create a Power Point presentation of the information discussed at today's meeting to help educate the new Council on the significance of lifecycle costing in reducing the Township's contribution to Climate Change.

- Adaptation – Where does it fit?

The Climate Action Plan was funded by the Federation of Canadian Municipalities (FCM) grant to produce a mitigation plan – to reduce Greenhouse gas emissions. The other aspect of addressing climate change is adaption to increased flooding as well as increased droughts.

B. Argue pointed out that some adaption actions are also mitigation actions so are twice as valuable. Natural Asset Management is a good example (e.g., protection of wetlands). Protecting wetlands allows for carbon sequestration within the wetland (mitigating/reducing the amount of greenhouse gas in the air). Wetlands also provide adaptation to climate change impacts by soaking up rainwater (which reduces flooding) and also releasing water slowly (providing a reserve of water during droughts).

iii) **Communications**

- Lanark County Climate Change Committee Update

The Planner explained to the Working Group that Reeve Rainer sits on the Committee with three (3) other County Councillors and that she had been appointed to be the Township's municipal representative to the Lanark County Climate Change Committee. She has not been invited to any meeting yet in 2023. Last year Working Group member Bob Argue was the representative for the Township, but the policy has been changed by the County and members of the public were no longer appointed. The Lanark County Climate Change Committee has not yet completed a Climate Action Plan.

- Should Tay Valley Declare a Climate Emergency

P. Neilson expressed concern about the postponement of the electric vehicle purchase and about the County not tendering for heat pumps in the

renovations of its housing buildings. He provided an article about the Town of Huntsville declaring a climate emergency – *attached page 8*.

The Working Group will discuss the value of declaring a climate emergency as an educational tool at its next meeting.

P. Neilson also discussed a book that is recommended by Mark Z Jacobson – No Miracles Needed. The book asserts we can use existing technologies to harness, store, and transmit energy from wind, water, and solar sources to ensure reliable electricity, heat supplies, and energy security. – *synopsis page 9.*

Working Group Members are to bring back ideas to help educate the community with doing small things to make changes to address climate change. This will be added as a topic on a future agenda.

- National Building Code Update Energy Efficiency - Doug Barr

  Topic to be deferred to the next meeting.

- Update Webpage, Produce an E-news fortnightly on Energy/Climate Change Tips

  The Working Group discussed different options to educate the community with easy tips to help in implementing climate change actions in their own homes. A suggestion was to have current residents share their experiences using alternative heating sources like heat pumps or solar panels, etc, and send the information in a newsfeed or post on the Climate Change webpage.

  Another suggestion was to have a green festival or promote a festival in the area that is already taking place.

  Also, the Climate Lens Tool was recommended to be on the webpage for everyone to use when completing purchases or renovations.

9. NEW AND OTHER BUSINESS

The Working Group agreed to add the following to the Agenda under New and Other Business:

- Motion to Request that Hybrid Meetings be Permitted Again
- Three articles on climate change

i) **Motion to Request that Hybrid Meetings be Permitted Again**

The Working Group requested that the Green Energy and Climate Change Working Group meetings be held in a hybrid format on a trial basis to allow Members unable to physically attend to participate and that Councillors Hallam and Pierman draw this to Council's attention.

ii) **Three articles on climate change.**

The Planner provide information to the Working Group on the following topics:

- Journey to Sustainability presentation with ONfungi explores how fungal dominant compost builds soil life – *attached page 11 .*
- Article – Opinion – What if Climate Change meant not doom – but abundance? – *attached page 12.*
- The Indicators produced by Climate Reality Project Canada would be a good visual to communicate with the public on progress implementing the Action Plan – *attached page 14*

10. NEXT MEETING DATE AND PROPOSED AGENDA ITEMS

Next Meeting: April 14, 2023

11. DEFERRED ITEMS

**The following items will be discussed at the next and/or future meeting:*

- *National Building Code Update Energy Efficiency*
- *Declaring a Climate Emergency*
- *Suggestions for Educating Residents*

12. ADJOURNMENT

The Working Group adjourned at 4:39 p.m.

BUSINESS

Tay Valley Township

REPORT

COMMITTEE OF THE WHOLE MEETING
August 9th, 2022

Report #PW-2022-16
Sean Ervin, Public Works Manager

BUILDING CONDITION ASSESSMENT REPORTS

STAFF RECOMMENDATION(S)

It is recommended:

"THAT, Report #PW-2022-16 – Building Condition Assessment Reports, be received for information."

BACKGROUND

At the June 23rd, 2020 meeting, Council passed the following resolution:

RESOLUTION #C-2020-06-16

MOVED BY: Rob Rainer
SECONDED BY: RoxAnne Darling

"THAT, staff be authorized to apply for a grant opportunity from the Federation of Canadian Municipalities' Municipal Asset Management Program for a building condition assessment project.

THAT, the following activities be conducted as part of the building condition assessment project:

- retain a qualified consultant to evaluate and produce a report focused on architectural, structural, mechanical, and electrical portions of the Township buildings.
- such report will include recommendations, pictures, and budget estimates such that this report can be incorporated and used by the Township as part of its Asset Management Program.

AND THAT, $10,000 (or 20% of the maximum $50,000) be committed from the Asset Management Reserve towards the costs of this initiative."

The Township was notified on May 26, 2021, that the application to the Federation of Canadian Municipalities (FCM) was successful and that the Township would receive $40,000 for the completion of the building condition assessments.

At the August 24th 2021 meeting, Council passed the following resolution:

Report #PW-2021-19 – Building Condition Assessment – RFP Award.

RESOLUTION #C-2021-08-32

MOVED BY: Barrie Crampton
SECONDED BY: Mick Wicklum

"THAT, the Building Condition Assessment Contract #2021-EC-001, including the additional scope be awarded to McIntosh Perry;

AND THAT, the Reeve and Clerk be authorized to sign the necessary documentation."

ADOPTED

The purpose of this report is to update Council with the findings from McIntosh Perry's reports.

DISCUSSION

McIntosh Perry investigated the 15 buildings included in this project and provided subsequent reports for each of the buildings. Due to the size of the files, each report was not included in this report.

A summary of the recommended capital expenditures for the next year (2023) for the recommended buildings is summarized below. More information for each capital expenditure will be provided in the scheduled year during the yearly 10-year capital update report that is brought forward by the Treasurer as well as discussed during budget deliberations. The 15th building was the South Sherbrooke Fire Hall and is not included in this report as it will likely be brought forward to the Fire Boards attention.

Municipal Office – 217 Harper Road

Capital projects recommended for 2023 include the following:

- Replacement of flat roof, $107,250
- New electric heaters for the staff and the Public Works garage entrance, $9,600
- Replace emergency no exit signs, $4,200

Between 2024 and 2027, recommended projects include balancing and commissioning the HVAC system, painting the interior walls, replace window sealants, bathroom renovations, replacement of the carpet, electrical improvements, and replacement of the security system. The total capital investment for the next 5-years is $326,960.

Bathurst Garage – 217 Harper Road

Capital projects recommended for 2023 include the following:

- Replace exterior door hardware: $1,800

Between 2024 and 2027, recommended projects include repaving the parking lot, replacement of the CO detector, concrete repairs to the floor, repairs and parging to the exterior, installation of new oil-grit separator for the garage floor, replacement of exterior entrance doors, and replacement of the security system. The total capital investment for the next 5-years is $162,014.

Burgess Garage – 4174 Narrows Lock Road

Capital projects recommended for 2023 include the following:

- Replacement of the entrance door and new hardware: $6,000
- Paint propane tank piping $1,200

Between 2024 and 2027, recommended projects include exterior crack repairs and repaint exterior, new interior doors and door hardware, replacement of the stairs, washroom renovations, sealing and painting the concrete floors, plumbing fixture replacement, installation of oil-grit separator, installation of CO detector system, lighting upgrades, replacement of building signage and installation of fire alarm system. The total capital investment for the next 5-years is $224,254.

Maberly Garage – 172 Maberly Elphin Road

There are no capital projects recommended for 2023.

Between 2024 and 2027, recommended projects include crack repair to the block wall, replacement of exterior doors and new door hardware, replace overhead garage doors, install new eavestrough, electrical upgrade and lighting upgrades. The total investment for the next 5-years is $92,520.

Bathurst Sand Dome – 217 Harper Road

The capital projects recommended for 2023 included the following:

- Replacement of exterior lighting, $1,200

Between 2024 and 2027, recommended projects include concrete repairs to the foundation walls, replacement of the entrance gates, electrical upgrades, installation of bollards at the entrance and moisture protection for the interior concrete walls. The total investment for the next 5-years is $28,440

Burgess Sand Dome – 4174 Narrows Lock Road

There are no capital projects recommended for 2023.

Between 2024 and 2027, recommended projects include the replacement of the exterior man door and moisture protection for interior concrete walls. The total investment for the next 5-years is $9,000.

Burgess Hall – 4174 Narrows Lock Road

There are no capital projects recommended for 2023.

Between 2024 and 2027, recommended projects include electrical upgrades, repairs to the block wall foundation, replacement of exterior windows and doors, replacement of flooring at

the entrance and in washrooms, replacement of fire alarm system, kitchen renovation and replacement of baseboard heaters. The total investment for the next 5-years is $144,372.

Maberly Hall – 180 Maberly Elphin Road

The capital projects recommended for 2023 included the following:

- Install firestopping penetrations $6,000

Between 2024 and 2027, recommended projects include repaving the parking lot, replacement of the front steps at the front entrance, install electric heaters at front and side entrance, installation of exhaust fans in kitchen and washrooms, replace flooring in kitchen and the completion of a barrier free design and various barrier free improvements to the washrooms. The total investment for the next 5-years is $122,304

Maberly Rink Storage Shed/Change Room – 4906 Bolingbroke Road

Capital projects recommended for 2023 include the installation of a fire alarm system and emergency lighting at an estimated cost of $7,200.

Between 2024 and 2027, recommended projects include the replacement of exterior lighting on the building and over the rink, and the replacement of windows and a new overhead door. The total investment for the next 5-years is $13,500.

Glen Tay Waste Site Shed – 156 Muttons Road

There are no capital projects recommended for 2023.

Between 2024 and 2027, recommended projects include the replacement of ceiling panels, replacement of the asphalt shingles, and repairs to the concrete landing at the entrance. The total investment for the next 5-years is $4,314.

Stanleyville Waste Site Shed – 1200 Stanleyville Road

There are no capital projects recommended for the next 5-years.

Maberly Waste Site Shed – 582 Zealand Road

There are no capital projects recommended for the next 5-years.

ReUse Center - 156 Muttons Road

The capital projects recommended include the installation of emergency lighting and exit lights at an estimated cost of $5,400.

Between 2024 and 2027, recommended projects include installation of a fire alarm system, structural improvements, and the completion of a barrier free design. The total investment over the next 5-years is $20,280.

Glen Tay Waste Site Barn – 156 Muttons Road

There are no capital projects recommended for the next 5-years.

Between 2024 and 2024, recommended projects include the repair of the wood structure, replace the steel roofing and replacement of doors and windows. The total investment of the next 5-years is $60,060

McIntosh Perry also completed the Building Condition Assessment for the South Sherbrooke Fire Hall. The subsequent update for that specific building will be presented to the Fire Board at a later date.

OPTIONS FOR CONSIDERATION

Option 1 (Recommended) - Council receive this report for information.

Option 2 – Council provides other direction.

FINANCIAL CONSIDERATIONS

The reports completed by McIntosh Perry determined that the Township would need to invest approximately $1.2 million over the next 5-years to maintain the buildings in a state-of-good repair. Further discussions regarding the impact of the proposed costs with the various building Reserves will take place during the Treasurer's annual 10-year capital plan update, which typically takes place during the September Council meetings.

STRATEGIC PLAN LINK

Financial Sustainability: We have stable tax rates and debt ratios and can fund our desired programs and infrastructure.

CLIMATE CONSIDERATIONS

The reports recommended that the Township should investigate replacing existing components with more energy efficient components that release less GHGs or with components that will reduce the energy use. An example is to replace the windows with 3-frame windows instead of 2-frame to reduce heat loss in the winter (30-40% heat loss), and reduce UV heat in the summer.

McIntosh Perry completed wall and roof thermology studies for the Municipal Office, and the Bathurst and Burgess garages.

The report for the Municipal Office noted that the southwest elevation has thermal variance (heat loss) and recommended that test cuts be completed to determine the wall assembly components. There were no significant thermal issues noted on the flat roofs or any other of the wall elevations.

The report for the Burgess Garage noted that there were no thermal issues with the roof assembly, however there were thermal variances (heat loss) around the southwest side of the building as well as over the garage door entries. A full-wall recladding with improved insulation is required to lower heat losses.

The report for the Bathurst Garage noted that there are thermal variances across the entire southwest elevation and the soffit of the southeast elevation. The southwest elevation was also notably saturated. There were no thermal variances on the flat roof.

A level 1 Energy Audit was completed for the Municipal Office. A level 1 audit is the most basic audit that involves a walk through of the building to identify glaring energy problems. The energy audit for the Municipal Office recommended to replace fluorescent light fixtures with LED fixtures, replacing older rooftop heating/cooling units with more efficient units or units that use alternative units, turning lights off when not in use, setting thermostat for when building is not occupied and replace roofing with lighter coloured roofing membrane.

CONCLUSION

Overall, most of the Township's buildings are in a good condition. However, there are a few buildings, including the Burgess Hall, Burgess Garage, Bathurst Garage and Glen Tay Waste Barn that are not in good condition and will require substantial investment to maintain the buildings in a state-of-good repair. Council may also want to further investigate the functionality/feasibility and a cost benefit analysis of these buildings as it may be more financially beneficial to replace or deem some of these buildings as surplus.

ATTACHMENTS

None.

Prepared and Submitted By:

Sean Ervin,
Public Works Manager

Approved for Submission By:

Amanda Mabo,
Chief Administrative Officer/Clerk

If not now, when?': N.B. capital city declares climate emergency

The City of Fredericton has made a climate emergency declaration.

It was approved at the council's regular Monday meeting after a small group presented it with a petition signed by 500 people and 12 civil organizations, businesses and faith organizations.

Fredericton is the fourth and final capital city in Atlantic Canada to adopt the declaration.

"It's just a way for the community to be aware that we are in tune with things that need to change in order to lower greenhouse gas emissions and basically become a better stewardship for the community," said Kevin Darrah, chair of the environment committee and councillor for Ward 7.

The declaration, according to the wording, "carries with it significant meaning, signalling to the public the city's acknowledgement of the seriousness and urgency of the climate crisis and a deep commitment to urgently eliminate greenhouse gas emissions by empowering residents and city staff to dramatically lower their carbon footprints by increasing funding and mobilizing resources towards addressing the crisis."

It was supported by a presentation that began: "If not now, when?"

Darrah agrees and said there is work to be done to help mitigate the risk communities, especially in Atlantic Canada face with respect to climate change.

The federal government made a similar declaration in 2019, but none from the provincial government, as it looks to renew efforts to extract shale gas and invest in small modular reactors research.

"There are things that the province needs to do in order to benefit and help the province benefit," Darrah said of whether the province would replicate the city's efforts.

New Brunswick Premier Blaine Higgs said he understands the climate is changing, but draws concern to the province's reliance on outside energy sources and questions what making a climate emergency declaration means instead of looking at solutions to an energy supply.

"But what does that mean, does that mean every consumer in the province just needs to pay more energy," he said.

Higgs noted an incident in February when Hydro Quebec cut power to the province because of a cold snap that impacted both provinces.

"There was too much wind, many of the windmills had to be shut down," he said.

The Conservation Council of New Brunswick said it is pleased by the declaration, but said the province would do well to learn from its capital city's governance.

Moe Qureshi, the CCNB's manager of climate solutions, was on hand when the motion was approved.

"The message from scientists all over the world is immediate action, we need to take steps toward solutions and solutions mean a cleaner strategy," he said. "We shouldn't go back to those days. When we think about this climate emergency, we need to stop burning stuff. There is no reason to keep burning oil or shale."

Qureshi said relying on the creation of SMRs, which can take up to 10 years to build, will only set us back.

"I think New Brunswick as a whole has to invest in a clean strategy," he said.

Megan Mitton, a Green MLA, has submitted a motion to declare a provincial climate emergency declaration, which is expected to be debated next week.

We Are Living in a Climate Emergency, and We're Going to Say So
It's time to use a term that more than 13,000 scientists agree is needed

- By Mark Fischetti on April 12, 2021

An emergency is a serious situation that requires immediate action. When someone calls 911 because they can't breathe, that's an emergency. When someone stumbles on the sidewalk because their chest is pounding and their lips are turning blue, that's an emergency. Both people require help right away. Multiply those individuals by millions of people who have similar symptoms, and it constitutes the biggest global health emergency in a century: the COVID-19 pandemic.

Now consider the following scenarios: A hurricane blasts Florida. A California dam bursts because floods have piled water high up behind it. A sudden, record-setting cold snap cuts power to the entire state of Texas. These are also emergencies that require immediate action. Multiply these situations worldwide, and you have the biggest environmental emergency to beset the earth in millennia: climate change.

Given the circumstances, *Scientific American* has agreed with major news outlets worldwide to start using the term "climate emergency" in its coverage of climate change. An official statement about this decision, and the impact we hope it can have throughout the media landscape, is below

This idea is not a journalistic fancy. We are on solid scientific ground. In January *Scientific American* published an article about a study entitled "World Scientists' Warning of a Climate Emergency." At the time, more than 11,000 scientists from 153 countries had signed a report to signify their agreement that the world is facing a climate emergency that requires bold action. As of April 9 another 2,100 had signed on. As our article said, "the adverse effects of climate change are much more severe than expected and now threaten both the biosphere and humanity.... Every effort must be made to reduce emissions and increase removal of atmospheric carbon in order to restore the melting Arctic and end the deadly cycle of damage that the current climate is delivering." Our article also noted that as of January, "1,859 jurisdictions in 33 countries have issued climate emergency declarations covering more than 820 million people."

Journalism should reflect what science says: the climate emergency is here. The statement we have issued was coordinated by Covering Climate Now, a global journalism initiative with more than 400 media partners. Here it is:

From Covering Climate Now, Scientific American, Columbia Journalism Review, *the* Nation, *the* Guardian, *Noticias Telemundo, Al Jazeera,* Asahi Shimbun *and* La Republica:

The planet is heating up way too fast. It's time for journalism to recognize that the climate emergency is here.

This is a statement of science, not politics. Thousands of scientists—including James Hansen, the NASA scientist who put the problem on the public agenda in 1988, and David King and Hans Schellnhuber, former science advisers to the British and German governments, respectively—have said humanity faces a "climate emergency."

Why "emergency"? Because words matter. To preserve a livable planet, humanity must take action immediately. Failure to slash the amount of carbon dioxide in the atmosphere will make the extraordinary heat, storms, wildfires and ice melt of 2020 routine and could "render a significant portion of the Earth uninhabitable," warned the January Scientific American *article.*

The media's response to COVID-19 provides a useful model. Guided by science, journalists have described the pandemic as an emergency, chronicled its devasting impacts, called out disinformation and told audiences how to protect themselves (with masks and social distancing, for example).

We need the same commitment to the climate story. As partners in Covering Climate Now, a global consortium of hundreds of news outlets, we will present coverage in the lead-up to Earth Day, April 22, 2021, around the theme "Living Through the Climate Emergency." We invite journalists everywhere to join us.

MILLER THOMSON
AVOCATS | LAWYERS

"Green" Changes Announced for Ontario Building Code

July 20, 2017 | Aaron Atcheson, Julia Zanetti

On July 14, 2017, the Ministry of Municipal Affairs announced the replacement of the Ontario Building Code, effective January 1, 2019. The changes are being made to include new requirements supporting the government's Climate Change Action Plan (CCAP) of June 2016, with a view to reducing GHG emissions and implementing energy-efficient measures in new homes and large buildings. The concept is to bring these structures closer to being "net-zero energy buildings" (NZEB) – where the energy used by the building is equal to the amount of renewable energy created on site. Affected parties including designers, builders, contractors, and installers should take note of these significant changes being considered.

Requirement of "Solar-Ready" Roofs and Conduits

One of the major themes from the proposed changes is to institute requirements during the installation stage of new houses and large buildings that will make them ready to be "net zero" in the future. There are two amendments with this objective in mind: (i) adding a loading requirement to roofing designs for all new large buildings that makes possible the future addition of solar technology; and (ii) the requirement of a conduit on all new houses and large buildings to facilitate the installation of a photovoltaic system or a solar domestic hot water system.

The current version of the Building Code does not require these facilitating measures be in place. The rationale for these proposed changes is that, currently, when solar voltaic panels are added to an existing building, the construction costs can be huge. These amendments would require that certain upfront costs be incurred during the construction phase – ensuring large building roofs are able to support a larger dead load allowing for the weight of a future installation of a PV or solar hot water system, and of installing conduits on all new houses and buildings.

The loading requirement for roofing designs will only be waived in circumstances where the solar collection system is not practical, including roofing areas occupied by mechanical equipment, vegetative or high-reflectance roofs, roof area that is largely shaded, roof area that is sloped or oriented to make solar collection impractical, and roof area used for paths of travel.

National Resources Canada partnered with the Canadian Solar Industries Association to explore this "solar-ready" concept and created Solar Ready Guidelines.[1] Builder-led pilot projects were done to explore the solar-ready concept. The findings were that a few simple, inexpensive design modifications made "up front" in the design and construction phase of a new home enabled building owners to significantly save on future installation costs of a solar domestic hot water system or photovoltaic system. Specifically, it found that for an average home, homeowners could expect to save about $1,000 on the installation of a solar domestic hot water system or a solar PV system in a home built "solar-ready" versus a home without these features.[2]

Reduction of Trade-offs between Building Envelope and Heating Systems for Energy Efficiency Compliance

Another significant proposed change is with regard to the energy efficiency requirements under the Ontario Building Code, as set out in the Supplementary Standard SB-12 "Energy Efficiency for Housing." The change would reduce, starting in 2020, the possibilities for trade-offs between components of building envelopes and heating systems, eventually eliminating the practice of these trade-offs altogether by 2022.

Currently, houses can meet the energy efficiency requirements by following either the prescriptive-based approach or the performance-based approach in SB-12. Prescriptive compliance means that the thermal performance and energy efficiency of both the building envelope and the mechanical equipment (including space heating equipment, hot water heating equipment, and heat recovery ventilators) must conform to a certain compliance package with specified requirements for each component. Performance compliance means the builder must only ensure that the overall energy use of the house does not exceed the amount of energy it would use if it was designed according to a select prescriptive compliance package; but how this is distributed amongst the various components is up to the builder to decide. This greater flexibility thus allows builders to make trade-offs between building envelopes and mechanical equipment, which often results in the substituting of a highly energy-efficient heating system with a poorly-performing building envelope.

A recent *Globe and Mail* article entitled "Ontario Looks to Close Loophole on Energy Standards for Buildings" discussed that many condominium and apartment building developers are exploiting the flexibility provided under the current rules.[3] Developers are able to meet energy targets by installing ultra-efficient mechanical heating and ventilation systems as a "trade-off" against the use of one of the least energy-efficient materials for its building envelope – floor-to-ceiling windows. This practice has the effect of undermining the energy efficiency of these new large buildings which are able to "squeak by" the energy efficiency standards, but whose building envelopes are overall low-performing in thermal and energy efficiency.

The proposed amendment will reduce the potential for these trade-offs with the view that it will highlight the critical role of the building envelope in making new buildings as efficient as possible in terms of energy use and GHG emissions. As of 2022, these trade-offs will be altogether eliminated, so that builders can only substitute building envelope components for other building envelope components. For

example, a window with a lower-than-required performance level can be substituted for insulation that has a higher than required R-value but it cannot be substituted for a higher performing heating system.

Requirement of Heat or Energy Recovery Units in all Buildings

Another amendment, to be in effect by 2022, is that all apartment buildings and condominiums will be required to have a heat or energy recovery unit as part of their ventilation system. The rationale for this change is that due to recent efforts at reducing air leakage in new buildings, air tightness in new homes and buildings has significantly increased to the extent that air leakage, as well as the supply air for exhaust ventilation systems, is now reduced. A heat or energy recovery ventilator can address these issues as it provides a controlled amount of fresh air through a mechanical ventilation system. The purpose of a heat recovery unit is to remove moisture and provide fresh air to buildings in order to maintain good indoor air quality. Air quality is important not just for human health reasons, but also for energy efficiency and cost-savings, as it reduces heating costs by not heating excess water vapour in the air (heating moist air eats up more energy). Although there will be upfront installation costs for these units, it is expected that the saved heating costs over time will make them cost-efficient and have a payback period shorter than their expected lifetime.

Encouraging Greywater Reuse Systems

One of the proposed changes to the Building Code is to facilitate greywater reuse systems. Greywater systems are a form of decentralized water reuse where the system is maintained by the property owner or manager and the collected water is reused on site.[4] There are cost benefits for the user, as there will be lower payments for water, system benefits, as the re-used water does not have to be transported through the water infrastructure (the sewage system), and environmental benefits, as there is, obviously, lower water source withdrawal, as well as lower energy use.

"Facilitation" of these systems in the new Building Code will be in the form of adopting a new standard for greywater reuse created by the Canadian Standards Association – the CAN/CSA-B128.3 Standard – which references the quality of water required for greywater reuse systems. The current Building Code only references one CAN/CSA standard, which is focused mainly on the design and installation portions of greywater systems.

The hope is that with implementing such a standard controlling the quality of water, users' and consumers' concerns about health, safety, and sanitation with Greywater reuse systems will be allayed, and these systems will become more commonplace.

A recent study done by the Priority Green Clarington demonstration project and reported on by the Environmental Commissioner of Ontario in its 2016/2017 report found that compared to other water-saving technologies, the Greywater system delivered the largest water savings – at 13 litres per person per day, providing more than 50% of the water needed for toilet flushing.[5] Unfortunately, such systems are not yet cost-efficient, due to their high upfront cost, including installation of a dual plumbing system.[6]

It is unknown whether this addition of a new water quality standard will be enough to encourage users to install and retrofit these expensive greywater systems. This change is to be in effect in 2019, although it is anticipated that there will be a negative reaction to this initiative from municipalities, who based their capital expenditures on water and wastewater treatment systems on the current model of water usage.

Other potential changes proposed for the new Building Code include: continuous insulation requirements; energy-efficient windows and sliding doors requirements; and air leakage testing and air tightness requirements.

Conclusion

The Ministry is encouraging comments to be posted on their site during the 77-day comment period, which closes September 29, 2017. Following this period, Technical Advisory Committees of Building Code experts will meet to offer advice on the proposals, which are anticipated to begin coming into effect as of January 1, 2019. However, with a provincial election scheduled for spring 2018, it is unknown whether some or all of these changes will actually be put in place.

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[1] "Solar Ready Guidelines for Solar Domestic Hot water and Photovoltaic Systems", *National Resources Canada*, CanmetENERGY Housing, Buildings, and Communities, Version 1.1 <http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/canmetenergy/files/pubs/SolarReadyGuidelines_en.pdf,> online.

[2] *Ibid*, at page 16.

[3] Lorinc, John: "Ontario Looks to Close Loophole on Energy Standards for Buildings", *The Globe and Mail*, published March 16, 2016, <https://www.theglobeandmail.com/life/home-and-garden/architecture/ontario-looks-to-close-loophole-on-energy-standards-for-buildings/article29261814/:/ >, online.

[4] "Every Drop Counts: Reducing the Energy and Climate Footprint of Ontario's Water Use", *Annual Energy Conservation Progress Report by the Environmental Commissioner of Ontario*, 2016/2017 (Vol 1), <http://docs.assets.eco.on.ca/reports/energy/2016-2017/Every-Drop-Counts.pdf>, online, at page 86.

[5] *Ibid*, at page 88.

[6] *Ibid.*

BUILT ENVIRONMENT

Why is Ontario making new buildings less energy efficient?

The province's proposed building code is a step backward from net-zero

BY CHRIS BALLARD
APRIL 13, 2022

Chris Ballard is a former Ontario minister of housing and environment and climate change and the CEO of Passive House Canada, a national non-profit professional association that advocates for the Passive House high-performance building standard.

If you could live in a home that was highly energy efficient, climate resilient, comfortable and healthy for about the same cost as a code-built home and was built to outlast current buildings, would you move in?

All that's missing to make that a reality for homebuyers is an improved government building code that recognizes how easy – and important – it is to lower household energy bills and provide shelter during extreme weather events.

Unfortunately, governments around the world have repeatedly failed to deliver, and this cycle of building-code failure is about to continue in Ontario.

During a short and rushed consultation that ended in March, the provincial government released a proposed update to the building code. The latest changes were meant to be based on the model national code released last month. The proposed federal code isn't the pathway to net-zero it's hyped to be; it's an improvement but not there yet. Meanwhile, Ontario's proposed code is a step backward when it comes to making buildings more energy efficient and resilient in the face of the climate crisis.

buildings suffer a 30% reduction in value, while a robust Canadian energy-efficiency marketplace could add up to $48 billion to GDP.

Worse still, it may come with the collateral damage of those homes and lives when buildings are not able to withstand extreme weather events. For example, buildings with generous insulation, triple-pane windows, air tightness, heat-recovery ventilators and low energy use can support residents during extreme temperatures, like those during the unprecedented heat dome that killed 600 people in B.C. last summer.

Ontario municipalities looking to improve their green-building standards will find that the regressive provincial code stymies their plans. Municipalities use a process called site plan control to develop green building standards, but having more tools, such as a unified robust building code, would drive consistency, predictability and capacity to help transform the market across the province.

Federal code is an improvement but a missed opportunity

Meanwhile, the top step of the new federal code calls for a 60% reduction in energy use over the previous model code, released in 2015. It's an improvement but not as ambitious as B.C.'s step code, which has limitations but targets a near 90% reduction. There's plenty of evidence demonstrating that more is possible, with minimal cost increases, but that ambition did not make it into the code. In a world where Canada will have to double its electricity supply to get to net-zero, shouldn't we look to save energy at every step?

In today's building stock, including "green buildings," there is a performance gap between expected and actual energy

A quick code refresher: every five years, the Canadian Commission on Building and Fire Codes, established by the National Research Council of Canada, develops and publishes the model Canadian National Building Code. The federal code is voluntary, but since many provinces lack the ability or desire to develop their own, most adopt some or all of it.

The latest federal model code is a step code, much like that found in British Columbia. This means it's designed to allow provinces to ratchet up energy performance levels over time to increase efficiency and drive down greenhouse gas emissions. By having steps, it gives the building industry a clear idea of what will come next, performance-wise.

The proposed federal code isn't the pathway to net-zero it's hyped to be; it's an improvement but not there yet.

Rather than adopt the step code, the provincial government in Ontario proposes to opt for the lowest possible efficiency level. For smaller buildings, Ontario will make no improvements in energy efficiency. For larger buildings, the province will put in place a standard that is less efficient on some of the requirements for windows, doors and insulation, making it less stringent than what is in place today. With everything we know about the climate crisis and building solutions, this is not only a wasted opportunity that will end up costing Ontario more in the long run; it will also hurt the province's long-term competitiveness to attract jobs in the low-carbon economy. Real estate investors in Europe and the United Kingdom are already seeing inefficient

performance. A low-cost way to close this gap and verify the efficiency level of buildings is by conducting what's called a blower-door test to see how air-tight they are. With heavy lobbying from the building industry, air-tightness testing was first added to and then pulled from the federal code (and wasn't added to the Ontario code).

The federal code also continues to use a "reference building approach," where energy performance is assessed against a similar hypothetical building – an approach that will continue to exacerbate the performance gap problem. In a net-zero world, where investors are seeking decision-useful climate data, shouldn't we aim to deliver quantifiable reductions in carbon pollution over the life of the building? Instead, we are expected to just trust the building industry.

Equally troubling is the near complete absence of resiliency measures added to the federal code to protect buildings from high winds, floods, wildfires and more. Incorporating projections about future climate conditions into the codes will reduce the need for costly future retrofits, according to the federal government's own expert panel on disaster resilience.

Ontario municipalities looking to improve their green-building standards will find that the regressive provincial code stymies their plans.

One major problem: developing Canada's model code is a conservative and opaque process.

The Canadian Commission on Building and Fire Codes uses a series of committees composed primarily of members of the building industry to develop the new code. Gaining a seat at the table is near impossible. The commission also receives advice from provinces and territories through a committee that can block virtually anything the code committee wants to move forward.

While the commission may have done good work in the past to ensure the integrity of our buildings, the process is too slow to address the innovative building needs of Canadians during a worsening climate crisis.

If the federal government wants to meet its climate-mitigation and -resilience goals, it needs a stronger code, and it needs provinces and territories to take a step forward, not back. The code-development process needs to be reformed to make it faster, more accountable, transparent and innovative to help solve the climate crisis.

More ambitious codes will spur jobs and innovation while delivering high-performing buildings that are comfortable and better for your health. If built correctly, they will have the potential to significantly cut carbon pollution while also sheltering us from some of the worst climate-related impacts. Change is needed because the codes belong to the public, not entrenched interests and recalcitrant provinces.

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