

PRT – Changing the game

21st Century Transit

210

September, 2018



Mobility is like the Internet in its early days. It is the next big innovation sector.

Prime Minister Narendra Modi
MOVE Global Mobility Summit. 7th September 2018.

His Vision on Mobility – 7 Cs

**Common. Connected. Convenient. Congestion Free.
Charged. Clean. Cutting Edge.**

We are 7 Cs

We are

- **First mover:**
 - **PRT development started in UK by NASA scientist in 1995**
 - **Current global leader**
- **Heathrow Pod:**
 - **7 years successful operations**
 - **6mn+ passenger-km, safety record, delighted customers**
 - **Cutting-edge control technology - proven and scalable**
- **Ready to build to scale**
 - **Typical project \$450mn**
 - **Largest project pipeline in PRT world: 170+ identified projects, specified routes & details**
- **Building a business to design, finance, construct, commission and operate PRT systems**
 - **Technology + Infra growth: \$900 billion market opportunity**
 - **Attractive IRRs**

Conflict



Annual Road deaths - India

Over 150,000

17,000 Children

Congestion





*'Of course I have a car. But
I don't have a road to drive
it on!'*

R.K. Laxman in
'The Times of India'

From the 80s!

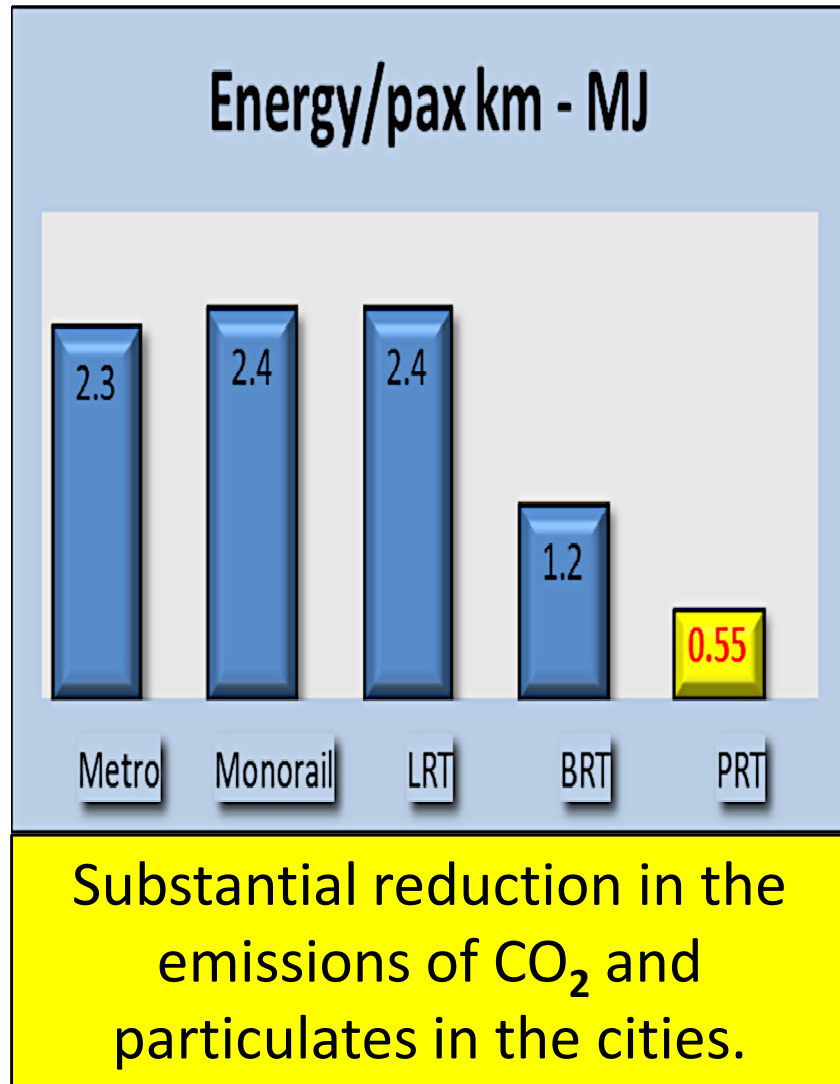
PRT in Congested City



No need to cut trees



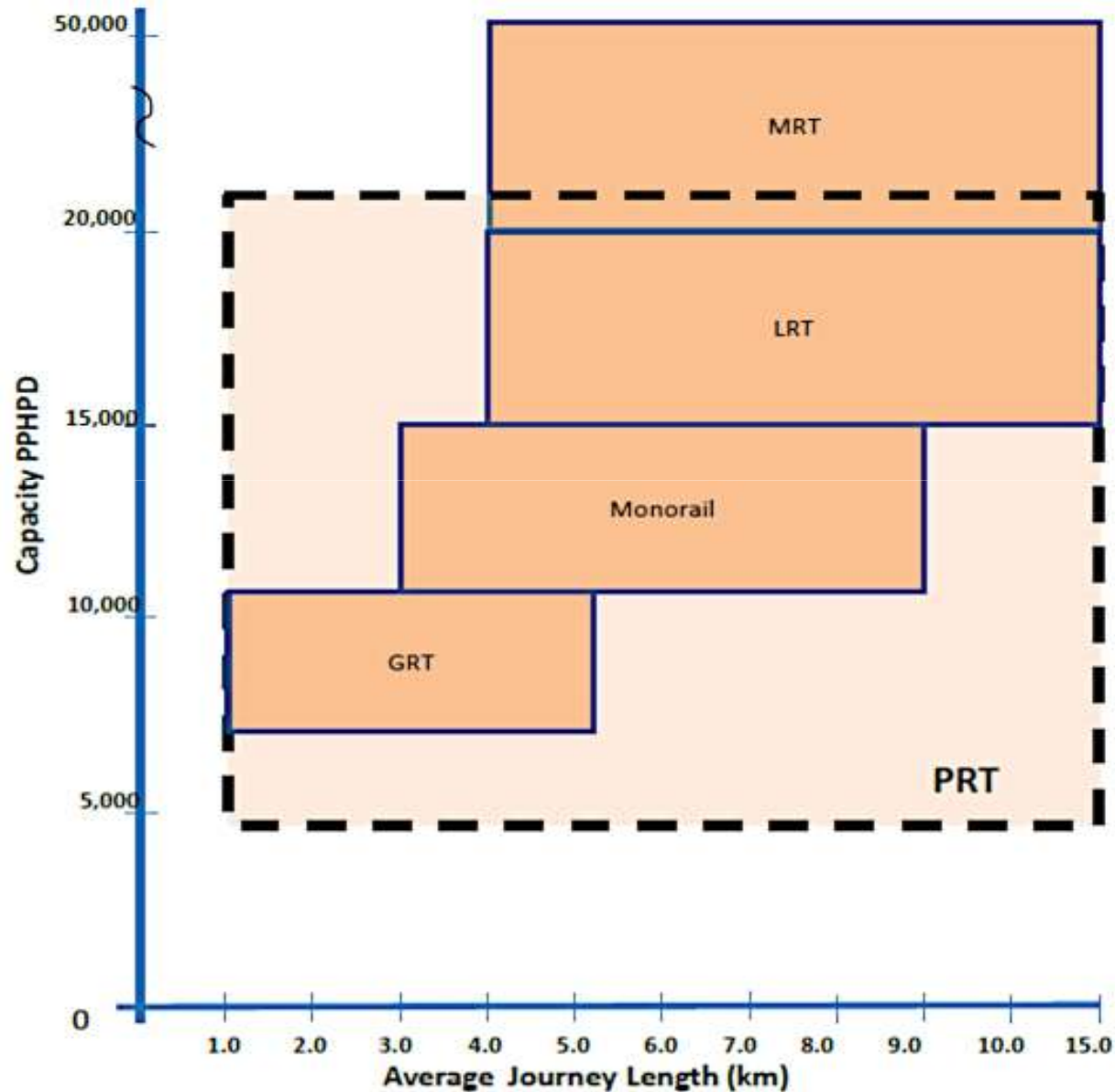
How PRT saves emissions?



Most energy efficient:

- On demand travel
- Origin to destination
- Non stop travel
- Empty vehicles minimised.
- No waiting in traffic. Ride sharing.
- Regenerative braking

A game changer



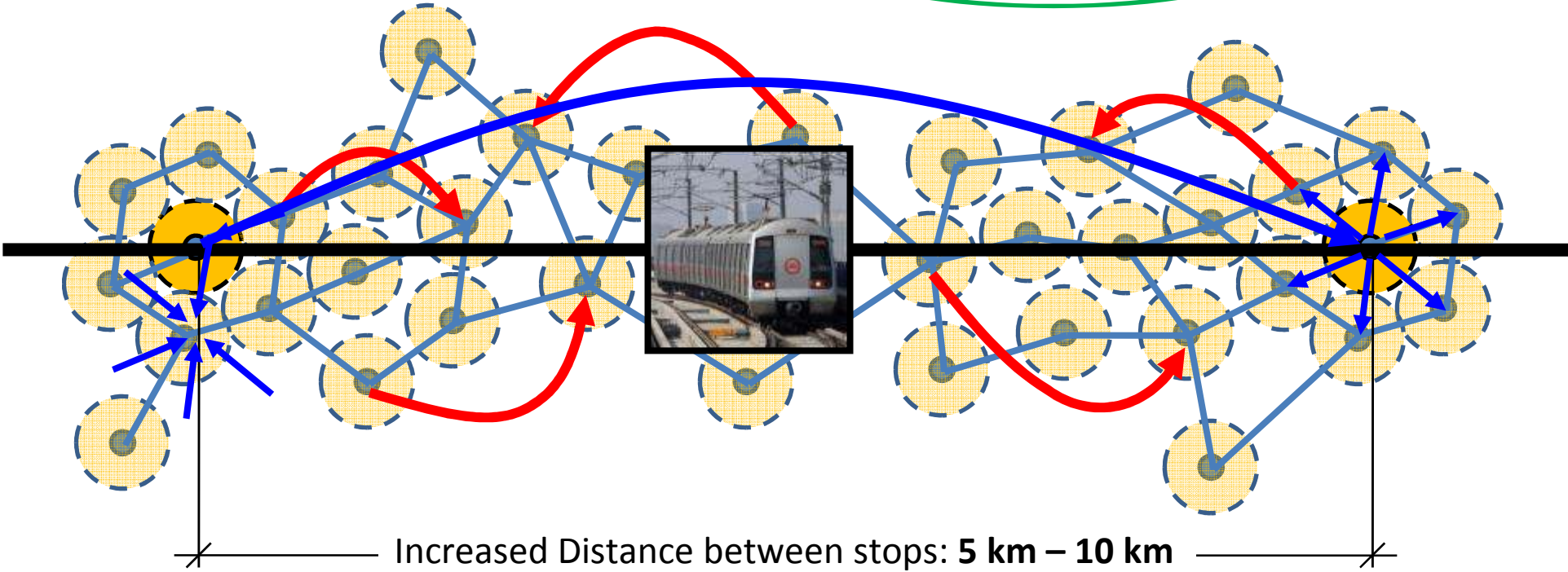
- Much lower cost
- more flexible
- clean
- zero conflict
- Comfortable, seated travel
- last mile, or full journey.

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PRT: Integration with MRT

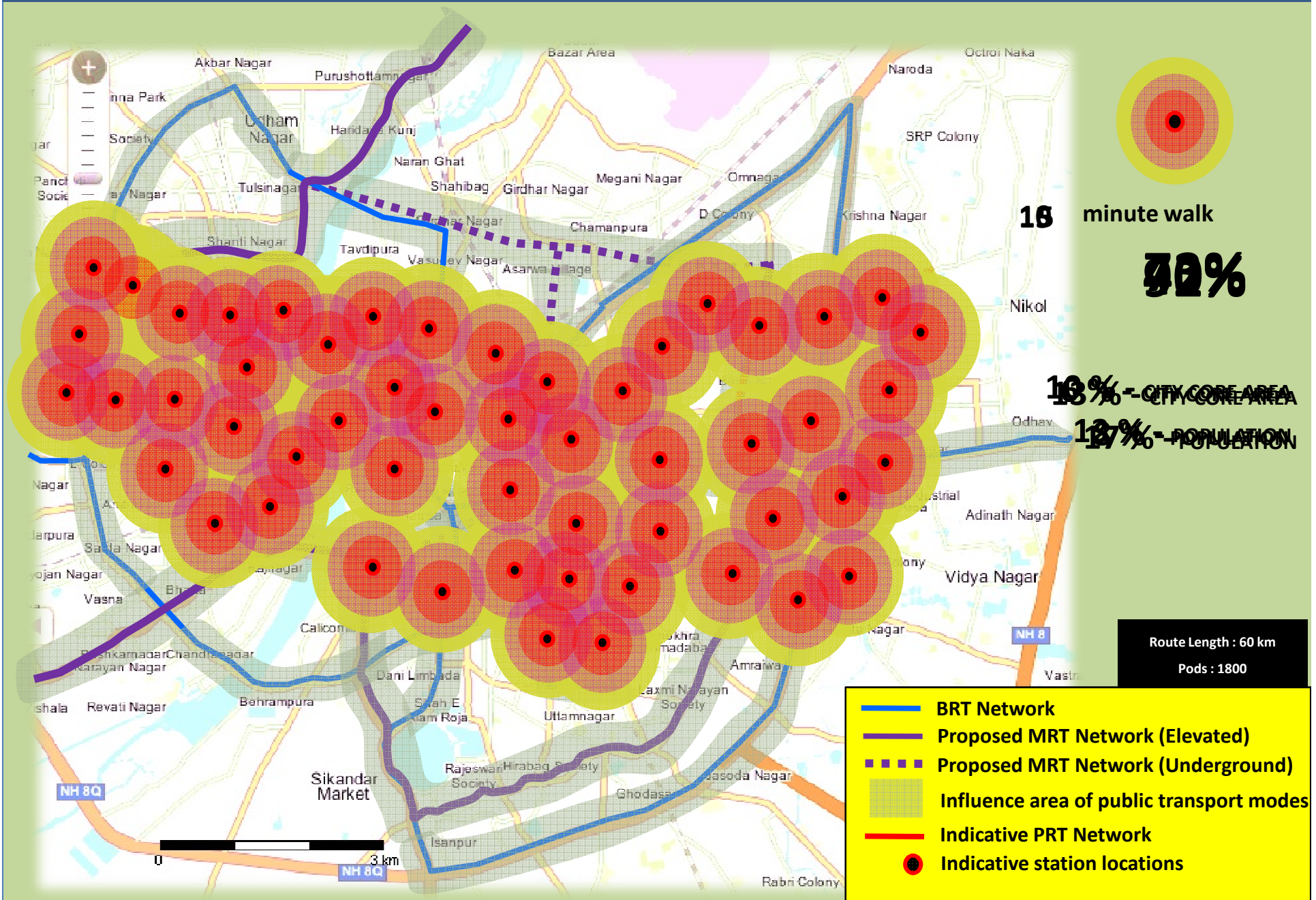


Line speed: **40-80 kmph** ●
Coverage: **Very Good** ●



Cheaper MRT, Increased ridership, Faster & Full journey

Walkable



The Heathrow Pod

The world's first fully operational PRT system

- In service since 2011
- 6mn+ passenger km
- Waiting time <10 seconds
- 100% safety record

System	Availability
<u>Pod</u>	<u>99.3%</u>
Heathrow Express	98.0%
Underground	95.6%
Docklands LRT	97.4%
Tramlink	98.6%
Overground	94.8%



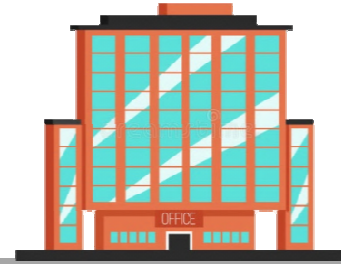
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Last mile

School



Office

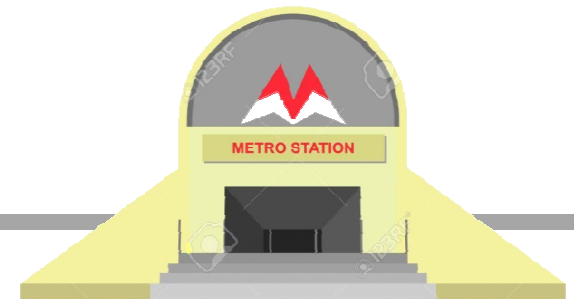


Residence



Mall

Metro Station



- Feeder
- Faster, all-weather, inside-to-inside

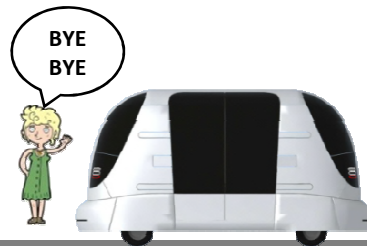


~~Aggravation~~

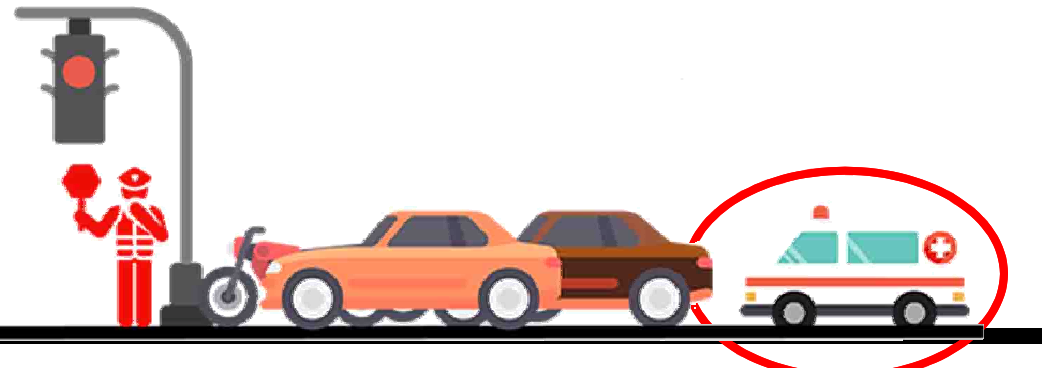
Productivity

Environment

Safe Journey to school



Medivac – The golden hour



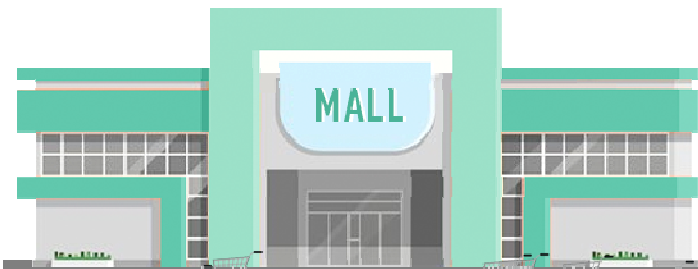
Women Safety



Help ! Help !



Cargo Facility



- Supply chain during off peak time
- Reducing commercial vehicles
- Reducing turn around time



During Day / Night



TRIPS/ DAY

CAR

16

4 TRIPS

TAXI

32

8 TRIPS

BUS

500

10 TRIPS

METRO

10,000

10 TRIPS

POD

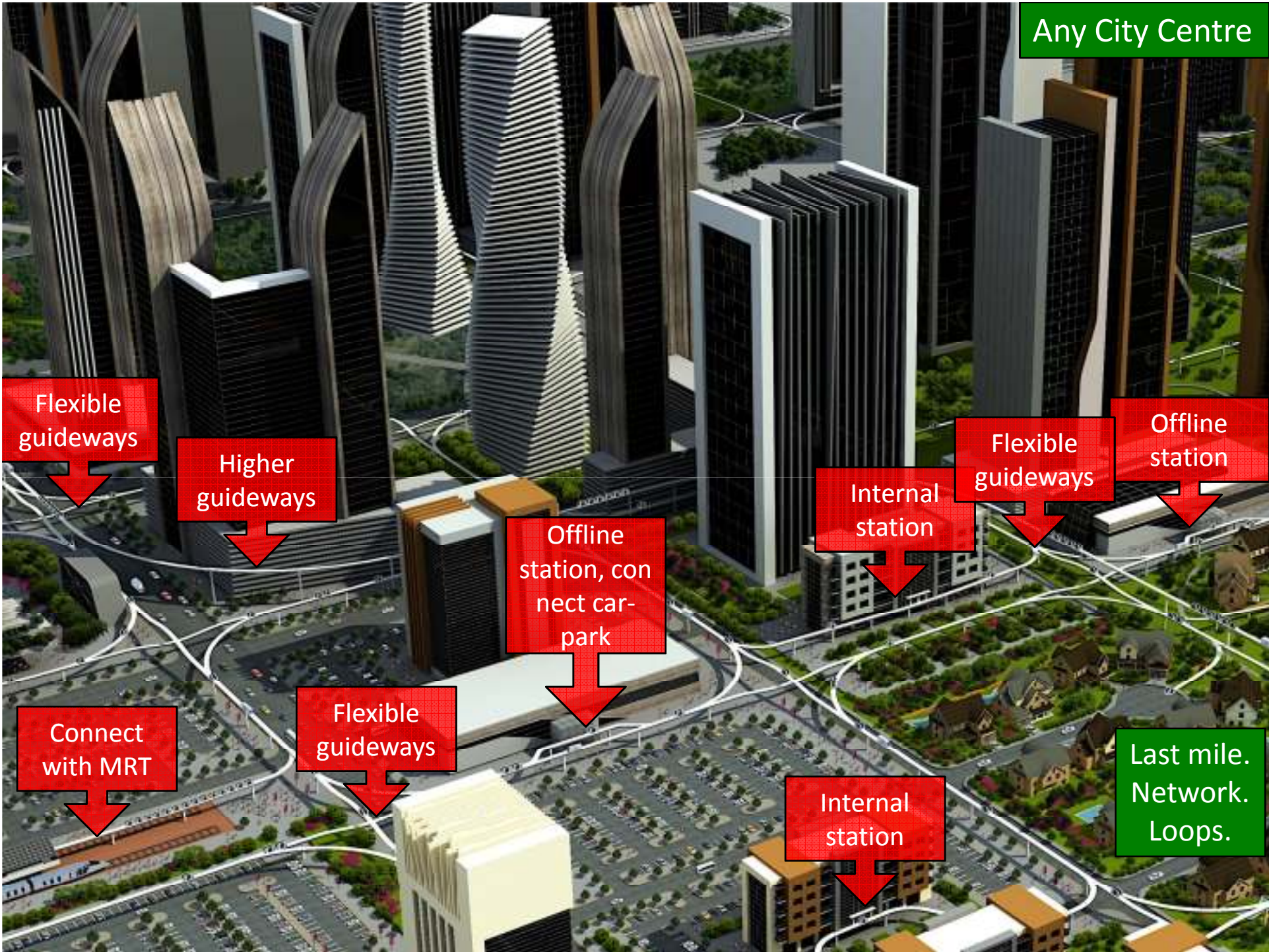
1,200

200 TRIPS

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

People/Day/Unit

Any City Centre



Flexible guideways

Higher guideways

Offline station, connect car-park

Internal station

Flexible guideways

Offline station

Connect with MRT

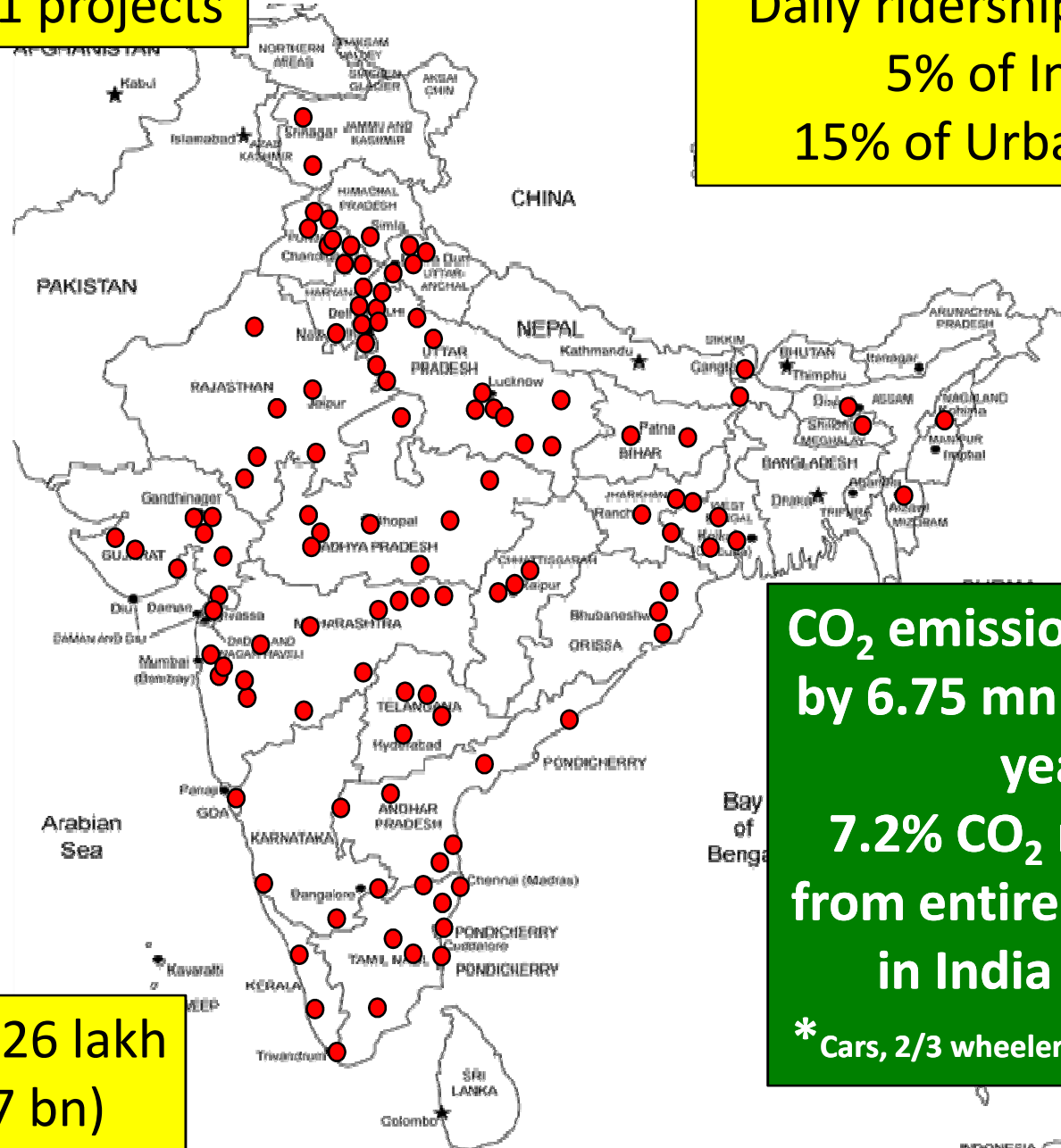
Flexible guideways

Internal station

Last mile. Network. Loops.

Pipeline - 121 projects

Daily ridership – 61 mn
5% of India
15% of Urban India



Capex - Rs 3.26 lakh crs (US\$47 bn)

CO₂ emissions reduced by 6.75 mn tons every year.
7.2% CO₂ reduction from entire transport* in India – 2021.

* Cars, 2/3 wheelers, Bus, Trucks, Rail.

Indian Ocean

INDONESIA

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Pipeline - 50 projects

Capex – US\$ 33 bn

2,000 PRT cities forecast
by Frost & Sullivan



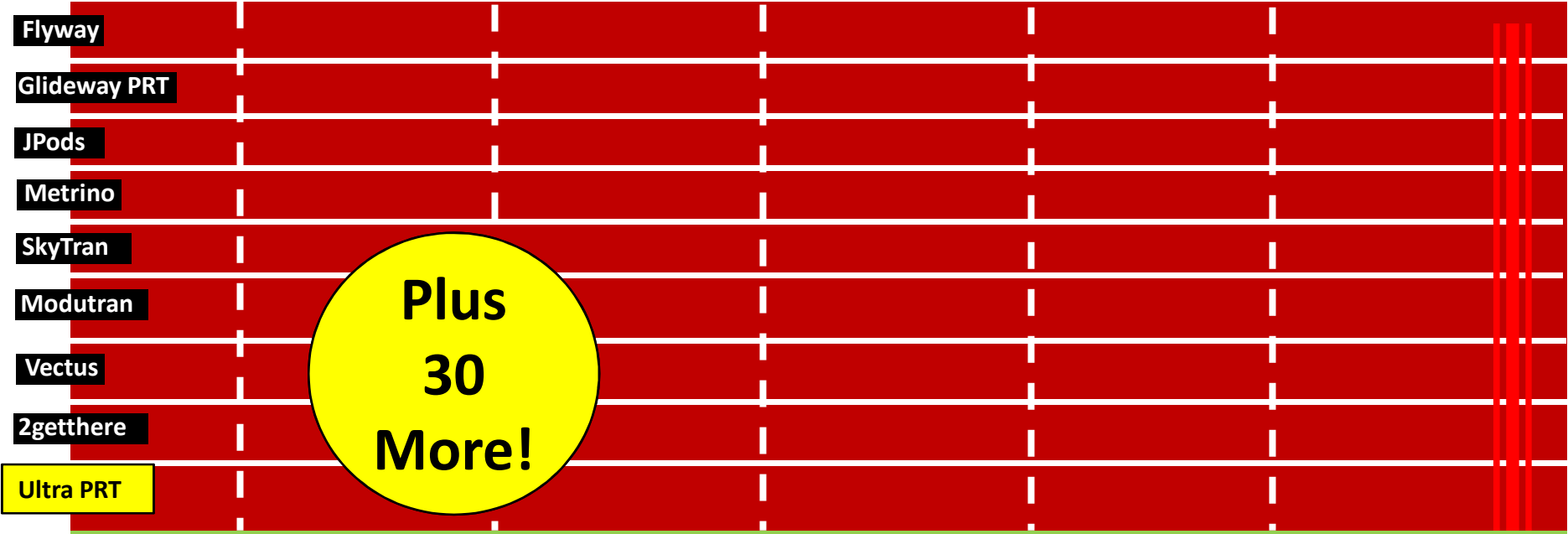
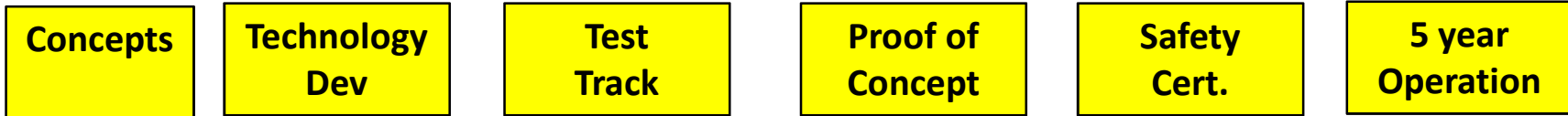
Our pipeline - CO₂ emissions reduced by 2.8 mn tons every year.

Bengaluru

- Transportation generates an estimated 6.7 mn tonnes CO₂ pa.
- ***A PRT system, in some parts of Bengaluru, would save ~ 2.61% of CO₂ emissions, improve air quality significantly.***

- In addition, much lower congestion on the roads, faster travel time & less idling in traffic jams, will also reduce CO₂ emissions.

Bolt Move



Plus
30
More!



Validation

- **Safety certified - UK**
 - **Scrutinised/approved by Niti Ayog, NHAI, MoRTH, IISc, State Govts.**
- **Tenders. MoUs. Awards. Concessions. Legislation. POC. Public hearings. Environmental approvals. Operations.**
- **Compliant with APM standards globally**
 - **Enthusiastic endorsement by users**



For the World.



Starting 2019

80% local content for India projects, incl. Infra

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Game Changers

19th Century

21st Century

