

Business as Planned Scenario (Option 1)

A Business as Planned scenario is akin to a business as usual scenario but it is more realistic to Saskatoon's future state as it takes into account the projects that are in progress or planned but not yet completed. It assumes no additional policies, actions, or strategies are implemented between now and 2050, beyond those that are currently underway.

The Business as Planned scenario was developed by Sustainability Solutions Group and WhatIf Technologies with detailed data inputs provided by the City of Saskatoon (City). This provides an analysis of energy, fuel, and emissions if only planned actions are taken over the next 30 years for comparison with a low emissions community scenario.

The Business as Planned scenario assumes that Saskatoon continues to grow, reaching a population of over 500,000 by 2050. With population growth, there are associated increases in employment, number of cars, buildings, and fuel use. While for the most part this results in a similar increase in greenhouse gas (GHG) emissions, there are some notable exceptions:

- The Government of Canada will require a full phase out of coal by 2030, causing a significant decrease in electricity emissions. Other fuel emission factors are also expected to decrease as the Environmental Protection Agency legislates additional efficiency and Canada follows.
- New buildings will become more efficient to comply with the National Building Code / National Energy Code for Buildings (2017).
- Planned activities such as an Environmental Performance Contracting (EPC), LED streetlight replacement, the Active Transportation Plan mode share targets, Plan for Growth targets and population projections, and a Curbside residential organics programs. The assumptions for are included in Table 1.

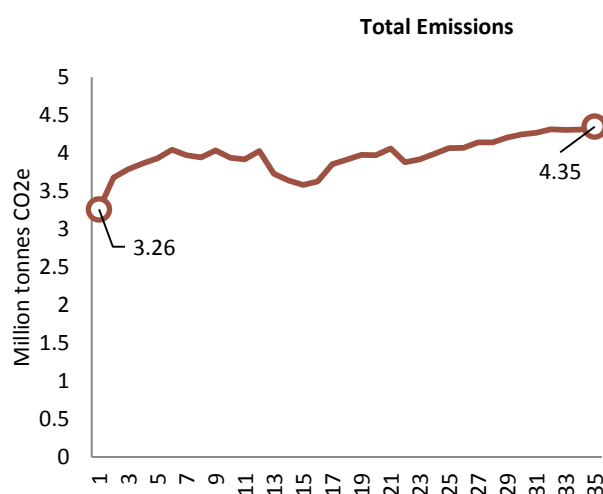
Table 1. City Initiatives included in the Business as Planned Analysis

| Initiative | Assumption |
|---|--|
| Energy performance contracting (EPC) includes building retrofits with equipment focus such as LED lighting, toilets, and boilers. | Energy reductions: 2020: 5,544,853 kwh of electricity and 941,779.8 m3 of natural gas; 2021: 8,317,280 kwh of electricity and 1,412,670 m3 of natural gas. |
| LED streetlight replacement (citywide) | All streetlights replaced by 2026 with an average savings of 74%. |

| | |
|---|---|
| Targeted Mode Shares from growth plan (incorporates BRT targets for transit and Active Transportation Plan targets for cycling and walking) | 2045 target transportation mode shares increased to: Transit: 8% Bike: 8% Walk: 16% Vehicle: 68% |
| City Wide organics program for single unit dwellings | Increased organics capture rate from single family homes: 2020: 51% 2024: 52% 2029: 54% 2044: 63% |

Projected Total GHG Emissions

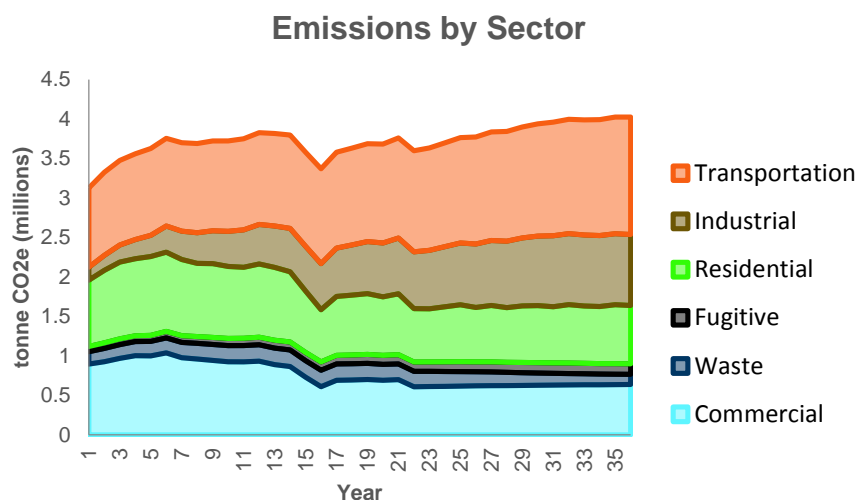
Saskatoon's total GHG emissions for the 2016 baseline year is 3.26 Million tonnes of carbon dioxide equivalent (MtCO₂e). Total projected GHG emissions increase to 4.35 MtCO₂e by 2050 (an increase of 33.4%). Per capita GHG emissions decrease by 4.4 tCO₂e between 2016 and 2050 (a decrease of 48%).



Total GHG Emissions by Sector

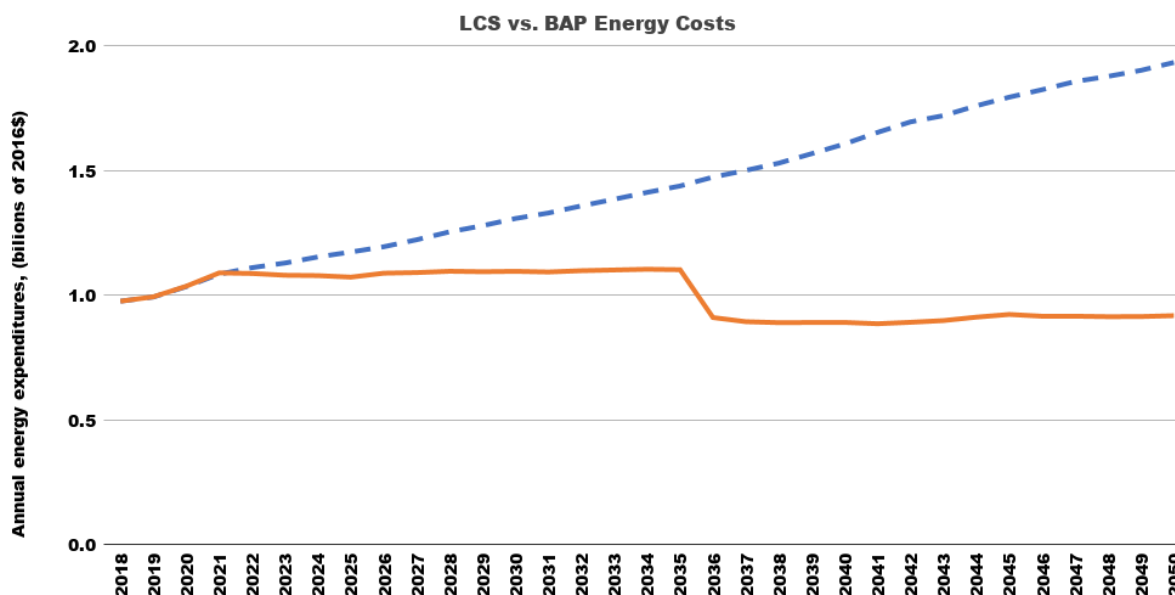
The transportation, residential, and commercial sectors are responsible for the vast majority of Saskatoon's GHG emissions in 2016, with 32%, 26%, and 28% of total 2016 GHG emissions, respectively. In a 'Business as Planned' scenario it is projected that by 2050 transportation emissions will increase by over 47% as car ownership increases. All building sectors will see significant emissions reductions from the phase out of coal-fired electricity production through the mid-2030s. Commercial building sector

emissions will decrease by almost 30% as Heating Degree Days decrease and only moderate floor space is added. The residential sector will see a 10.0% emissions increase, despite significant added housing because of the switch away from coal. The industrial sector is expected to expand its floor space greatly by 2050, adding significantly to its energy use and emissions, which rise by almost 450%.



Energy Costs Low Emissions Community scenario vs. Business as Planned Scenario

The following graph depicts the expected total energy (fuel and electricity) costs for the Business as Planned scenario and Low Carbon Scenario.



In 2016, total energy costs paid out by households, businesses and other organizations in Saskatoon totalled \$866 million. Electricity accounted for 28%, gasoline sales accounted for 35%, and natural gas use accounted for 10% of expenditures. In the BAP scenario, energy prices are projected to increase, although ongoing improvements in vehicle and building efficiency offsets some of the increase, resulting in a 2% average annual energy spending increase, reaching almost \$2 billion in total energy expenditures in 2050.

In the near term, the business as planned scenario does not require any upfront financial investment to be implemented, however, it ensures a reduced quality of life for residents, higher energy costs and high carbon future that does not meet reduction targets.

There are two additional key consequences of the business as planned scenario which include:

1. More drastic and costly emissions reductions will likely be required in the future; and
2. The City and community will forfeit economic, health and other benefits associated with low-carbon investments and actions.