Automated Metro vs Tram (LRT)

Tram (LRT)

- An LRT is called a Tram in Quebec and most of Europe.
- Using the Alstom Citadis as a reference with one train having four sections and a frequency of every 5 minutes for 12 trains an hour. Frequencies of less than 5 minutes would affect the cross traffic at the level crossings with priority signalling. With no priority signalling the trains can have higher frequencies but would need to stop at the traffic lights the same as a car.
- One train (50m) is capable of carrying 300 passengers with a total capacity of 3,600 pphpd.
- Two trains coupled together (100m) would be capable of carrying 600 passengers with a total capacity of 7,200 pphpd.
- Three trains coupled together (150m) would be capable of carrying 900 passengers with a system capacity of 10,800 pphpd.
- The average speed of an LRT/Tram sharing a lane with traffic is approximately 15km/hr.
- The average speed of an LRT/Tram in its own lane in a city street is approximately 24-26km/hr.
- The average speed of an LRT/Tram separated from traffic and no level crossings is around 30km/hr.

Metro

- An Automated Metro can have a frequency of 40 to 48 trains per hour depending on the signaling system and the type of vehicles. Skytrain (Linear Induction) with Sel Trac signalling is designed to run up to 48 trains per hour. The Montreal REM is designed to run up to 40 trains per hour.
- The new 5 car trains (85m) on the Expo and Millenium Lines would have a maximum capacity of 32,256 pphpd running 48 trains an hour and 26,880 pphpd running 40 trains per hour. (This is not “crush” mode).
- The Montreal REM four car trains (80m) can carry 600 passengers and have a maximum capacity of 24,000 pphpd running 40 trains an hour (This is not “crush” mode).
- The average speed on the Expo Line is around 45km/hr with stations averaging 1.5km apart.
- The average speed on the Montreal Rem is around 50km/hr with stations averaging 2km apart.

Cost Difference

- The cost difference between LRT and Skytrain along the Fraser Hwy was only 30% higher for Skytrain.
- The cost difference between LRT and Skytrain for the Surrey-Newton-Guilford Line was only 20% higher for Skytrain.
- The Montreal REM costs were similar to an LRT/ Tram as the majority of the metro line was at grade.