THUNDER BAY CLIMATE TRANSITION COLLABORATIVE

April 14th, 2025, Thunder Bay City Council Deputation

By Margaret Woods & John Stephenson

SLIDE 1 – GREEN DEVELOPMENT STANDARDS – GROWING A HEALTHY & JUST COMMUNITY

Good evening, Mayor Boshcoff and members of council. My name is Dr. Margaret Woods, I am a physician and environmental advocate with a deep commitment to public and planetary health and a sustainable community. As a member of the Canadian Association of Physicians for the Environment I speak regularly with my colleagues from across Ontario who are as concerned as I am about the impact of climate change on the health of our communities.

My name is John Stephenson, I am a Thunder Bay Architect and Past President of the Ontario Association of Architects, and I am deeply concerned about the impact our built environment has on climate change and both human and community health. During much of my 45-year career in architectural practice I have been focused on designing very energy efficient buildings and for the past several years on the need for the decarbonization of what we build. My experience designing three significant zero carbon projects currently under construction in Thunder Bay has shown me that high-performance buildings relying entirely on electricity can be built within reasonable and affordable budgets.

SLIDE 2 – WHO IS THE TBAY CLIMATE TRANSITION COLLABORATIVE?

We represent the Thunder Bay Climate Transition Collaborative, a coalition of local community organizations and institutions who are concerned about climate change and its impact on the health of our community and the environment.

The Thunder Bay CTC was created through Thunder Bay's involvement, along with 22 other communities across the country, in the 2024 Tamarack Community Climate Transition Cohort. This was initiated by Thunder Bay's Sustainability Coordinator in the fall of 2023.

We've held two community roundtables. The first was attended by 15 different organizations, to build community support for advancing the City's Net Zero Strategy.

The second, held last fall, included representatives from the business, construction and design communities bringing their valued perspective to the table.

SLIDE 3 – WHAT IS OUR CURRENT FOCUS?

Thunder Bay is directly impacted by climate change with more frequent extreme weather, milder and dryer winters increasing wildfire risks with smoke affecting air quality in the city and region in the summer months.

We're here today to speak with you about the vital importance of accelerating the adoption of Green Development Standards for Thunder Bay, a key recommendation of the City's own Net-Zero Strategy, a step that over 15 other Ontario municipalities have already taken to help reduce these impacts.

It is being said today that Thunder Bay needs economic growth to have a sustainable future. However, to be truly sustainable, any growth must also be smart growth and must have both economic and environmental benefits.

The adoption of a GDS for Thunder Bay is a necessary step toward creating a livable, sustainable, and resilient city.

SLIDE 4 – WHAT ARE GREEN DEVELOPMENT STANDARDS?

To be clear – Green Development Standards do not require net zero design immediately, but rather, mandate stepwise increases in building design requirements.

- A GDS contains both voluntary and mandatory requirements to promote sustainable design, including reduced GHG's.

- A GDS is one regulatory tool, including a range of controls for air quality, building energy emissions & resilience, water quality & efficiency, ecology & biodiversity, and waste.

- A GDS requires the development of buildings and sites to meet higher standards than the minimum required by building codes and other bylaws.

SLIDE 5 – TORONTO GREEN STANDARD

Thunder Bay's own Net-Zero Strategy, adopted in 2021 after Council's declaration of a climate emergency in 2020, says that a Green Development Standard is a necessary step required to meet our 2030 and 2050 net-zero goals. It references the Toronto Green Standard, first adopted with mandatory requirements in 2010, as an example to learn from. On this slide you can see the breadth of issues that Toronto's Green Development Standards address.

SLIDE 6 – MISSISSAUGA'S GDS TIERED STRUCTURE

This graphic from Mississauga's green development standard adopted late last year illustrates the tiered structure of a typical GDS which includes gradually more stringent mandatory requirements. In Mississauga, it is planned to make the highest tier of requirements fully mandatory by 2030. A common feature of many green standards is that they require cities to lead by meeting the highest tiers with their own projects.

SLIDE 7 – WHY MUST THUNDER BAY BUILD SMARTER?

- Buildings are among the largest sources of Thunder Bay's GHG emissions contributing over 31% of total emissions.

- Thunder Bay's Net-Zero Strategy says that to meet the City's 2050 net-zero goals, it must reduce community wide emissions by 90% from 2016 greenhouse gas levels.

- 58% of that reduction, with half coming from buildings, needs to be by 2030, now only six years away, and so far, we've only realized about 4.5% - in seven years! It's clear that the pace of reduction needs to increase – by as much as 12-fold.

SLIDE 8 – BENEFITS OF A GREEN DEVELOPMENT STANDARD

The benefits of buildings designed to meet Green Development Standards are wide ranging.

- GDS buildings cost less to operate,
- They use municipal infrastructure more efficiently,
- They grow local economic opportunities, create jobs and improve sector capacity,
- They reduce Greenhouse Gas Emissions, and
- They improve the health and wellness of residents.

SLIDE 9 – CLIMATE CHANGE THREATENS PUBLIC HEALTH

We know that climate change is not only an environmental and economic threat, it is also a public health threat.

In 2023 the World Health Organization declared climate change, "the greatest threat to global health".

Our own Northern Ontario Health Units reported in 2022 that: "The impacts of a changing climate are broad and overwhelmingly negative, affecting not only our environment but our economy, infrastructure and the health of Canadians".

SLIDE 10 – THE HEALTH HARMS OF AIR POLLUTION

Fine particulates and nitrous oxide gases released by the burning of fossil fuels enter our blood streams via the lungs and cause disease in multiple body systems as this compelling graphic illustrates.

SLIDE 11 – ESCALATING AIR POLLUTION

Air pollution from greenhouse gases and increasing wildfires accelerated by climate change also bears a significant cost to our economy. While the global and national cost is enormous, in Ontario alone, it is estimated that there are as many as 6,600 premature deaths annually at a cost to the Ontario economy of $49 billion every year.

SLIDE 12 – HOW DOES THIS IMPACT THUNDER BAY RESIDENTS?

According to the World Health Organization “Climate change is impacting health in a myriad of ways, including, by leading to death and illness from increasingly frequent extreme weather events, such as heatwaves, storms and floods, the disruption of food systems, increases in food, water and vector-borne diseases, and mental health issues.

“Furthermore, climate change is undermining many of the social determinants for good health, such as livelihoods, equality and access to health care and social support structures.”

These climate-sensitive health risks are disproportionately felt by the most vulnerable and disadvantaged, including women, children, indigenous communities, ethnic minorities, older populations, and those with underlying health conditions.

SLIDE 13 – CLIMATE CHANGE IMPACTS MENTAL HEALTH)

Young people who have contributed the least to this crisis are particularly vulnerable to climate distress and anxiety.

In 2021 the Lancet Planetary Health Journal reported in a global study of 10,000 youth that nearly half of those who participated say that climate anxiety affects daily life and functioning and a startling 60% say government inaction betrays current & future generations!

A significant majority of our young people feel that **WE** are compromising their futures!

SLIDE 14 – PROVEN HEALTH BENEFITS OF REDUCED GHG EMISSIONS

The health benefits of reduced greenhouse gas emissions are undeniable.

- Energy-efficient systems and reduced reliance on fossil fuels lead to cleaner air, decreasing respiratory illnesses like asthma and chronic obstructive pulmonary disease (COPD) and cardiovascular disease (CVD).
- Green infrastructure protects vulnerable populations during heat waves.
- Access to green spaces and biophilic design has been shown to reduce stress, improve mental health, and encourage physical activity.

SLIDE 15 – ADDITIONAL COST OF A ZERO-EMISSIONS BUILDING

Some will argue that we can't afford to build to net-zero standards, however, studies have confirmed that these costs are reasonable. But more importantly for cities, the costs of doing nothing and for society as a whole, the humanitarian costs are far too great.

According to a 2021 study in Montreal, the cost of switching from gas to electricity was zero. However, once building enhancements required to reduce energy consumption were included, the cost premium rose to a modest 4.7% and those prices will continue to fall as more standards come into place. The Atmospheric Fund

SLIDE 16 – COST BENEFIT STUDY, TORONTO GDS

The Montreal study validated an earlier study for Toronto which projected direct costs and benefits over 24 years. However, the Toronto study went further and concluded that when the capital cost savings to municipal systems were included there would be net savings to the community of about 2.3%. When building operating cost savings for owners and occupants were included, every dollar spent saves three dollars.

SLIDE 17 – WHAT DOES THIS MEAN FOR A SINGLE FAMILY HOME IN THUNDER BAY

When we look at the cost of GDS for a $500,000 single family home this is what we see. A cost premium of about $22,500 (4.5% as per the studies) buys an all-electric heat pump, an air source hot water tank and a variety of building envelope upgrades to improve energy efficiency.

This is nowhere near the premium for Green Development Standards that some worry might occur, and it is estimated that replacing a gas furnace and electric air conditioner with an air source heat pump will alone result in an annual GHG reduction of just over 3 tonnes of CO_2 and reduce energy consumption by over 50%.

SLIDE 18 – THE VALUE OF GREEN BUILDINGS

We must also look beyond the financial Return on Investment to the human and planetary health benefits of better buildings. This graphic from the recently adopted Mississauga Green Development Standards shows the environmental return on investment, the ultimate benefit of a Green Development Standard. This is also an investment in affordability, and in sustainable growth, as what is built right the first time won't need to be retrofit In 15 years.

SLIDE 19 – WHY MUST THUNDER BAY ADOPT A GREEN DEVELOPMENT STANDARD?

- Climate change poses a **major threat** to public and ecosystem health in Canada and Thunder Bay and a Green Development Standard provides both public health and eco-system co-benefits.
- Buildings contribute **over 31%** of Thunder Bay's Green House Gas Emissions, one of the largest sectors.
- The Ontario Building Code only sets **minimum** standards and just meeting the code **won't** get us to net zero and zero carbon.
- A GDS will **grow green industries** in Thunder Bay and contribute to economic development.
- A GDS will **attract people** to Thunder Bay as a healthy place to invest and live.
- By setting higher standards, a GDS in Thunder Bay will **improve community health and wellness**.

Green Development Standards - which lower the carbon footprint of buildings **and** improve **both** public and eco-system health are among the most powerful climate actions municipalities can take.

SLIDE 20– CONCLUSION

Adopting a Green Development Standard bylaw is an investment in our city's future. It demonstrates leadership, accountability, and a commitment to our community's economic growth in a healthy and environmentally sustainable way. Such a bylaw is not just a policy change or an aspirational guideline that is never met - it's a legacy for future generations.

We urge you, our city leaders, to ask our city administration to advise you what resources and timelines are needed to accelerate the adoption of this transformative measure.

In closing, we leave you with these powerful thoughts from the Canadian Public Health Association.

Thank you for your time and consideration. We are happy to answer any questions you might have.