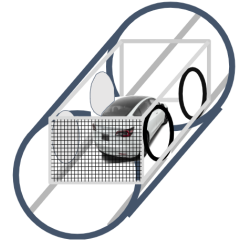


# Swiftube



## A New Hyperloop Concept

Imagine leaving your home for vacation, a weekend getaway, or dinner in the next town over and within minutes, driving into a vehicle that then enters a tube to be taken (car, luggage, family, and all) at 300+ mph anywhere across the state, country, or world. You bypass all stops, and exit only when desired for lunch, site seeing, or the occasional/urgent “potty break”. **Swiftube** is a closed-loop system that utilizes the pod/capsule-in-tube freight, car, and passenger transportation system similar to other Hyperloop developments, but without levitation and vacuum tubes. Elon Musk’s Hyperloop concept seemed promising for fast transport with minimal energy use, but today’s technology in magnetic levitation and vacuum tubes are not capable of being brought to cost-effective maturity for a variety of reasons, including rare-earth metal and pressure vessel strength needs and expense.

**Swiftube** uses large-diameter wheels/hub motors for high speeds at low RPM (dynamic stability), moved to the exterior walls of each capsule. Pods ride in the tube at atmospheric pressure, where 99.7%+ of the tube interior is treated in the latest low-drag coating. The system includes linear motors for both propulsion and braking. This simpler, conventional system supports a more cost-effective solution, allowing faster testing and construction to bring efficient global tubed-travel to realization before the end of the century. Drag force calculations indicate that speeds of over 125 mph for full-diameter (nearly piston-like) pods are achievable with over one mile between pods. Higher speeds are achievable with closer spacing, smaller pods, more power (solar), or as improved drag coatings are developed. As all of these factors continue to improve, so will both speeds and efficiencies.

### Testing Steps:

- Micro-scale (1/44th), 4-inch pipe system tests to validate the efficiencies of tubed travel compared to conventional travel and test pod spacing theories.
  - Gravity/potential energy for vehicle propulsion
  - 500m-1000m in length.
- Quarter-scale System testing to further validate tubed-travel efficiencies.
  - At least 30 miles in length, with exit/entry interchanges and maximum concept testing.
  - Fully powered vehicles. Work on automation. Test both open-air and in-tube to validate the average spacing between pods needed to be more efficient than open-air pods.

Funding: Partnership with a university to apply for a grant per section 11109 (“SURFACE TRANSPORTATION BLOCK GRANT PROGRAM.”) of the infrastructure bill to begin the engineering, construction, and testing steps needed for development.

Conclusion: Tubed travel of any sort is the only way to meet our global energy and transportation challenges towards the 22nd century. Tubed travel systems eliminate or nearly eliminate weather delays and crashes, while improving the speed and efficiency with which we move goods and people. **If we get it right**, it will serve mankind well for centuries to come.