

Committee: Economic and Social Council

Issue: Supporting public transport systems to improve sustainable urban development

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Introduction

2010 was a milestone in human history; for the first time, the majority of the global population lived in cities. This did not stop the trend, however. Still, each week more than one million people migrate to cities from rural settlements. As urban population surges ubiquitously, there is a similar, visible escalation in demand on existing infrastructure — especially on public transportation. Transport plays a critical role in urban development by providing access for people to education, markets, employment, recreation, health care and other numerous key services that are necessary for any citizen's well-being. Many cities simply fail to keep up with such a pressing demand and are plagued with congestion on roads and public transportation systems.

This creates several economic, social and environmental problems. Previously, local and national governments have endeavoured to address all fields of the issue separately based on how intense their constituents felt about them.

After some analysis, however, it is easy to deduce that these problems are quite interconnected. Unchecked practices in transportation and urban growth lead to air pollution, decreased quality of life and increased demand for energy, a cycle which has existed since humanity started to live in cities.

There are two undisputedly crucial points one must keep in mind while deliberating and debating on this topic. Firstly, any proposal should be developed considering its long-term consequences. The key word on this agenda is 'sustainability' and delegates should adhere to the concept it suggests. The second point is the obvious but frequently forgotten



Image 1 – Electric buses in Shenzhen, China

necessity to co-operate with local and national governments, since the ECOSOC naturally is bereft of the time or the means to get involved with urban planning in the micro level.

All in all, our responsibility in the committee will be to find creative ideas or make better use of the ones we already have in order to create a socially, environmentally and economically more suitable and sustainable way to cover the skyrocketing demand for public transportation.

Definition of Key Terms

Sustainability

The ability to be maintained at a certain level both now as well as in the future. In this sense, a system that is not dependent on fossil fuels is an example of a more sustainable system, keeping in mind that resources, such as fossil fuels, are becoming scarce.

BRTs

There are some abbreviations, which will be useful during the debate. BRT is standing for *Bus Rapid Transit*. In some specific examples, it is called a 'metrobus' (Istanbul, Turkey) or a 'transitway' (Ottawa, Canada) Basically, a BRT system features a roadway of two lanes that are dedicated to buses. It has some advantages such as more effective use of buses, as higher-capacity vehicles can be used with the minimal risk of accidents. Articulated or even bi-articulated buses are commonly used, typically with multiple doors for fast entry and exit. You will encounter a lot of examples of this system, as it usually receives overwhelmingly positive feedbacks from its customers. We will analyse this further in the next segment.



Image 2- A BRT system in Brazil.

SUMPs

A 'Sustainable Urban Mobility Plan' is a rather formal name for any scheme that aims to provide high quality and sustainable transport. These are introduced by regional or national authorities.

TODs

'Transit Oriented Development' is a type of urban planning that aims to reduce the use of private cars by placing the popular destinations of the city within a walking distance of a stop on public transport. Such destinations include densely residential or business districts. Many cities are now preparing their development plan according to TOD policies. The term itself is a United States-born concept so it is seldom used in Europe, but many of the particular attributes are already observable in many cities; most prominent ones being Paris and Stedenbaan, the Netherlands. The city that pioneered the system is Arlington, Virginia in the US.

BENEFITS OF TRANSIT ORIENTED DEVELOPMENT

Americans believe transit oriented development provides an array of benefits ranging from lifestyle to environmental to economic.

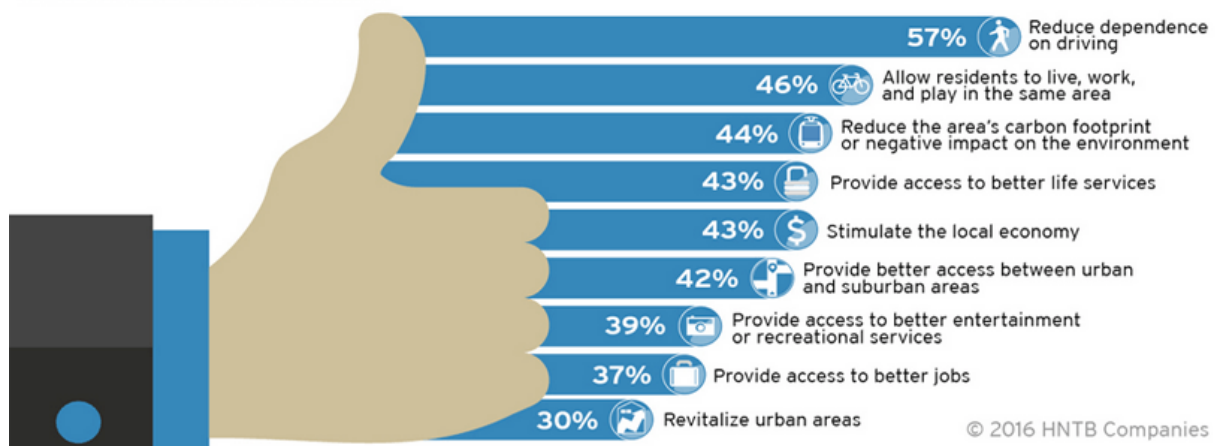


Image 3

Background Information

Goal number 11 of the United Nations Sustainable Development Goals is 'Make cities and human settlements inclusive, safe, resilient and sustainable'; indicating the importance this issue has on the world stage. This matter is a rather new one, emerging from the mass urbanization in the 21st Century. That means we do not actually have a broad historical context to analyse, which is why we will be focusing in this section on some of the most common projects and how and where they are currently in use.

1) Bicycle-friendly cities

Getting from one place to another on a bicycle is the most environmentally friendly option. Moreover, it is free and exercise is evidently good for one's physical and mental health. Nevertheless, a downside of building a system relying on bicycle lanes is that it leaves out many people who have to commute long distances. People will always need something faster. Additionally, bicycles are useless in cities built on bumpy terrain.

2) Walkability

Walkability refers to how friendly a community is to commuting on foot, by far the healthiest way of moving. A recent slew of studies provides increasingly compelling evidence of the positive effects of walkable neighbourhoods on everything from housing values to crime and health, to creativity and more democratic cities.

a) Economic

Walkability has been found to have many economic benefits, including accessibility, cost savings both to individuals and to the public, increased efficiency of land use, increased liveability, economic benefits from improved public health, and faster economic development, among others.

Researches show a strong connection between walkability and housing prices. A study in the journal *Cities* examined the effects of walkability on housing values and foreclosures following economic crises. It found that walkability plays a significant role in the estimation of housing prices. The more walkable a community is, the more demand for housing and higher prices. It further found that there is a negative correlation between the risk of foreclosures and walkability.

This particular advantage of walkability, however, is ensured if the entire system of streets and corridors is walkable.

b) Crime-related

It is popularly argued that when more people are on the street, a natural surveillance is created acting as a deterrent against crime. However, some criminologists challenge this argument citing figures that imply a rise in crime as people live closer and have to communicate with each other a lot.

c) Social

It has been claimed that denser, more walkable environments stimulate more social interactions of the sort that encourages creativity, as well as higher levels of civic engagement and volunteerism.

d) Health-related

Medical researches clearly suggest that walking improves the health status of the people from obesity and heart disease to mental health and cognitive functions. Walkability indices have been found to correlate with both Body Mass Index (BMI) and physical activity of local populations in a significant scale. The World Cancer Research Fund released a report urging

all further development planning in cities to be done in a fashion that encourages walking, on the grounds that walking contributes to a reduction of cancer.

WALKABILITY AND SELF-RATED HEALTH

2004 study by Rohrer, Pierce and Denison



thermaproject.com: Mike Ashley, Jamison Wicker, Gerald Wildmeyer, Juan Pablo Brien, Creative Staff, Sarah Joy, Daniel Turner, Tahsin Tekli
Rohrer, James, JD Pierce, and Anne Denison. "Walkability and Self-rated Health in Primary Care Patients." BMC Family Practice, December 2, 2004. Accessed October 9, 2015.

Image 4

3) Bus Rapid Transit Systems

As explained previously, this is one of the most common and recent systems used in developing cities. The reason behind this is that it is simple to integrate into a city with an old-fashioned planning, while trying to get people to ride bicycles would require enormous infrastructural adaptations. Additionally, the simplicity of taking a bus always comforts people in a sense that subways or trams do not offer. We will describe further down some of the top advantages of BRTs. However, before that, there are four essential features that define BRT:

- *Specific lanes dedicated to the buses:* Self-explanatory.
- *Off-board fare collection:* Fare payment at the station, not inside the bus, removes the delay and any risk of chaos caused by passengers waiting to pay on board.
- *Platform-level boarding:* The station should be at the same height with the doors of the buses for quick and easy boarding.

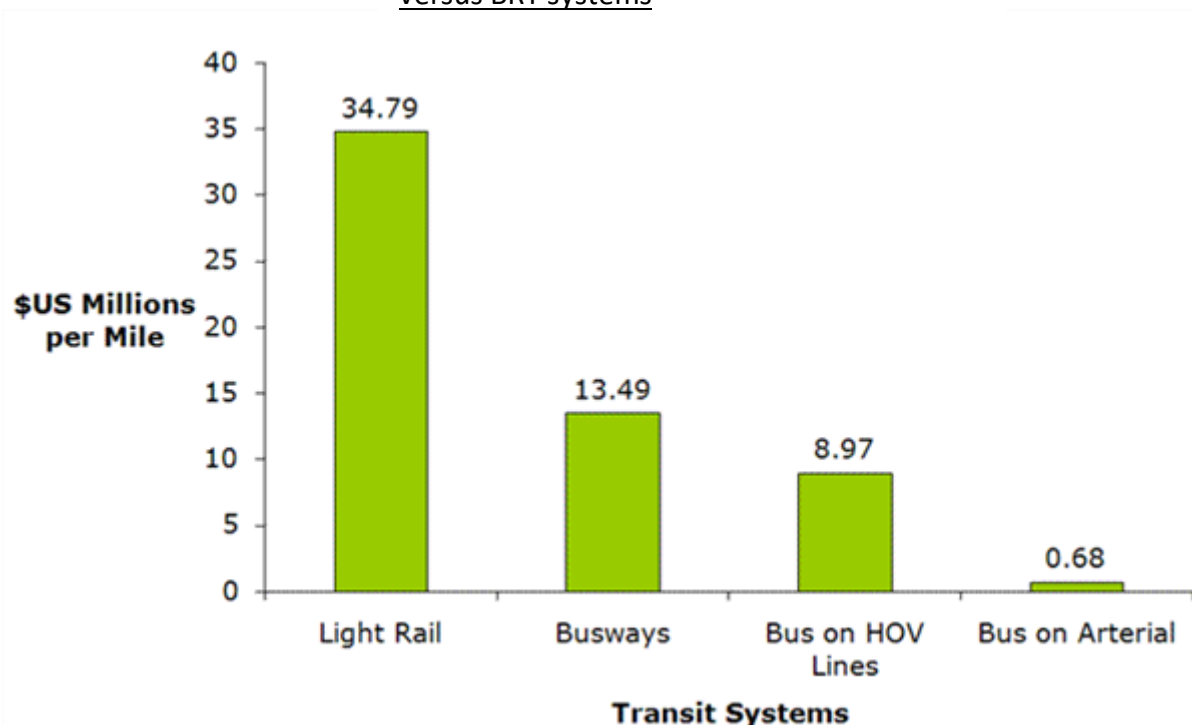
This also makes it fully accessible for wheelchairs, disabled passengers, strollers and carts with minimal delays.

- *Intersection Treatments:* Prohibiting turns for traffic across the bus lane reduces delays caused to buses by turning traffic. Prohibiting such turns is the most important measure for moving buses through intersections —more important even than signal priority.

a) Advantages of BRTs

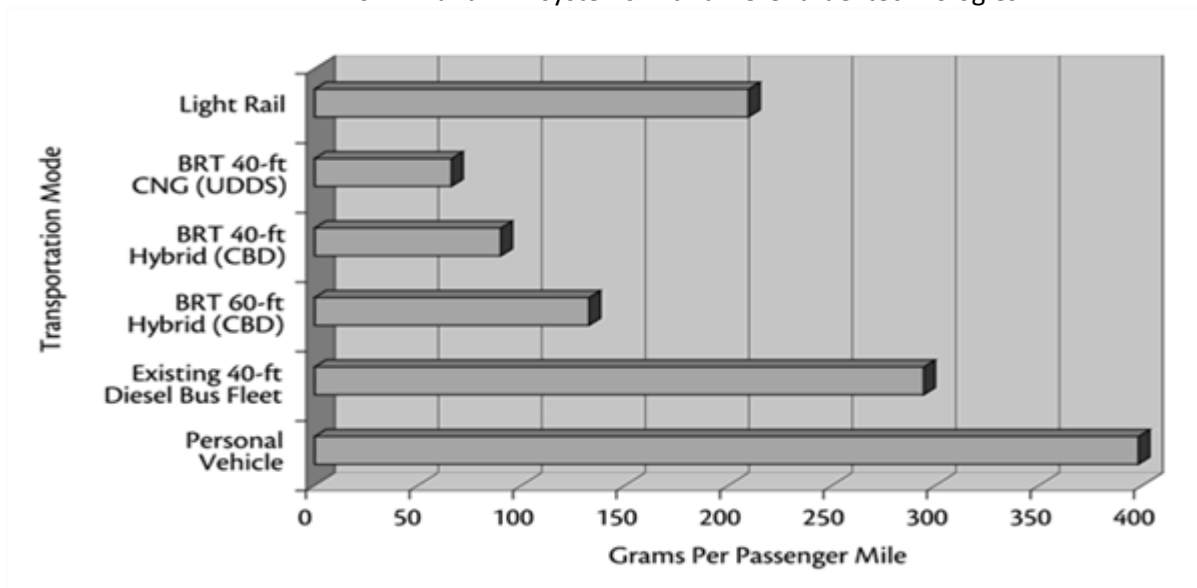
- I) *Buses are much more efficiently used*, in a conventional bus ride you have limited time and you are expected to board from the front gate. This means that the front parts of the vehicle are crowded and the back parts unnecessarily empty. A BRT bus, in contrast, can be boarded from all gates, resulting in the better distribution of the passengers inside the vehicle.
- II) *Stations are more effective to handle the passenger demand*. Since the buses can move fast, the circulation in the system is always flowing; thus, waiting times in stations are low.
- III) *It is independent*. You will never have traffic jams in a BRT lane, whereas the conventional bus system would collapse should there be an accident or something else to block the flow of traffic.
- IV) *It is significantly cheaper*. A BRT system will typically cost 4 to 20 times less than an equivalent LRT (light rail system) and up to 100 times less than an equivalent subway rail system.

Graphic 1: Capital costs per mile of Light Rail versus BRT systems



- V) *It can produce significantly greater Carbon Dioxide (CO₂) reductions than LRT systems.* While you may expect trains to be less environmentally pollutant, if the electricity required for the train is generated by fossil fuels, BRTs turn out to be much more energy-efficient. This point is valid only if the buses use the latest fuel technology, however, such as Hybrid.

Graphic 2: Comparative analysis of the environmental performance of LRT and BRT systems with different fuel technologies



b) Criticism surrounding BRTs

- I) *Bus rapid transit often uses diesel or gasoline-fuelled engines.* The typical bus diesel engine causes perceptible levels of air pollution and undesired noise to its vicinity. However, it can still benefit the environment by decreasing at least the number of private cars on the road.
- II) *Overcrowding and poor quality service* are two common complaints about BRTs. In various examples around the world, people challenged the capacity of the buses and gave way to severe overcrowding. In the BRT system in Bogotá, Colombia, the overcrowding is even worse; the average is eight passengers per square meter.
- III) *They are not durable.* A bus operating non-stop and in its full capacity will need frequent repairs and constant maintenance. Most buses become inoperable after a mere twenty years. The risk of malfunctions is greater than many other vehicles as well. This is a major downside of the BRTs especially compared to systems with trains.

4) Tram and Light Rail Systems

System of railways usually powered by overhead electrical wires and used for medium-capacity local transportation in metropolitan areas. Historically, trams are one of the oldest examples of public transportation, emerging as early as the first quarter of the nineteenth century.

a) Advantages of Tram and Light Rail Systems

- I) *They offer a more comfortable ride.* Especially for people who are used to having private space and who cannot stand the gigantic crowds of buses, train systems have been a more attractive option.
- II) *They make less noise than any other vehicle.* An engine powered directly by an external electricity source does not create much vibration, so the level of noise it creates is not disturbing its vicinity.
- III) *Tram vehicles are very durable, with some being in continuous revenue service for more than fifty years.*
- IV) *Aesthetics.* Very well designed trams are seen as adding visual appeal to the urban landscape, even becoming a tourist attraction in some instances.

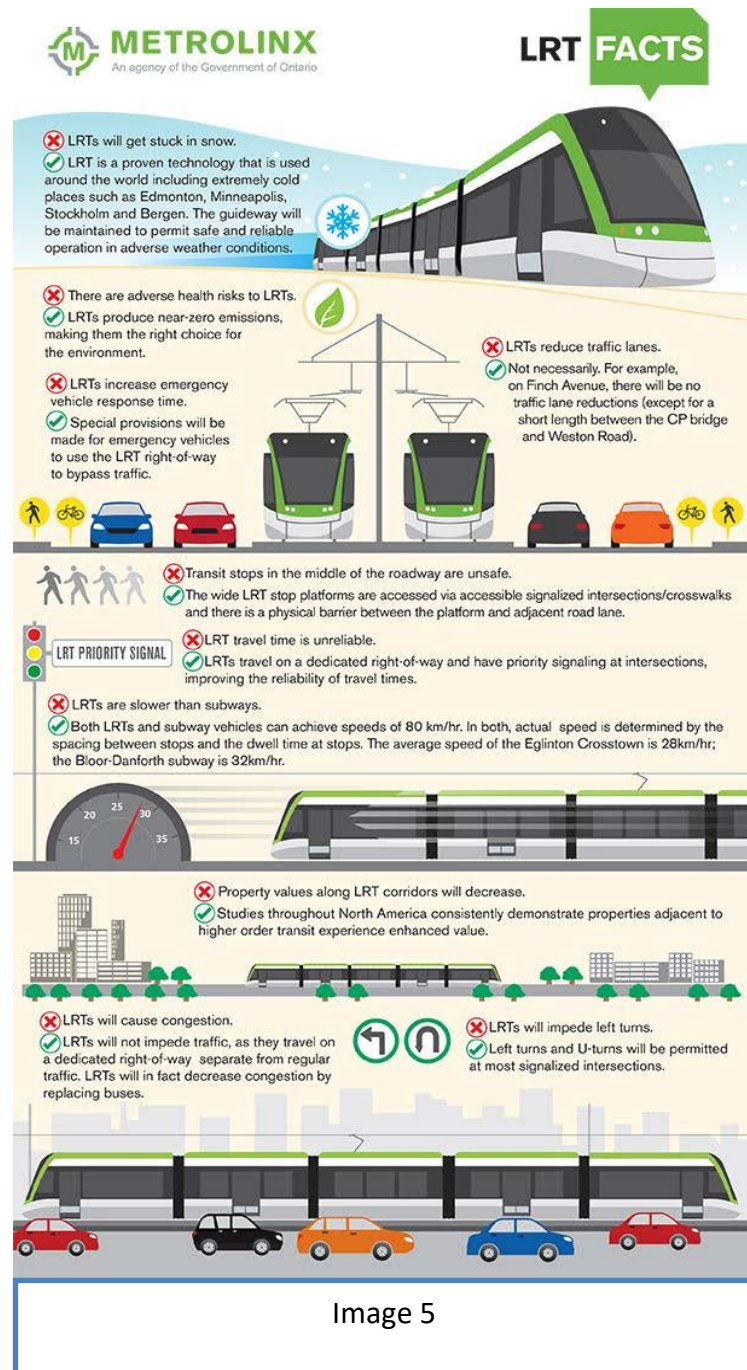


Image 5

b) Disadvantages of Tram and Light Rail Systems

- I) *Inflexibility*. If a car fails on tracks, there is no way to overtake it, which means the complete shutdown of the system and severe financial losses. Additionally, in the event of the closure of a street with the tracks, the system is rendered inoperable.
- II) *Higher capital costs than buses*.
- III) *Aesthetics*. Countering the visual appeal of the train itself are the overhead wires, which are disliked by many people.
- IV) *Safety*. An analysis of data published by the US Department of Transportation shows that light rail fatalities are higher than those of all other forms of transportation except for those of motorcycle travel (31.5 fatalities per 100 million miles) This is also an unpredicted side-effect of the silence of trains. Drivers, bikers and pedestrians do not notice the approaching train, resulting in many tragic accidents.

Major Cities/Organizations Involved

- Institute for Transportation and Development Policy

One of the largest and oldest non-profits to be campaigning for sustainable transportation, ITDP was founded in 1985 in the United States by Michael Replogle and others advocating for the cause. It is a non-governmental organization (NGO).

The activities of ITDP include developing more cost-efficient and environmentally friendly BRT systems, promoting biking, walking and other non-motorized transport. In ten years after its foundation, ITDP worked to support and grow local bicycle industries in Haiti, Nicaragua, Mozambique, South Africa, and in many countries in West Africa. By 1989, ITDP's 'Bicycles Not Bombs' battle had sent 10,000 second-hand bikes to promote wellbeing and instruction endeavours in Nicaragua and utilized these to build up a bike gathering industry in that nation.

In the course of recent years, ITDP has given direct help to city governments and has been engaged with the exploration, arranging, and development of world-class BRT frameworks in Argentina, Brazil, China, India, Mexico, South Africa, Tanzania, and many others.

ITPD is one of the co-founders of Partnership on Sustainable, Low Carbon Transport (Slocat).

- Partnership on Sustainable, Low Carbon Transport

The Partnership on Sustainable, Low Carbon Transport (SLoCaT) is a multi-partner association of more than 90 members trying to advance the reconciliation of sustainable transport in worldwide approaches on manageable improvement and environmental change. It was established in 2009. SLoCaT is a Type II non-legal and non-binding association under the United Nations, facilitated by the United Nations Department of Economic and Social Affairs.

The partnership has four specific objectives:

- I) The integration of sustainable, low carbon transport in climate negotiations, as well as national and local climate policies and programs.
- II) The integration of climate considerations in regional, national and local transport policies.
- III) Recognition of sustainable, low carbon transport as necessary in strategies and operations of international development organizations.
- IV) Contribute to sustainable development, the millennium development goals as well as the post-2015 sustainable development goals by providing access to or for goods and services by lower income groups.

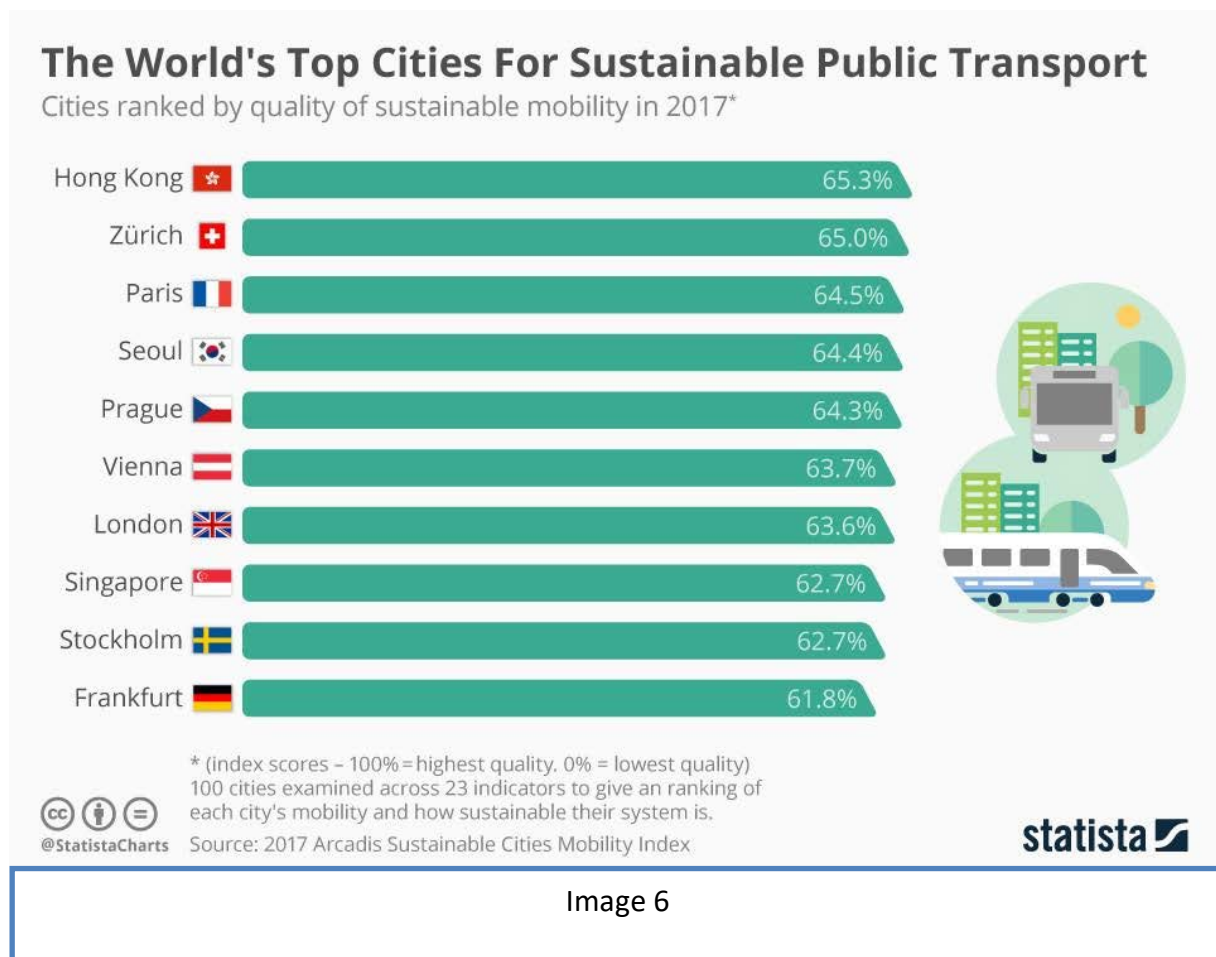
The partnership currently has over 90 members from across the globe. Here is a complete list of all members: <http://slocat.net/members/by-name>

- World Business Council for Sustainable Development

The WBCSD is a global advocacy association of roughly 200 companies operating on the fields of business and advocacy for sustainable development. One of their program areas includes transforming mobility, with a plan to quicken the progress towards spotless, safe and effective mobility for all. WBCSD's organizations push to accomplish four Sustainable Mobility Goals around the world.

- Hong Kong

Hong Kong is the city with the most sustainable transportation system, according to the 2017 Sustainable Cities Mobility Index from Arcadis —a global design and consultancy firm for natural and built assets. Hong Kong dominated the analysis generally thanks to its very much associated and creative transport network, which handles an amazing 12.6 million passenger journeys each day. Despite the city’s high density and lack of space, the service runs smoothly, promptly, and at a reasonable price point for passengers. This is a model definitely deserving to be viewed.



Relevant UN Treaties, Resolutions and Events —Previous Attempts to Resolve the Issue

1) Earth Summit 2002

It took place in Johannesburg, South Africa, from 26 August to 4 September 2002. It was convened by the United Nations to discuss sustainable development. As the problems regarding public transportation started to rise with the beginning of the century, the topic was brought before the international community for the first time at this summit, though no formal declarations or agreements have been specifically released on transportation.

2) Global Sustainable Transport Conference

The first sustainable transport conference was held on 26 and 27 November 2016 in Ashgabat, Turkmenistan. The Global Sustainable Transport Conference brought together key stakeholders from Governments, UN system and other international organizations, the private sector, and civil society to engage in a dialogue that emphasized the integrated and crosscutting nature of sustainable transport and its multiple roles in supporting the achievement of the SDGs. All modes of transport —road, rail, aviation, ferry and maritime— were addressed. Two remarkable documents were produced at the conclusion of the conference.

- a) Press release on the matter (which I highly encourage you to read) :
https://sustainabledevelopment.un.org/content/documents/11979Final_Press_Release.pdf
- b) Ashgabat Statement on Commitments and Policy Recommendations of the Global Sustainable Transport Conference:
<https://sustainabledevelopment.un.org/content/documents/11987Ashgabatstatement.pdf>

3) Resolution A/RES/72/212

A resolution submitted by Turkmenistan in the GA week of 2017. It addresses the issue of ‘Strengthening the links between all modes of transport to achieve the Sustainable Development Goals’. It passed unanimously.
http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/72/212

Possible Solutions

The aforementioned ideas are tried in varying degrees in different parts of the world. Some of these projects have been implemented successfully some have been not. The concern of selecting one is up to the local governments, but what can be done in an international scale is promotion and incentivization.

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Visual Credits

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