

TRANSFORMING MUMBAI METROPOLITAN REGION (MMR) THROUGH TRANSIT RIENTED DEVELOPMENT: *Integrated, Sustainable Urban Development And Mobility*



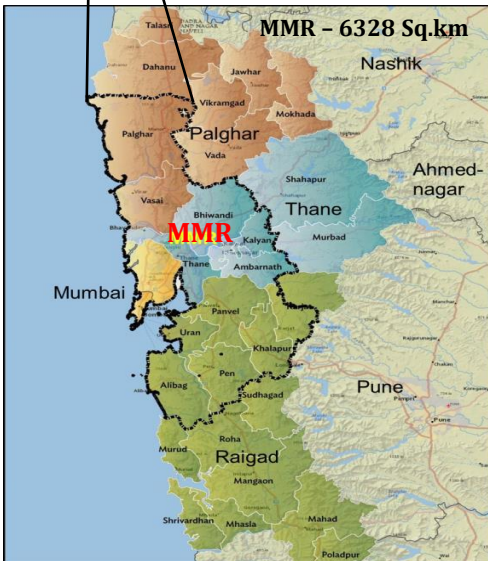
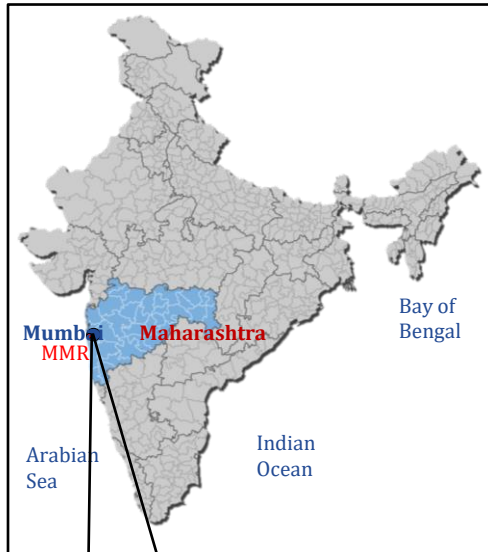
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Project Director & Member Secretary, Mithi River
Development and Protection Authority (MRDPA)
Director, MMR – Heritage Conservation Society
Director, MMR – Environment Improvement Society



**SESSION 4: "Facilitating Implementation of TOD
– Case Studies for Replication"**
28th October 2023 ; 11.30 to 13:00 hrs.
Manekshaw Center, New Delhi

MMR: *The Leading Economic Urban Agglomeration in India*



Parameter	India	Maharashtra	MMR
Population (2011) (millions)	1210	112	23
Urban Population (2011)	31%	45%	95%
Population Density (2011) (people per sq. km)	382	365	3,619
Employment (2021) (millions)	464	48	15
Annual GDP (2022-23) (\$ billion)	3400 (\$ 3.4 Tn)	444 (\$ 0.44 Tn) (13 % of India)	140 (\$ 0.14 Tn) (4-5 % of India)
Projected Annual GDP (2028) (\$ billion)	5000 (\$ 5 Tn)	1000 (\$ 1 Tn)	350 (\$ 0.35 Tn)
Annual GDP per capita (2022-23) (2028) (\$)	2500 (1.75X)	3600 (2X)	4,500 (2.5X)

MMRDA : *Established in 1975 under MMRDA Act, 1974*

PREAMBLE:

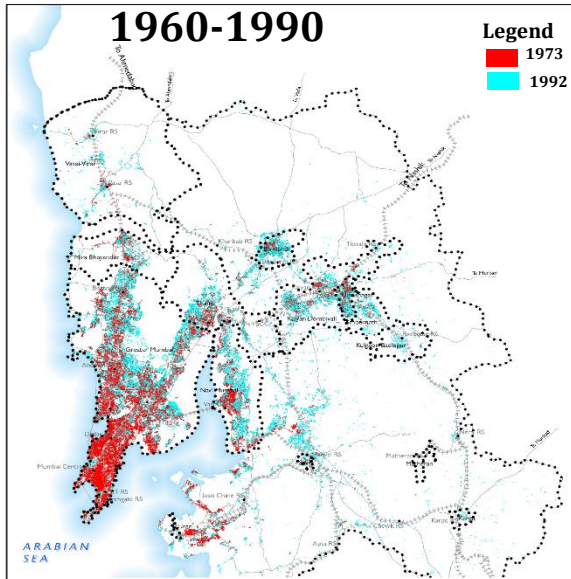
“Planning, coordinating and supervising the proper, orderly and rapid development of the areas in the region and executing plans, projects and schemes for such development, and to provide for matters connected therewith.”

VISION:

MMRDA aims to develop MMR as a destination for economic activity by promoting infrastructure development and improving the quality of life.



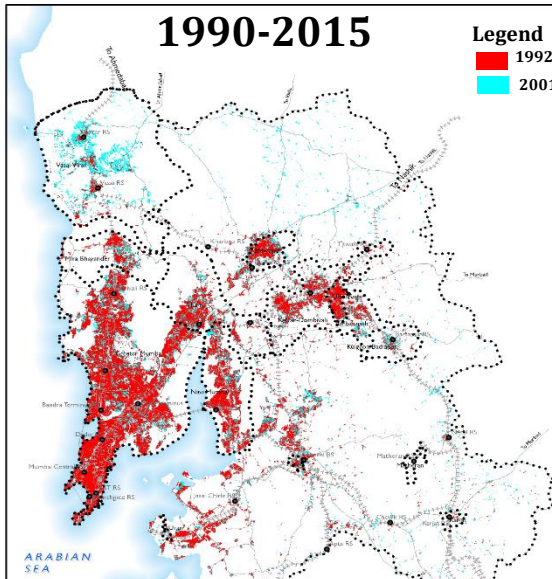
MMR: 1960 TO 2015



BUA in 1973 **114.78 sqkm**
Add. BUA(1973-1990) **168.52 sqkm**

Contentment: Confinement of Growth, New Towns

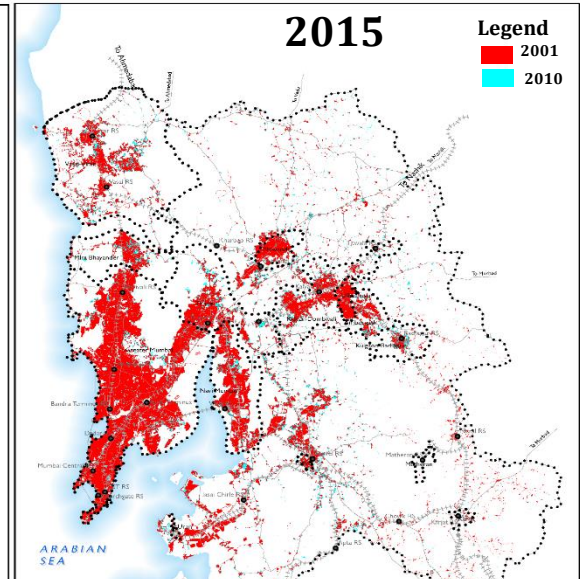
- Philosophy of urban containment
 - Socialistic approach
 - Prescriptive
 - Land banking
 - Counter magnets to Mumbai
- (Navi Mumbai)**



BUA in 1990 **283.3 sqkm**
Add. BUA(1990-2001) **126.27 sqkm**

Enabling Land use with Limited Connectivity

- Reflecting economic liberalization in India **(BKC)**
- Market orientation
- Interventions for land-assembly
- Shifting of wholesale market
- Industrial location policy

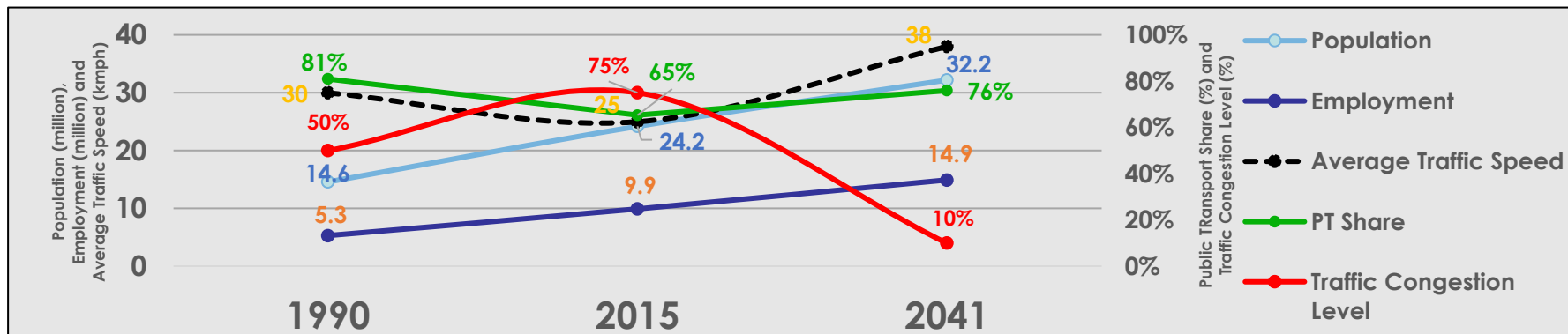
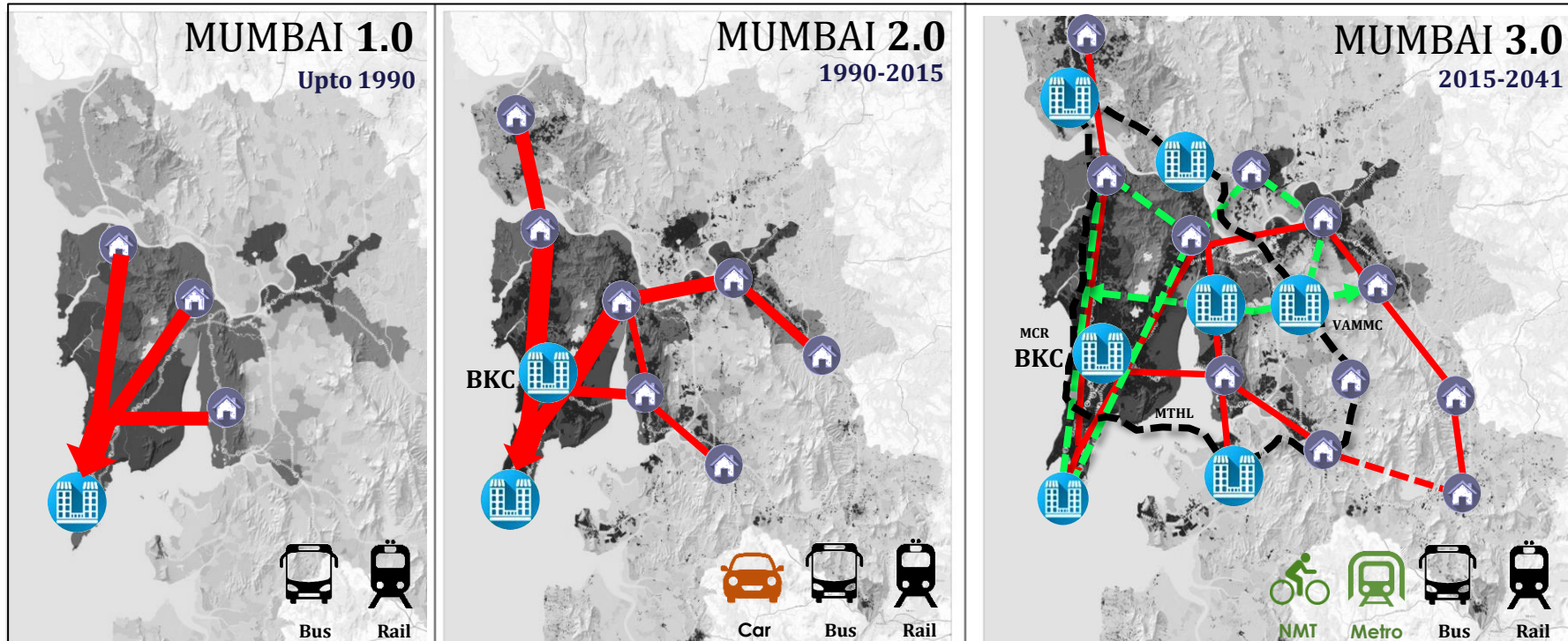


BUA in 2001 **409.57 sqkm**
Add. BUA(2001-2015) **94.55 sqkm**

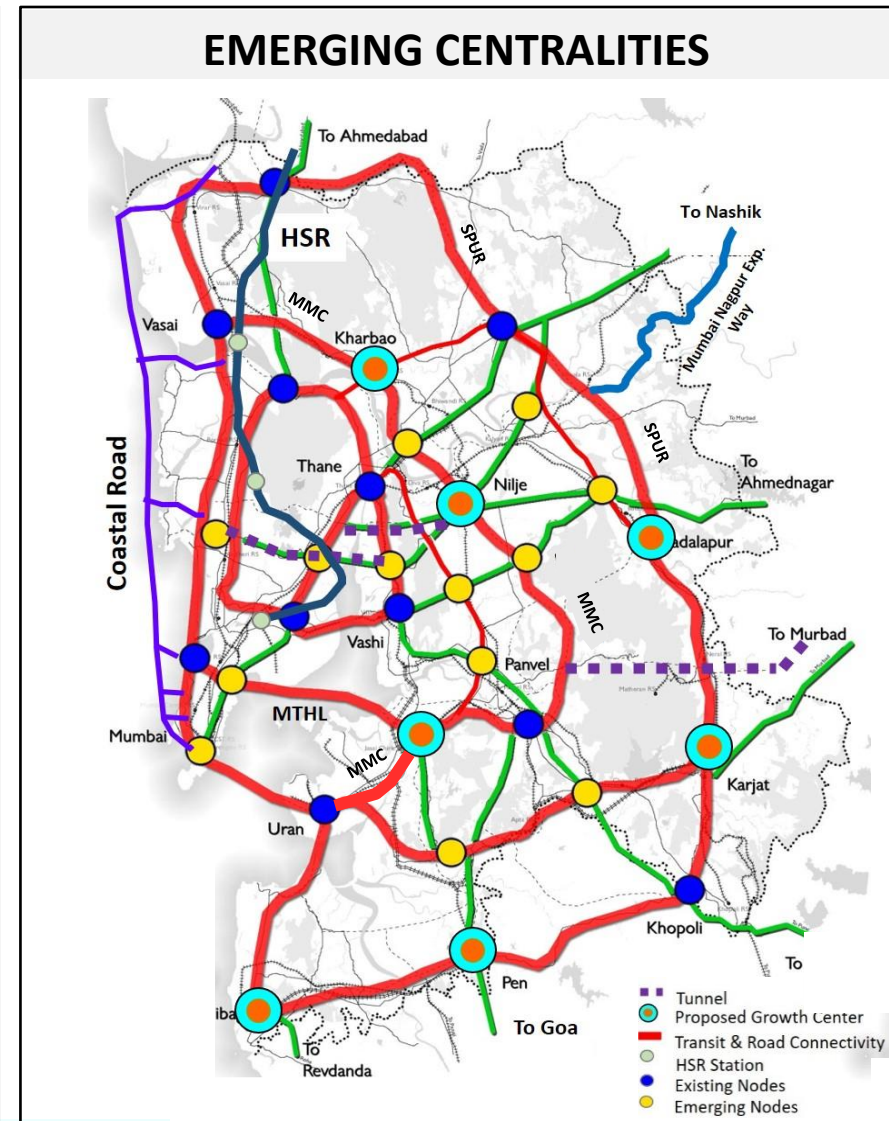
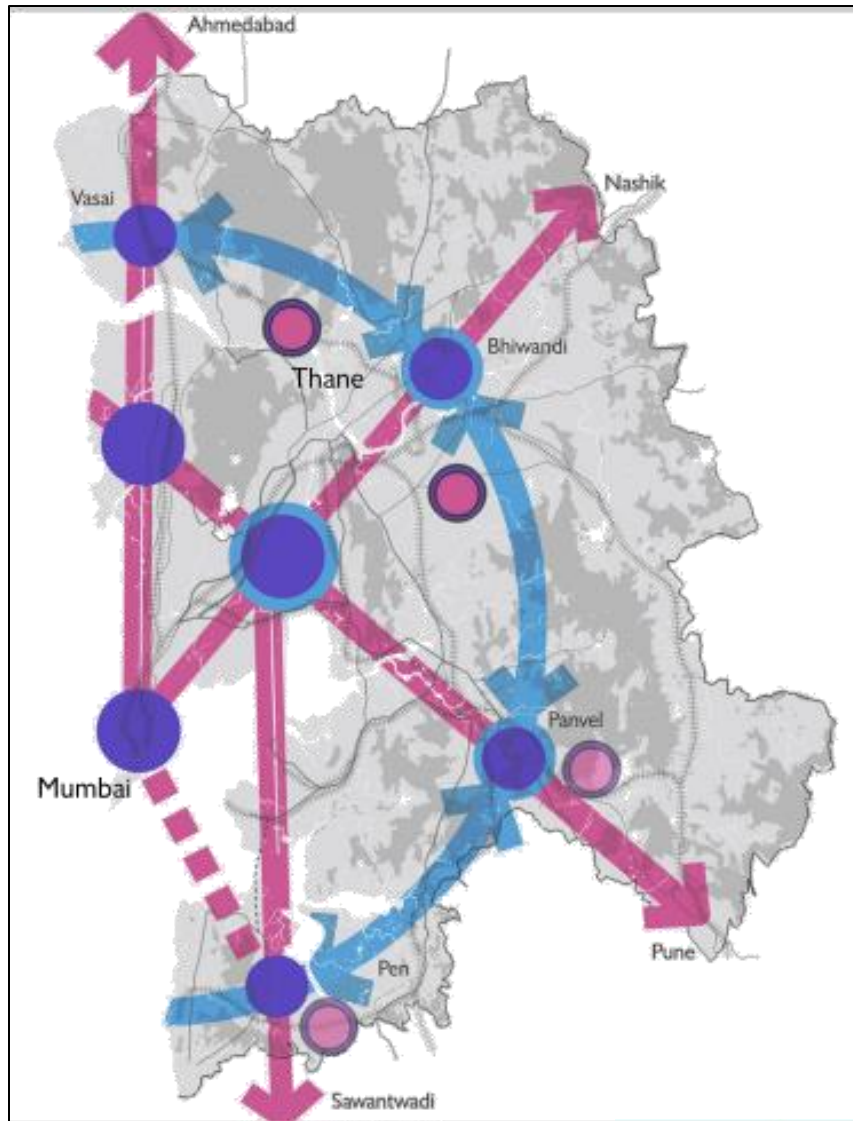
Enabling Land use + Enhanced Connectivity (Metro) = TOD (Growth Centers)

- Balanced Spatial Development and Information Systems.
- **Growth Centers,**
- **Local Growth Centers,**
- Regional Information System (RIS)


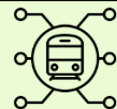



MMR'S TRANSFORMATION



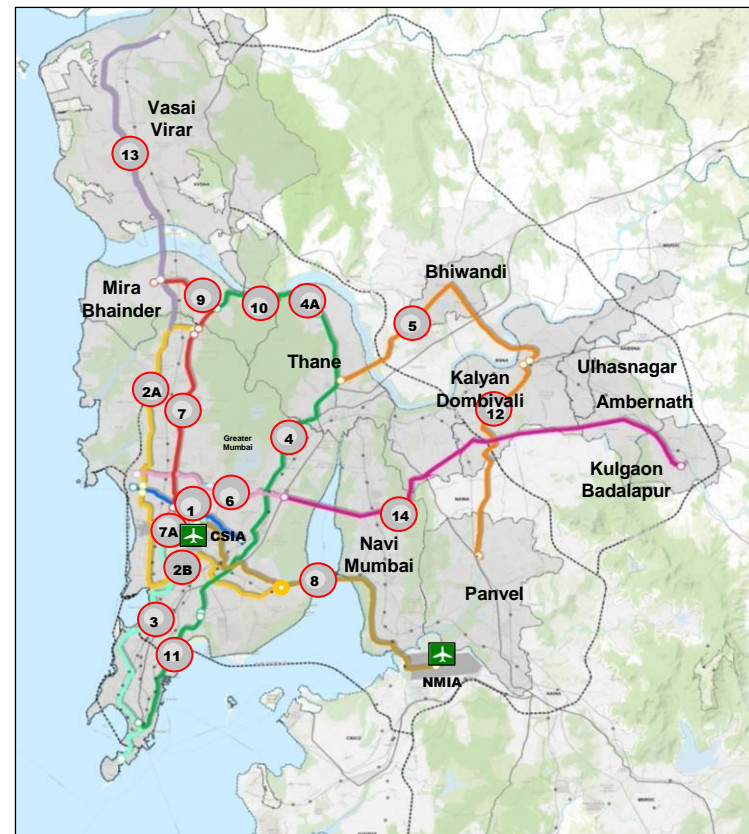
REGIONAL STRATEGY: *Polycentric Growth*



METRO: *Unprecedented Size, Scale & Speed*

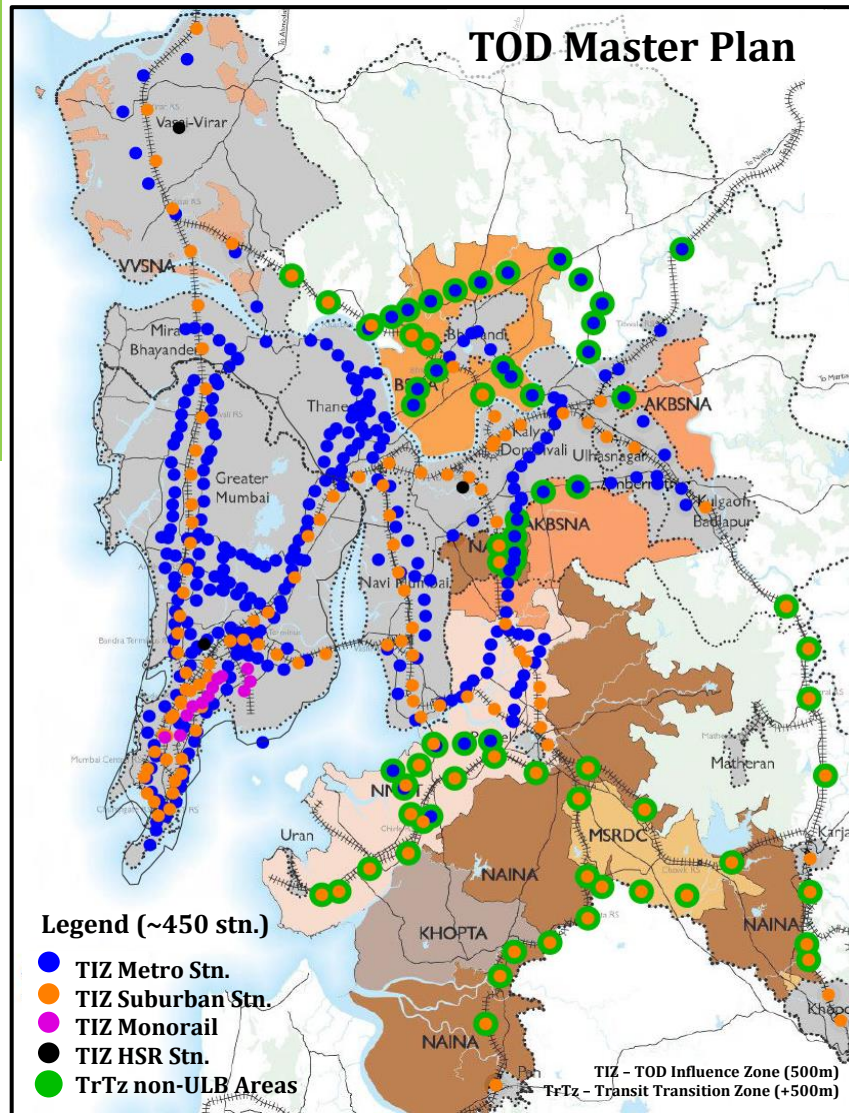
	14 Lines		337 Kms		Over 225 metro Stations		13 Mn daily ridership-2031		\$ 25 Bn (Rs. 2 lakh Cr)
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Lines	Corridors	Length (km)
1	Versova - Andheri - Ghatkopar	11.40
2A	Dahisar - D.N. Nagar	18.60
2B	D. N. Nagar - Mandale	23.60
3	Colaba - Bandra - SEEPZ	33.50
4	Wadala - Kasarvadavali	32.30
4A	Kasarvadavali - Gaimukh	02.70
5	Thane - Bhiwandi - Kalyan	24.90
6	Swami Samarth Nagar - Vikhroli	14.50
7	Andheri (East) - Dahisar (East)	16.50
8	Airport Line (CSMIA - NMIA)	35.00
9 & 7A	Dahisar - Mira Bhayander & Andheri - CSMIA	13.50
10	Gaimukh - Shivaji Chowk (Mira Road)	09.20
11	Wadala - CSMT	12.70
12	Kalyan - Taloja	20.70
13	Shivaji Chowk (Mira Road) - Virar	23.00
14	Kanjurmarg - Badlapur	45.00
Total		337.10

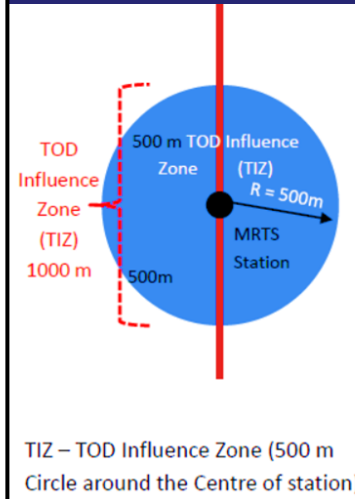


	Operational (46.50 KM)		Under Construction (145 KM)		Under Tendering (42.60 KM)		DPR Preparation (103 KM)
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TRANSFORMING MMR: *Through TOD (337 Km)*



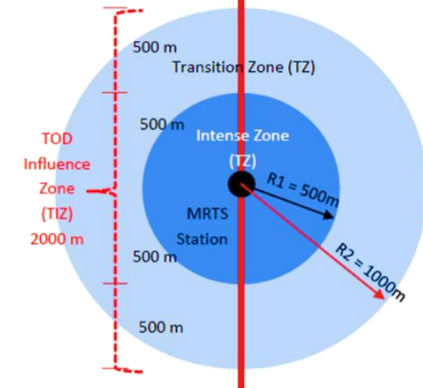
Corporations, Councils & SPA's incl. MCGM Areas within MMR



TIZ – TOD Influence Zone (500 m Circle around the Centre of station)

Rest of MMR (Per-Urban) Areas within MMR

$$\begin{aligned} \text{TOD Influence Zone} &= \text{Intense Zone} + \text{Transition Zone} \\ \text{TIZ} &= \text{IZ} + \text{TZ} \\ 1000 \text{ m} &= 500 \text{ m} + 500 \text{ m} \end{aligned}$$



IZ – Intense Zone (500m from Centre of Station)

TZ – Transition Zone (beyond 500 m of IZ up to next 500 m i.e. outer limit is 1000 m from Centre of Station)





TOTAL TOD AREA – 430.97 Sq. Km.

TOD Area :

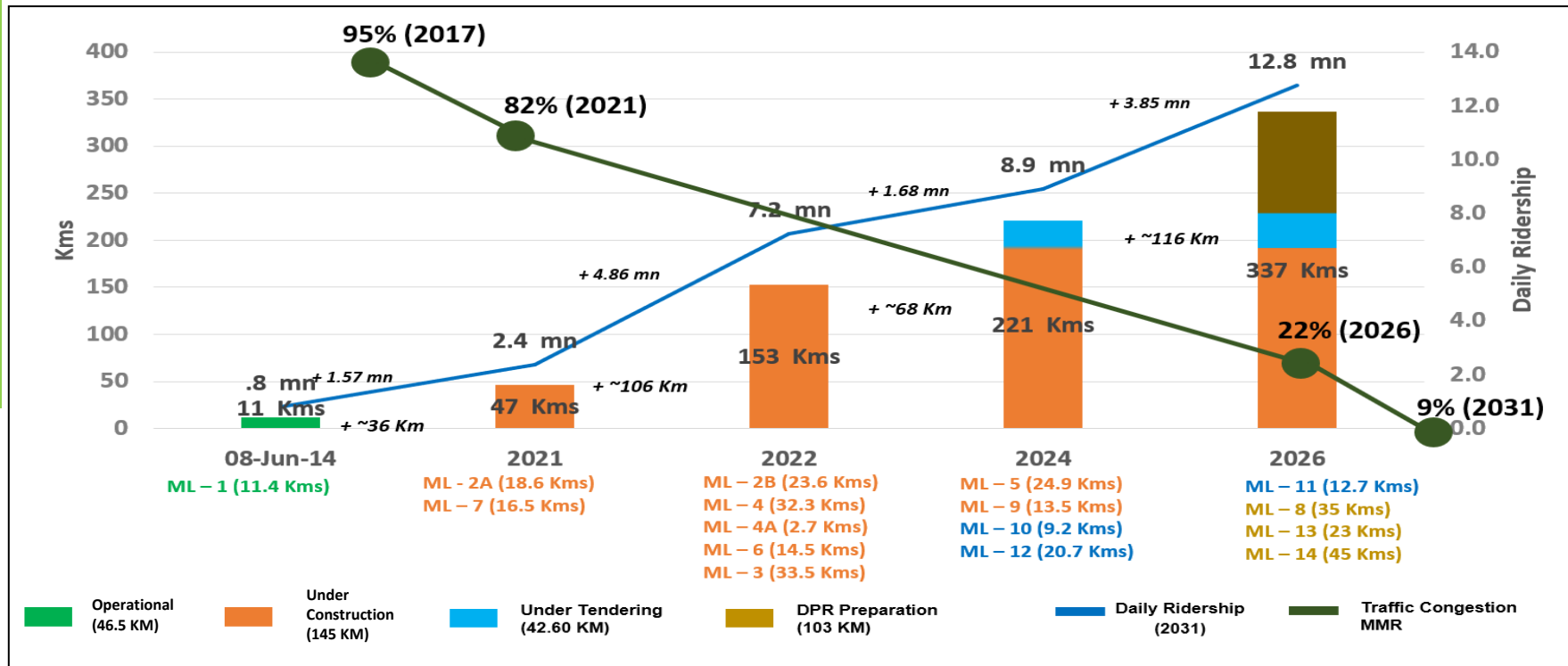
~10% of the total MMR area

~20% of total Developable area of MMR

TOD: Influence Areas along MRTS Stations in MMR

										Total Public Transport	
		Sub-Urban Train		Metro Rail		Mono Rail		High Speed Rail			
		No. of Stations	Area in Sq.km.	No. of Stations	Area in Sq.km.	No. of Stations	Area in Sq.km.	No. of Stations	Area in Sq.km.	No. of Stations	Area in Sq.km.
Corporations		114	89.49	262	205.67	17	13.345	3	2.355	396	310.86
Councils		5	3.925	9	7.065	0	0	1	0.785	15	11.775
Spa Areas (outside MCGM)		32	25.12	22	17.27	0	0	0	0	54	42.39
Rest of MMR		12	37.68	9	28.26	0	0	0	0	21	65.94
TOTAL		163	156.22	302	258.27	17	13.35	4	3.14	486	430.98

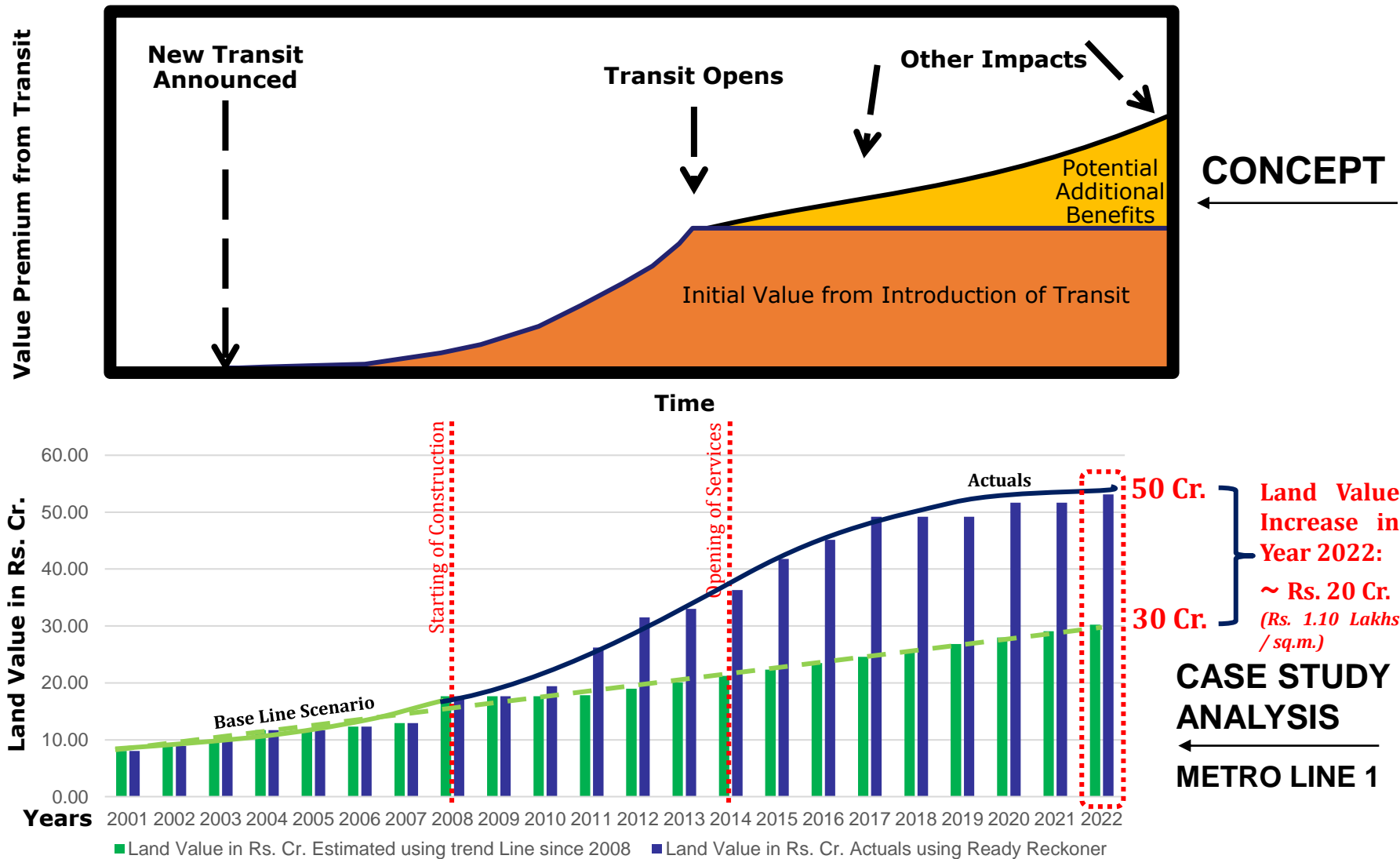
SUCCESSFUL IMPLEMENTATION OF METRO MASTER PLAN (337 KM)



IMPACT:

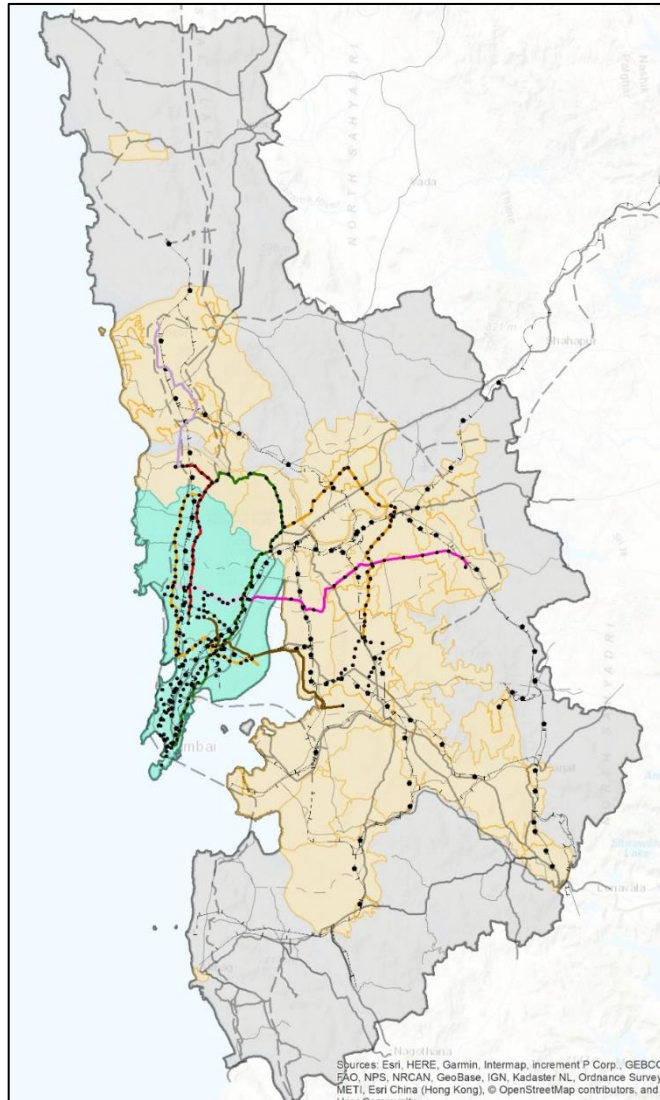
- Increased ridership on public transit (**27 Mn by 2041**)
- Increased Public Transport Share (**75% by 2041**)
- Increased walkability and bike-ability
- Increased Avg. Journey Speed (**37 Kmph by 2041**)
- Affordable housing
- Public open space
- Community support
- Mixed Use Development

LAND VALUE CAPTURE : Case Study Analysis, Andheri Station, Area:1800 sq.mt.



TRANSIT ORIENTED DEVELOPMENT DRAFT POLICY & REGULATIONS:

Submitted by MMRDA to GoM for Approval



MUMBAI METROPOLITAN REGION

01

MUNICIPAL CORPORATION OF GREATER MUMBAI

Total Area: 467.02 Sq.Km.*

TOD Area: 310.86 Sq.Km. (66% of Total Area)

No. of Stations: 396

02

MUNICIPAL CORPORATIONS, MUNICIPAL COUNCILS AND SPAs WITHIN MMR (Except MCGM)

Total Area: 2307.21 Sq.Km.*

TOD Area: 54.07 Sq. Km. (2.5% of Total Area)

No. of Stations: 69

03

REST OF MUMBAI METROPOLITAN REGION

Total Area: 3557.8 Sq.Km.*

TOD Area: 65.94 Sq. Km. (1.8% of Total Area)

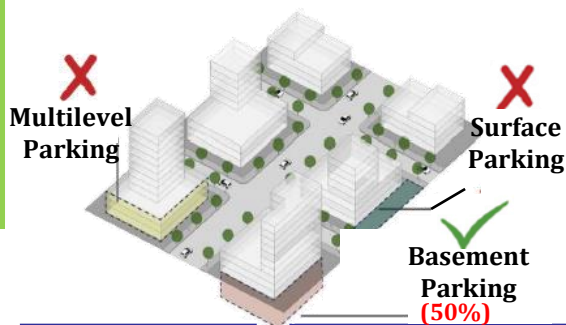
No. of Stations: 21

TRANSIT ORIENTED DEVELOPMENT DRAFT POLICY & REGULATIONS:

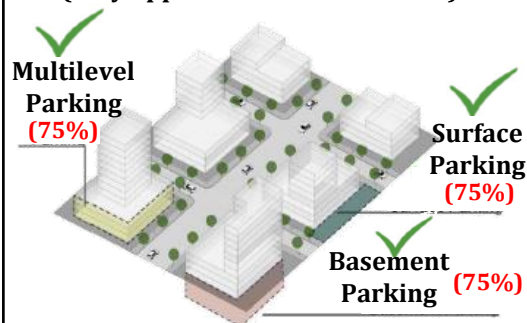
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ON-SITE PARKING REQUIREMENT

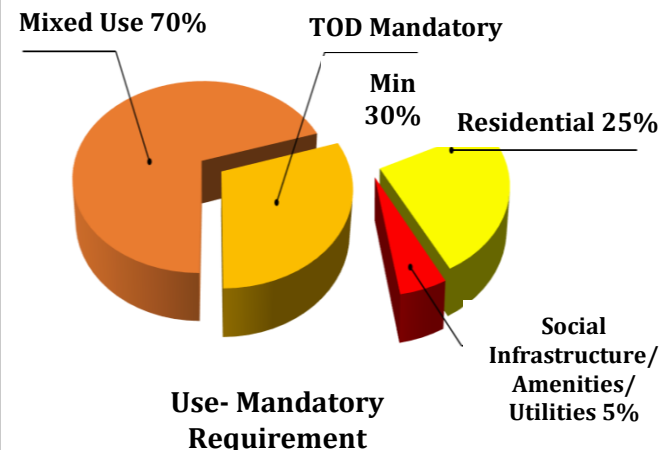
Intense Zone (0 – 500 m) : 50% of the parking requirements of applicable DCRs (Applicable in all Corporations, Councils & SPA's incl. MCGM)



Transition Zone (500m -1000m) : 75% of the parking requirements of applicable DCRs (only applicable in Rest of MMR)



MIXED LAND USE



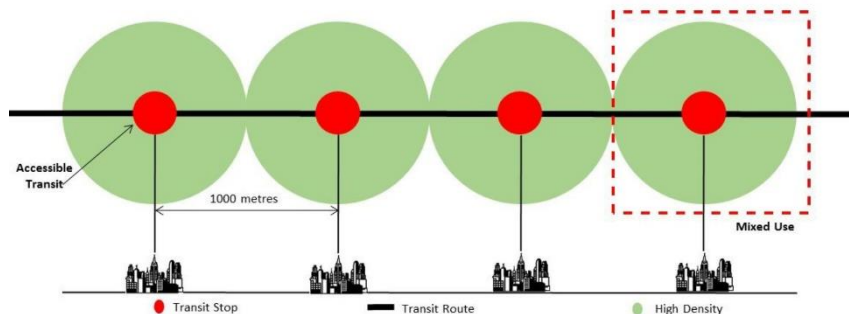
FSI

Sr. No.	Area in MMR	Basic FSI + All Other Dev. Rights	Addl. TOD Premium FSI in TOD Influence Zone (Private Properties)	Addl. TOD Premium FSI in TOD Influence Zone (Govt. Projects / Jt. Dev.)
1	Municipal Corporation of Greater Mumbai	As per the prevailing sanctioned Development Control Regulations	2	4
2	Municipal Corporation, Municipal Councils AND SPA's Within MMR (Except MCGM)		1	2
3	Rest of MMR		1	2

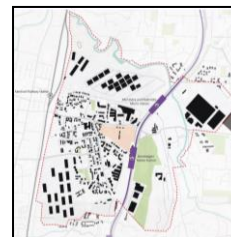
TRANSIT ORIENTED DEVELOPMENT REGULATIONS OF UDCPR (REST OF MMR):

Ref: Govt. Notification dated 10/10/2022

TOD_ZONE : 500 m from Metro Stations to be delineated by Planning Authority with approval of State Government



Preparation of LAP : Planning Authority to conduct Impact Assessment and prepare Integrated Mobility Plan and Local Area Plan



Existing Development



Existing Road Network



Dev. Plan Proposals

HIGHER FSI : Maximum Permissible FSI - 4.00








S. No.	Road width in m.	Maximum permissible FSI as per UDCPR		
		Corporations	Remaining Authorities/ Areas	For TOD: For all Municipal Corporations and Metropolitan Region Development Authority area (except MCGM)
1	9 m. and up to 12 m	2.00	1.70	2.50
2	12 m. and up to 15 m.	2.25	2.00	3.00
3	15 m. and up to 24 m.	2.50	2.10	3.50
4	24 m. and up to 30 m.	2.75	2.30	4.00
5	30 m. and above	3.00	2.50	4.00

FSI Premium

Residential: @35% of RR with 1 FSI

Commercial@40% of RR with 1 FSI

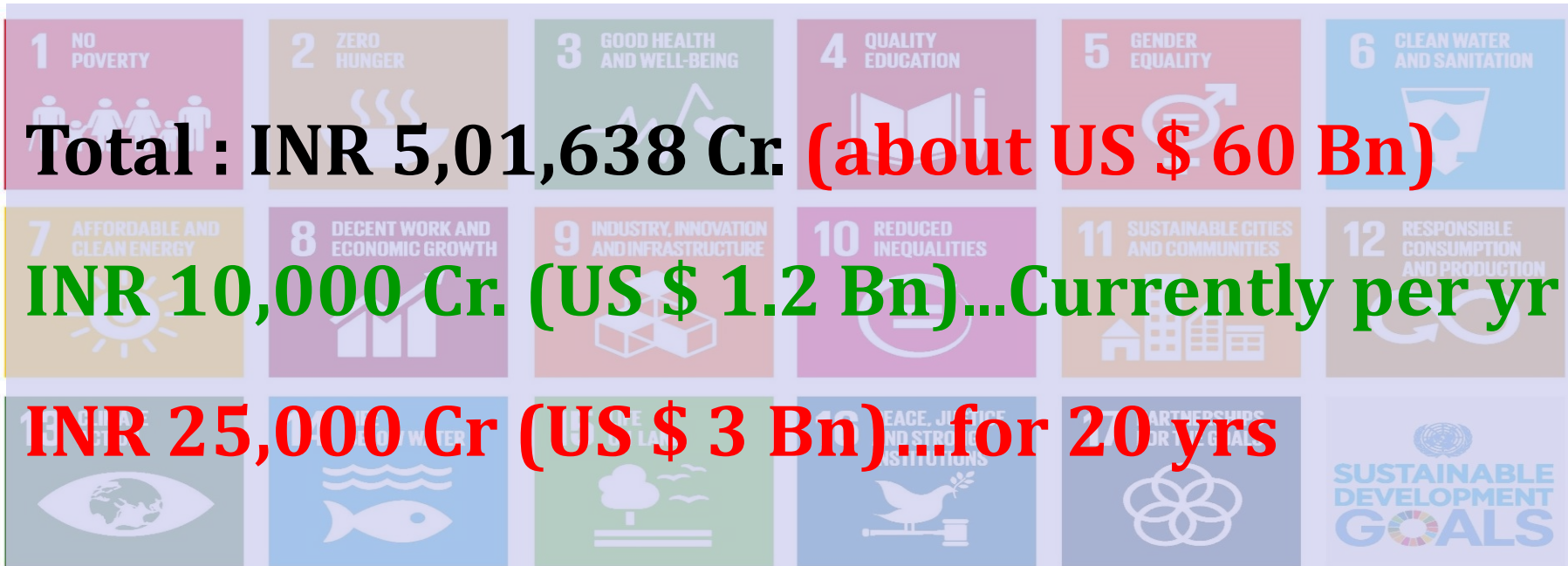
MAJOR INVESTMENTS IN SUSTAINABLE URBAN MOBILITY : 2020 - 2040

 Metro System	 Suburban System	 BRTS	 Bus System fleet	 Highway System	 Terminals	 Traffic Management
(11 km) + 337 Km	(378 km) + 232 Km	(Nil) + 570 Km	(5,000) + 6254	(2600) + 1090 Km	(30) + 66	Several initiatives
INR 2,21,773 Cr	INR 95,608 Cr	INR 7,992 Cr	INR 8,075 Cr	INR 1,13,953 Cr	INR 8,975 Cr	INR 45,262 Cr
US \$ 27.05 Bn	US \$ 11.66 Bn	US \$ 0.97 Bn	US \$ 0.98 Bn	US \$ 13.89 Bn	US \$ 1.09 Bn	US \$ 5.52 Bn







Total : INR 5,01,638 Cr (about US \$ 60 Bn)

INR 10,000 Cr. (US \$ 1.2 Bn)...Currently per yr

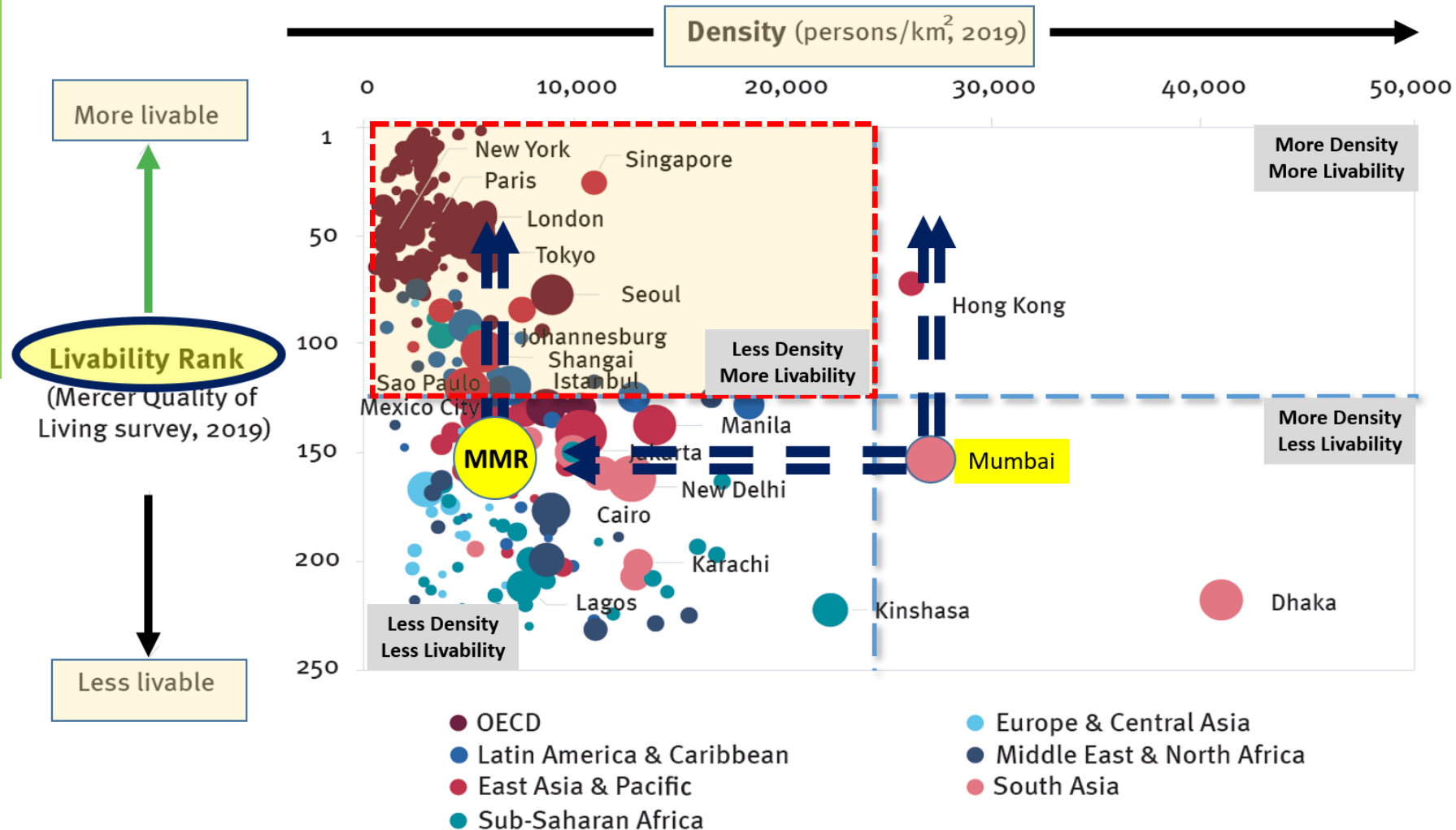
INR 25,000 Cr (US \$ 3 Bn)...for 20 yrs



OUTCOMES FOR MMRDA WITH WORLD BANK COLLABORATION: *Proposal*

OUTCOMES FOR MMRDA	
	Aligning with the UN's Sustainable Development Goals: Promoting Green Clean Public Transport.
	Enhancing Economic activities: Multiplying employment opportunities including female labor force Participation. Attracting Global Private Financial Investment.
	Mainstreaming Resilience: Building Future-Ready, Climate-Resilient Infrastructure.
	Inclusive Urban Growth : Ensuring provision of Affordable houses.
	Public Participation: Creating Thriving, Livable, Vibrant, Inclusive, Safe, Well-designed City Neighborhoods for engagement of communities to enhance Happiness and Productivity.
	Digital Platforms: Creating Digital Urban Observatory and developing Regional information systems for ease of doing business.

RISE IN LIVABILITY INDEX



TOD: A Catalyst in transforming MMR

Transforming MMR into a Sustainable Metropolis with efficient, affordable, inclusive, safe, speedy resilient, accessible, reliable, delightful travel experience along with Transit Oriented Urban Development through Mixed Land Use and People Centric Planning.

TOD is transforming Cities.

TOD is transforming Regions.

TOD is transforming lives of 25 million people living in MMR.

TOD is much beyond FSI, Premium Built form etc.



Regional Plan



+ C. T. S.



+ T. O. D.

=



Sustainable MMR





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THANK YOU