

NON FARE REVENUE OPTIMIZATION FOR PUNE METRO



COURSE

Leaders Program in Urban Transport Planning & Management

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OBJECTIVE & PROBLEM STATEMENT

- **Objective** – To identify possible Non – Fare Revenue sources for Pune Metro using literature study, case studies and stakeholder discussions
- Study the identified sources to assess their potential, regulatory and other hurdles for their implementation
- Prepare a strategy for tapping identified NFR sources and thus provide an optimised solution for supplementing fare revenue with NFR sources for proposed Pune Metro.
- **Statement of Problem** -Identify the resource gap in Pune metro in revenue terms and employ appropriate methodology to arrive at potential sources to optimize NFR sources for Pune metro & integrate the NFR measures to enhance the sustainability of Pune Metro



PUNE-THE CULTURAL, EDUCATIONAL, DEFENCE & SOFTWARE HUB

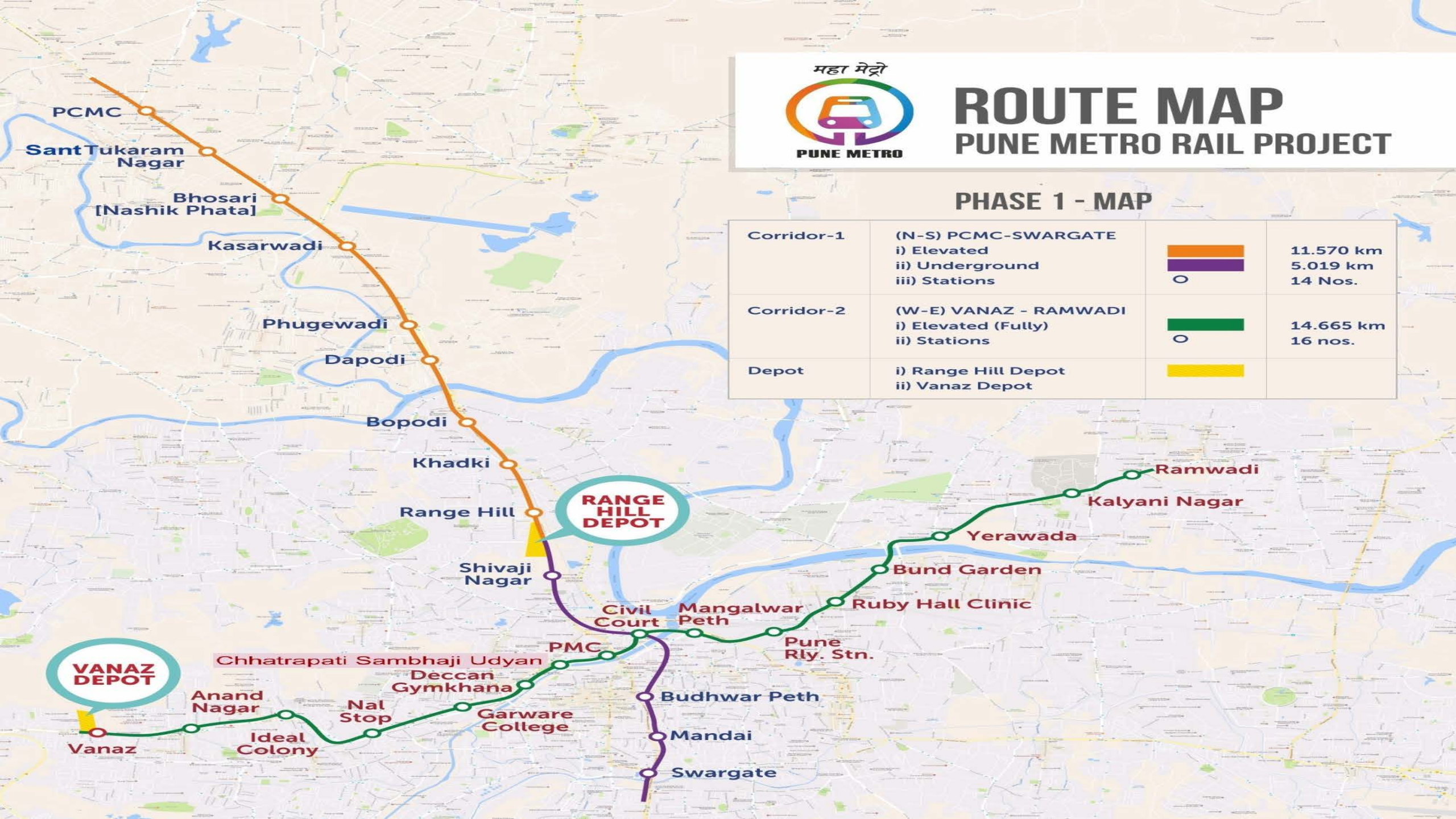


ROUTE MAP

PUNE METRO RAIL PROJECT

PHASE 1 - MAP

Corridor-1	(N-S) PCMC-SWARGATE i) Elevated ii) Underground iii) Stations	 	11.570 km 5.019 km 14 Nos.
Corridor-2	(W-E) VANAZ - RAMWADI i) Elevated (Fully) ii) Stations	 	14.665 km 16 nos.
Depot	i) Range Hill Depot ii) Vanaz Depot		



PUNE METRO – AN INTRODUCTION

- Project approved by Govt. of India on 07/12/2016 and by Govt of Maharashtra on 23/12/2016.
- DPR was prepared in 2009 and revised in November 2015.
- Project is being implemented by Maha Metro.
- Total project Cost as per DPR is as follows: RS.11420 Crores

Project status as on date is as follows:

- Physical Progress has started in both the corridors.
- Land survey work completed.
- EIA and SIA commenced.

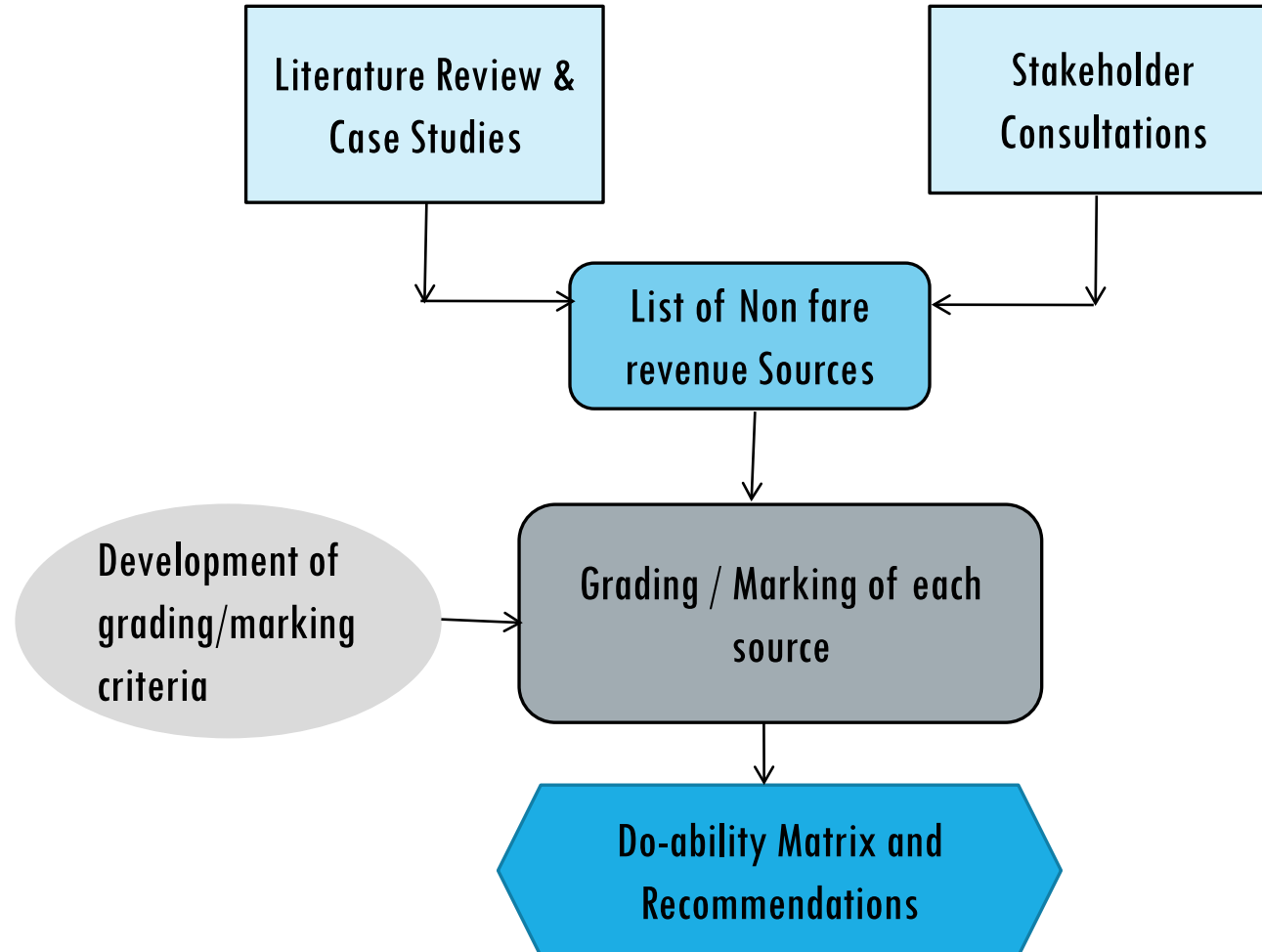
REVENUE PROJECTIONS AS PER DPR

HEAD	EXPENDITURE IN Cr Per Year
Establishment Cost	100
O&M	200
Interest Payment	60 (@ 1%p.a.)
Principal Repayment	400 (6000 cr To be returned in 15 years)
Minimum Committed Expenditure	760

Fare Box Revenue Calculations	
Average Ridership /day	3lakhs
Average no. of Trips/ Day	6 lakhs
Average Fare	Rs 20
Daily Earning	1.2 Cr
Yearly Earning (325day)	400 Cr

Revenue Gap/year = 360 Cr

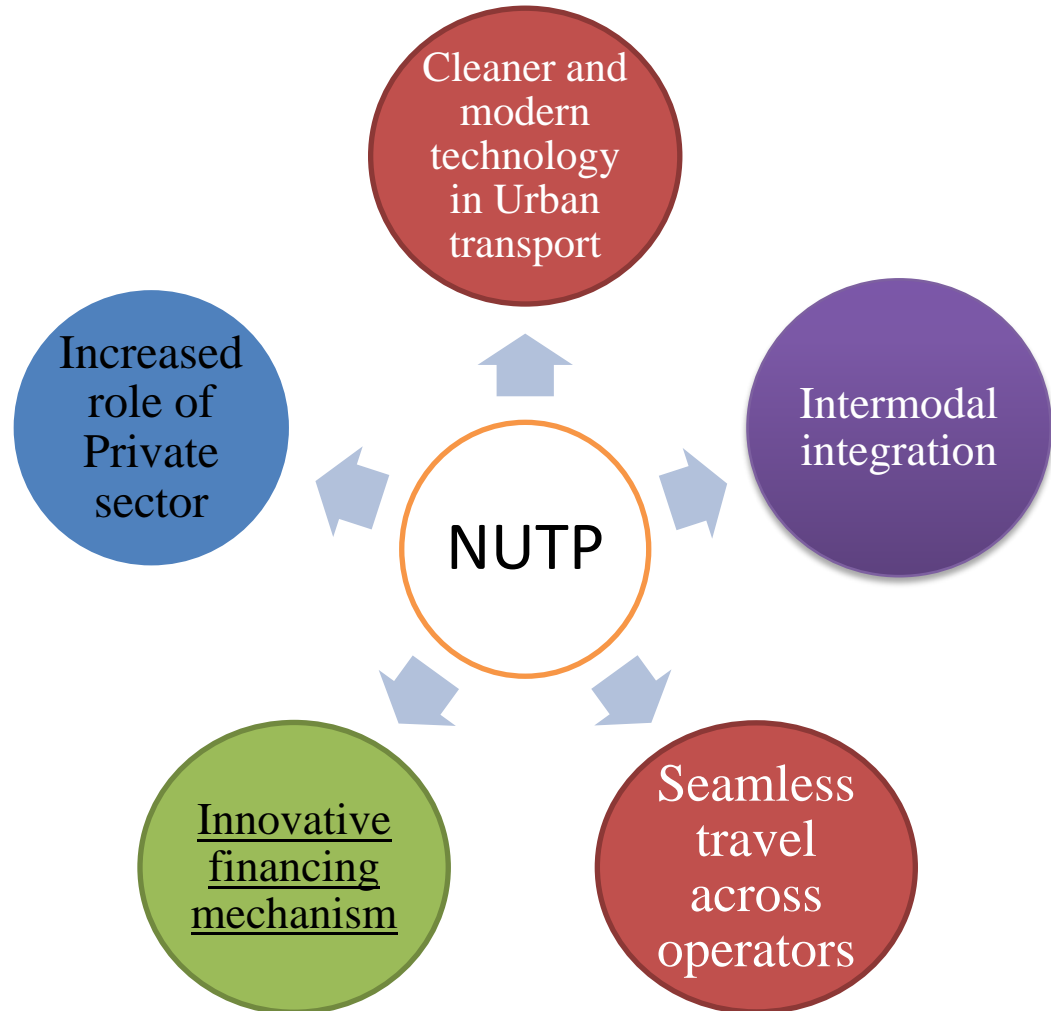
METHODOLOGY



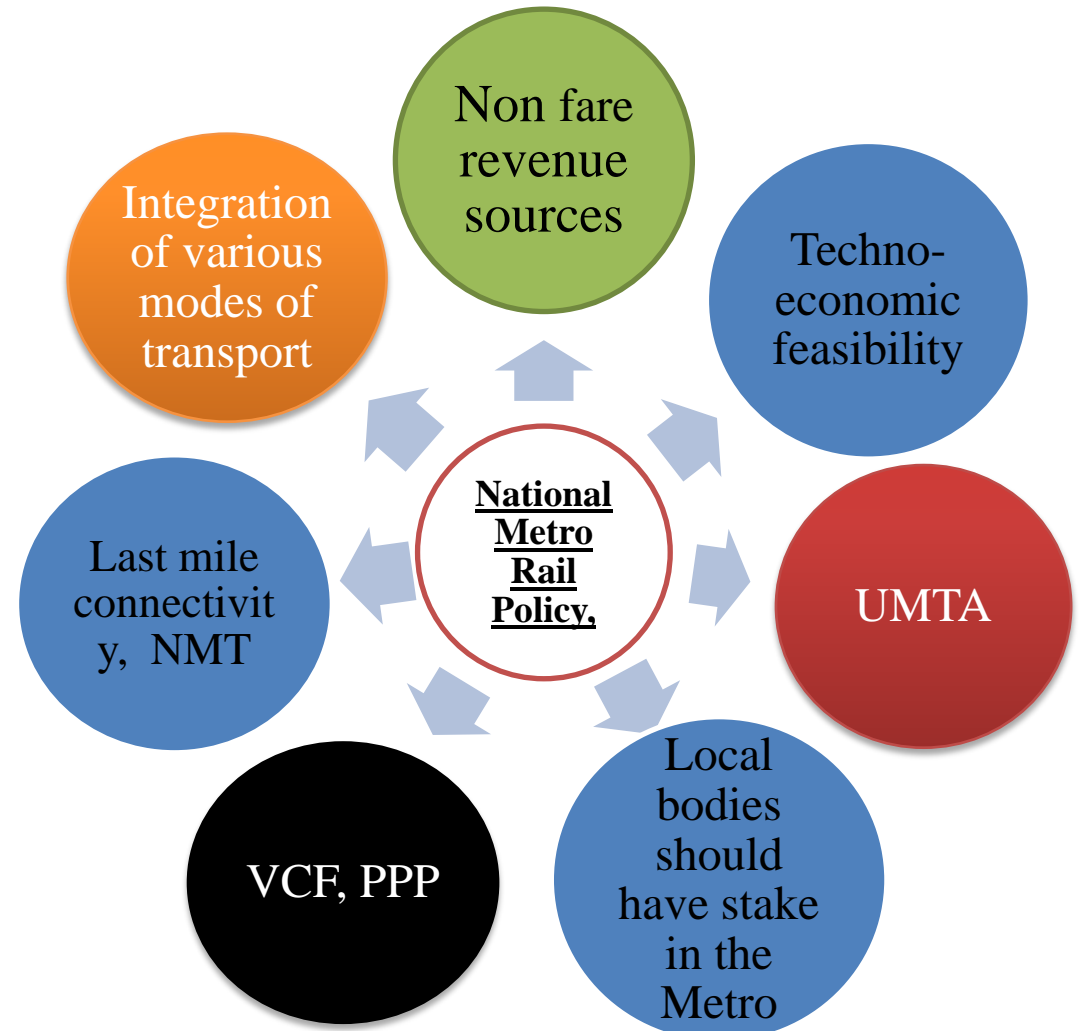
REVIEW OF EXISTING LITERATURE

REVIEW OF POLICIES

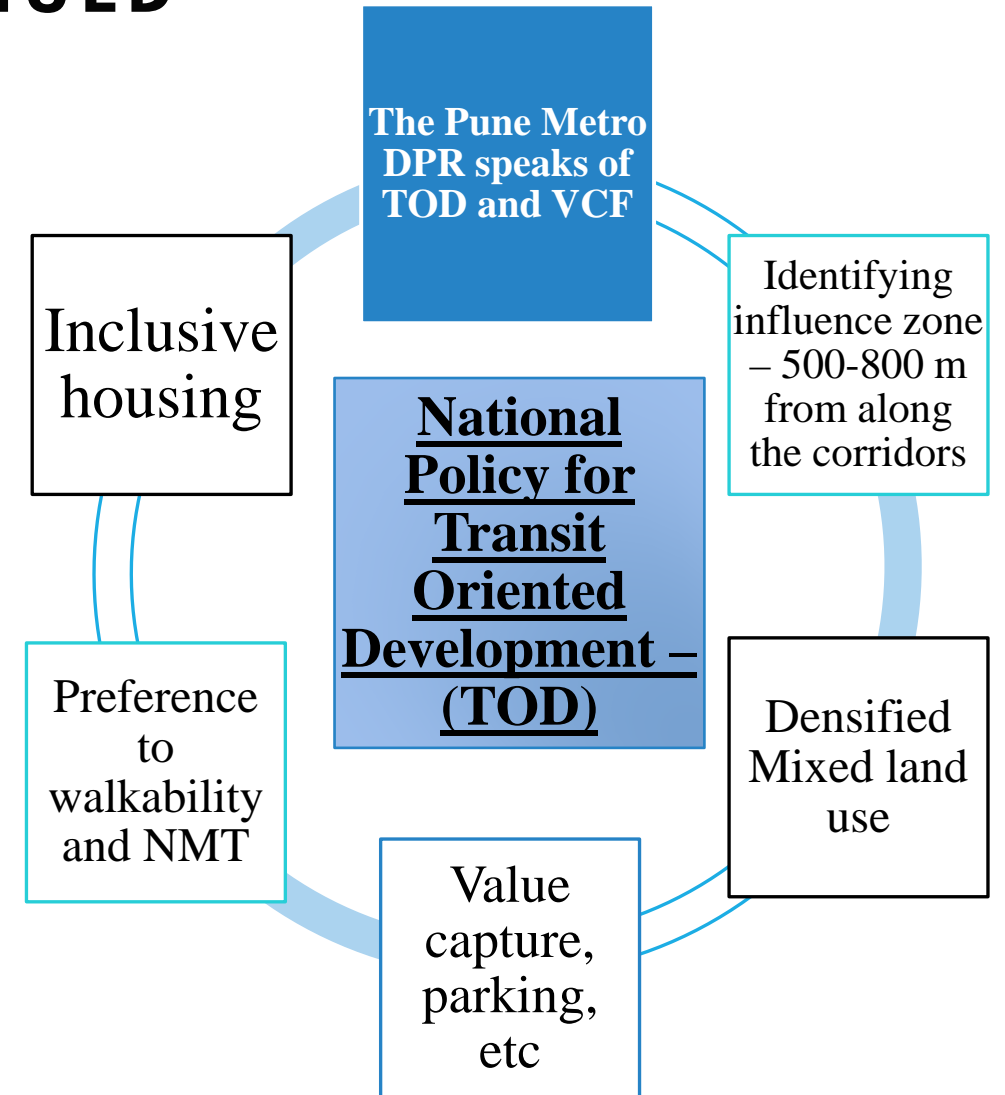
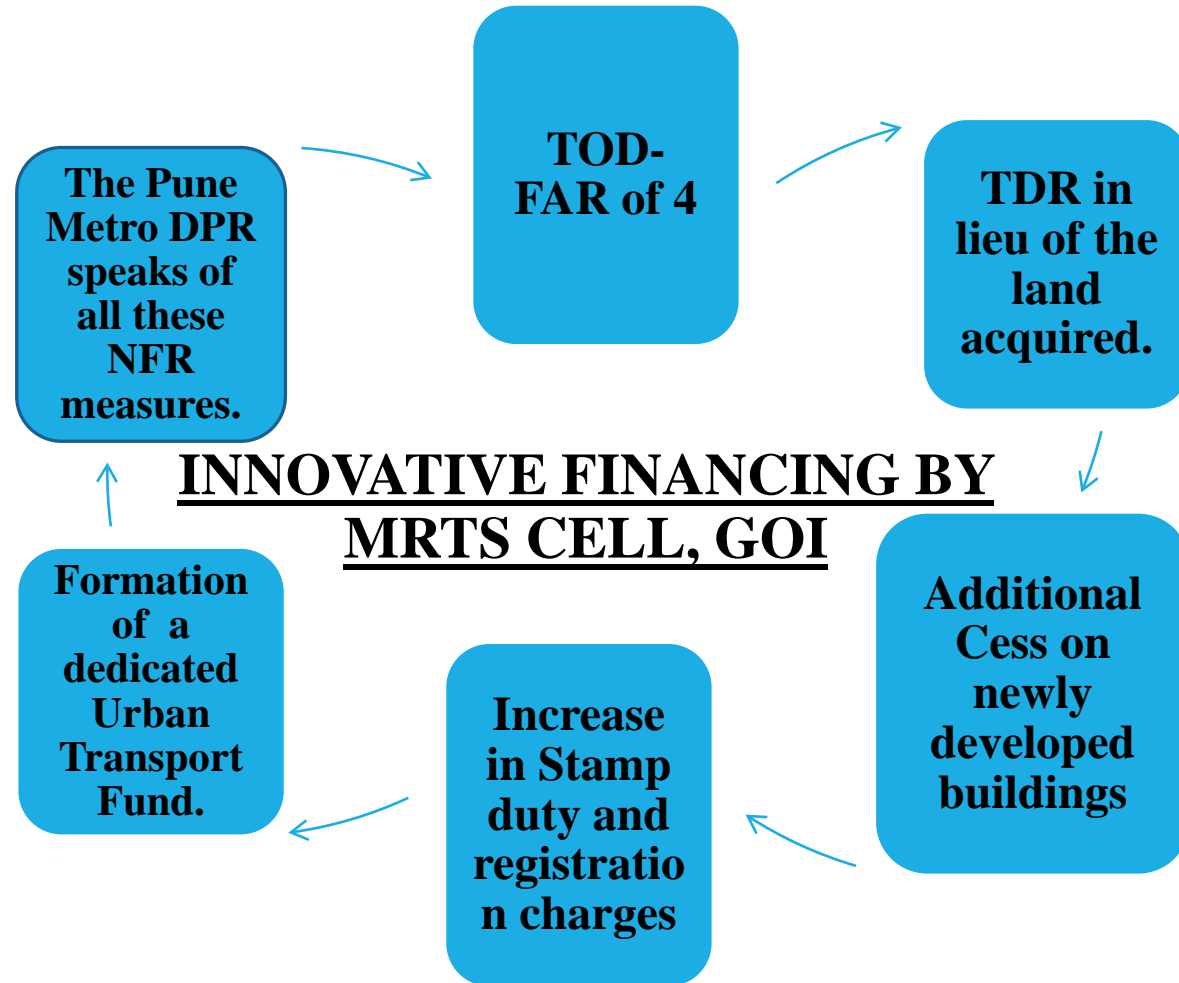
NUTP- NATIONAL URBAN TRANSPORT POLICY



NMRP- NATIONAL METRO RAIL POLICY



REVIEW OF POLICIES - CONTINUED



REVIEW OF EXISTING LITERATURE

1. TOD and Value Capture- Dr Wing-Tat Hung, The Hong Kong Polytechnic University

- The development of Metro rail by MTR.
- Rail + Property model
- Value capture and integrating land use and metro rail development.
- ✓ Pune Metro runs through the congested areas and so green field development not possible. Also as most land is privately owned, Pune Metro cannot be the land developer.
- ✓ However FAR and other value captures proposed by Pune Metro.

2. A Decision Support Framework for Using Value Capture to Fund Public Transport- Shishir Mathur and Adam Smith, Mineta Transportation Institute

➤ **The Value Capture** is the identification & capture of land value resulting from public investment in infrastructure. Some measures to capture VC highlighted are :

✓ **Impact Fees-**

1. Cost of infrastructure development is borne by real estate developer State level legislation is critical. Significant capacity building at institutional level is must.
2. There is moderate opposition from stake holders.
3. The revenues are moderate.
4. Cities – San Francisco, Portland, Broward county.

✓ **Tax Increment Financing-**

1. The increase in the property tax after the infrastructure investments are made are allotted to the Infra Authority.
2. Requires state level enabling legislature and significance institutional capacity .
3. The stakeholder opposition specially from residence is high.
4. The revenue stream is moderate and stable.
5. Cities– Contra Costa Centre, Cedar Rapids, Portland & Chicago.

✓ **Special Assessment District-**

1. Development charges for all infrastructure developed are collected from the residents of the area. Robust legal provisions required. Institutional capacity required to garner community support.
2. Revenue stream is large and stable.
3. Cities- Seattle, LA, Portland & NY.

✓ **Joint development and Air right charges-**

1. Development in collaboration of Local Authority and Private player
2. Local clear policy framework is needed.
3. Significant capacity building is required.
4. Stakeholder opposition may arise because of increase in traffic , noise pollution.
5. Revenue stream is high and stable
6. Cities- Bethesba, Contracosta & Cedar Rapids.

3. Urban Transport Pricing & Finance - World Bank Review

- **Congestion pricing-** Singapore & London.
- **Cordon or Area Pricing** - Singapore & London
- **Time Dependent Tolling-** Hong Kong, Seoul & Singapore.
 - ✓ In Seoul private vehicles using Namsan-1 and 3 tunnels are charged for one or two occupant private vehicles. Rest vehicles are exempted.
 - ✓ 34% reduction in traffic, 50% increase in speed, annual revenue of ~\$ 15million / year used exclusively for transport projects
- **Electronic Road Pricing (ERP)-** Singapore.
 - ✓ Introduced in 1998, electronically paid. Restricted zone traffic dropped by 20-24%, traffic speed increased from 35 to 45 km/hr
- **Excessive taxes** on cars to limit ownership of private vehicles – Denmark, Hong Kong & Tokyo.
- **High parking charges-** Many cities in UK & France.

4. Who pays for urban transport- handbook of good practices- AFD (Agence Francaise de Development)

➤ Urban transport can no longer be funded exclusively by government finances

Means to raise funds-

➤ Fuel taxes- Tax on fuel. California, Colombia, Germany

➤ Eco-taxes- Principal of '**Polluters Pay**' - Japan, France

➤ Road infrastructure Charges or Toll- San Francisco, commonly accepted principal in India for road infrastructure development.

➤ Parking charges- Montpellier – The Transport authority of Montpellier (TaM) is responsible for public transport, NMT & managing 40% of parking spaces in the city center. TaM creates residential parking at lower parking rates & reduces parking places near work places, implements park & ride facility, encourages parking at residence or at park & ride sites, manages over 21,000 car parks in city. Uses car parking fees as a lever to decongest city center.

4. Who pays for urban transport- handbook of good practices- AFD (Agence Francaise de Development) - Continued

➤ Congestion Charging- London, Singapore, Stockholm, Milan.

In London managed by TFL. Payment is compulsory on weekdays and working hours, use of technology, public vehicles and taxis are exempted, resulted in 35% decongestion, increase in traffic speed & 14000 users shifted to public transport.

➤ Taxes on employers and business activities- France, any establishment having more than 9 employees has to transport tax.

➤ Land value capture tool to raise finances.

➤ PPP Mode to develop transportation projects.

➤ Pune Metro is proposing - Land Value capture.

STAKEHOLDER FEEDBACK

Policy makers

Additional Chief
Secretary to Chief
Minister

Principal Secretaries,
Urban Development

Additional Chief
Secretary Housing

Policy implementers

Municipal
Commissioners, Pune
and Pimpri-
Chinchwad cities

Metropolitan
Commissioner,
PMRDA,

CMD, PMPML(Pune
and Pimpri
Chinchwad Municipal
Transport)

Organizations

Team, Pune Metro,

Organisations like
RITES, CREDAI,

Town planners of
PMC and PCMC,

GRADING SYSTEM

	Weightage- 1	Weightage-5	Weightage-10
Regulatory Framework	No provision in existing Statutes and difficult to incorporate	Provision exists in Statute but requires other empowering provisions	Can be within existing regulatory framework
Institutional Framework	Institutional arrangement does not exist	Institution arrangement exists but requires strengthening/capacity building	Can be carried out within existing Institutional capacity.
Stakeholder Alignment	Creates heavy burden on stakeholders	Moderately aligned	Fully aligned as it creates acceptable burden on stakeholders
Resource Potential	Small resource potential (range will need to be defined)	Moderate	High resource potential

A) LAND BASED TOOLS

	Impact Fees	Incremental Property Tax	TDR	Higher FSI	Betterment levy
Regulatory framework	2	2	2	10	6
Institutional framework	10	10	10	10	10
Stakeholder alignment	4	4	10	10	3
Resource Potential	5	5	5	9	6
Total	31	21	27	39	25

B) NON - LAND BASED TOOLS

	Congestion Pricing/ERP Weightage	Higher Parking Charges Weightage	Fuel Tax Weightage	Restrictive Tax on Car Ownership Weightage	Auctioning of vehicle ownership rights in TOD Weightage	Integrated Ticketing Weightage
Regulatory framework	2	6	2	2	2	10
Institutional framework	10	10	10	10	10	10
Stakeholder Alignment	2	2	1	2	1	10
Resource Potential	5	3	5	3	3	6
Total	19	21	18	17	16	36

C) OTHER TOOLS

	Advertisement	Station naming	Joy rides	Metro ambulance	Solar energy	Pouring rights
Regulatory framework	10	10	10	10	10	10
Institutional framework	10	10	10	10	10	10
Stakeholder alignment	10	10	10	10	10	10
Resource Potential	6	5	3	1	7	5
Total	36	35	33	31	37	35

SUGGESTED TOOLS ON GRADING

Land based

- Increased FSI
 - TDR
 - Impact Fees
- * Joint development
& Air rights

Non land based

- Integrated Ticketing
- Higher Parking Charges
- Auctioning of vehicle ownership rights in TOD

Others

- Advertisement
 - Station naming
 - Solar energy
- * Metro ambulance
* Joy rides
* Pouring rights

LAND BASED TOOLS FOR NFR FOR PUNE METRO

1- Addl FSI-

- Additional FSI of 2.9 along 500 meters on either side of TOD in the Pune DCR
- Maximum FSI in TOD is 4 (1.1 +2.9)
- Additional FSI is subject to road width, size of land parcel , available parking space etc.
- No provision for affordable housing in TOD.
- Revenue expected will be moderate as the metro runs from area which is densely populated, already developed and congested.
- **In view to increase ridership an additional FSI of 2 is recommended. (Policy Makers have Agreed)**

2- TDR

- The provision for TDR not made in the DCR, however provision for TDR would reduce the acquisition cost for Pune Metro.
- The process for provision for TDR would have to be made in the DCR.
- The revenue saving will be substantial and the Metro will have more acceptability among the stake holders.

LAND BASED TOOLS FOR NFR FOR PUNE METRO

3) Air Rights

- The vertical space above the Metro station specially where sufficient land is available e.g. Swargate, Civil Court, Vanaz Corner , PCMC is recommended.
- The revenue generation through air development rights through rent will be stable and moderate.
- It will also make the Metro community oriented.

4) Joint Development Rights

- 2 km stretch much of which is a unused land recommended for joint commercial development.
- The land being in the heart of the city will fetch a strong and stable revenue source.
- The revenue may shared between Pune Metro and the local cantonment.

5) Impact Fees-

- The public expenditure on metro necessitate the value capture which can be achieved by impact fees.
- The impact fee need statutory provision from the State.
- The municipal corporation may be authorized to levy and collect the Impact fees from the demarcated influence zone of the Pune Metro.
- The proceeds may be deposited in the proposed Pune Metro Development fund used for Opex & Capex.
- The impact fee will face opposition & therefore considerable public education about Impact fees is necessary.
- The Impact Fee should be in commensurate with actual additional value created because of Pune Metro.

It is recommended that Pune Metro be made a SPA for Joint development and Air Rights

NON LAND BASED TOOLS FOR NFR FOR PUNE METRO

1) Auctioning of Vehicle ownership Rights

- It's a behavior changing tool. In order the higher FSI of 6 is permissible in TOD, the number of vehicles need to be restricted.
- Therefore, the auctioning of vehicle ownership is proposed, though the revenue would be low it would be compensated by higher ridership for Metro.
- The state level legislation is required.
- The road traffic organization may be authorized to auction the ownership of vehicles.
- The public need to be educated regarding this measure

2) Smart Mahacard

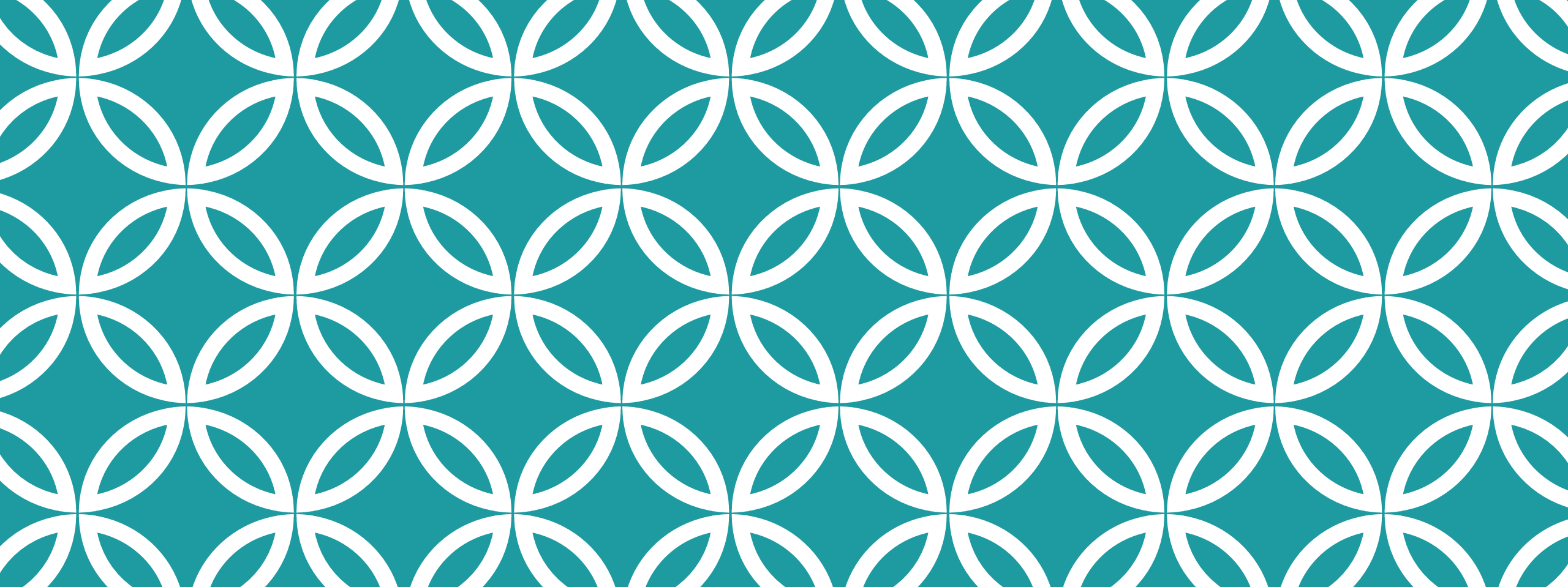
- The Pune DPR envisages integrated ticketing for metro and public transport.
- This card would also be integrated with the train, municipal transport, state transport, rickshaw and fleet taxi services.
- MAHACARD will be a multi utility, pan city card.
- The Metro would gain user charges if the card is used for non transport activities.

3) Higher Parking Charges-

- The parking near the city/commercial centres may be kept high, whereas the parking near the residences and near the mass parking places low.
- The Municipal corporation will be required to pass a resolution to the effect.
- This is a behavior changing tool.
- This would make the people prefer public transport.

OTHER NFR RESOURCES

Advertising-	Station Naming-	Metro Ambulance-	Solar Energy-	Joy Rides & Pouring Rights
<ul style="list-style-type: none"> ➤ The space available for advertising will be large and accompanied with a high footfall. The advertising revenue will be large. ➤ The station, Pillars, the metro, the tickets, announcements on the lines of “ Mind the Gap”. ➤ Day Screens and other innovative sources. ➤ Regulatory and the Institutional framework exists. 	<ul style="list-style-type: none"> ➤Pune has famous cultural, historical and commercial institutions. ➤They make be approached for naming the station after their institution, 	<ul style="list-style-type: none"> ➤Pune is well known health care centre of the State. ➤The Metro may provide ambulance services to all hospitals. ➤This is an important step to connect metro to the riders. 	<ul style="list-style-type: none"> ➤The Pune Metro provides a huge scope for solar energy harvesting. ➤The solar energy so harvested may be used for in house consumption and the excess may be sold privately. 	<ul style="list-style-type: none"> ➤The metro may be used joy rides and hiring activities for private purposes. ➤The Pouring Rights may be auctioned.



“NFR- THE BRIDGE TO CONNECT THE RIDERS WITH METRO”

THANK YOU!

