

## Green New Deal Maximum Program

None

November 9, 2019

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## Chapter I

# Introduction

### I.1 Land Acknowledgment

Before we begin, it is necessary for us to acknowledge that we are occupying Mohkinstsis, the unceded homelands of the Blackfoot Confederacy, including the Piikuni, Kanai, and Siksika nations, the Stoney Nakoda Nation comprising the Chiniki, Bearspaw and Wesley clans, the Tsuut'ina Nation, and the Métis peoples of Alberta (Region 3). These lands were stolen through bad-faith Treaty 7 negotiations conducted in the midst of genocides that are ongoing to this day. This is now, and will always be, Turtle Island.

### I.2 The Problems

- Anthropogenic climate change is happening right now.
  - The last 5 years are the hottest 5 years on record.
  - The CO<sub>2</sub> in the atmosphere has already exceeded 415 ppm, levels that were described as “the point of no return.”

- According to IPCC reports, carbon emissions must be reduced significantly by 2030, and globally we need to reach net-zero emissions by 2050 if we are to avoid warming in excess of 1.5 degrees Celsius.
- Without reduction in emissions and effective carbon sequestration we could see global temperatures increase by 4°C as early as 2060.
- Canada is one of the world's largest contributors to climate change, and its climate change plan was considered among the worst in G7.
  - Canada was not on track to meeting Paris climate targets, let alone the goals outlined in the latest IPCC report.
    - \* Alberta is not on track to meet federal goals; not under the NDP or IPCC targets. These targets are considered “doomed.”
    - \* Alberta & Saskatchewan are uniquely responsible for preventing Canada from meeting Copenhagen and Paris emissions goals, and have increased emissions as the rest of the country has reduced them.
    - \* Oil Sands emissions reporting was incorrect; our current numbers put Canada's greenhouse gas emissions over 2 times what it was originally thought to be.

The people most affected by climate change & environmental destruction are the least responsible for emissions, including Indigenous communities in North America and the global

south, marginalized populations, people of color, women, children, working people, and the poor.

- – Indigenous peoples' traditional food sources are being contaminated, with skyrocketing cancer rates.
- The oil & gas industry has gutted northern BC First Nations' economies & ecosystems. This Amnesty International report also looks at the intersection of gender and the flawed consultation process.
- The incessant assaults on Indigenous sovereignty by pipeline and other dirty infrastructure development. Two prominent and pressing examples:
  - \* The invasion of the Wet'suwet'en First Nation for the Coastal Gas Link pipeline (clans Unist'ot'en and Gidimt'en)
  - \* The invasion of the Secwepemc First Nation by attempting to force the expansion of the TransMountain pipeline without their consent.

The number of Indigenous communities' receiving drinking water advisories has increased.

- The Canadian government knew about Grassy Narrows' mercury poisoning since the 1960s, but kept it secret. It still has done next to nothing. The poisoning came from the dumping of a corporation.
- Because of the disproportionate impacts of climate change on the most vulnerable, the failure of the wealthiest people in the world to act amounts to genocidal activity.
- The Oil & Gas Industry has controlled economic & ecological narratives around climate change.

- It is uniquely responsible for obstuficating and challenging attempts to convert to green energy.
- The Oil & Gas industry deserves intense criticism for its contribution to climate change and environmental destruction.
  - \* The industry is responsible for at least 33% of all carbon pollution should be held accountable to the people and environments they have harmed.
  - \* Oil & Gas industry profits and tax cuts do not result in more jobs or better conditions for workers.
  - \* Boom and Bust oil-patch economics harm Canadian families.

Market-based solutions will not save us.

- – Carbon trading is a failure. Even if maximally implemented, energy corporations lobby aggressively to exploit its structure, or water it down to utter ineffectiveness.
- The vast majority of oil sector emissions will be exempt from federal carbon pricing.
- Environmental destruction is expensive and not worth it.
  - The cost of cleaning up Alberta's oil patch is estimated to be about \$260 billion. The fossil fuel industry has only paid \$1.6 billion.

### 1.3 The Solutions

- A Green New Deal (GND) is the solution to the social and ecological problems we currently face.



- A GND would be a public spending initiative to rapidly transform our energy systems and develop climate-resistant infrastructure, all while employing millions of people and reviving our economy.
- A GND emphasizes timely, achievable, inclusive actions developed from successful examples from across the world. We aim to avoid insubstantial targets that popular political parties have developed to quell meaningful change. Maintaining the status quo is incompatible with impactful climate action.
- Integral to a GND is the respect of the sovereignty of First Nations, decolonization, and the effective implementation of the United Nations Declaration of the Rights of Indigenous Peoples, which recognizes that the protection of indigenous rights protects the environment.
- Ecological conservation and recovery work, and the role that worker cooperatives and unions can play in accomplishing this transformative change, create the foundation for a sustainable culture and economy.

#### **Popular Support**

- A majority of Canadians across all political orientations support a Green New Deal.
- More than 80% of registered American voters support a Green New Deal, with majorities among both parties.
- Major environmental NGOs and organizations have endorsed a Green New Deal, including the Sunrise Movement, Green-

peace, 350.org, and more. The rest of official endorsers can be found here.

#### **1.4 Official GND Websites**

- The Pact for a Green New Deal - Coalition
- Our Time - Youth Movement
- <https://350.org/>
- Sanders' Campaign GND

## Chapter 2

# Food Security & Land Conservation

### 2.1 Introduction

Food security is paramount with the growing threat of climate change. We must ensure that local sustainable food production provides egalitarian access to nutritious food. Our Maximum Program addresses food security, community empowerment, and conservation as a unified subject rather than as separate issues. We include proposals that are both locally specific and widely applicable so that these ideas may be replicated and adapted to local conditions.

### 2.2 Community Level Proposals

#### Local Food Production

##### Introduction

- Climate change will cause changes in rainfall, sea-level increases, and extreme weather events, threatening local, national, and international food security.<sup>1</sup> Extreme weather

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<sup>1</sup> FAO, "Climate Change And Food Security: A Framework Document."

events have nearly doubled since the 1990s, threatening food security on a global scale.<sup>2</sup> Developing local food sources in Calgary will help mitigate rising food insecurity in the city and region.

- Local food production provides mitigates carbon production, democratizes food access, and establishes community-level organization absent in contemporary Canadian cities.<sup>3</sup>
- Gardening reduces anxiety, depression, and obesity while increasing perceived quality of life and sense of community.<sup>4</sup>

#### 1. Supplying locally-grown food to food-insecure persons

##### 1. Data

1. One in eight households in Canada is food-insecure.<sup>5</sup>
2. Food insecurity disproportionately affects people living alone, female lone parents, renters, those with chronic physical or mental health conditions, LGBTQ2+ identifying people, and indigenous people.<sup>6,7</sup>
3. The rising cost of food worries nine in ten Canadians, with food prices expected to rise by \$400 per year for Canadian families.<sup>8</sup>

##### Proposals

2. 4. Distribute locally-produced food from community centres, revitalizing community centres as places to

<sup>2</sup> “UN Warns Climate Change Is Driving Global Hunger.”

<sup>3</sup> “Local Food - Benefits.”

<sup>4</sup> Soga, Gaston, and Yamaura, “Gardening Is Beneficial for Health.”

<sup>5</sup> “Household Food Insecurity in Canada.”

<sup>6</sup> “Household Food Insecurity in Canada.”

<sup>7</sup> “Inequalities in Food Insecurity in Canada.”

<sup>8</sup> “Rising Food Prices Worry 90% of Canadians as Federal Election Nears.”

access social services. For example, Lambeth GP Food Coop<sup>9</sup> in the UK has integrated healthcare services with local organic gardening co-ops. For more about community centres, see the Social Services section of the GND Maximum Program.

5. Create food purchasing programs for community centres. To combat the high prices of expensive dietary staples, community centres could organize bulk food sales for community members. Community members who buy into these programs would receive dietary staples at a discounted price compared to conventional grocers or markets.
6. Enable local food sovereignty by creating local gardening counsels, allowing for community-level coordination of planting, harvesting, and distribution of food. This will help minimize the labor cost of food production at a local level.

### Prioritizing soil production

#### 2. 3. Data

7. Soil Erosion is outpacing soil production at alarming levels.<sup>10</sup>
8. Soil with low organic content leads to lower yields, lower biodiversity, and higher sea levels with reduced water retention.<sup>11</sup>
9. Using compost and other non-synthetic fertilizers can help sequester 43% more carbon.<sup>12</sup>

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<sup>9</sup> "Lambeth GP Food Co-Op."

<sup>10</sup> FAO, "Climate Change And Food Security: A Framework Document."

<sup>11</sup> FAO.

<sup>12</sup> FAO.

### Proposals

4. 10. Expanding composting capacity of city facilities.
  11. Providing compost equipment for interested person for free or at reduced prices.
  12. Using animal waste to produce high-quality compost.
3. Closing metabolic loop regarding waste management both human and animal

### 5. Data

13. Human Waste Processing, the production and distribution of “biosolids” is already a wide spread across much of North America and while concerns exist, humans have been using untreated and treated human waste for millennia.<sup>13,14,15</sup> There does not appear to be substantive indication that treated organic human wastes are much different than those from other sources of manure.<sup>16</sup>

### Proposals

6. 14. Examine Biowaste use in detail. Ideally bio wastes should go to food production and bioremediation purposes as a priority. Any unused biowastes should be redirected towards reforestation projects.

### Green-space conversion

### 4. 7. Data

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<sup>13</sup> “Biosolids.”

<sup>14</sup> “FAQ - Biosolids.”

<sup>15</sup> Durant, *The Life of Greece*.

<sup>16</sup> “Biosolids.”

15. Our GND is anti-lawn. In the United States, between \$47-82 billion dollars are spent on lawn care with 40 million acres dedicated to an inedible crop.<sup>17</sup> The rise of lawns has caused the decline of pollinator species, the use of one to two thirds of municipal drinking water, and lawnmowers that emit forty times as much emissions as a car per gallon.<sup>18</sup>
16. Food forests such as the Beacon Food Forest<sup>19</sup> in Seattle, Washington or the Brown Mills Urban Food Forest<sup>20</sup> in Atlanta, Georgia are a low-impact sustainable agricultural method that has been practiced for millennia throughout the world to produce substantial amounts of food in otherwise unproductive areas.

### Proposals

8. 17. Convert the Transit Utility Corridor for agriculture production. This currently unused greenspace is maintained by mowing and herbicide use, costing an estimated \$40 million per year. This land could be turned over to the surrounding communities with minimal costs. A map of the corridor is available on the City of Calgary website.<sup>21</sup>
18. Incentivize the conversion of lawns, boulevards, and unused lots into community garden spaces. This program would mitigate the issue of garden care for elderly or disabled persons who otherwise cannot main-

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<sup>17</sup> Graber-Stiehl, "Lawns Are an Ecological Disaster."

<sup>18</sup> Graber-Stiehl.

<sup>19</sup> "Beacon Food Forest Permaculture Project."

<sup>20</sup> Holcombe, "This Southern City Is Fighting Food Deserts with a Forest of Free Produce."

<sup>21</sup> "Transportation Utility Corridor."

tain their yard space.

19. Create an open-source interactive map of Calgary showing all the available green space in Calgary including information about ecological regions within Calgary, climate data, and what plants thrive in the greenspace of interest.
20. Food forests: convert existing greenspaces into woodland areas that produce food and herbs.

## 5. Native plants and pollinators

### 9. Data

21. Cities provide a unique place for native pollinators to flourish, as rural areas are increasingly becoming crop monocultures managed with neonicotinoid pesticides.<sup>22</sup>

### Proposals

10. 22. Reroute funding for mowing/weeding to promote planting of native plants.
23. *Xericulture* is the practise of growing plants, and landscaping with the intent to use little water, typically only that which falls a precipitation. By creating programs and information packets it can be relatively simple to begin converting costly and unproductive lawns into low water landscapes which efficiently store water that falls there, and replacing water intensive species with deeper rooting shrubs and trees, and ground cover of mulches, rocks, and plants with low water needs like juniper, or natives grasses.<sup>23</sup>

<sup>22</sup> University of Bristol, "Cities Could Play a Key Role in Pollinator Conservation."

<sup>23</sup> Rutledge et al., "Xeriscaping."



24. Abolish the use of pesticides. These harm native and domestic pollinators, causing the collapse of native plant populations and lower production yields for food crops.<sup>24</sup>
25. Encourage the proliferation of native pollinators by providing nesting sites and wildflowers in these converted green-spaces.

### Urban Growing in Calgary

#### 6. 11. Proposals

26. Passive and low input greenhouse design.<sup>25</sup> Low input and passive are highly possible in the Albertan climate. The largest challenge for winter growing is low light levels, but LED solutions are already available, and passive light collection through reflectors can be pursued in some situations.
27. AquaPonics.<sup>26</sup> Encourage the development of aquaponics farms throughout Calgary (such as in the +15 spaces) through municipal grants. Such systems combine aquatic species (fish, small crustaceans, and various mollusks) with conventional annual crops to produce food, and greatly reduce waste and need for inputs such as fertilizer and water, and chemical filters and additives. It also prevents pollution of local watersheds.
28. Green Walls.<sup>27</sup> Retrofit buildings with green walls to reduce heating costs, produce food, and have aes-

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<sup>24</sup> "Pesticides and Pollinators."

<sup>25</sup> Smith and Harlan, "Cold Climate Solar Greenhouse Design."

<sup>26</sup> "What Is Aquaponics?"

<sup>27</sup> "Green Wall - Function."

thetic benefits.

29. Rooftop Urban Farming.<sup>28</sup> Retrofit buildings to have rooftop gardens that reduce heating costs, produce food, and provide habitat for bird and pollinator species.

**\*\***This report covers some of the things already mentioned above but ties them together into a regenerative and circular economic system:

[https://www.ellenmacarthurfoundation.org/assets/downloads/Cities-and-Circular-Economy-for-Food\\_280119.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/Cities-and-Circular-Economy-for-Food_280119.pdf)

### **Local Animal Agriculture**

To ensure sustainable food security in Calgary and Alberta, responsible animal agriculture must be encouraged as part of the GND.

## 7. Calgary Urban Animal Agriculture

### 12. Honey bees

#### 30. Data

1. Urban beekeeping benefits the community by providing crop pollination and honey/wax production. Honeybee pollination is beneficial or even essential for many food crops grown in Alberta.<sup>29</sup> Honey has less fructose than high-fructose corn syrup and is a source of antioxidants.<sup>30</sup> Additionally, honey bees kept in urban environments are

<sup>28</sup> "Rooftop Republic Urban Farming."

<sup>29</sup> "List of Crop Plants Pollinated by Bees."

<sup>30</sup> Whitaker, "The Sweet Science of Honey."

often healthier than their rural counterparts, preventing the collapse of domestic honey bee populations seen elsewhere in the world.<sup>31</sup>

#### Proposals

31. 2. Eliminate barriers to beekeeping: restrict the ability of homeowner's associations and insurance companies to prevent people from beekeeping on their property.
3. Encourage responsible beekeeping through the existing free provincial registration system and education through local beekeeping organizations.<sup>32</sup>

Chickens, quail, and other small fowls.

#### 13. 32. Data

4. Urban chickens provide protein (eggs and meat), consume some table scraps, and produce compost.<sup>33</sup>
5. Chicken keeping is currently banned in Calgary, but loopholes exist for chicken keeping via support animal bylaws, but this requires a letter from a licensed psychologist or psychiatrist which overburdens our existing healthcare system.<sup>34</sup>

#### Proposals

33. 6. Lift restrictions on urban chicken keeping in Calgary: establish a free permit system for up to four hens (no roosters) per suitable sized properties in Calgary following similar programs to Van-

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<sup>31</sup> "Bees Reared in Cities 'Healthier.'"

<sup>32</sup> "Getting Started."

<sup>33</sup> Page, "5 Surprising Benefits of Owning Chickens."

<sup>34</sup> "Livestock Emotional Support Animals."

couver,<sup>35</sup> Toronto,<sup>36</sup> and Edmonton.<sup>37</sup>

7. Eliminate barriers to chicken-keeping: restrict the ability of homeowner's associations and insurance companies to prevent people from keeping chickens on their property.
8. Provide information to new chicken owners to prevent abandoned chickens.

#### 14. Small ruminants: goats and sheep

##### 34. Data

9. Small ruminants such as goats and sheep provide sources for milk, fibre, and meat.
10. Small ruminants are grazers, controlling grasses and weeds without the use of herbicides that are toxic to birds<sup>38</sup> and amphibians.<sup>39</sup>
11. Goat weed-management projects have occurred in Calgary parks since 2018.<sup>40</sup>
12. Small ruminant keeping in Calgary is currently banned in Calgary, but loopholes exist for miniature goat keeping via support animal bylaws, but this requires a letter from a licensed psychologist or psychiatrist which overburdens our existing healthcare system.<sup>41</sup>

## Proposals

<sup>35</sup> "Learn the Rules for Backyard Chickens, and Register Your Chickens with the City."

<sup>36</sup> "UrbanHensTO Pilot Program."

<sup>37</sup> "Urban Hens Program."

<sup>38</sup> Blus and Henny, "FIELD STUDIES ON PESTICIDES AND BIRDS."

<sup>39</sup> Hayes et al., "Hermaphroditic, Demasculinized Frogs after Exposure to the Herbicide Atrazine at Low Ecologically Relevant Doses."

<sup>40</sup> Bell, "Weed-Managing Goats Are Back and It's Win-Win for Calgary Parks."

<sup>41</sup> "Livestock Emotional Support Animals."

35. 13. Expand the current small ruminant weed-management program to include the transit utility corridor and other unused green-spaces in Calgary. Offer permits and incentives to local goat and sheep producers in and around Calgary to manage these areas.
14. Offer pilot permits to study the viability of backyard miniature goat keeping in Calgary along the lines of the Miniature Goats Pilot Project in Saanich, British Columbia.<sup>42</sup>

### Aquaculture

#### 15. 36. Data

15. Aquaculture is the agricultural cultivation of aquatic organisms (red/green algae, crustaceans, molluscs, and fish).<sup>43</sup>
16. Aquaculture is the fastest growing agriculture sector and accounts for over 50% of global fish production.<sup>44</sup>
17. Examples of successful aquaculture implementation incorporating plants and fish exist in Calgary, such as Deepwater Farms.<sup>45</sup>

### Proposals

37. 18. Research the viability of large-scale aquaculture in Calgary and Alberta, whether this will be sustainable, and how this can be implemented.
19. See above for aquaponics in public spaces.

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<sup>42</sup> "Miniature Goats."

<sup>43</sup> "Aquaculture."

<sup>44</sup> "Aquaculture."

<sup>45</sup> "Deepwater Farms."

## 16. Veterinary Involvement

### 38. Data

- 20. Most veterinarians in Calgary practice on dogs, cats, and rabbits. Urban animal agriculture will require the cooperation and participation of veterinary professionals to treat honey bees, chickens, and small ruminants.
- 21. As of December 2018, all medically important antibiotics in Canada must be sold by prescription only.<sup>46</sup> Thus, urban animal producers need veterinarians to access antibiotics for all animal species including honey bees.
- 22. Many urban veterinarians are not experienced working with chickens, small ruminants, and honeybees.

### Proposals

- 39. 23. Offer continuing veterinary education programs to veterinarians and veterinary technologists about urban agricultural animals via the ABVMA and CVMA.
- 24. Coordinate with the University of Calgary Faculty of Veterinary Medicine to include urban animal agriculture in the curriculum, particularly as part of the distributed veterinary learning community in the fourth year rotations.
- 25. Ensure biosecurity in the City of Calgary through disease monitoring, food safety, and public education via the University of Calgary and AB-

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<sup>46</sup> “Responsible Use of Medically Important Antimicrobials in Animals.”

## VMA.

### Wildlife Management

#### 17. 40. Data

26. Calgary has one of the worst cases of urban sprawl in North America. Low-density housing has contributed to Calgary's standing as Canada's second-highest emitting city, largely due to commuting to far-flung communities.<sup>47</sup> This urban sprawl encroaches on rural areas, causing wildlife to move into urban areas.<sup>48</sup>

#### Proposals

41. 27. Establish protected areas along the periphery of Calgary with corridors for wildlife. These protected areas will discourage further urban expansion and allow living space for wildlife away from the suburban and urban areas. Similar passageways exist in London for bees.<sup>49</sup>
28. Limit rezoning for peripheral farmland to remain farmland or become nature preserves.

### Plant-Based Diets

#### 8. Plant-Based Diets

#### 18. Data

42. Animal agriculture is one of the leading causes of climate change, accounting for 80% of human land

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<sup>47</sup> Lawrynuik, "The Climate Cost of a Sprawling City."

<sup>48</sup> Lawrynuik.

<sup>49</sup> "'Bee Corridor' Planted in London to Boost Insect Numbers."

use and 18% of all carbon emissions.<sup>50</sup> Livestock account for 30% of all anthropogenic methane emissions.<sup>51</sup>

43. Global transition to low-meat or meatless diets could result in 2.8 Gha of reclaimed land that could be used as cropland or as a natural vegetation carbon-sink.<sup>52</sup> The cost of maintaining CO<sub>2</sub> below 450 ppm by 2050 would be 55% less if we shifted toward a plant-based diet.<sup>53</sup> The individual difference in shifting toward a plant-based diet is similar to the difference of a sedan versus an SUV.<sup>54</sup> Meat-consumption in the United States is equal to the carbon dioxide produced by 60 million vehicles.<sup>55</sup>
44. Livestock populations suffer enormous losses during droughts and famines. For example, during droughts in Africa from 1981 to 1999, between 20% and 62% of cattle died.<sup>56</sup> Climate change will exacerbate these trends in the future, making livestock agriculture potentially untenable on a large-scale.<sup>57</sup> The FAO recommends that we should “shift away” from grain-fed livestock species as a matter of global food security.<sup>58</sup>
45. Livestock grazing is one of the leading causes of global

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<sup>50</sup> Stehfest et al., “Climate Benefits of Changing Diet.”

<sup>51</sup> FAO, “Climate Change and Food Security: A Framework Document.”

<sup>52</sup> Stehfest et al., “Climate Benefits of Changing Diet.”

<sup>53</sup> Stehfest et al.

<sup>54</sup> Eshel and Martin, “Diet, Energy, and Global Warming.”

<sup>55</sup> Eshel et al., “Environmentally Optimal, Nutritionally Sound, Protein and Energy Conserving Plant Based Alternatives to U.S. Meat.”

<sup>56</sup> FAO, “Climate Change and Food Security: A Framework Document.”

<sup>57</sup> FAO.

<sup>58</sup> FAO.



deforestation, destroying important habitats and removing carbon sinks.<sup>59</sup>

46. Plant-based diets confer numerous prevent obesity, cardiovascular disease, and diabetes.<sup>60</sup> The World Health Organization classifies processed meats as a group 1 carcinogen (“carcinogenic to humans”) and red meat as a group 2A carcinogen (“probably carcinogenic to humans”).<sup>61</sup> Thus, widespread adoption of plant-based food would decrease the burden on the healthcare system.
47. Nearly 43% of Canadians are currently shifting to a partly or completely plant-based diet, largely for health and wellness reasons.<sup>62</sup>
48. Canadian agricultural subsidies were worth \$6.9 billion in 2011 with the majority of the money going toward beef, egg, and pork production.<sup>63</sup> In Alberta alone, the Canadian Agricultural Partnership invested \$406 million in the agricultural sector, largely for meat and egg production.<sup>64</sup>
49. Canadians consumed 94 million Kg of beef less beef in 2019 than in 2010 and prices are on a steady decline while plant-based sources are increasing in price.<sup>65</sup> Unfortunately, producers are not adapting to this change (or acknowledging the change), threatening their livelihoods being crowded out by plant-based

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<sup>59</sup> FAO.

<sup>60</sup> Tusso, “Nutritional Update for Physicians.”

<sup>61</sup> Bouvard et al., “Carcinogenicity of Consumption of Red and Processed Meat.”

<sup>62</sup> “Plant-Based Proteins Are Gaining Dollar Share Among North Americans.”

<sup>63</sup> McKenna, “Taxpayers Oblivious to the Cost of Farm Subsidies.”

<sup>64</sup> McKenna.

<sup>65</sup> Stevenson, “2019 Canada Food Price Report: Meat Prices to Decline.”

alternatives.<sup>66</sup>

50. Slaughterhouses are one of the most dangerous workplaces, with a greater than 100% turnover rate annually (sometimes up to 250%), a 25% rate of serious injury requiring medical attention, and a greater than 60% prevalence of carpal tunnel syndrome.<sup>67</sup> Most slaughterhouse workers are people of color of largely immigrant and uneducated backgrounds, paid minimum wage.<sup>68</sup>

### Proposals

19. 51. End federal and provincial subsidies to animal agriculture.
52. Tax processed meat to reduce meat consumption and reobtain healthcare funds lost from treating diseases associated with eating processed meat products.<sup>69</sup>
53. Include plant-based alternatives in school lunches and hospital meals.
54. Education about plant-based alternatives. A good example of this was the inclusion of a general “protein” category in Canada’s food guide.<sup>70</sup>
55. Support a Just Transition for beef, dairy, poultry, and pork producers in Alberta. Emphasize using their transferable skills such as producing silage/hay for growing food crops or creating pensions for producers nearing retirement.

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<sup>66</sup> Stevenson.

<sup>67</sup> Dorovskikh, “Killing for a Living: Psychological and Physiological Effects of Alienation of Food Production on Slaughterhouse Workers.”

<sup>68</sup> Dorovskikh.

<sup>69</sup> Carrington, “Taxing Red Meat Would Save Many Lives, Research Shows.”

<sup>70</sup> “Canada’s Food Guide.”

56. Support a Just Transition for slaughterhouse workers. Create job retraining opportunities and pension programs for injured workers. Emphasize using transferable industrial skills for building green technology and plant-based agriculture.

## 2.3 Municipal Level Proposals

### Greenbelt Legislation

#### 11. Greenbelt Legislation

##### 1. Data

1. A greenbelt is permanently protected land surrounding urban areas to limit urban growth, preserve and revitalize plant and wildlife, and repurpose land for agriculture and food growth.

In 2005, the Government of Ontario established a greenbelt surrounding the Golden Horseshoe, a densely populated and quickly growing urban region in southern Ontario which includes the Greater Toronto Area.<sup>71</sup>

3. The total area of Ontario's greenbelt is 7,284km<sup>2</sup>, making it one of the largest greenbelts in the world.<sup>72</sup>
4. Ontario's greenbelt provides over \$9.1 billion in economic benefits and 161,000 full-time equivalent jobs.<sup>73</sup>
5. Ontario's greenbelt includes the Niagara Peninsula, a region that hosts about 2.1 million tender fruit trees (peaches,

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<sup>71</sup> "Ontario's Greenbelt."

<sup>72</sup> "The Greenbelt."

<sup>73</sup> "The Greenbelt."

pears, plums, cherries, grapes). These trees produce over 800,000 baskets of fruit per year.<sup>74</sup>

6. Another highly fertile special crop region within Ontario's greenbelt is The Holland Marsh ("Ontario's vegetable basket").<sup>75</sup> The Holland Marsh produces lettuce, celery, potatoes, cauliflower, beets, parsnips, and other world crops. The value of these crops is in excess of \$50 million per year.<sup>76</sup>
7. In addition to being highly productive agricultural regions, greenbelts also preserve biodiversity and can sequester large quantities of carbon.<sup>77</sup>

### Proposals

12. 8. Establish "urban growth boundaries" around major cities in Alberta. Limiting urban sprawl makes cities easier to access by transit and reduces the use of private single-occupant vehicles.
9. With urban growth boundaries in place, establish greenbelts surrounding major cities in Alberta. Where possible, use greenbelt areas for agriculture, rewilding, preservation and cultivation of biodiversity, and carbon sequestration.

## 2.4 Canadian Food Security

### 13. Data

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<sup>74</sup> "The Greenbelt."

<sup>75</sup> "The Greenbelt."

<sup>76</sup> "The Greenbelt."

<sup>77</sup> "The Greenbelt."

1. Over 30% of all food consumed in Canada is imported, particularly fruits and vegetables, causing the production of 3.3 million tonnes of CO<sub>2</sub>.<sup>78</sup> Not only is this pattern of consumption ecologically unsustainable, but economically unsustainable when faced with increasing global food insecurity.
2. Climate change will cause extreme weather events that may jeopardize global food security, endangering Canadian food security.<sup>79</sup>
3. Canada's North is highly food insecure. Nearly 70% of households in Nunavut are food insecure.<sup>80</sup> Most households in the Territories rely on a mix of wild-caught game/fish and store-bought goods.<sup>81</sup> Game is sporadic (particularly with a changing climate) and shipped food is prohibitively expensive.<sup>82</sup>
4. Canada has lost 70% of its farmers aged 35-50 in the last twenty-five years.<sup>83</sup>
5. The largest barrier to young farmers is the cost of land, making farming a profession that is improbable for many would-be farmers.<sup>84</sup>
6. Female farmers are more likely to rent land and use outside work to pay for land compared to male farmers, increasing the overhead of women farmers.<sup>85</sup>

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<sup>78</sup> Kissinger, "International Trade Related Food Miles – The Case of Canada."

<sup>79</sup> FAO, "Climate Change and Food Security: A Framework Document."

<sup>80</sup> "Affordable Food in the North."

<sup>81</sup> "Affordable Food in the North."

<sup>82</sup> "Affordable Food in the North."

<sup>83</sup> Stevenson, "Does Canada Have Enough Young Farmers?"

<sup>84</sup> Graves, "Back to the Land: Are Young Farmers the New Starving Artists?"

<sup>85</sup> Shumsky and Nelson, "Female and Young Farm Operators Represent a New Era of Canadian Farmers."

7. Animal agriculture accounts for 80% of human land use and 18% of all carbon emissions.<sup>86</sup> If we do not cease the production of grazing animals, it is unlikely that we can avert climate change.<sup>87</sup>
8. For land use proposals, see also Monbiot et al., *Land for the Many*.<sup>88</sup>

### Proposals

14. 9. Create community land trusts in agriculturally productive regions that are commonly owned by the community, allowing for young farmers to own common stakes of land at a reasonable cost.
10. Prevent the monopolization of agriculturally productive land caused by acreages and land-speculation to be bought, divided, and resold to young farmers at a fair price.
11. Create planning committees for forestry and agricultural activities in rural areas, such as is already done for housing planning committees in urban and suburban areas.
12. Prevent the use of farmland for pasture grazing by buying, dividing, and reselling land to young plant farmers.
13. Offer a buy-back program of artificially cleared pasture or grazing land to be reforested as a carbon sink.
14. Create an open-source weather monitoring platform for individuals and organizations to contend with extreme weather events that may occur as a result of climate change,

<sup>86</sup> Stehfest et al., "Climate Benefits of Changing Diet."

<sup>87</sup> Garnett et al., "Grazed and Confused?"

<sup>88</sup> Monbiot et al., "Land for the Many."

using Environment Canada, university, and citizen scientist weather stations.<sup>89</sup>

15. Research and develop crop strains that can resist extreme weather events, are water-efficient, and help maintain a sustainable nutrient balance.<sup>90</sup>
16. Protect the right to use uncultivated land for agricultural production.
17. Increase funding to research wildlife game populations in Canada's North to assess the sustainability of these resources.
18. Regularly communicate research findings to Northern communities.
19. Create and implement game sustainability programs advanced by indigenous leadership.

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<sup>89</sup> FAO, "Climate Change and Food Security: A Framework Document."

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## Chapter 3

# Housing

### 3.1 Introduction

Housing is an essential human right, one that is neglected in Canada. This section of the Maximum GND focuses on ensuring sustainable, affordable access to housing for everyone. The following data and proposals demonstrate that ecological well-being and housing security are common goals and need to be emphasized in any complete GND.

#### Retrofitting and Constructing Green Homes

##### 1. Data

1. “Building the Retrofit Economy,” a report commissioned by Ecology North, shows how retrofitting all the buildings in the NWT to more energy-efficient standards would actually generate revenue from fuel savings. This revenue could be put towards labor, training, construction expenses, and renewable energy for retrofitting buildings.<sup>1</sup>

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<sup>1</sup> Gagnon et al., “The Northern Building Retrofit Economy.”

2. Housing accounts for 40% of carbon emissions from the urban consumption sector indifferent of housing density, identifying the need for more energy efficient buildings.<sup>2</sup>
3. LED lighting is 75% more energy efficient and lasts 25 times longer than traditional incandescent bulbs.<sup>3</sup>
4. Certain building materials have carbon-sequestering properties, such as hempcrete. Hempcrete is a renewable alternative to traditional building materials that hardens as it sequesters carbon, providing improved insulation and carbon sequestration over time.<sup>4</sup>
5. Using recycled car tires packed in adobe mud has been shown to be a safe, affordable, and sustainable building material when compared to traditional non-renewable construction materials.<sup>5</sup>

### Proposals

2. 6. Undertake standard efficiency retrofits to improve operational performance.
7. Undertake deep retrofits to high performance standards, focusing on carbon reduction.
8. Incorporate Solar or other on site renewable energy systems in buildings.
9. Switch to low carbon fuel sources in buildings.
10. Ban incandescent bulbs and replace burnt-out bulbs with LEDs.

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<sup>2</sup> Heinonen, Kyrö, and Junnila, "Dense Downtown Living More Carbon Intense Due to Higher Consumption."

<sup>3</sup> "LED Lighting."

<sup>4</sup> Arrigoni et al., "Life Cycle Assessment of Natural Building Materials."

<sup>5</sup> "Building with Tires."

11. Incentivising the usage of green materials in housing construction, such as hempcrete, or recycled materials, such as shredded car tires.
12. Incentivising the building of green roofs in housing construction (see the Food Security section).

### Land Proposals

#### 3. Data

13. In the UK, community land trusts are nonprofit institutions that reduce the downpayment of a house by having the Trust buy land beneath a house and then hold it in trust for the commons. Members pay rent to the Trust and use the land in common with other renters (see pg 67 of “Land For The Many”).<sup>6</sup>
14. Nordic countries such as Sweden have “right of public access” or “everyman’s right” guaranteed in their constitution, ensuring that everyone has the right to use uncultivated land so long as one does not cause land degradation, disturb wildlife, or remain longer than 24 hours.<sup>7</sup>

### Proposals

4. 15. Create community land trusts and give them adequate funds to buy available land around rural areas.
16. Make land ownership data more transparent and available to foster community led land acquisition.

<sup>6</sup> Monbiot et al., “Land For The Many.”

<sup>7</sup> “The Right of Public Access – What Is Allowed?”



17. Establish democratic land councils that are answerable to the public rather than private land development companies.
18. Enshrine the right to roam across all uncultivated land and water.

### Housing Security

#### 5. Data

19. As of 2016, 1.35 million homes in Canada are vacant or temporarily occupied, 8.7% of the total number of homes.<sup>8</sup>
20. Canadians spent more than 30% of their income on housing. Canadians would have to make \$22.40/h to afford an average two-bedroom apartment or \$20.20/h to afford an average one-bedroom apartment.<sup>9</sup>
21. Over half of all Calgarians struggle to afford food and shelter.<sup>10</sup>
22. Approximately 235,000 Canadians experience homelessness each year. Shelter occupancy rose from 82% to 92% between 2005 and 2014.<sup>11</sup>
23. Given soaring rent prices coupled with over 66,000 unoccupied homes, Vancouver implemented a ghost-tax for unoccupied dwellings. The scheme, projected to produce \$30 million in tax revenue annually for the city, targeted 8,500 dwellings. However, it seems that the tax

<sup>8</sup> “Tens of Thousands of Homes Are Sitting Vacant across Canada: Report | CTV News.”

<sup>9</sup> Macdonald, *Unaccommodating*.

<sup>10</sup> Yol, October 1, and 2019, “Vital Signs 2019 Report Shows Calgarians Feeling Financial Stress | Calgary Herald.”

<sup>11</sup> “How Many People Are Homeless in Canada?”

has done little to decrease rent problems in the city, likely due to the high demand and the small number of dwellings targeted.<sup>12</sup>

24. Zoning regulations in North America are the direct result of racial segregation in the United States, with white families living in affluent low-density suburban neighborhoods and black families living in poor high-density urban neighborhoods.<sup>13</sup>
25. Urban Habitat filed a lawsuit against the City of Pleasanton, California for exclusionary housing policies that disproportionately affected non-white wage workers. The low-density housing in the city was unaffordable for workers, forcing nearly 90% of workers to commute from outside the city, generating huge amounts of greenhouse gases. In 2012, the lawsuit was settled and Pleasanton built 500 units of affordable housing, put in two rapid transit stations, and passed anti-discrimination housing legislation that rezoned suburban housing areas.<sup>14</sup>
26. Co-op housing in Canada are more cost-effective (14% less) to operate than non-profit housing. Co-ops strongly benefit women, with 58% of co-op housing residents being women and half of all co-op housing households being either single females or single-female parents.<sup>15</sup>
27. Rent control loopholes were closed in Ontario, capping rent increases at the rate of inflation and no more than

<sup>12</sup> Estate, "Ghost-Home Tax Fills Vancouver Coffers but Rentals Remain Scarce | Financial Post."

<sup>13</sup> "Exclusionary Zoning Continues Racial Segregation's Ugly Work."

<sup>14</sup> "Pleasanton: Lawsuit Lifts Barriers to Affordable Housing and Advances Environmental Justice | Urban Habitat."

<sup>15</sup> "Facts and Figures."

2.5% to combat ballooning housing prices.<sup>16</sup>

28. Gentrification in Vancouver's Downtown Eastside has endangered social housing, putting thousands of Vancouverites at risk of displacement and homelessness, particularly those affected by drug and alcohol addiction. This gentrification is driven by a mixture of aggressive condo-development, civic corruption, and disproportionate over-policing of the Downtown Eastside.<sup>17</sup>
29. Since 1981, Alpha House has existed in Calgary as a safe place to help people with alcohol and drug addictions access addiction-related healthcare and housing. Due to gentrification of the area, there has been a push by new residents to move the Alpha House, which could displace the detox residents that need healthcare and housing.<sup>18</sup>
30. Landlords in Canada use legal loopholes such as "renoviction" to evict tenants that do not comply to rent increases.<sup>19</sup>
31. Companion animal pets provide numerous health benefits to pet owners including improved cardiovascular health, improved mental health, and increased opportunities for socialization and outdoor activity.<sup>20</sup>
32. Despite the fact that pets are ubiquitous and are increasingly considered family members, pet owners have poorer housing security than non-owners and are more likely

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<sup>16</sup> Alex et al., "Bye Bye 1991 Loophole — Rent Control to Expand to All Rental Units in Ontario | CBC News."

<sup>17</sup> Sep 1 and Facebook, "The Gentry Have Landed."

<sup>18</sup> "Calgarians Petition to Move Alpha House Rehab Centre Because of Crime Concerns."

<sup>19</sup> "Housing."

<sup>20</sup> "About Pets & People | Healthy Pets, Healthy People | CDC."

to seek poorer quality housing to accommodate their pets.<sup>21</sup>

33. Inuit communities are in an even deeper housing crisis than other people in Canada, with over 40% of Inuit living in overcrowded housing and one third of Inuit in need of suitable housing, largely due to the absence of public and private housing investment.<sup>22</sup>
34. One in five trans\* people in the US experienced homelessness and 20-40% of homeless youth are LGBT+, largely due to parental rejection and housing discrimination.<sup>23</sup>

### Proposals

6. 35. Implement an aggressive ghost-house tax of greater than 50% to unoccupied homes, with \$10,000 fine for each day of a false declaration of occupancy.
36. Construct affordable housing projects in areas where people work in YYC.
37. Rezone suburban areas to allow for the construction of affordable apartment housing and the end of class and economic segregation.
38. Increase subsidies to housing co-ops in Canada.
39. Establish rent control without loopholes, fixing rent at the cost of inflation and no more than 2.5%, with exceptions for new developments.
40. End gentrification of low-income housing by stopping upzoning. Special consideration should be given to areas that have homeless shelters and detox programs.

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<sup>21</sup> Power, "Renting with Pets."

<sup>22</sup> "Housing."

<sup>23</sup> "Housing & Homelessness."

41. Mandate that all rental properties allow renters to have pets. All rentals should allow for at least one dog or cat per residence.
42. Expand temporary housing options for housing insecure persons and homeless people.
43. Invest in suitable housing for Inuit people living in Canada's North and for other indigenous people living in Canada.
44. Ensure housing protection for LGBT+ youth through establishing queer housing centres in major cities.

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## Chapter 4

# Social Services

### 4.1 Introduction

Climate Action depends on empowered, educated, healthy people. Without access to social services, mobilizing people against climate change will not be successful. Moreover, improving access to social services increases productivity, reduces lost labour time, and decreases healthcare costs through preventative care. With the aim of adapting to climate change and mitigating the negative consequences, we propose the shifting of social service access points to community centers, creating more self-sufficient and self-governed communities. This will help fight climate change in minimally two ways: by empowering people with the necessary skills and community connections to make adapt themselves and their communities to climate change, and by reducing travel time and carbon emissions for accessing social services. Community centers should live up to their name, and truly become the center of a community. With this in mind, we have formulated the Social Services section of the Maximum GND to best serve the people.



## 4.2 Municipal Level Proposals

### I.

#### Revitalization of Community Centres as access points for social services

##### 1. Data

1. Participation in community centre activities is associated with improved general physical health, mental health, and social well-being, with greater benefits predicted from comprehensive well-being services.<sup>1</sup>
2. Appropriate land use policies in Ontario are slated to reduce commuter emissions by reducing commuting times to access social services. Thus, putting services within walking/cycling distance would help combat climate change.<sup>2</sup>

##### Proposals

2. 3. Institutionalize neighborhood assemblies for decision-making on issues that directly impact the community.
4. Guaranteed child care in community centres.
5. Streamline elder care services with childcare services in facilities, breaking up age segregation.
6. Establish free meal programs through community centres.
7. Offer conflict resolution (mediation/arbitration) resource access through community centres.

<sup>1</sup> Jones et al., "The Role of Community Centre-Based Arts, Leisure and Social Activities in Promoting Adult Well-Being and Healthy Lifestyles."

<sup>2</sup> Pembina Institute, "Driving Down Carbon."

8. Run mobile medical/dental clinics on a rotational basis through community centres.
9. Offer community health education programs through community centres.
10. Offer free/reduced cost recreational centres and programs through community centres.

### Water fluoridation

#### 2. 3. Data

11. Despite popular approval of water fluoridation in Calgary after five plebiscites (the latest in 1998 voting to approve the practice), Calgary City Council voted to repeal water fluoridation in 2011, voting to review it as recently as 2016.<sup>3</sup>
12. In the three years since water fluoridation was discontinued in Calgary, tooth decay increased dramatically in children, with an increase in 3.8 tooth surfaces on average.<sup>4</sup>

### Proposals

4. 13. Reinstitute water fluoridation in Calgary.

## 4.3 Provincial Level Proposals

### 3.

### Healthcare Expansion

#### 5. Data

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<sup>3</sup> “Should Calgary Bring Fluoridated Water Back?”

<sup>4</sup> “Fluoridation Cessation Impact in Calgary Children.”

14. Mental healthcare services are critically overburdened in Alberta, with long wait times and lack of services putting vulnerable Albertans at risk.<sup>5</sup>
15. Dental costs in Alberta are the highest in Canada.<sup>6</sup>
16. 86% of Canadians support publicly funding dental care for families without insurance.<sup>7</sup>
17. In Ontario in 2014, preventable dental disease led to more than 60,000 emergency room visits and 230,000 family doctor visits, costing Ontario over \$40 million.<sup>8</sup>
18. The current substance abuse crisis costs Alberta over \$1 billion.<sup>9</sup>
19. Safe injection sites in Alberta have caused a plateau in the number of overdose deaths, despite funding freezes by the United Conservative Party.<sup>10</sup>

#### Proposals

6. 20. Increase accessibility and number of walk-in clinics, prioritizing low-income areas.
21. Expand dental, addiction, and mental health services under provincial healthcare.
22. Expand safe injection sites and harm-reduction programs across Alberta, focusing intervention on low-income areas.

<sup>5</sup> Sep 18, September 18, and 2018, “Alberta’s Mental Health System ‘cracking at the Seams,’ Says Co-Author of Review | CBC News.”

<sup>6</sup> “Dental Fees in Alberta.”

<sup>7</sup> “Canadians Support Publicly Funded Dental Care for Those without Insurance, Ipsos Poll Finds.”

<sup>8</sup> “Canadians Support Publicly Funded Dental Care for Those without Insurance, Ipsos Poll Finds.”

<sup>9</sup> “Substance Abuse a Costly Issue in Alberta.”

<sup>10</sup> Balanko-Dickson, “How Does Calgary’s Supervised Consumption Site Compare to Others?”

**Reform of foster care system****7. Data**

- 23. In Canada, 52.2% of children in foster care are Indigenous, but account for only 7.7% of the child population according to Census 2016. This means 14,970 out of 28,665 foster children in private homes under the age of 15 are Indigenous.<sup>11</sup>
- 24. Results from the 2011 National Household Survey also show that 38% of Indigenous children in Canada live in poverty, compared to 7% for non-Indigenous children.<sup>12</sup>

**Proposals**

- 8. 25. Address institutionalized racism as it impacts indigenous and immigrant populations by marginalized experts leading reform programs.
- 26. Reroute funding for child displacement, provide more support for struggling families in home.
- 27. Prioritize known alloparents and community connections in placement.
- 28. Increase in-home monitoring of conditions in foster care to reduce suicide and abuse.

5.

**Childcare and Domestic Labor****9. Data**


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<sup>11</sup> Canada, "Reducing the Number of Indigenous Children in Care."

<sup>12</sup> Canada.

- 29. Women perform 1.8 times more unpaid housework and care work than men in developed countries such as Canada.<sup>13</sup>
- 30. Unpaid domestic work is valued at 10-39% of national GDP, often contributing more economically than manufacturing, commerce, and transportation.<sup>14</sup>

#### Proposals

- 10. 31. Improve access to childcare services through community-centred childcare programs for working parents.
  - 32. Increase childcare subsidies to unpaid domestic laborers to compensate them for their labor.
- 6.

#### Elder Care

##### 11. Data

- 33. Nearly half of all beds in Alberta for elderly people in need of 24 hour care do not have a nurse on-site and do not meet minimal staffing requirements.<sup>15</sup>
- 34. Publicly-run elder care facilities have a higher quality of care compared to for-profit facilities in Alberta, despite both being funded by provincial tax-payer dollars.<sup>16</sup>

#### Proposals

- 12. 35. Expand the number of long term care beds for elderly Albertans.

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<sup>13</sup> "Redistribute Unpaid Work."

<sup>14</sup> "Redistribute Unpaid Work."

<sup>15</sup> "Losing Ground."

<sup>16</sup> "Losing Ground."

36. End for-profit long-term care facilities in Alberta, moving these funds to support publicly-run facilities.

7.

#### **Social and community Care workers**

##### **13. Proposals**

37. Provide incentives for training for social and community care workers.
38. Establish social worker transition task force, led by marginalized experts, to create an action plan for Calgary and identify number of needed positions.
39. Expansion of child/youth, elderly advocacy positions.

8.

#### **Education**

##### **14. Data**

40. In 2015, Alberta's New Democratic Party installed a tuition cap for 250,000 full and part-time students, saving these students \$16 million.<sup>17</sup>
41. The projected tuition hikes by the United Conservative Party will not only increase the cost of post-secondary education, but will decrease the quality of learning by increasing the student-teacher ratio of Alberta university classrooms.<sup>18</sup>

<sup>17</sup> "Alberta Students' Union Wants Action on Government Tuition Review."

<sup>18</sup> "U of A President Says Tuition Hikes, Program Cuts Ahead after UCP Budget | CBC News."

42. High tuition costs disproportionately oppress indigenous, PoC, disabled, and LGBT+ students, trapping these individuals in cycles of poverty.<sup>19</sup>
43. The total cost of free post-secondary tuition in Alberta would be \$918 million dollars, which could be easily reimbursed through corporate tax reforms.<sup>20</sup>
44. Alberta needs 2000 to 3000 teachers to reach classroom size targets, particularly for K-3, particularly with increasing numbers of ESL and disabled students, leading to teacher burnout.<sup>21</sup>
45. 40 schools in Alberta are over 100% capacity, despite 85% being considered “full” by the Alberta government. Calgary Board of Education is facing \$1.3 billion in deferred maintenance costs.<sup>22</sup>
46. Charter schools in Alberta divert funding from public schools while serving fewer students, thanks to limited enrollment.<sup>23</sup>
47. Alberta is the only province in Canada that has charter schools.<sup>24</sup>
48. High Schools are not preparing young people for entering the workforce as employers increasingly look for work experience, personal virtues, and sometimes nepotism when hiring.<sup>25</sup>

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<sup>19</sup>Harden, *Time to Think Big*.

<sup>20</sup> Harden, *Time to Think Big*.

<sup>21</sup> November 1 and 2018, “Class Sizes Becoming Unmanageable, ATA President Says | Edmonton Journal.”

<sup>22</sup> April 23 and 2019, “Charter Program Gets Government Funds While Public Schools Overflow | Calgary Herald.”

<sup>23</sup> April 23 and 2019.

<sup>24</sup> “Charter Schools | The Canadian Encyclopedia.”

<sup>25</sup> Paddon, “High Schools Not Preparing Students for Employment, Business Group Says.”

49. Climate change education is insufficient in Canadian schools, with most provinces not emphasizing environmental stewardship or the negative consequences of climate change.<sup>26</sup>

### Proposals

15. 50. Free tuition for all post-secondary students in Alberta.
51. Fund free tuition by closing tax loopholes, ending off-shore corporate tax dodging, and taxing e-commerce companies.
52. Increase pay and incentives for teachers and educational support staff.
53. End charter schools and all private education subsidies.
54. Reform the primary education system by integrating occupational experience, intergenerational knowledge, and individual proficiencies into the curriculum.
55. Update the curriculum of schools to emphasize the science of climate change, the negative effects of climate change, and environmental stewardship.

9.

### **LGBT+ Protections and Services**

#### 16. Transgender Healthcare and Discrimination

##### 56. Data

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<sup>26</sup> Willick, “How Climate Change Is Taught in Canadian High Schools — and How It Can Improve.”



1. Trans\* individuals experience high rates of mental health disorders due to familial rejection and medical wait-times, which show improvement following gender-affirming care.<sup>27</sup>
2. Wait times for gender affirming surgery in Canada are increasing, lasting up to several years.<sup>28</sup>
3. The informed consent clinic proposed in Edmonton has not seen any progress since 2018.<sup>29</sup>

#### Proposals

57. 4. Expansion of LGBT+ counselling for youth and adults.
5. Creating an informed consent clinic in Calgary for access to gender-affirming hormonal therapy and counselling for trans\* people.
6. Opening the informed consent clinic in Edmonton for access to gender-affirming hormonal therapy and counselling.
7. Increase the availability of gender-affirming surgeries for trans\* Canadians by giving funding to Canadians outside of the country.

#### LGBT+ school protections

##### 17. 58. Data

8. The United Conservative Party of Alberta scrapped Bill 24, which allowed students to form an independent GSA that protected the identities of students involved with GSA activities.<sup>30</sup>

<sup>27</sup> Dhejne et al., "Mental Health and Gender Dysphoria."

<sup>28</sup> "Wait Times for Sexual Reassignment Surgery Outrage Transgender Community - May 22, 2015 | CBC Radio."

<sup>29</sup> "New Clinic for Transgender Albertans to Launch in Edmonton | Edmonton Journal."

<sup>30</sup> "What the United Conservatives' Education Bill Means for GSAs in Alberta | The Star."

9. GSAs provide numerous mental health and social benefits to LGBT+ students and their allies, but having unprotected GSAs puts students at risk of bullying from peers and abuse from parents.<sup>31</sup>

#### Proposals

59. 10. Restore GSA protections as outlined in Bill 24.

### 4.4 Federal Level Proposals

#### 10. Restorative Justice

##### 18. Data

60. Indigenous persons, despite being 4% of Canada's population, represent over 20% of Canada's prison population and 33% of Canada's female prison population, with relative rates of indigenous incarceration increasing.<sup>32</sup>
61. Despite being considered as a form of torture by the UN, solitary confinement above 15 days is being used in Canada (with some individuals being kept over four years in solitary confinement).<sup>33</sup>
62. Food justice programs have been used to rehabilitate ex-offenders in Oakland, California, providing them with skills that led them to become productive members of society.<sup>34</sup>

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<sup>31</sup> "Gay-Straight Alliances."

<sup>32</sup> "Social Conditions of Indigenous Peoples in Canada | The Canadian Encyclopedia."

<sup>33</sup> "Social Conditions of Indigenous Peoples in Canada | The Canadian Encyclopedia."

<sup>34</sup> Sbicca, "These Bars Can't Hold Us Back."

63. Restorative justice practices in Canada have been shown to decrease recidivism and decrease trauma to victims of crime.<sup>35</sup>

#### Proposals

19. 64. End solitary confinement torture in Canadian prisons.
65. Implement restorative justice practices in Canada, particularly for indigenous people vulnerable to recidivism.
66. Use food justice as a template for restorative justice, giving ex-offenders the means to reenter society through tree-planting campaigns and food-production.

#### Water Security

##### II. 20. Data

67. At any given time, over 100 indigenous communities in Canada have water advisories.<sup>36</sup>
68. Water privatization increases water costs and decreases water quality, disproportionately affecting women and indigenous peoples.<sup>37</sup>
69. One quarter of Canadian bottled water is from the tap. Bottled water is less regulated than tap water and is sometimes bottled with PET that leaches toxic antimony into the water.<sup>38</sup>

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<sup>35</sup> Gaudreault, "The Limits of Restorative Justice."

<sup>36</sup> "Indigenous Communities and Water Crises — Is a Real Solution in the Works?"

<sup>37</sup> "Women and Water in Canada: The Significance of Privatization and Commercialization Trends for Women's Health."

<sup>38</sup> "Women and Water in Canada: The Significance of Privatization and Commercialization Trends for Women's Health."

70. Bottled water causes the release of 2.5 million tonnes of CO<sub>2</sub> every year.<sup>39</sup>

### Proposals

21. 71. End the indigenous water crisis by investing in water treatment facilities and infrastructure in indigenous communities.
72. End water privatization in Canada.
73. Ban plastic water bottles.<sup>40</sup>

## 12. Military

### 22. Data

74. NATO targets for defense investment would cost Canada \$6.5 billion, 2% of its GDP.<sup>41</sup>
75. The thirteen-year long Canadian War in Afghanistan cost Canada \$18 billion dollars, killed 165 Canadians, gave over 10% of combat veterans PTSD, and did not achieve its strategic goal of eliminating the Taliban and al-Qaeda or of stabilizing Afghanistan.<sup>42</sup>
76. Afghanistan's strategic importance to the US and Canada was geographical: Afghanistan exists between the shipping lanes of the Persian Gulf and the rich oilfields of Turkmenistan. By stabilizing Afghanistan, NATO hoped it could build a pipeline through the country and reduce oil prices.<sup>43</sup>

<sup>39</sup>“The Environmental Impact of Plastic Water Bottles”

<sup>40</sup>“The Environmental Impact of Plastic Water Bottles [Infographic] | Greener Ideal.”

<sup>41</sup> “Feds to Invest Billions Less in New Military Equipment, May Fall Short on NATO Spending Target.”

<sup>42</sup> “Canada and the War in Afghanistan | The Canadian Encyclopedia.”

<sup>43</sup> “Pipeline Politics.”

77. China has reassigned 60,000 soldiers to plant trees specifically to tackle air pollution.<sup>44</sup>

#### Proposals

23. 78. Decrease military spending to fund the development of renewable energy in Canada.
79. Learn from the mistakes of the Afghanistan War by foregoing future imperial wars for fossil fuels.
80. Use existing Canadian military infrastructure to re-forest and re-wild Canada.

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<sup>44</sup> "China Has Sent 60,000 Soldiers to Plant Trees."

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## Chapter 5

# Transit

### 5.1 Introduction

Expanding public transit is an integral component of climate action. Not only does public transit reduce carbon emissions, it also reduces road maintenance and increases economic activity. The following data and proposals in the Transit section of the Maximum GND seek to optimize these effects in YYC and across Canada.

### 5.2 Municipal Proposals

#### I. Public Transit

##### I. Data

- I. The most effective way to combat urban sprawl is to improve transit accessibility, which in turn reduces vehicular emissions and the need for space-occupying parking lots.<sup>1</sup>

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<sup>1</sup> Gershon, "Public Transportation."

2. Transit improves worker commutes, increasing the chances of workers staying employed, reducing societal reliance for unemployment insurance.<sup>2</sup>
3. Improved access to public transit fosters inclusivity to the elderly, students, low income/single income families, tourists/visitors, and the differently abled, fostering community integration.<sup>3</sup>
4. Transit is a safer form of travel when compared to private vehicles.<sup>4</sup>
5. Luxembourg has become the first country in the world to make all public transit free starting in 2020 to reduce traffic congestion. Currently, fares only generate 10% of the revenue for transit, making the switch relatively inexpensive.<sup>5</sup>
6. Transit boarding cards are being used across the world, such as in the Netherlands,<sup>6</sup> London,<sup>7</sup> and New Zealand.<sup>8</sup> These systems are convenient, easy to use, eliminates change, reduces paper waste, and reduces overspending for tickets.
7. 24-hour transit availability offered in other cities, such as Berlin,<sup>9</sup> Copenhagen,<sup>10</sup> Chicago,<sup>11</sup> and NYC.<sup>12</sup>

## 2.

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<sup>2</sup> Gershon.

<sup>3</sup> Gershon.

<sup>4</sup> Gershon.

<sup>5</sup> Auxenfans, "The Cost of Luxembourg's Free Public Transport Plan."

<sup>6</sup> "OV-Chipkaart: Public Transport Smart Card in the Netherlands."

<sup>7</sup> "Oyster Cards and Travelcards in London."

<sup>8</sup> "What Is an AT HOP Card & How It Works."

<sup>9</sup> "Night Buses & Public Transport at Night."

<sup>10</sup> "How to Get around Denmark with Public Transport."

<sup>11</sup> "Night Owl Service."

<sup>12</sup> NYCgo.com Staff, "NYC Transportation: Getting Around."

## Proposals

8.

Make transit free. Calgary already has partial free transit with the free fare zone downtown. These zones should be enlarged until they encompass the entire transit system within Calgary.

9.

### Expand Calgary Transit System

1.

Include C-Train service to end of Memorial, south to Foothills

2. Include C-Train service to Country Hills (Green Line)

3. Include C-Train service to surrounding First Nations

4. Increase frequency and coverage of municipal bus services

10.

Switch to public transit chip cards instead of paper tickets in areas not served by the free-fare zone.

11. Offer 24-hour transit availability.

12.

**Diversify city-supplied modes of transportation, such as bicycles and scooters.**

13. Restrict non-transit traffic in the downtown core and beltline during peak daytime hours.
14. Consult with local transit unions to optimize transit expansion and updates.

2.

### Cycling

#### 3. Data

15. Cycling in the Netherlands prevents 6500 deaths per year, increases life expectancy by half a year, and accounts for more than 3% of the GDP through health benefits.<sup>13</sup>
16. Cycling lanes reduce road fatalities for all users due to the “calming effect” that bicycle lanes have on automobile traffic.<sup>14</sup>
17. Opposition to bike lanes is partly conducted by small business owners who often underestimate the effect of bike traffic on business and worry about temporary loss of business during construction. However, these fears tend to be largely unfounded, so outreach with business owners with data from similar projects will help convince them. Conservative bikelash tends to be founded on xenophobia and racism, so culti-

<sup>13</sup> Fishman, Schepers, and Kamphuis, “Dutch Cycling.”

<sup>14</sup> “Cycling Lanes, Not Cyclists, Reduce Fatalities for All Road Users.”

vating a friendly image of a cyclist helps combat fear campaigns.<sup>15</sup>

### Proposals

4. 18.

**Increase distribution and connectedness of bike lanes, such as between Tuscany and the University.**

19. Dedicate a street downtown specifically for cyclists and pedestrians.
20. Promote cycling by emphasizing health and economic benefits with a wholesome angle.

### Pedestrians

3. 5. Data

21. Increased linearity, continuity, coverage, and slope of sidewalks is correlated with a decreased risk of pedestrian accidents.<sup>16</sup>
22. Suburban neighborhoods were built to accommodate cars, but increasing poverty is forcing many individuals to walk, causing increased pedestrian accidents from inadequate sidewalk systems.<sup>17</sup>

### Proposals

6. 23. Increase sidewalk coverage, linearity, and connectedness in Calgary neighborhoods, particularly in suburban areas.

## 4. Carpooling

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<sup>15</sup> Wild et al., "Beyond 'Bikelash.'"

<sup>16</sup> Osama and Sayed, "Evaluating the Impact of Connectivity, Continuity, and Topography of Sidewalk Network on Pedestrian Safety."

<sup>17</sup> Benediktsson, "Beyond the Sidewalk."

## 7. Data

- 24. Carpooling apps can encourage co-workers to carpool, reducing travel costs and carbon emissions for commuters.<sup>18</sup>
- 25. Carpooling significantly reduces vehicular emissions and HOV lanes encourage carpooling when population density is high.<sup>19</sup>

## Proposals

## 8. 26.

Develop a municipal app that streamlines car pooling services.

- 27. Increase the number and distribution of HOV lanes

## 5.3 Provincial Proposals

## 5.

High-speed commuter train service between Calgary and Edmonton

## 9. Data

- 28. HWY 2 currently trafficked by 32,000 vehicles per day on average or more throughout this corridor as of 2016.<sup>20</sup>
- 29. A high-speed train could add anywhere between \$5.7 and \$41.5 billion to the Albertan economy (adjusted

<sup>18</sup> Bruck et al., "Minimizing CO<sub>2</sub> Emissions in a Practical Daily Carpooling Problem."

<sup>19</sup> Javid, Nejat, and Hayhoe, "Quantifying the Environmental Impacts of Increasing High Occupancy Vehicle Lanes in the United States."

<sup>20</sup> "ALBERTA HIGHWAYS 1 TO 986 TRAFFIC VOLUME HISTORY 2007 - 201."

for inflation), create 3,400-7,162 permanent jobs, and decrease vehicular emissions.<sup>21</sup>

30. TransPod, a private corporation, will begin construction of a bullet-train in 2021 between Olds and Didsbury and will complete the Calgary-Edmonton line by 2030.<sup>22</sup> The current construction project is valued at \$6 billion dollars.<sup>23</sup>

#### Proposals

10. 31. The Government of Alberta must invest in developing a high-speed rail system in the Calgary-Edmonton corridor.
32. Run the high-speed train service as a public corporation rather than a private business.

### 5.4 Federal Proposals

#### 6. Trans-Canadian Railway

##### 11. Data

33. Currently, one-way express passenger services between Vancouver and Toronto is a four-day trip costing upwards of \$2699 CAD<sup>24</sup> or a seven-day trip costing upwards of \$1660.<sup>25</sup>
34. Non-stop one-way plane tickets between Vancouver and Toronto is a four-hour trip costing less than \$200.<sup>26</sup>

<sup>21</sup> "Economic Benefits for Development of High Speed Rail Service in the Calgary-Edmonton Corridor."

<sup>22</sup> Lulla, "Edmonton-Red Deer-Calgary Bullet Train Waiting for Provincial Blessing."

<sup>23</sup> Lulla.

<sup>24</sup> "Trans Canadian Railway Tours."

<sup>25</sup> "Trans Canada by Rail."

<sup>26</sup> "Flights from Vancouver to Toronto."



35. Trains produce far less emissions per kilometer compared to planes, buses, and individual automobiles.<sup>27</sup>
36. Rail privatization in the UK has led to increased prices, decreased punctuality, greater taxpayer cost, and reduced customer satisfaction. British rail privatization was done to undermine organized labor at the expense of an essential public utility.<sup>28</sup>

#### Proposals

12. 37. Nationalize Canadian rail to improve the quality and price of train-travel in Canada.
38. Research the feasibility of implementing high-speed rail between Vancouver and Toronto.

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<sup>27</sup> “Climate Change: Should You Fly, Drive or Take the Train?”

<sup>28</sup> Jones, “Why Britain’s Trains Don’t Run on Time: Capitalism.”

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## Chapter 6

# Energy Sector

### 6.1 Introduction

Fossil fuels are the primary cause of climate change. While sustainable energy generation exists, ending fossil fuel industry strangleholds, expanding renewable energy generation, ensuring a Just Transition for workers are the primary hurdles sustainable energy development. These measures require not only infrastructural changes, but corporate restructuring and employment transition for energy sector workers. The following data and proposals of our Maximum GND emphasize how this is not only feasible in, but beneficial for, our current economic and social paradigm.

### 6.2 Municipal Level Proposals

#### Microgrids

#### 1. Microgrid Power Generation

##### 1. Data

1. Microgrids are local autonomous energy grids, connected to a main grid, but capable of generating electricity independently.<sup>1</sup>
2. Microgrids are highly resilient to natural disasters, allowing communities to recover from power outages that may result.<sup>2</sup>
3. Using a decentralized optimization algorithms, excess electricity can be shared with other members of the microgrid when energy yields are higher.<sup>3</sup>
4. Reduced spending on energy from microgrids keeps wealth within the community.<sup>4</sup>
5. Edmonton has increased rebates for solar power to \$0.40/Wt, covering about 15% of the cost of installing a solar system on an existing home.<sup>5</sup>

#### Proposals

2. 6. Create community projects, co-operatives, and trusts to install renewable energy generation and storage capacity.
7. Offer educational opportunities and job retraining to individuals interested in microgrid installation and maintenance.
8. Offer tax deductions for new buildings with microgrid solar generating capacity.
9. Offer rebates and grants for solar retrofits, similar to the Edmonton's solar energy rebate program.

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<sup>1</sup> "How Microgrids Work."

<sup>2</sup> "Is There a Role for Microgrids in the Energy Future of Quebec and Canada?"

<sup>3</sup> "Microgrids Can Help Maximize Efficiency of Renewable Energy Consumption."

<sup>4</sup> Canada, "Picturing Canadian Communities in 2050."

<sup>5</sup> "Edmonton Boosts Its Solar Energy Rebate, Helping Fill Gap from Stalled Alberta Program | CBC News."

- 10. Mandate smart meter installation to allow buildings to send electricity back to the grid.
- 11. Streamline approval process for businesses installing local generation.

### **Worker Cooperatives**

#### 2. Worker Co-ops

#### 3. Data

- 12. Worker co-ops are more productive than conventional firms and increase employment security for workers.<sup>6</sup>
- 13. Worker co-ops can help localize neighborhoods by pooling resources to purchase or lease property in the city, allowing for mutual benefit for all in the co-op.<sup>7</sup>
- 14. Despite their reputation for small-scale ventures, worker co-ops can be large and successful. Mondragon in Spain is one of the most prominent worker coop examples, valued at €15 billion and employing 84,000 people. Evergreen Cooperative Laundry in Cleveland, Ohio is a recent success story that in the course of ten years became an \$8 million USD operation.<sup>8</sup>
- 15. Tax-breaks, funding, technical assistance, and legislation has helped establish worker's co-ops as economic mainstays in Italy, France, and Spain.<sup>9</sup>

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<sup>6</sup> Chen, "Worker Cooperatives Are More Productive Than Normal Companies."

<sup>7</sup> Stumo-Langer, "Five Ways Co-Ops Are Countering Corporate Power in Cities."

<sup>8</sup> Tremlett, "Mondragon."

<sup>9</sup> Tremlett.

16. Solar energy generation strongly benefits worker co-ops. Solar co-ops generate profit and help communities save on energy costs by up to 20%.<sup>10</sup>
17. Proposals
  1. Offer tax breaks and funds to encourage the growth of worker's co-ops.
  2. Offer technical assistance to start-up worker's co-ops, including offering publicly-available information for workers interested in starting a co-op.
  3. Grant workers the right of first refusal so they can offer to buy-out companies that are closing, planning on going public, or planning on selling to larger companies. This will include low-interest loans and grants to facilitate this transition.
  4. Provide information to worker co-ops to establish renewable energy generation

### 6.3 Provincial Level Proposals

#### Provincial Renewable Energy

#### 3. Provincial Renewables

#### 4. Data

18. Alberta emits 262.3 million tons of CO<sub>2</sub> (as of 2016) annually, the most of any Canadian province. 48% of these emissions stem from the oil and gas indus-

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<sup>10</sup> Stumo-Langer, "Five Ways Co-Ops Are Countering Corporate Power in Cities."

try, 17% stem from electricity generation, and 12% stem from transportation.<sup>11</sup>

19. Alberta consumes most of its energy in the form of natural gas - the majority of which is used to provide heat and electricity for extracting petroleum from the oil sands.<sup>12</sup>
20. Because of its reliance on coal for electricity generation, in 2016, Alberta's electricity sector accounts for 58% of CO<sub>2</sub> emissions for Canada's electricity sector.<sup>13</sup>
21. Alberta's former renewable energy program resulted in the installation of 1,363 megawatts of wind energy, at an average cost of 3.84 cents per kilowatt-hour (c/kWh)<sup>14</sup>. For reference, the average price of electricity in Alberta, from October 2 to 8, was 3.15 c/kWh.<sup>15</sup>

### Proposals

5. 22. Reinstate Alberta's renewable energy procurement program.
23. Implement more aggressive renewable portfolio standards.
24. Reinstate provincial carbon tax at 20\$ per equivalent ton of CO<sub>2</sub>.
25. Freeze and progressively cap oilsands and natural gas extraction.
26. Raise consumer E.V. incentives to meet the standards set by BC and Quebec.

<sup>11</sup> Canada, "Greenhouse Gas Emissions."

<sup>12</sup> Government of Canada, "NEB – Provincial and Territorial Energy Profiles – Alberta."

<sup>13</sup> Government of Canada.n

<sup>14</sup> "REP Results."

<sup>15</sup> "Market and System Reporting."



27. Mandate indigenous (per UN Declaration on the Rights of Indigenous Peoples) and local consultation on energy projects. Expand the qualifications specified by the REP to all energy infrastructure projects, and require that companies invest in local communities by hiring locally, creating local projects, or by direct and fair compensation.

#### Provincialize Non-Renewable Energy

#### 4. Provincialize Non-Renewable Energy

##### 6. Data

28. Declaring an intention to nationalize fossil fuel industries would decrease the cost of the shares in fossil fuel companies and disincentivize private investment.<sup>16</sup> Precedent for such a drop in share value was when the Obama administration announced it would phase out private prisons.<sup>17</sup>
29. SaskOil is a precedent for a provincially owned oil & gas corporation, established specifically to prevent fossil fuel companies from controlling provincial politics.<sup>18</sup>

##### Proposals

7. 30. Declare an intention to provincialize fossil fuel companies to decrease the price of shares.
31. Compulsorily buy 51% of shares and elect majority board dedicated to phase out fossil fuels.

<sup>16</sup> Gowan, "A Plan to Nationalize Fossil-Fuel Companies."

<sup>17</sup> Ingraham, "Private Prison Stocks Collapse after Justice Department Promises to Phase Them Out."

<sup>18</sup> Eaton and Gray-Donald, "Socializing and Decolonizing Saskatchewan's Oil."s

32. Profits from the corporations will be used to hold over costs, keep jobs until Just Transition is implemented.

## 6.4 Federal Level Proposals

### De-Prioritizing Non-Renewable Energy

#### 5. De-Prioritizing Non-Renewable Energy

##### 8. Data

33. Global fossil fuel subsidies cost \$373 billion USD per year. Canada itself pays \$3.3 billion in subsidies to the fossil fuel industry, or \$19/tonne of carbon pollution.<sup>19 20</sup>
34. Cutting fossil fuel subsidies and carbon pricing do not slow economic growth in over 70 different national and subnational economies.<sup>21</sup>
35. Investment in energy efficiency saves billions of dollars in energy waste and creates three times as many jobs as investing the same amount into the fossil fuel industry.<sup>22</sup>
36. Investing in green energy training (such as solar technicians) for women has accelerated market growth and promoted a green energy transition.<sup>23</sup>

### Proposals

#### 9. 37. End subsidies to non-renewable energy.

<sup>19</sup> Corfee-Morlot, Westphal, and Spiegel, “4 Ways to Shift from Fossil Fuels to Clean Energy.”

<sup>20</sup> “The Elephant in the Room.”

<sup>21</sup> Corfee-Morlot, Westphal, and Spiegel, “4 Ways to Shift from Fossil Fuels to Clean Energy.”

<sup>22</sup> Corfee-Morlot, Westphal, and Spiegel.

<sup>23</sup> Corfee-Morlot, Westphal, and Spiegel.

- 38. Introduce carbon pricing to non-renewable energy.
- 39. Invest capital in energy efficiency conversions.
- 40. Invest in training women and indigenous people in green energy jobs.

## Green Innovation Fund

### 6. Green Innovation Fund

#### 10. Data

- 41. Development of new renewable energy technologies is facing market-failure, where the risk of developing new technology is too high to be profitable, requiring government intervention.<sup>24</sup>
- 42. The Clean Growth Hub is a Canadian agency that funds green energy R&D, with \$2.3 billion in funds during 2017.<sup>25</sup>
- 43. Green New Deal Institutes could be used to subsidize the cost of developing mid-stage technology research tech.<sup>26</sup>
- 44. Creating trusts in developing technology sectors has been done in the past to encourage economic participation, paying dividends to investors should the technology be successful and marketable.<sup>27</sup>
- 45. Many tech companies notoriously avoid paying taxes, so making tech firms that use green energy technol-

<sup>24</sup> Wells and Traficonte, "An Innovation Policy for the Green New Deal."

<sup>25</sup> Government of Canada, "Clean Growth Hub - Home."

<sup>26</sup> Wells and Traficonte, "An Innovation Policy for the Green New Deal."

<sup>27</sup> Wells and Traficonte.

ogy pay royalties would be a way to co-opt funds that would otherwise be lost.<sup>28</sup>

### Proposals

11. 46. Expand the Clean Growth Hub by increasing funding to its projects and challenging the agency to help Canada develop green innovation through experimental green technology.
47. Establish Green New Deal Institutes to subsidize the cost of R&D for mid-stage technology.
48. Encourage investment of green innovation by setting up a public trust in green technology R&D.
49. Encourage tech companies to invest in green technology by offering their proprietary use with small royalty payments rather than through low-interest loans, helping to recycle funds into more green innovation projects.

### Just Transition

#### 7. Workplace Transition Plans

##### 12. Data

50. If allowed to “bust” by a sudden loss of investor confidence, fossil fuel workers could suddenly lose their jobs without skills or resources to access new employment.<sup>29</sup>
51. Clear timelines will help mitigate economic turmoil from transitioning to renewable energy.<sup>30</sup>

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<sup>28</sup> Wells and Traficonte.

<sup>29</sup> Cooling et al., *Just Transition*.

<sup>30</sup> Cooling et al.

### Proposals

13. 52. Create clear timelines for reduction and closure of fossil fuel plants and projects.
53. Create strategies for employee attrition well in advance of closures.
54. Develop strategies for community resilience if extractive fuel industries no longer operate in a community, particularly through renewable energy systems.

### Retraining and Job Transfers

8. 14. Data
  55. Decarbonization will create millions of new jobs by 2050.<sup>31</sup>
  56. The fossil fuel industry today accounts for only 1% of jobs and 8% of the national GDP.<sup>32</sup>
  57. Employment Insurance would not be sufficient for former fossil fuel workers exiting the industry.<sup>33</sup>
  58. Alberta is the only province that has taken steps to create a Just Transition for coal workers, with \$195 million allocated to help communities transfer to renewables and later an additional \$30 million to support fossil fuel workers.<sup>34</sup>
  59. Quebec has a payroll tax levy on companies that do not train apprenticeships to at least 1% of their workforce.<sup>35</sup>

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<sup>31</sup>Mertins-Kirkwood, *Making Decarbonization Work for Workers*.

<sup>32</sup> Mertins-Kirkwood.

<sup>33</sup> Mertins-Kirkwood.

<sup>34</sup> Mertins-Kirkwood.

<sup>35</sup>Cooling et al., *Just Transition*.

60. China has delayed or stopped development of 151 coal power plants, instead investing \$15 billion USD into job retraining, relocating, and retirement to coal workers.<sup>36</sup>

### Proposals

15. 61. Create a coordinated plan to transfer and retrain individuals in all fossil fuel industries.
62. Allocate funding to retrain and transfer fossil fuel workers to renewable energy industries or to other areas where their skills are transferable, such as truck drivers transferring to urban transit or electrical technicians transferring to renewable energy.
63. Allocate funding to communities that rely on fossil fuel employment to establish alternative industries, such as renewable energy generation or agriculture.
64. Invest in expanding apprenticeship programs in energy related fields.
65. Encourage indigenous retraining and job transfers by setting aside a retraining fund specifically for indigenous workers.

## 9. Pensions

### 16. Data

66. Older workers are often passed over for up-training and retraining, due to their shorter span in the industry.<sup>37</sup>

### Proposals

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<sup>36</sup> Corfee-Morlot, Westphal, and Spiegel, “4 Ways to Shift from Fossil Fuels to Clean Energy.”

<sup>37</sup> Cooling et al., *Just Transition*.

17. 67. Governments should provide funding to “bridge” older workers to retirement. Bridging is easier and more cost-effective than training workers for jobs they will only briefly perform before retiring. This can be done through already-existing infrastructure found in EI.
68. Develop pension criteria in partnership with employers, unions and government stakeholders.
69. Audit existing pension to ensure adequate funding exists for both income and benefits if the underlying firm or industry disappears.
70. Offer early retirement for workers nearing retirement age.

### Community Transition

#### 10. 18. Data

71. Most transition plans neglect to account for cases where a worker loses their job in a household, but another household member does not.<sup>38</sup>

#### Proposals

19. 72. Offer employment and mental health counselling services to workers who are transitioning out of the fossil fuel industry.
73. Help families with dual-incomes find employment through in new communities via family employment counselling.

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<sup>38</sup> Cooling et al.

## 6.5 Appendix: Institutions doing Sustainable Energy R&D

- Fraunhofer Institute (Germany): A multidisciplinary research institute in Germany tackling many modern problems including transitioning to renewable energy sources. Has separate institutes specifically for solar and wind energy. <https://www.fraunhofer.de/en/research/energy-resources/renewable-energy.html>  
<https://www.ise.fraunhofer.de/en.html>  
<https://www.iwes.fraunhofer.de/en.html>
- National Renewable Energy Laboratory (US): US based lab of the US Department of Energy dedicated to renewable energy technologies. <https://www.nrel.gov/research/>
- Centre for Renewable Energy Systems Technology at Loughborough University (UK): A renewable energy research and development lab from the UK out of Loughborough University.  
<https://www.lboro.ac.uk/research/crest/research/>
- UK Energy Research Centre (UKERC): The UK Energy Research Centre (UKERC) carries out world-class research into sustainable future energy systems. <http://www.ukerc.ac.uk/about-us.html>

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## **6.7 Waste Management**

Biological waste in urban contexts: [https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation\\_Biocycles\\_21-06-2017.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation_Biocycles_21-06-2017.pdf)

Plastics: [https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation\\_London\\_Case\\_Study.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation_London_Case_Study.pdf)

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## 6.8 Engaging Experts

- We need to identify local experts in each of the topics listed above, involve them meetings and organization as much as possible, so that they can answer questions at town halls, provide reliable information, and guide the revision and expansion of the GND towards the achievement of realistic, immediate goals.

## 6.9 Addressing Concerns about Jobs

Federally focused studies

- (Federally focused) This study discusses how we can create over one million decent jobs in the public sector.
- (Federally focused) “As many as 18,000 jobs are created for every \$1 billion of investment in energy conservation and renewable energy systems. The average renewable energy investment creates four times as many jobs as the same investment in the fossil fuel economy.” Study
- (Federally focused) This Columbia Institute study found that Canada can create 3.9 million direct jobs with net zero building retrofits and new “green” commercial, industrial, and institutional building construction: building small district energy systems, building an almost completely renewable energy grid by 2050, and expanding and improving our public transportation systems.
- (Federally focused) This comprehensive study demonstrates the feasibility of federal free tuition and provides progres-

sive fundraising mechanisms for presentation from a fiscally conservative.

- “Every \$1 million invested in efficiency programs generates 30 to 52 job-years.” [Source p. 13]
- (Federally focused) This study discusses how we can create over one million decent jobs in the public sector.
- (Federally focused) “As many as 18,000 jobs are created for every \$1 billion of investment in energy conservation and renewable energy systems. The average renewable energy investment creates four times as many jobs as the same investment in the fossil fuel economy.” Study

#### Provincially focused

- (Provincially focused) The 18,000 jobs per \$1 billion of investment does not just apply to one area. Such investments can be done on a provincial basis, with paid student jobs and internships made a priority. Our engineering students and research infrastructure can easily be applied to a Green New Deal program.

#### On pipelines

- Environmental Concerns
  - Canada and the world cannot meet any climate change targets if there is not an end to fossil fuel production.
  - There is no price advantage for bitumen in Asia.
  - Alberta has all of the pipeline capacity it needs, sells mostly to US markets, and seriously underuses the TransMountain pipeline at current capacity for shipments to Asia.

- Lighter, cheaper, closer crude is available to Asia via Russia, the Gulf countries, Iran, etc.

### Jobs

- – Automation has made it so that even in the unlikely event of another oil “boom”, there would be far less work.
- Testimony from someone who works in the oil & gas industry and who supports a Green New Deal.
- Taxes
  - “Canadian corporations increased the money they report in Canada’s top 12 overseas tax havens by almost 10% to a record high of \$353 billion in 2018, according to Statistics Canada Foreign Direct Investment figures released....” - Canadians for Tax Fairness

## 6.10 On Worker Cooperatives

Worker cooperatives are employee-owned businesses in which decisions are made democratically: one worker, one vote. Worker coops are an innovative model of keeping wealth local and incomes high, while ensuring the energy grid of the future is accountable to the community.

- Efficiency, feasibility, profitability, potential
  - Worker coops are more productive than conventional firms.
  - A more in-depth study on worker coops that discusses their size, profitability, viability in different sectors, etc.

- Mondragon is one of the most prominent worker coop examples: they compete globally, and have a university which welcomes students from GM and Microsoft.

The Evergreen Model is a prime example of how worker co-operatives can

- – revive impoverished areas in an environmentally and economically sustainable way
- naturally build wealth more equitably,
- and provide a reliable tax base for local government.
- Policies
  - Increased supportive policies must be made to encourage the growth of and educate people about worker co-operatives in order to build the sector.
  - Allow workers “the right of first refusal”: the right to refuse corporate buyout. article.
  - More information may be requested by Students for Direct Action or the Canadian Worker Cooperative Federation on this topic.

#### Miscellaneous

- Commercial, industrial, and institutional building construction: building small district energy systems, building an almost completely renewable energy grid by 2050, and expanding and improving our public transportation systems.
- (Federally focused) This comprehensive study demonstrates the feasibility of federal free tuition and provides progres-



sive fundraising mechanisms for presentation from a fiscally conservative.

- (Provincially focused) Free tuition is ideal for the facilitation of a Green New Deal program. Consider this study (p. 15) which finds that total public education (college, vocational, university all included) revenue amounts to about \$918 million. The province can pass legislation mandating the elimination of tuition fees for students that go to public institutions. How it could be **paid for** would be for an increase in corporate taxes of between 1.5-2%, using the following information: “The NDP says that corporate taxes generate \$316 million per tax point...” & “the net reduction from 2001-2006, when the corporate tax rate dropped by 5.5 per cent, saw the province lose \$3.7 billion.”
- Other Justice Issues and Supplementary economic visions:
  - Eliminate homelessness like Medicine Hat (even with a fiscally conservative city council).
  - Medicare and pharmacare-for-all
  - Free public transit like Germany
  - Food and land sovereignty with projects like Grow Calgary