Smart Growth Transit Planning in Whitby

Project Summary:

Whitby's transit system connects residents to employment areas; however, not all locations are well served by public transit. This creates accessibility gaps that can limit access to jobs and economic opportunities.
This project uses spatial analysis to evaluate transit accessibility across Whitby. By identifying employment areas located beyond an 800-meter walking distance from transit stops, the study highlights underserved regions and supports improvements in transit planning.

Project Goals:

- **Analyze transit accessibility across Whitby**
- **Identify employment areas beyond 800m from transit stops**
- **Highlight underserved areas with limited transit coverage**
- **Support data-driven transit planning decisions**

Methods:

- **Spatial analysis using Python (GeoPandas, Folium)**
- **Integration of transit stop and employment datasets**
- **Distance-based accessibility analysis (800m threshold)**
- **Mapping and visualization of accessibility gaps**

Outcomes:

- **Most employment areas are located near existing transit routes**
- **Several locations are beyond 800m from transit stops**
- **Accessibility gaps are more prominent in northern Whitby**
- **Transit coverage is concentrated in central and southern areas**
- **Developed maps to visualize transit accessibility patterns**

Why is this important?:

Improving transit accessibility strengthens connections between residents and employment opportunities, supporting economic growth and workforce mobility.

These findings provide actionable insights for Durham Region to expand transit services, reduce accessibility gaps, and promote equitable and sustainable transportation planning across Whitby.