



MD's CORNER

Dear Colleagues,

The year 2019 ended with Maha Metro meeting another challenging dead line of launching the trial run of Pune Metro in record period of 30 months by 31.12.2019. Hon.PM in a address in Pune in Dec.'18 had desired that and it motivated and inspired us despite being unavoidably difficult. Year 2019 has been very eventful for Nagpur Metro also. Hon. PM had honoured all of us and city of Nagpur by inaugurating through video link 13.5 Km. section of 'Orange Line' along with five stations in March'19, in a record time of 44 months. Further, in a period of 4 ½ years record progress of over 85 % has been made by Nagpur Metro project. Pune Metro project has progressed ahead of schedule, achieving overall progress of over 36%.

We have been honoured by the kind encouraging words of Hon'ble Prime Minister of India, Hon. Chief Minister of Maharashtra, Hon'ble Union Road Transport, Highways & Micro, Small & Medium Enterprise, Hon'ble MOS (IC) MoHUA, all other stake holders, several distinguished citizens and media. This has been possible only due to extreme hard work, devotion, dedication, discipline and excellent team work of Maha Metro. The team includes all Consultants, Experts, Contractors and their staff.

Contribution of families of all the team members has been even greater, enabling them to go much further than normal call of duty to ensure that we successfully deliver a metro service of high international standards to citizens of Nagpur, Pune and other cities where we are working at the earliest, ahead of schedule.

Such a performance never goes unrecognised, therefore, Maha Metro has been entrusted with many other crucial assignments of further phases of projects at Nagpur and Pune, DPR preparation at Thane and Nasik and other works of NHAI, Municipal Corporations etc. Such trust and confidence is our biggest motivation.

We are proud of the fact that innovation and creation of new benchmarks has become culture of our organisation.

Personal welfare, development and career growth of all team members and their families remain upper most in our minds.

While I wish you and your family a great 2020 on both personal & professional front, I call upon all of you to rededicate ourselves with even greater energy and focus to our goal of providing a world class Metro Rail experience to all our present and future users and customers.



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Editorial Board :

Akhileshwar Sahay, Strategic Advisor
Anil Kokate, Executive Director, Nagpur
Hemant Sonawane, GM-PR, Pune

Design :

ExcelStudio, Nagpur

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2019 - A YEAR IN RETROSPECTIVE



NAGPUR METRO

January: Nagpur Metro Phase 2 approved by Maharashtra Cabinet; Reach 3 viaduct work completed

February: Metro ran between Airport South and Congress Nagar station for the first time

7th March: The day Hon'ble Prime Minister Inaugurated 13.5 km Orange line between Khapri to Sitabuldi

May: First trial of Aqua Line began between Lokmanya Nagar and Subhash Nagar

July: Nagpur Metro Facebook page gets 5 lakh likes highest for a Metro Rail page; visit of Mr. Walter Lindner Germany Ambassador to India along with KFW tea

August: First trial run between Sitabuldi and Subhash Nagar on Aqua Line on Independence Day; Maha-Card app launched for commuters

September: CMRS sanction for 11 km Aqua Line Commercial Operation, 24 km completed in record time -a new benchmark

November- Last segment cast between Sitabuldi and Prajapati Nagar, Jaiprakash Nagar station on Orange line opens for traffic

December: Every 15-minute metro service between Khapri and Sitabuldi, Telangana Govt gives assignment to make Metro Neo DPR for Warangal to Maha-Metro



PUNE METRO

January: War room for project monitoring through Unique 5D BIM inaugurated to ensure within cost, before time, quality project implementation; Bilateral loan funding agreement for 245 million Euro signed with AFD

February: Bhoomipujan of Pune Swargate Multimodal Hub at the hands then Chief Minister of Maharashtra Devendra Fadnavis on Saturday 9th Feb 2019.

February: Inauguration of Pune Metro Underground ramp work on 14th Feb 2019 at Agriculture College Ground at the hands of then Hon. Guardian Minister Shri. Girish Bapat,

June: Track laying work begins using UIC 60 E1 1080 Head hardened rail

July: DPR for Metro Neo Project at Nasik submitted to Maharashtra government. DPR approved by state cabinet on 28th August

August: Global Indian firm Titagarh's Italian subsidiary Titagarh Firema wins the competitive bid for supply of next generation aluminium bodied 102 metro rail coaches. Such coaches will be manufactured first time in India

November: First of the four Tunnel Boring Machine (TBM) arrives to expedite the underground work construction

December: Pune Metro Facebook page likes cross 5 Lakh, second metro after Nagpur to cross the milestone

December: TBM completes 200 meters of tunneling, first metro train arrives at Pune



2020 THE YEAR OF PUNE'S TRYST WITH METRO RAIL

The year 2020 has just commenced. The year gone by was one which Maha-Metro can justifiably look with pride as it completed 24 km (i.e. two third of the total project length) construction of Metro Rail at Nagpur in record 50 months from the day construction commenced-it indeed was an immensely satisfying benchmark.

Not to remain content on its laurels, team Maha-Metro has upped the ante further to make 2020 memorable by bringing Metro Rail at Pune as new year gift for Pune-kars. The onset of 2020 has heralded a new era for Pune, as on 1st of January, the city already had its tryst with Metro Rail, with the beginning of trial run on the PCMC-Dapodi section. With this the stage is set for commissioning of approximately 10 km of Reach 1 and 2 modularly in the first half of 2020 after necessary certifications from RDSO, Railway Board and the Commissioner Metro Rail Safety (CMRS).

The trial has begun with two 3 coach trains brought specifically from Nagpur to meet the deadline. Later this year, Pune-kars will be able to get the benefit of ultramodern next generation aluminum body coaches with still better aesthetics which will be manufactured for the first time in the country.

Pune Metro Rail Project has already readied 6 km track on the PCMC-Dapodi stretch, laying of over-head power cable is progressing smoothly and the entire viaduct on the priority section shall be up and ready in the first quarter of the year along with completion of two stations – Sant Tukaram and Phugewadi. The work on another two stations (Anand Nagar and Garware College) to be opened on Vanaz-Garware college stretch too is progressing at brisk pace. This all augurs well for beginning of the commercial operations on two priority sections along PCMC-Swargate and Vanaz-Ramwadi corridor.

The year 2019 was the year when Metro became a way of commuting in Nagpur, 2020 will end decades wait of Pune-kars for a safe, secured, comfortable, convenient, affordable, inclusive and environmentally friendly metro rail. Pune metro is reaching this milestone seamlessly despite challenges galore it faced particularly in land acquisition. After opening of the priority section Maha-Metro is also committed to modularly open the balance portion of the elevated corridor by early 2021.

The work on underground section too has already begun in real earnest and to expedite the underground execution four tunnel boring machines (TBM) are being deployed of which the first such TBM has already completed more than two hundred meters of tunneling.

Pune Metro like Nagpur shall also be amongst the “The Greenest Metro” with its 65% of total energy needs met by solar energy, 100% rainwater harvesting, 100% water-recycling and with bio-digesters at all stations to achieve zero percent net discharge. Another re-deeming feature of the project is its bold gambit to bring 50% of total earnings from non-fare-box revenues, which shall include earnings from more than 10 million square feet commercial space being created



THE INNOVATION CORNER

CONSTRUCTION INNOVATION : SITABULDI INTERCHANGE



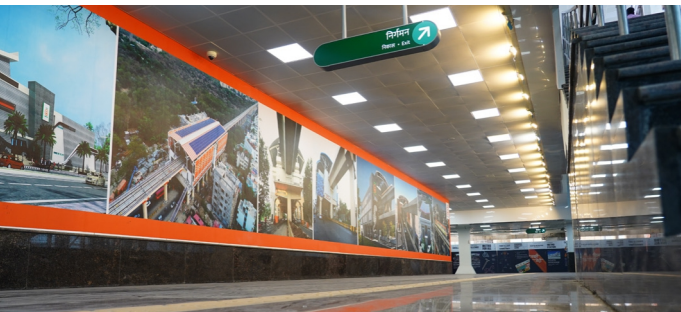
At Munje Chowk the busiest intersection stands, magnificent and iconic, engineering marvel Sitabuldi Interchange station intersecting Nagpur Metro Orange and Aqua Lines. Its panoramic perforated aluminum metal facade, with abundant natural light and ventilation gives Sitabuldi a distinct character. The construction of the complex station called for many innovations and tested full might of Maha-Metro designers and engineers. Some innovations are below



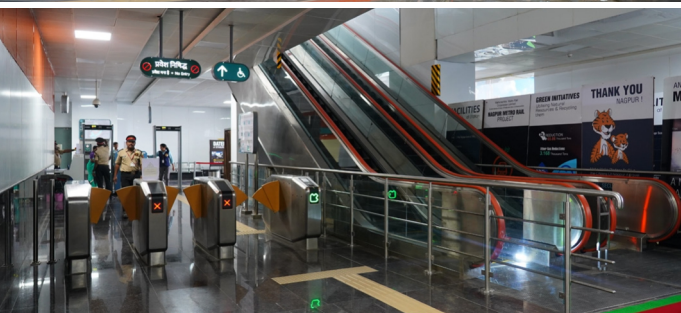
The station construction around busiest city junction with heavily congested roads, posed engineering and managerial challenges needing precision planning. There was no margin of error as even a small oversight could spell disaster.

With thousands of vehicles on arterial roads every hour, even short duration traffic diversion proved nightmare. A comprehensive Traffic Impact Study and resultant effective mitigation measures led to innovative four-stage construction of station.

Safety and smooth passage of road users was ensured even with substantially reduced carriage through prohibitory / diversion signage's; 55 meters taper of construction zone; installing reflectors near construction site; maintaining pedestrian sidewalks; providing speed control facilities like humps to prevent speeding of vehicles and provisioning signals on the basis of modeled signal cycles on intersections.



The complex construction site with narrow roads and proximity of existing structure was nightmare requiring tailor-made structural design and construction solutions. To ensure smooth post-construction traffic, Munje Chowk junction during construction was kept free from columns and other hindrances resulting in very large spans for the central part of the station structure with two levels of rail tracks crossing above at the same point. This made construction of central portion of the station challenging and critical for the timeline.

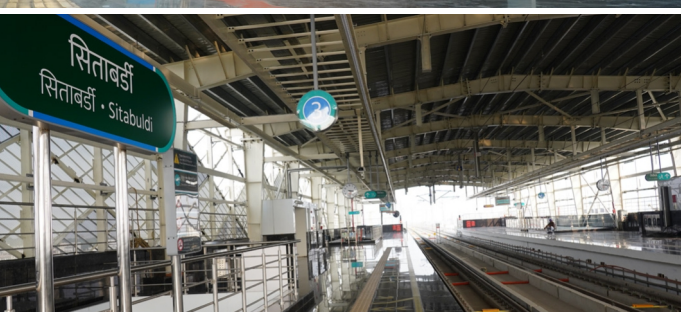


Constructing central portion of station was structural design nightmare also due to large 40m span to take train loads of two lines above. Maha-metro solution was to cast in situ vierendeel truss of 40m span, constructed in one go that too without disturbing the traffic flow below. The engineers also addressed serious worries of residents, of owners of shops, malls, banks close to station and constructed 300 piles and 70 pile caps without affecting even one structure.



In another innovation to ensure quality and speed of construction, the station was constructed with precast I-Girders which were placed on the pier cap arm with precision. Total 159 precast I-Girders were erected for concourse & platforms. Cast in situ deck slab was constructed on the erected precast I-Girder by placing steel plate sacrificial shuttering and concrete was poured with the help of pump and boom placer directly at deck slab, drastically reducing the construction time duly keeping safety, health and environment of paramount importance.

Cast in situ stub column, platform beams and staircases were constructed with admirable quality control and precision and another construction innovation was brought in by resting the Precast-I Girder on the pier cap without providing the elastomeric bearing underneath substantially eliminating the need for periodic inspection and replacement of bearings and greatly enhancing life of station structure and floor finishes.



Maha-Metro team faced an unexpected challenge while constructing East West part of the station when it found a pile-cap lying on an existing nallah, whose diversion was a time-consuming job. The problem was solved with introduction of additional pier with pile cap.

The planning, design and construction of Sitabuldi Interchange station has indeed been an architectural, planning, engineering and traffic management and execution challenge, tamed effectively in constrained timeframe by Maha-Metro Team.



Nagpur Metro Orange Line Gets 80 kmph speed

Maha-Metro Nagpur recently increased its total number of rakes to 13, it has enabled it to run services on the 13.5 km Orange Line every fifteen minutes that too at designed speed of 80 kmph after the clearance from CMRS. Out of 13 three coach trains, 8 rakes are being maintained at MIHAN depot and balance five at Hingna depot. These rakes are sufficient for running trains at 15 minutes interval both on 13.5 km opened stretch of Orange Line and 11 km Aqua Line ready for commercial operation.



Underground Construction moves on fast-track at Pune

The first Tunnel Boring Machine (TBM) reached Pune in the last week of November and commenced operation in early December. In less than 25 days it successfully completed more than 200 meter of tunneling and the first breakthrough achieved at Agriculture College ground. The second TBM is also expected to start working from Agriculture College side shortly. All together 4 TBMs will be used for constructing more than 5 km long underground section which is likely to be commissioned by early 2022



Maha-Metro to prepare DPR for Metro Neo at Warangal city, Telangana

On 9th December after a high powered meeting held by Shri K. T. Rama Rao Hon'ble Minister of Municipal Administration and Urban Development, Telangana State, and other senior functionaries with Maha-Metro Managing Director and Director (Projects), Maha-Metro has been awarded the assignment to prepare Detailed Project Report (DPR) for Metro Neo System at Warangal. It is a matter of immense pride for team Maha-Metro which has developed the low-cost, energy efficient, innovative Metro Neo System as solution to urban transport problem to Tier 2/3 system. This is the first recognition by a State Government outside Maharashtra of Maha-Metro's capability, experience and innovative, reliable and low-cost rubber-tyred Metro Rail system for Tier 2/3 cities which can be constructed at a cost as low as Rs. 72-80 crore per km as against Rs. 180-250 crore per km for a conventional metro rail.



Pune Metro Miniature Train Model unveiled by CM of Maharashtra

On 27th December Maharashtra Shri Udhav Thackeray, Honorable Chief Minister of Maharashtra in the presence of Director (Strategic Planning) Maha-Metro unveiled the miniature model of Pune Metro Rail train at Mumbai. Pune Metro trainset shall have 3 coaches, (with one reserved for women) which will be able to carry 900-950 commuters at the designed speed of 90 Kmph. These coaches will be next generation aluminium bodied light weight, aesthetically superior and will be manufactured for the first time in India. A special feature of Pune metro coaches is that they will have mobile phone and laptop charging facilities for the convenience of commuters.

Nagpur Metro gets Stakeholders Thumbs Up

Services of Nagpur Metro have started getting accolades from commuters of all walks of life. There is special happiness and satisfaction in women commuters. Smt. Anita the owner of Bakshe Medicos while expressing her happiness says the news of imminent start of metro services has brought immense happiness to female commuters. She also adds that most consumers at the medical store talk about the metro and believe that all the problems faced during construction have been worth the pain. Shri Chetan Choudhary owner of General Stores says he had not even thought in dreams that in two years there will be such a huge difference in commuting in an area where urban transport was the most endemic problem. Social worker Mahesh Singh Rajput adds the coming of Metro Rail has opened the pathways for all round development of the city. Already developments are happening all along the metro corridor. He believes there is no mode of urban transport more convenient and safer for the citizens than metro. Shri Bandu Bonde officer of Digdoh Gram panchayat says, Metro has changed for ever both "Dasha and Disha" (commuting condition & direction) while metro brings most convenient mode of transport it also brings all round development of the city

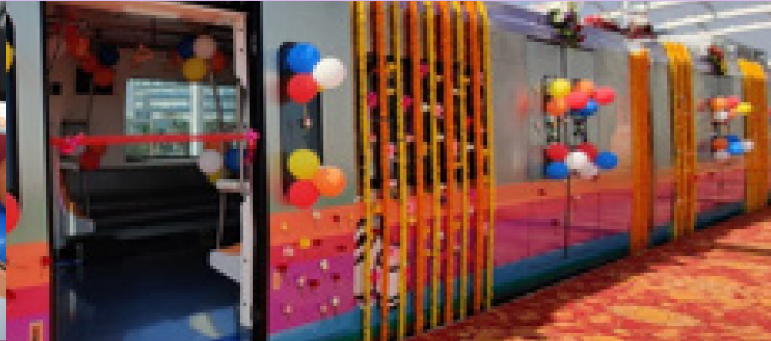
The first metro train arrived at Pimpri Chinchwad on 29th December and got a rousing welcome amidst the beating of traditional music instruments like Dhol, Tasha and Singa. Pune Metro train also received a thunderous and joyous welcome amid celebrations by happy citizens dancing to the beat of traditional dhol tasha as it arrived in Pimpri Chinchwad area. The first lady of the city and Mayor Mrs. Mai Dore also joined the celebrations and welcomed the metro train by performing pooja. Not to lose on time, the trials along PCMC—Dapodi priority section began on 1st January 2020.



Pune - Pimpri Chinchwad's Tryst with Metro Train Begins

Trial of Pune Metro begins

As we all bid adieu to 2019, Pune Metro commenced its trial run of the Metro train on its corridor PCMC to Dapodi on 31st Dec 2019 and ushered into the New Year 2020 with the trials of Pune Metro Train. The operations of the Metro train would begin soon after all the mandatory trials, inspections and certifications. The coach design is inspired by Shaniwar Wada, Mahatma Phule Mandai, IT park, Tabla and Tanpura which relate to rich traditional art and music. The colour scheme represents the rich tradition and culture of Pune Metropolitan region.



Maha-Metro Mega Sports Tournament at Pune

Maha Metro organised its maiden edition of sports carnival MEGA SPORTS TOURNAMENT 2019-20 at Agriculture College, Pune for 04 Days on 13th -14th Dec.2019 & 22nd -23rd Dec.2019. "One Team, One Spirit and One Win" was the theme of this sports carnival. This mega event attracted participants from Pune Metro, GC, contractors and associated agencies. The entire team from the Directors downwards became one and participated with wholehearted enthusiasm and sportsman spirit. The purpose of organising such an event to bring people together, to know each other, friendly relationships and aiming of bringing a feeling of Oneness and Togetherness amongst all including staff, contractors & outsourced agencies was achieved in totality.



Social Media Engagement

Citizens Love Maha Metro!

Social media engagement of Pune & Nagpur Metro far exceeds its other counterparts in the country. Pure testimony of 'Maazi Metro'



NAGPUR METRO

Average acquisition of FB followers per month **9,586**

5,37,290 7,870

3,83,000 8,780



PUNE METRO

Average acquisition of FB followers per month **14,260**

5,13,514 7,960

7,85,000 16.4K