Mobilise Your City

At-grade transit systems as tools to develop urban attractiveness

Is it applicable to India?

Webinar on Transit-Oriented Development

September 30th, 2020

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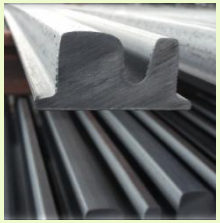
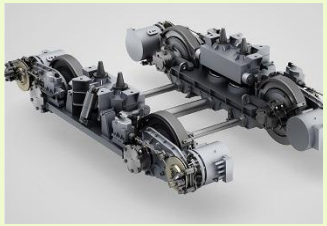
Transport is not just about transport

CITY shapes MOBILITY

Is transport first a matter of technology? Of infrastructure?



Transport is about moving, and moving is life!


Transport shapes the city and the street

Favour an integrated urban-transport approach

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Many cities are dismantling flyovers…

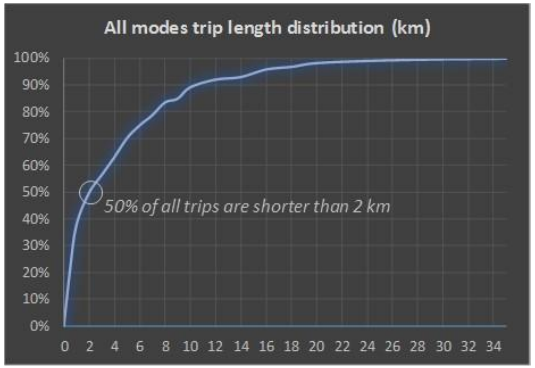
Grenoble	Lyon	Seoul
		
		

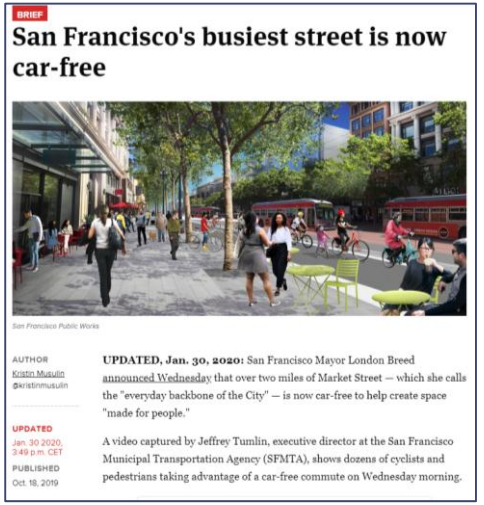
… Building at-grade transit systems

… Developing “walkability”
Shaping *streets* instead of *roads*

“Roads” are for vehicles

“Streets” (or boulevards, or avenues…) are for people





BRIEF

San Francisco's busiest street is now car-free

San Francisco Public Works

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Jan. 30 2020, 3:49 p.m. CET

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Oct. 18, 2019

UPDATED, Jan. 30, 2020: San Francisco Mayor London Breed announced Wednesday that over two miles of Market Street — which she calls the "everyday backbone of the City" — is now car-free to help create space "made for people."

A video captured by Jeffrey Tumlin, executive director at the San Francisco Municipal Transportation Agency (SFMTA), shows dozens of cyclists and pedestrians taking advantage of a car-free commute on Wednesday morning.

Before

After

Increased value of adjacent buildings

Nantes, France

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… With a radical change in the streets

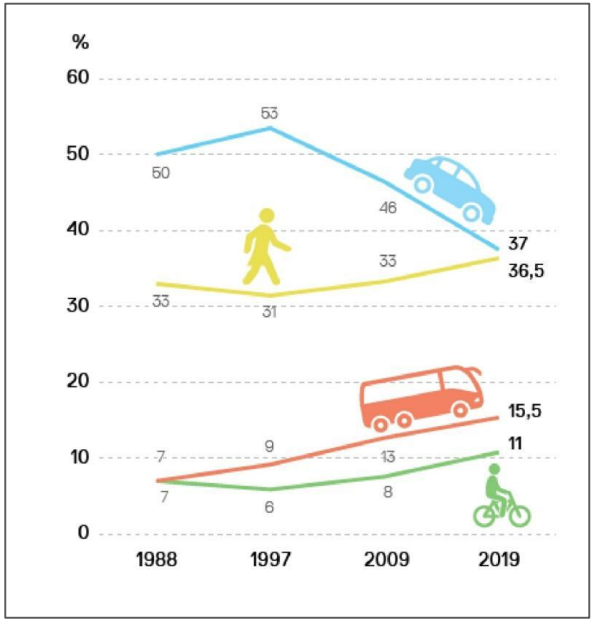
Before

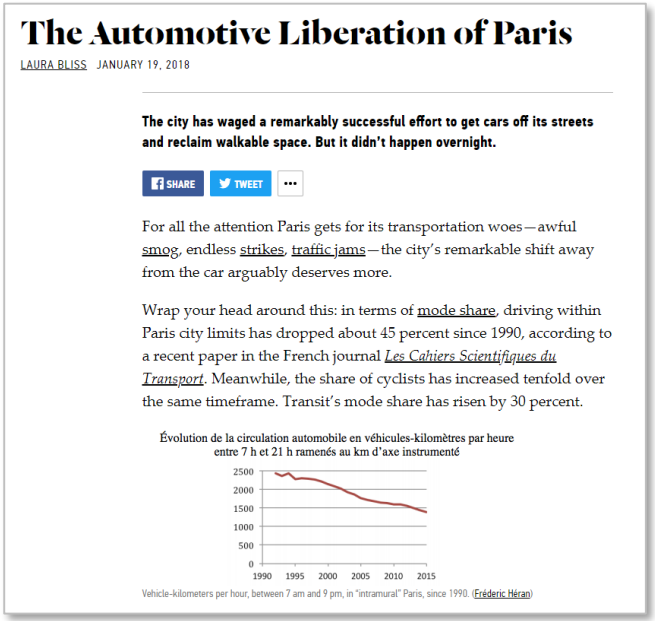
After

Barcelona

… And results!

Typical trend in French cities (Strasbourg here)





The Automotive Liberation of Paris

LAURA BLISS JANUARY 19, 2018

The city has waged a remarkably successful effort to get cars off its streets and reclaim walkable space. But it didn't happen overnight.

SHARE TWEET ···

For all the attention Paris gets for its transportation woes—awful smog, endless strikes, traffic jams—the city's remarkable shift away from the car arguably deserves more.

Wrap your head around this: in terms of mode share, driving within Paris city limits has dropped about 45 percent since 1990, according to a recent paper in the French journal *Les Cahiers Scientifiques du Transport*. Meanwhile, the share of cyclists has increased tenfold over the same timeframe. Transit's mode share has risen by 30 percent.

Évolution de la circulation automobile en véhicules-kilomètres par heure entre 7 h et 21 h ramenés au km d'axe instrumenté

Vehicle-kilometers per hour, between 7 am and 9 pm, in "intramural" Paris, since 1990. (Frédéric Héran)

Transit and NMT development ▶ Enhanced streetscape; Less noise, less pollution, less stress; More reliable mobility system ▶ **A new attractiveness** ▶ Residents; Activities; Shopping; Tourism; Investors ▶ **Increased land and real estate value**

A mechanism that works (too) well!

A short history of modern tramway

A new generation of urban tramways, first introduced in Europe in the 1980s

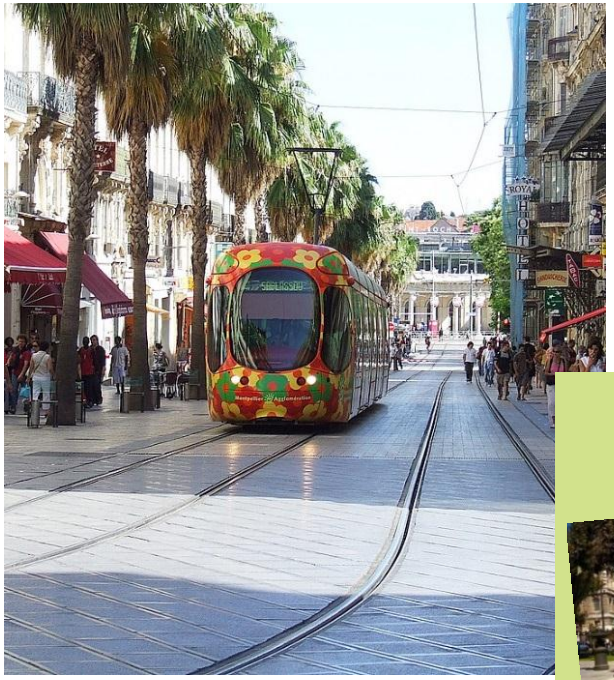
At-grade on-street systems, low-floor vehicles, upgraded (open) stations

Segregated right-of-way but with at-grade crossings and intersections

Mostly developed with **façade-to-façade streetscaping, traffic-calming policies, NMT facilities**

A major leverage to **modal shift in favour of public transport** (improved service, change of image) **and of NMT** (less traffic, wider sidewalks, cycle lanes)

Later developed in the Americas (USA, Canada, Brazil, Argentina, Colombia, Ecuador), **North Africa** (Morocco, Algeria, Tunisia), **Asia** (Turkey, Israel, UAE, China, Japan)…



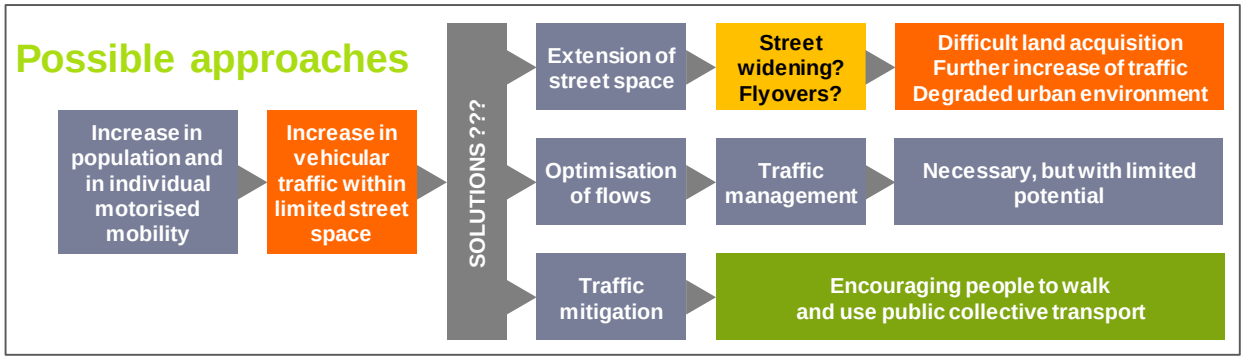
Often among the city landmarks, a showcase of the city

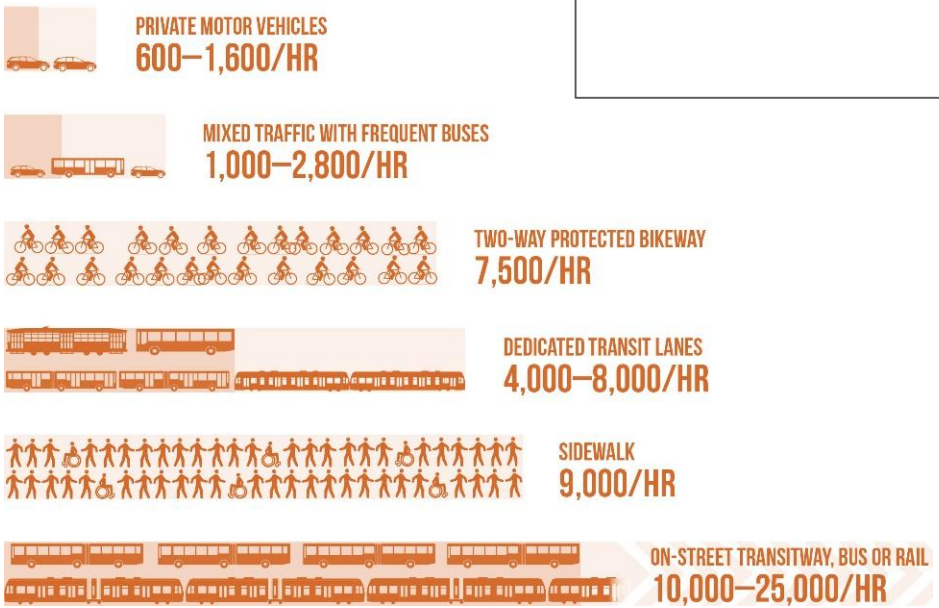
OK, now, nice, but

is it applicable to India??

“Not enough room in our roads”

Possible approaches





Capacity of a single 10-foot lane by mode at peak conditions with normal operations, in number of <u>persons</u> per hour *(source: NACTO, USA)*

“Not enough room in our roads”

On-street mass transit lines are always planned on the busiest axes

But eventually it works!

How come?

On the mass transit street, traffic is rationalised, better channelled

On-street parking is discouraged

Car drivers change their route and avoid peak hours

People transfer to mass transit

The transit line increases the total transport capacity of the street

People transfer to walking, thanks to the rearrangement of the street

People change their mind!

Be ready to reduce traffic lanes

“Does not provide enough transport capacity”

At-grade modern tramway: possibility of **60~65m vehicles**, 2.65m-wide, as in Casablanca, Rabat, Istanbul, Jerusalem…

Maximum capacity of about **600 passengers**

Minimum headway **3 minutes** to ensure priority at intersections and regularity

Maximum capacity **12,000 passengers per hour and per direction** for a very compact infrastructure (7m wide)

▶ Less than an elevated system, but **much easier to integrate**

▶ Equal to a procession of buses, but with a much better service, possibility of organising priority at intersections, and **a way to upgrade the street and the city**

A possible useful complement to existing systems

“An on-street system is too slow”

The commercial speed depends on the distance between stations and on the site conditions (number of intersections, density of traffic, street width, curves…)

Typical value in dense urban contexts is 20 km/h

▶ **Higher than bus lines** (typically 15 km/h in same contexts) and **much better regularity / reliability**

▶ Substantially less than for elevated systems (30 to 40 km/h): true, **but access to stations and vehicles is much faster and easier**

Most adapted to distances up to 10 km

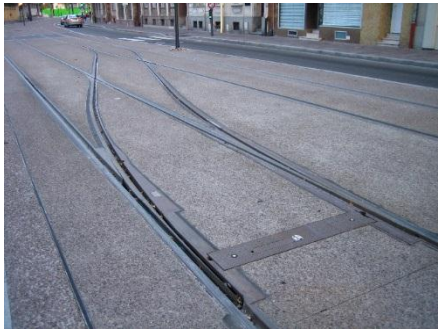
“Indian people will not respect it”

Every country / city tend to think that their citizens are **“less disciplined”** than elsewhere.

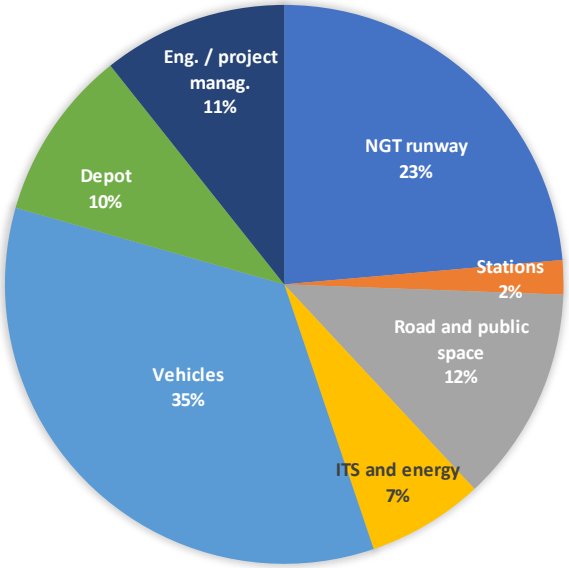
Everywhere there is a **period of adaptation** at the beginning of operations, with specific measures (slow transit speed, enforcement…).

Various systems can be used to **discourage vehicles and pedestrians to circulate on the transit right-of-way** (level gap between the transit platform and the carriageway, surfacing of the transit RoW… Barriers to be avoided!)

People get rapidly used to it everywhere.



“It is too expensive”



Some international tramway references (with higher headways so less vehicles):
- Casablanca (Morocco)
L1: 190, L2: 140
- Halic (Turkey): 150
- Alexandria (Egypt): 200

Example of tramway project under study in Hyderabad

- Rs 150 Crore/km for full project
- Rs 130 Crore/km for transport system alone
- Rs 70 Crore/km without rolling stock

Expensive? Yes… and no

Because it is **a combined transit and urban project**

Because it can attract short distance trips thanks to its easy access ▶ **High ridership all day long** (not only peak hours)

Comparison of existing metro and studied tramway in Hyderabad
Of course service (speed, capacity) is not the same and tramway could not replace metro
But just to show that tramway cost is not prohibitive when compared to potential ridership
If tramway fare is accessible to present bus users

	Cost *Rs Crores*	**Daily passengers** *Lakhs*	**Rs Lakhs/daily passenger**
Metro	20,000	5	4.0
Tramway	1,600	3	0.5

“It is only for rich people”

Oh, good point, wider issue!

The on-street transit lane will replace the majority of existing bus lines on the street.

It only works well in an integrated / trunk-and-feeder network, where transfers are easy and low cost (or free).

So the logic of it is **to be affordable to a maximum of people**.

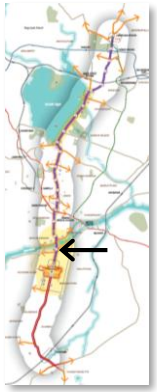
It should not be seen as a premium service but as a “new normal”!

This raises **financing and institutional issues**, and the potential need of public funding / subsidies.

Mobility has so many economical / social / environmental impacts that it is good policy to dedicate a part of the GDP to it!

And this leads us back to value capture, property developments, **transit-oriented development**!

A pilot project in Hyderabad?



Thank You

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