Solution 1: Urban density is more cost-effective than urban sprawl

A comprehensive study for the Paris region shows, that in the outer city area where there are less than 30 inhabitants and employees/ha the cost of journeys made by car are 3 times higher than those made in the centre of Paris by metro or RER, where the density is as high as 400 inhabitants and employees/ha.

In low-density areas the car dominates the choice of transport, and the cost of providing public transport is high. In these sprawling cities almost all journeys are made by car.

The Millennium Cities Database for Sustainable Transport, prepared by UITP and Murdoch University (Aus.), shows that the cost of passenger transport for the community, as a proportion of GDP, is as low as the density is high. The reason is that in dense urban communities, the share of journeys made by public transport is the highest.

Urban Areas in	Density Inhabitants/ Hectare	Share of journeys on foot, bicycle and by Public Transport	Cost of journeys (% of GDP)
USA, Canada Oceania	18	15%	12.7%
Western Europe	55	52%	8.3%
Japan, Hong Kong, Singapore	134	62%	5.4%

Source: UITP Millennium Cities Database

Put an end to urban sprawl; the cost of journeys is low when public transport is the dominant mode of transport in a high or medium density city.

Solution 2: Urban development around public transport stations

Siting offices next to stations reduces walking distances and encourages the use of public transport, as can be seen here in San Diego.

Taking public transport into account in urban planning decisions is an effective way to stop the increase in private car traffic and daily traffic congestion. One of the best incentives for leaving the car at home is a short walk to an attractive public transport station.

The graph below, from a small town in Switzerland, shows that the number of public transport users is doubled when the walking distance to the nearest stop is reduced from 7 minutes to 2 minutes.

Public transport stops should be no more than a short walk from home and as close as the parking lot to the office.

Solution 3: Cities become welcoming and dynamic when freed from congestion

60 Italian cities, such as Bologna, have closed their centres to general traffic, allowing only buses and delivery vehicles at certain times.

It is not the purpose of city centres to attract cars, but to attract residents, shoppers and visitors for commercial, cultural or leisure activities.

Concentration of these activities in a small space imposes strict limits on access in order to preserve a peaceful environment.

Several cities have been able to keep the attractiveness of their centres using the following well-known solutions:

- Reduce on-road parking to a minimum.
- Adopt traffic plans that stop through car traffic except for buses, trams and bicycles.
- Restrict access to the centre by car except for residents and limited deliveries.

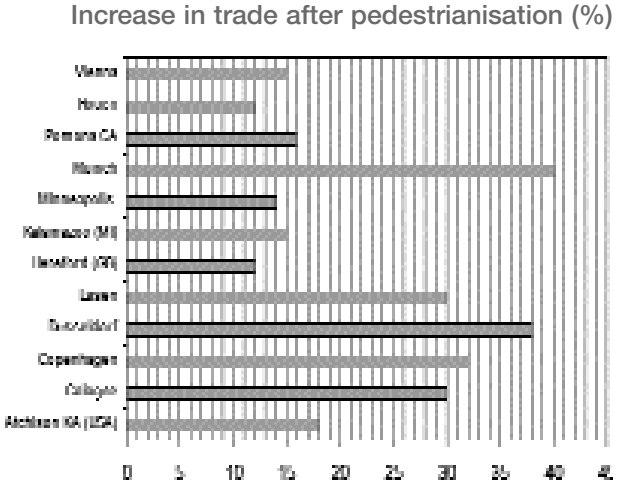
Central areas, liberated from traffic jams and parking, become available for walking, shopping, and leisure.

Allow public transport access to city centres but restrict other transport.

Solution 4: More trade after pedestrianization

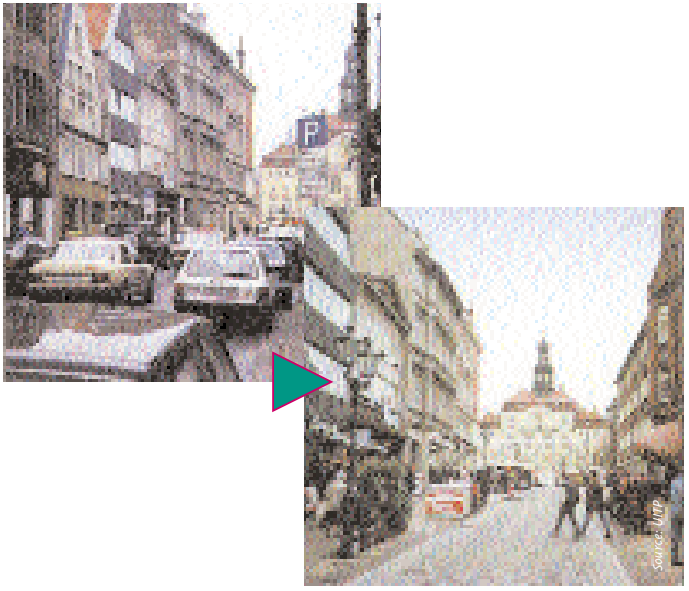
Promoting public transport and creating pedestrian areas has been successful in Valladolid, Spain.

Many shopkeepers believe, that parking spaces in front of their shops are essential for sales. But experience in many cities shows that converting streets into pedestrian areas, allowing access only to public transport vehicles and for deliveries, has increased turnover for local commerce.



International experience shows that pedestrian-friendly areas, with attractive public transport access gives shops a boost.

Solution 5: Strict parking policies in city centres reduces traffic jams



Pedestrianization of a city road (as seen here in Lüneburg Germany) enhances local trade, despite the loss of parking spaces.

Contrary to popular belief, more parking spaces often means more traffic congestion. Restricting the availability of parking - especially for commuters - is the most effective (and cheapest) way to convince drivers to leave their cars at home. They then change to less space-consuming modes of transport.

Parking policies are a major tool for successful city traffic management.

UITP recommends the following actions: limit the creation of parking spaces in new office buildings; discourage free parking at people's places of work; limit parking capacity in centres; optimise parking use (eliminate on-road parking for commuters through the use of time restriction 'blue' zones…) and ensure that the restrictions are enforced.

FOCUS PARKING POLICY

Making more parking space available than the road network can handle is as illogical as training the muscles of the body when the heart does not have the appropriate capacity to cope.

Solution 6: Park + Ride complements parking restrictions in city centres

Park + Ride at a light rail terminal in Hanover (Germany).

Not everybody lives a short walk from a station, so other modes need to be used to get to the station. The private car is an important feeder to public transport interchanges and in many countries Park + Ride facilities have shown good results getting people to use public transport to get into the city.

P+R schemes must be consistent with parking measures in city centres e.g. each new parking place in a P+R should mean one parking place in the city centre.

To be attractive, Park + Ride must offer connections to frequent, fast public transport services and they must be well managed. Real-time passenger information, comfortable waiting and transfer areas increase their attraction.

FOCUS PARKING POLICY

A car parked in a suburban station means one parking space less in the city and two car journeys less on the access roads.

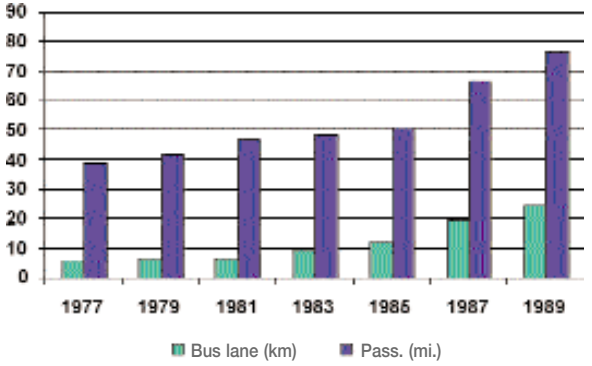
Solution 7: Fast, reliable public transport can attract passengers from other modes

Car drivers, blocked by congestion, see buses and trams passing and begin to consider a change of mode, as in Stuttgart, Germany.

Public transport needs to be as fast and reliable as the private car.

The Metrolink light rail in Manchester has taken 3 million car journeys off its roads per year.

The growth of traffic in Geneva is directly related to the length of the dedicated bus lanes.



Increasing the speed and reliability of public transport attracts new passengers, and improves its image.

Solution 8: Give public transport a reserved right-of-way

Speed and reliability are important factors to make customers change to public transport. Nice, France has a dedicated bus lane parallel to the popular beach front.

Space is at a premium in urban areas so it needs to be used sensibly. Buses and trams use nearly 20 times less space to transport the same number of people than the private car.

One of the most cost effective measures for successful public transport is giving it dedicated rights-of-way.

The resulting increase in speed and reliability:

- Reduces operating costs, mainly through a reduction in the total number of vehicles needed and fewer spare vehicles needed to compensate for running late.
- Improves the frequency of the service.

Increasing the vehicle speed and reducing waiting times results in a shorter overall journey time for passengers.

Giving buses and trams dedicated infrastructure gives a good pay-back by reducing operating costs and increasing farebox revenue.

Solution 9: Low floor means easy access

Many European cities have low-floor trams and buses allowing quick and easy boarding to and from the platform as shown here in Dresden, Germany.

Easy boarding is a must for all sorts of customers: children, shoppers with heavy bags, parents with strollers, the elderly. Good accessibility is required to satisfy the needs of those with reduced mobility.

Level boarding is a long-time feature of underground railways. 15 years ago surface vehicles started to have this type of access and nearly all new buses and light rail vehicles are now low-floor, offering near level-boarding.

FOCUS
ACCESSIBILITY

Public transport vehicles are more accessible than 15 years ago.

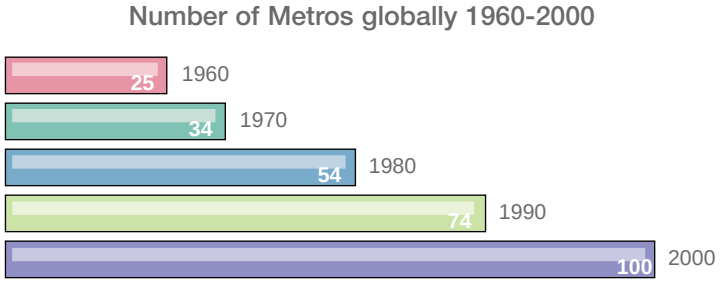
Solution 10: For heavy traffic demand, metros and suburban rail are the answer

The large quantity of people travelling by metro in Singapore keeps the roads more clear.

In major cities of the developed world, metros and heavy rail are the least expensive mode of public transport for access to and around the city centres.

Although the level of investment in metro, RER or heavy rail is often high, in the long term it offers the most efficient solution for moving thousands of passengers during the busy peak hours.

Therefore, the number of metro systems is still increasing in large cities and in the emerging nations, whose populations are growing fast.



Metros or suburban trains can carry more than 50,000 passengers on one line per hour and direction. No other mode can beat that!

Solution 11: Attractive Interchanges are key to successful public transport

An interchange in Vancouver British Colombia, Canada showing the easy transfer between modes.

The larger the city, the more passengers have to change between buses, metros, trams or other modes. This waste of time can be a great inconvenience, if these interchanges are not well planned and made attractive.

In good interchange areas, passengers should be able to use their time in an enjoyable way, to dine and shop for instance, and these areas can become a dynamic part of a city.

Public transport interchange and shopping centre in Sheffield, UK.

Interchanges should not be only used for transport purposes, but should be developed as interesting and lively parts of a city.

Solution 12: Good passenger information is essential for seamless travel

Dynamic passenger information makes public transport easier for passengers to use, as can be seen here in West Yorkshire, UK.

Providing the customer with easy to follow information on timetables, fares, routes and services makes public transport more accessible.

Good integrated and intermodal information systems allow door-to-door journey planning. Advanced technologies make it possible to provide real-time information at the customer's exact location.

A balanced mix of pre-trip information (printed leaflets and posters, travel enquiry offices, call centres, public interactive terminals, Internet web sites) and information provided during the journey (at stops, interchanges, on-board vehicles) facilitates public transport use and makes the journey more comfortable and less stressful.

CODE BRIEF
PASSENGER INFORMATION

To satisfy customers' needs information systems should be multi-modal, area-wide, and offer door-to-door information via one single medium.

Solution 13: Electronic ticketing helps make public transport easier to use

Contactless technology offers significant advantages in terms of cost, reliability, security, and speed of transaction compared to other forms of ticketing.

Tickets should allow easy transfer between modes and operators, either over a designated area or country wide.

Developments in electronic ticketing add a new dimension for regular and season ticket holders.

Automatic fare collection systems and contactless smart cards offer high performance alternatives to traditional ticketing. They are simple to use, allow fares based on actual travel length or on period of the day (peak, off-peak), permit transactions in total security, avoid handling cash, reduce fare evasion, allow inter-modal fares and leave the way clear for new electronic purse applications.

Smartcards and electronic ticketing make Public Transport easier to use and therefore more attractive.

Solution 14: Urban car journeys should be properly charged

A toll is charged in Singapore for entering the Central Business District (CBD). This toll eliminates the daily, city-centre congestion, experienced in many other megapolis.

Excessive car use in towns and cities is encouraged by the free use of roads and under-charging for parking. Moreover, car drivers do not pay for the external costs that they cause such as: congestion, atmospheric pollution and noise.

Therefore UITP recommends that charging for car use in urban communities be increased by:

- expanding the area covered for paying for on-road parking,
- increasing parking charges for non-residents,
- stepping up parking controls and improving the efficiency for the recovery of fines,
- adopting fiscal measures that discourage the provision of company cars and free private parking at the work place,
- introducing urban road tolls whenever the previous measures prove to be inadequate. The technology exists for this, and assorted trials show encouraging results.

FOCUS
URBAN PRICING

The final aim is not to increase car taxation, but to use carefully selected taxes or tolls to stop unnecessary car use in cities.

Solution 15: Innovative Financing is needed for investing in Public Transport

A large part of the cost of the tramway in Rouen, France was financed by the transport levy paid by employers.

Investment in a good public transport system benefits all citizens.

The advantages of good public transport networks are not only confined to their passengers. Therefore, investments in infrastructure and all operational costs should not be entirely paid for from the farebox revenue. Non-users should also contribute, as they also benefit from having an attractive public transport system and roads less congested.

There are many ways to link public and private financing and to raise funds for public transport:

- Property developers's contributions (e.g. Hong Kong, USA, Docklands GB).
- Taxes on salaries (e.g. the Transport Levy in France) are spent on improving public transport.
- Tax on fuel e.g. in Germany is dedicated to local transport investment.

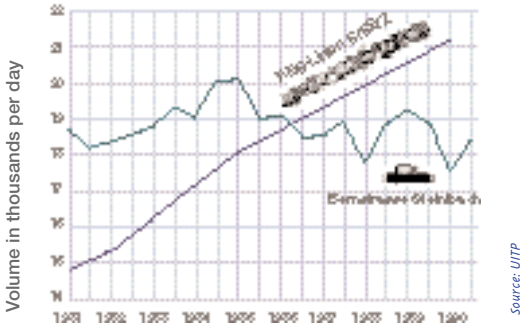
Each country has different ways to fund Public Transport projects, but investment should be made where it benefits the most citizens

Solution 16: Success breeds success

Cities such as Bern, Switzerland have applied these policies with success.

Investments in public transport alone cannot curb the increase in road traffic. It needs an integrated transport plan including land-use planning, parking policies and other measures. Success depends on a combination of political commitment and operational efficiency.

Public transport services must be developed to get people to switch to public transport, as is shown in this graph from a small town in Switzerland.



More or less stable car traffic but signifiant increase of passengers using public transport

A combination of measures based on land-use planning, restriction of private car use and the promotion of public transport helps to overcome growth in traffic and congestion

Three pillars for a balanced traffic system in urban areas

Only a combination of solutions is successful