Good Morning!

While we’re waiting to get started, in the chat enter your:

1) name, 2) organization, & 3) favourite quarantine pastime
Agenda
June 15, 2020  9:30 am EST

1. Welcome & intro  10 minutes
2. BAP Presentation + QA  45 minutes
3. Break  10 minutes
4. Engagement Summary  5 minutes
5. Actions Mapping  45 minutes
6. Next Steps  5 minutes
Meeting Objectives

1. Explain where we are in the process
2. Provide results & analysis of the BAP report
3. Community & stakeholder feedback to date
4. Assess potential low-carbon actions
Project Timeline: Where are we?

- **Fall / Winter 2019**
  - Project Start + Data collection
  - City & SAC Intro Meeting

- **Jan-May 2020**
  - Baseline Modelling (2016)
  - Stakeholder Meetings, Crowdsourcing & BAP Webinar

- **Spring 2020**
  - Business as Planned Scenario (2050)

- **Summer 2020**
  - 2050 Low-Carbon Scenario Modelling

- **Fall / Winter 2021**
  - Final Report + Strategy Alignment
  - City & SAC Working Groups: Implementation

- **Spring 2021**
  - Council Report + Project Close
  - Virtual PIC & Town Hall
Baseline 2016
Business-as-Planned 2050
About future scenarios...

- Current emissions level
- Reference scenario emissions level
- Emissions reductions of each action
- Target emissions reductions level
- Area under the curve = carbon budget
- Reference year
- Time
- Target year
What is the BAP?

Projection of “business-as-planned” to 2050

- Includes plans & policies currently approved and/or underway
- Not perfect; provides the best idea of what we anticipate may happen

How were assumptions developed?

- Quantitative projections
- Projections developed from plans/policy
Key Demographics

Demographics are an important driver of energy consumption and GHG emissions towards 2050.

In Hamilton, significant population (45%), and even greater jobs growth (72%) is anticipated.
Population density (people/ha)
2016 & 2050
1 Petajoule (278,000 megawatt hours) =

- 20,631 passenger vehicles
- 28,571,429 litres of gasoline consumed
- 24,211 homes' electricity use for one year
- 9,813 homes' energy use for one year
GHG Emissions

This is the size of ONE TONNE CO₂
Take up the challenge - reduce every way YOU can. Now!
Community Energy & Emissions, 2016 - 2050

Energy Consumption

137 PJ
151 PJ
10%
Community Energy & Emissions, 2016 - 2050

Energy Density (TJ/ha) 2016

Energy Density (TJ/ha) 2050
Energy Density (TJ/ha) 2016-2050
Community Energy & Emissions, 2016 - 2050

Energy Consumption

Total in 2016: 81.6 PJ
Total in 2050: 88.6 PJ
+9%

Industry

- 2016: 81.6 PJ
- 2050: 88.6 PJ
Community Energy & Emissions, 2016 - 2050

Energy Consumption

Total in 2016: 32 PJ
Total in 2050: 37.4 PJ

+18%
Community Energy & Emissions, 2016 - 2050

Energy Consumption

Transportation

Total (2016): 23.8 PJ
Total (2016): 25.4 PJ

7%
Community Energy & Emissions, 2016 - 2050

GHG emissions

Community Emissions
Total in 2016: 8.8 MtCO2e
Total in 2050: 9.7 MtCO2e

Per Capita Emissions
2016: 15.7 tCO2e
2050: 11.9 tCO2e
Community Energy & Emissions, 2016 - 2050

GHG emissions (tCO2e/ha) 2016

Stationary Emissions 2016 (tCO2e/ha)
- 0 - 100
- 100 - 300
- 300 - 700
- 700 - 2,400
- >2,400

GHG emissions (tCO2e/ha) 2050

Stationary Emissions 2050 (tCO2e/ha)
- 0 - 100
- 100 - 300
- 300 - 700
- 700 - 2,400
- >2,400
Community Energy & Emissions, 2016 - 2050

GHG emissions

- Total in 2016: 5.6 MtCO2e
- Total in 2050: 6.2 MtCO2e

Industry GHG Emissions

+12%
Community Energy & Emissions, 2016 - 2050

GHG emissions

- Total in 2016: 1.3 MtCO2e
- Total in 2050: 1.6 MtCO2e

+21%
Community Energy & Emissions, 2016 - 2050

GHG emissions

- Total in 2016: 1.710 MtCO2e
- Total in 2050: 1.713 MtCO2e
Community Energy & Emissions, 2016 - 2050

GHG emissions

- Total GHGs (2016): 32 ktCO2e
- Total GHGs (2050): 65 ktCO2e
- Total (2016): 55 ktCO2e
- Total (2016): 93 ktCO2e
- +11%
Energy Flow in Hamilton, 2050
Insights into Hamilton’s Projected BAP Future

BAP trends

- Efficiency improvements, but larger population and jobs growth = energy & emissions up

- Electrical grid, relatively clean but moving back to NG (peaker plants)

- 98% of GHG emissions from fossil fuels

- less than 1% of energy: local renewable

- +60% percent of energy use conversion losses

- **Industry**: largest source of emissions, esp. coal-powered steel smelters

*Source: CaGBC, 2018*
Insights...Pt 2

BAP Trends

- **Transportation:** Total VKT expected to double

- **Buildings:** Improved energy efficiency for new buildings, incremental retrofits, and reduced need for space heating are more than offset by population growth.

- **Waste:** Emissions from waste will continue to grow with a growing population.
NEXT STOP……
Low-carbon modeling

Questions?
10 minute break.

“Are you talking about the new normal of an hour ago, or is there a new new normal right now?”
Community Engagement
Phase 1: Meetings with stakeholders

Throughout the first half of 2020, the CEP City team had several meetings with key stakeholders:

- Hydro One
- Alectra
- Hamilton Community Energy
- Enbridge
- Hamilton Transportation Planning
- NRCan’s McMaster Innovation team (re: steel)

...Canadian Steel Manufacturers Association (forthcoming)
Phase 1: Crowdsourcing

2 online surveys were presented to citizens starting in May 2020 to develop:

1) Criteria for selecting low-carbon actions
2) Public preference for low-carbon actions
Which criteria is more important to consider when selecting low-carbon actions for Hamilton?

<table>
<thead>
<tr>
<th>Ideas</th>
<th>Score (0 - 100)</th>
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<tbody>
<tr>
<td>GREENHOUSE GAS EMISSIONS, impact on GHG reductions</td>
<td>84</td>
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<tr>
<td>PUBLIC HEALTH, impact on chronic diseases and injuries and support for a physically and mentally healthy population</td>
<td>76</td>
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<tr>
<td>RESILIENCE, impact on capacity to survive, adapt and grow despite chronic stresses or acute shocks</td>
<td>74</td>
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<tr>
<td>CLEAN AIR, impact on air pollution</td>
<td>68</td>
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<tr>
<td>CLEAN WATER, impact on water pollution</td>
<td>62</td>
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<tr>
<td>QUALITY AFFORDABLE HOUSING, impact on safe housing options in various price ranges</td>
<td>55</td>
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<tr>
<td>MOBILITY, impact on affordable, convenient access to key destinations for all community members through transportation options</td>
<td>54</td>
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<td>EQUITY, impact on equal access to opportunities</td>
<td>53</td>
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<td>INCLUSIVITY, impact on sense of community belonging and celebration of culture and identity</td>
<td>50</td>
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<td>ENERGY SECURITY, impact on a stable and reliable energy generation and delivery system</td>
<td>49</td>
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<td>Ideas</td>
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<tr>
<td>Retrofit existing homes and businesses to improve their energy efficiency</td>
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<td>Require new dwellings to be built to a net-zero standard</td>
<td>78</td>
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<td>Improve (residential and commercial) buildings’ energy efficiency through passive measures first (airtightness, insulation, triple glazing)</td>
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<tr>
<td>Undertake deep retrofits of commercial buildings</td>
<td>74</td>
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<td>Develop neighbourhood energy plans</td>
<td>65</td>
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<tr>
<td>Develop low-carbon energy efficient systems (a.k.a. district energy networks) to heat and cool buildings in dense areas</td>
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<tr>
<td>Develop a deep retrofit program for social housing</td>
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<tr>
<td>Support the industry in its efforts to decarbonize</td>
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<tr>
<td>Focus new development in urban areas to support walking and cycling</td>
<td>57</td>
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<tr>
<td>Develop a renewable energy cooperative</td>
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