

Abstract::

*Urban transport as a complex system – need for negative feedback control
Mechanisms*

In nature, stable and sustainable systems have two characteristics: all species, including humans beings, grow to maturity and then stop growth, and all have negative feedback systems to maintain homeostasis. As an important component of economic systems, the transportation sub-system must have negative feedback control to provide disincentives for excess travel by individuals. At present the transportation system is driven largely by positive feedback, encouraging people to travel long distances at high speeds. A longer drive gets you a larger house at lower prices. Even public transport systems (especially grade separated) focus on higher speeds encouraging long distance travel and sprawl. In addition, elevated and underground transit systems further discourage short distance travel because of large door-to-door trip times. Flat fares instead of distance based fares reward long distance travel and penalise those taking short trips. Unless our transport systems build in negative feedback loops against excess consumption and positive feedback for emission less travel, we are unlikely to see much progress