

METRO NEO SYSTEM

MINISTRY OF HOUSING AND URBAN AFFAIRS
GOVERNMENT OF INDIA

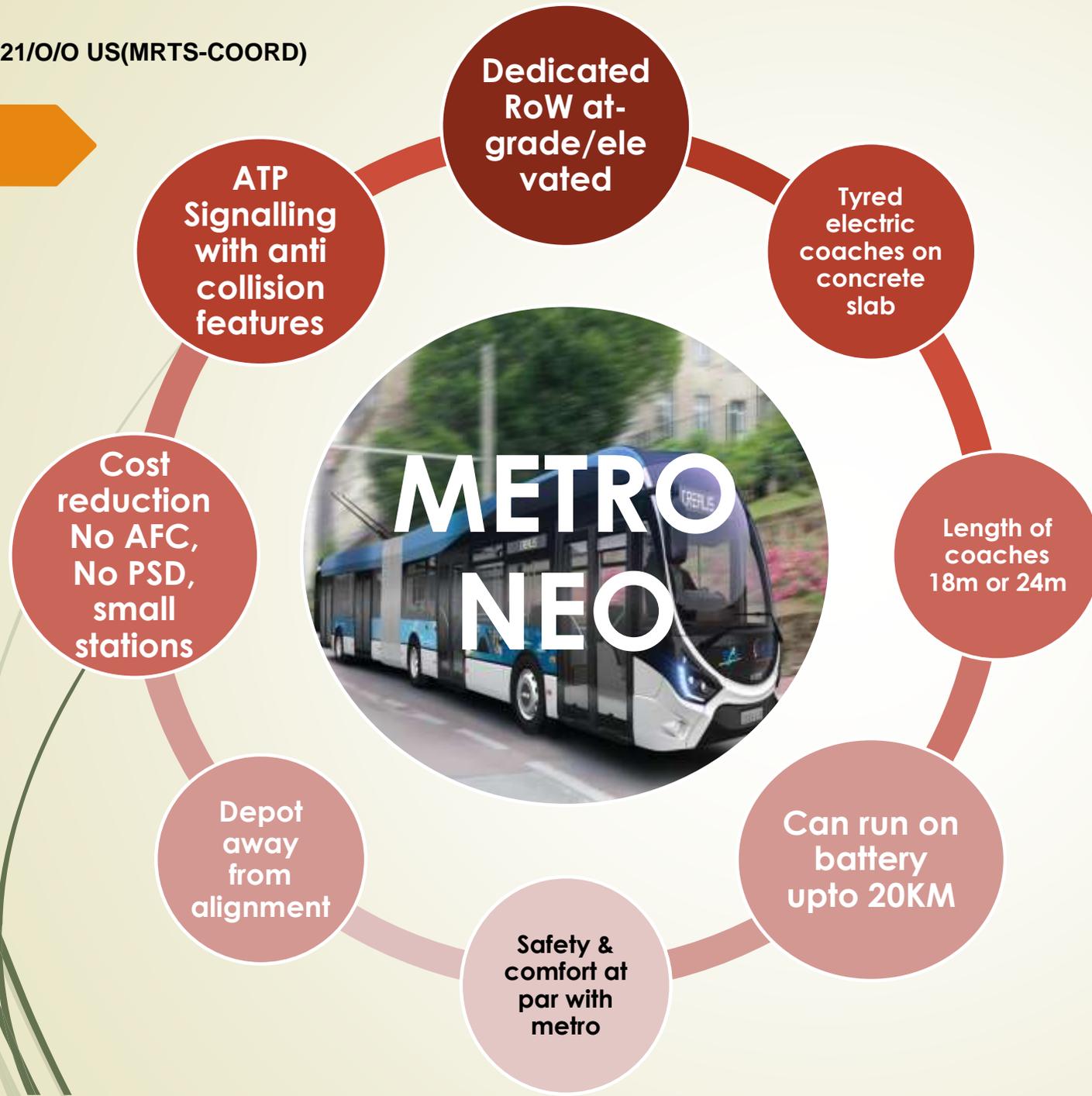
TMRG



WHY METRO NEO?

- ❑ Heavy Metro rail is economical for PHPDT greater than 15,000
- ❑ Bus transit system cater upto 5,000 PHPDT which is insufficient
- ❑ Rail based LRT, tram system address traffic requirement upto 15,000 PHPDT.
- ❑ Peculiar requirement of Indian cities require an innovative and cost effective solution
- ❑ Metro-Neo is India centric solution for tier 2/3 cities for 8,000 PHPDT and extendable upto 10,000
- ❑ MoHUA has issued standard specifications in Nov 2020 for rubber tyred metro coaches running on OHE named Metro neo for use in tier 2/3 Indian cities.

FEATURES OF METRO NEO



BROAD METRO NEO SPECIFICATIONS

- ▶ **Dedicated RoW of 8m**
- ▶ **Platform width of 1.12m, emergency side evacuation**
- ▶ **Low floor rolling stock around 10T axle load**
- ▶ **Caters PHPDT 8,000 and extendable upto PHPDT 10,000**
- ▶ **Upto 250 pax capacity for 24m coach and 200pax for 18m coach at AW3 loading**
- ▶ **750VDC OHE twin wire electrification. Coaches can run on battery where OHE is not feasible.**
- ▶ **ATP signalling with anti collision features and central control, CCTV surveillance in stations**

Above standards ensure the quality, safety, punctuality and comfort levels at par with heavy metro

1702416/2021/070-US(MRTS-COORD) **Cost aspects of Metro neo (Nashik DPR @ 2019 level) compared to Nagpur Metro actual costs⁶¹⁰**

SN	Sub-system	Description	Metro neo (Rs.Cr/KM)	Heavy Metro (Rs.Cr/KM)
1	Viaduct	Smaller viaduct	31.5	36
2	Stations	Concourse eliminated, platforms height is reduced	4.4	55
3	Track	No track	0	9
4	Traction & PSI		4.5	11
5	Rolling Stock	Tyred electric coaches	7.5	26
6	Signalling	ATP signalling with anti collision	0.5	10
7	Depot	Less depot area	2	5.5
8	Misc. Utilities		1	4
9	Telecom & Security	Smaller stations with optimal telecom services	1.5	5
10	Ticket vending (AFC)	No AFC gates	0.5	3
	Taxes, Contingencies, design charges etc.,		18.5	57.5
Gross Total including GST in INR			71	222

***Metro Neo costs Rs.71Cr/KM (Nashik MetroNeo DPR @ 2019 level) whereas heavy metro costs Rs. 222 Cr/KM (As per Nagpur Metro actual costs)**

ZURICH (SWITZERLAND)



- 54KM, 114 electric coaches
- 600VDC OHE
- ROW shared with roadside traffic
- Coaches running on dual mode with over 25KM battery capacity.
- Coaches having length of 18m and 24m are catering PHPDT upto 6000 PHPDT

RIYADH UNIVERSITY, SAUDI ARABIA



- 12KM, 12 coaches
- 750VDC OHE
- ROW shared with roadside traffic
- Coach length of 19.5m has 180 pax capacity handling PHPDT of 5,400

LYON CITY (FRANCE)



- 131nos electric coaches over 79KM
- 750VDC OHE
- Buses running on dual mode
- ROW shared with roadside traffic
- Coach length of 18m has 150 pax capacity handling PHPDT of 4,500

SALZBURG (AUSTRIA)



- 118 nos electric coaches over 146KM
- 600VDC OHE
- ROW shared with roadside traffic
- Dual mode trolleybuses with in motion charging of battery
- 18.75m long electric coaches carry 140 pax catering 4,500 PHPDT

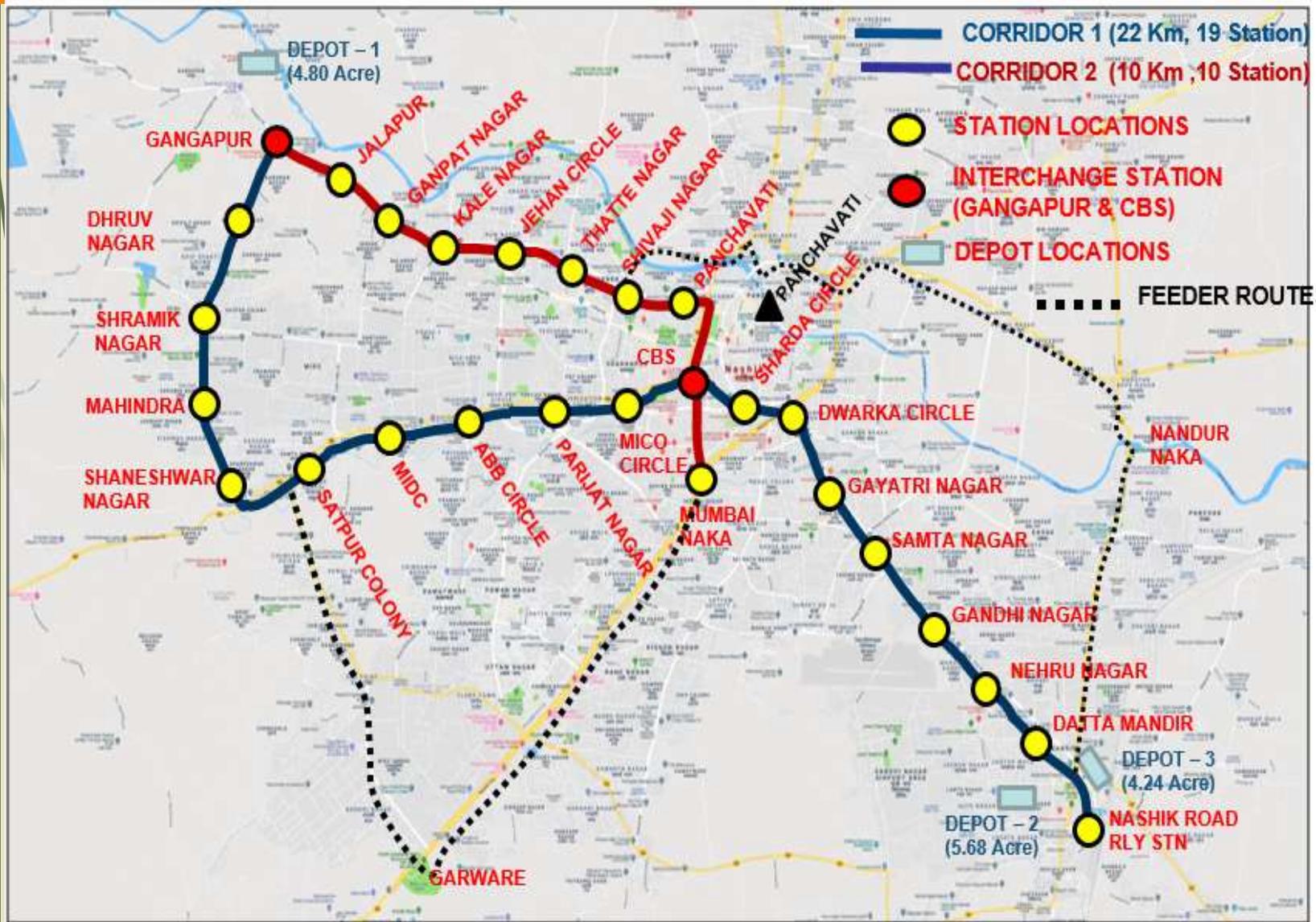


SAN FRANCISCO (USA)



- 100KM of network and 300 trolleybuses.
- Largest trolleybus system in USA
- 600VDC OHE
- ROW shared with roadside traffic
- Dual mode trolleybuses with in motion charging of battery
- 18.3m long electric coaches carry 150 pax catering 4,500 PHPDT

NASHIK METRO NEO PROJECT KEY FEATURES



- ▶ 2nos of Lines (Corridor 1 is 22km, Corridor 2 -10 km)- Total Length 32 km.
- ▶ Number of stations -29; Number of depots - 1.
- ▶ Total Project Cost (DPR)- Rs.2,100.60 Cr \approx (Rs 71 Cr per km).
- ▶ DPR already approved by the Government of Maharashtra (GOM).
- ▶ Project currently under sanction of the Government of India (GOI).

Way forward

- ▶ Cities under consideration for implementing Metro neo are
 - ▶ Warangal (Telangana)
 - ▶ Bamnoli village to Kirtinagar in Delhi
 - ▶ Nashik

THANK YOU



Parameters	Metro lite	Metro Neo
RoW	Dedicated RoW with fencing/parapet wall	Dedicated RoW with fencing/parapet wall
RoW/viaduct width	7.6m	8m
Min Platform width	1.12m	1.12m, island PF width = 4m,
Track	Standard Guage	No track, kerb/centre rail guidance
Items minimized	AFC gates, DFMD, separate concourse	AFC gates, DFMD, separate concourse
Axle load & PHPDT	12T axle load, PHPDT upto 15,000	Around 10T axle load, PHPDT = 8,000 extendable to 10,000
length x width of rolling stock	33m x 2.65m	18m or 24m x 2.55m
low floor height	300-350mm	300-350mm
Pax capacity @ AW3	300 pax in 3 car train	200 pax for 18m coach, 250 pax for 24m coach
Traction	750VDC OHE or embedded 3rd rail	750VDC OHE, can run upto 25KM with battery supply where OHE is not present
Signalling & Telecom	CBTC ATP GOA1, CCTV surveillance & TETRA radio	ATP only with anti collision features CCTV surveillance, radio and OFC based network

Metro Neo costs Rs.71Cr/KM (Nashik MetroNeo DPR @ 2019 level), Metrolite costs Rs.140Cr/KM (Thane Metrolite DPR @ 2019 level) whereas heavy metro costs Rs. 222 Cr/KM (As per Nagpur Metro actual costs)

Statutory & Institutional cover

- All the statutory and institutional covers available to Metro Rail systems shall also be available to Metro-Neo including “The Metro Railways (Construction of Works) Act, 1978”, “The Metro Railways (Operations & Maintenance) Act, 2002”, residual cover of “The Railways Act, 1989” and Metro Rail Policy, 2017.

(ha) “metropolitan city” means the metropolitan city of Bombay, Calcutta, Delhi or Madras;]

(i) “metro railway” means rail-guided mass rapid transit system having dedicated right-of-way, with steel wheel or rubber-tyred wheel coaches, but excluding tramways, for carriage of passengers, and includes—

(A) all land within the boundary marks indicating the limits of the land appurtenant to a metro railway,

(B) all rails tracks, sidings, yards or branches worked over for the purposes of, or in connection with, a metro railway,