

Active transportation needs and opportunities for the No Boundary Expansion alternative would primarily be related to the upgrading of existing facilities and the acceleration of the build-out of Planned Cycling Network as developed through the 2018 Cycling Master Plan. Greater pedestrian and cyclist trip density in intensified areas will generate a need to build higher quality, separated cycling facilities. This may include new or separated cycling facilities along Upper Ottawa, Upper Wellington and West 5th, to properly connect with the broader municipal network, to provide safe connections to the city-wide network. Higher trip density in this scenario could lead to existing communities being able to support amenities locally, they currently need to travel elsewhere for. Reducing trip distances will help make active modes more competitive for these shorter distances, which experience shows should lead to more active trips.

In both scenarios, there may be a need to upgrade and install other existing infrastructure. This could include installing sidewalks where there are none, making sidewalks that connect to key destinations wider, upgrading unpaved trails to year-round facilities, and other localized enhancements.

4.5 Emissions from Transportation

In addition to developing the background to evaluate the criteria under Transportation Systems, this report also provides a forecast of key inputs required to estimate Greenhouse Gas (GHG) emissions from transportation, as input to the Climate Change Theme criteria.

As background, transportation in Hamilton currently accounts for 13% of GHG emissions from all sources. Excluding industrial sources, which dominate Hamilton's GHG emissions, transportation accounts for 39% of emissions produced (Source: Hamilton and Burlington Low-Carbon Scenario and Technical Report 2016 to 2050, Sustainability Solutions Group)

Using the Hamilton Transportation Demand Model, it is possible to estimate total vehicle-kilometres (VKT) travelled by personal automobiles and passenger-kilometres travelled (PKT) by transit, each of which can be converted to GHG emissions based on fuel efficiency. VKT and PKT are key indicators of greenhouse gas emissions. While the resultant emissions are dependent on projected trends in fuel efficiency and fuel type mix (e.g. gasoline, diesel, natural gas, hydrogen, or electric), fundamentally VKT and PKT represent travel effort for which energy is required.

As shown on Table 4-7 both growth scenarios will result in significantly more VKT and PKT being generated by Hamilton residents, as expected due to increased population and employment. Comparing the two growth scenarios, the Ambitious Density Scenario would result in a 58% increase in VKT vs. 54% for the No Urban Boundary scenario. A