

Agro Metro for Amethi District in India: Metro Systems in Brave world of Rural Hinterland

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Abstract - India's first metro system commenced its operations in Kolkata in 1984. Much has changed since then. Metro systems are moving to newer and newer cities. With the success of Delhi Metro from 2002, Metro systems have moved to several cities. These include cities like Mumbai, Jaipur, Bangalore, Chennai, Kochi, Nagpur, Lucknow, Gurgaon, Faridabad, Hyderabad, Ahmedabad etc. More cities are now getting their own metro system in near future. In Uttar Pradesh, Government has decided to have rail-based mass transit transport in population centres of Kanpur, Varanasi and Meerut. However, till now, all planners are equating the usage of metros only for the big cities. The Metro growth story to villages/towns seems to be totally out of radar at this stage. However, holistic development is part of any democracy. Also, Greenhouse footprint reduction is now a compelling necessity. It is but incumbent on planners to design future transportation systems for network of towns in other parts of India also. The paper below outlines the viability of metros for villages/towns with illustration of implementation for Amethi District towns. Innovative idea of dual use of commuting as well as AgriLogistics may be viable for sustaining it for operational and financial future. Amethi District Ring Metro project analysed here will possibly be a guiding model for planners to move to the next level of hinterland Metro growth in future as growth in big cities peters out and saturates. But Perception and Change readiness/Management will be the key for the adoption of idea and subsequent implementation. The challenges ahead are huge but leap to the future of small cities is now a felt necessity due to growing accidents on roads and implementing Greenhouse gases reduction targets as per Paris Declaration COP 21.

Keywords: Amethi, Hinterland Metro, commuting, Agri Logistics, Change Perception, Agro Metro, dual use metro, COP 21

I. INTRODUCTION

Metros have emerged as the clean, green and safe modes of mass transportation for people. Most of the countries in developed and developing world are adopting this mode of transportation in a big way. In recent times in India and China this mode is becoming very popular. Newer metro systems are emerging even in Africa where in last few years, Addis Ababa added its first metro system.

Amethi is a proud district having rich heritage and history of almost 10 centuries. It is also a big political Superbrand. The district is already having large number of Industrial and Educational Institutions. Amethi was the 72nd district of Uttar Pradesh which came into existence on 1 July 2010 by merging three tehsils of the erstwhile Sultanpur district, namely, Amethi, Gauriganj and Musafirkhana and two tehsils of the erstwhile Raebareli district, namely, Salon and Tiloi. Now it has four tehsils Amethi, Gauriganj, Musafirkhana and Tiloi. Amethi is a major town of district and also a municipal board. But, Gauriganj is the headquarters of the district. A network of district cities like Amethi, Gauriganj, Jagdishpur, Jais, Fursatganj etc. is already like a big urban city/agglomeration. Substantial population is living in a network of small and medium cities/towns/villages within the geographical area of the district. Clean and Fast Transportation is a very much felt necessity. It is proposed to have a Ring Metro for the Amethi-Gauriganj-Munshiganj –Amethi section of the District now. Subsequent phases will also follow. In the last three years in India, from 2014-2017, the urban development ministry has already sanctioned Rs30,653.78 crore, out of which only Rs12,345.33 crore was released to various metro rail companies in the country.

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Fig. 1. Amethi beckons to the world of future transport

Amethi's Crossing the Future Transport Rubicon

PRESENT	FUTURE
<ul style="list-style-type: none"> • Chaotic • Lots of Road Accidents • Severely polluted • Reliability and Punctuality Assurance almost non existent • No multi modal networking/integration • Road Encroachment by private car/motorcycles 	<ul style="list-style-type: none"> • Clean and Green • Fast • Efficient • 24x7 • Seamlessly Integrated and networked with other modes of transport • Genuinely Farmer centric • Dual use –commuting/Agri Logistics • Aggregated • No loss of lives from horrendous accidents on roads • Better Punctuality and Reliability • Act as economic magnet

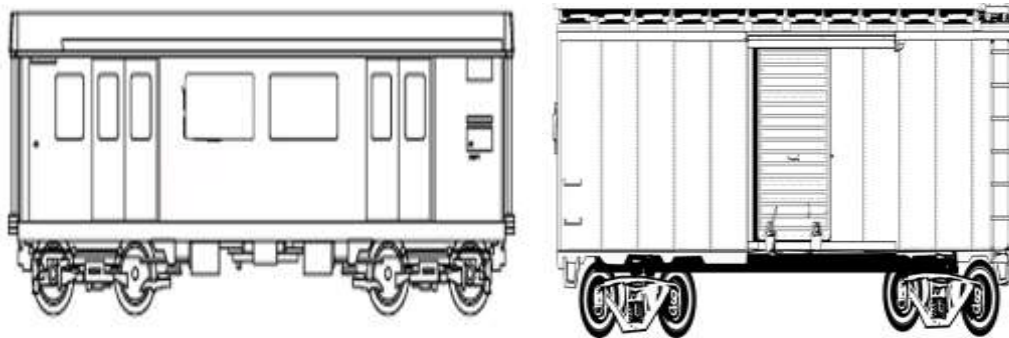
Fig. 2. Amethi has to cross the Transport Rubicon.Now.

II. CHIEF OBJECTIVES OF THE PROPOSED AMETHI RING METRO PROJECT

The chief objectives are as follows:-

- First Metro of the country which will be targetted for **dual purpose/use** - Commuter and Agriculture Logistics.It will be an unconventional metro. An innovative model ,it will be better called as “Agro”. This is so because to make it viable the train sets will carry passengers in 1-2 coaches and/or farm produce in different “customised” 1-2 coaches.

Ridership will be for both -human biological and farm biological passengers. Combinations of mixed coaches for both categories during day and night services can be leveraged.



For passengers

For Agri Logistics

Fig. 3 .Possible two configurations for dual usage of metro coaches for Agro Metro

- Traffic Reduction and reduction of lives lost due to growing number of accidents on roads in the district.
- Bring Urban Development to hinterland/outreach areas
- Reduction of greenhouse gases footprint/pollution
- Local Market Improvement
- Employment Opportunities for local youth
- Faster Connectivity of Farmers to the national/international Markets to help “doubling of income for farmers”
- 24x7 Transport Availability for people and farmers
- Big Leapfrog for Amethi’s future as Educational ,Industrial and Agricultural hub
- Economical and optimised system of carriage of Agricultural farm produce from Amethi district towns and villages to pan India markets. Several papers have covered this aspect in elaborate detail. Bibliography below covers some of the issues. This will provide a big impetus to the vision of Government of India to double farm incomes by 2022.Economies of scale will result in reduction in food wastages,better cold chains transportation by Metro systems and many more advantages.The aggregated transport will reap good dividends in faster movement of people and agricultural services/logistics and bring more professionalism in Amethi’s sleepy towns and villages.
- More gentrification of areas in the towns yielding an aesthetic and pleasing look.
- Reduction in the increasing farm distress in the country about diminishing returns in agriculture and lost focus on agriculture sector.





Fig.4 .Logistics of farm produce to the end user is a challenge and has huge potential to be better aggregated and optimised

III. PROPOSAL

- Amethi-Gauriganj-Munshiganj Ring Metro is a compelling need due to stunning growth in the Amethi district as a result of new Educational institutions and growth in automobiles and farm equipment in the region.
- It will possibly be the first Metro in the world for dual use. For commuting and Agri Logistics. It can better be christened as “Agro” rather than “metro”. A close illustration of the concept here where farm produce is directly loaded to metro coach is given below.



Fig. 5 .Illustration of possibility of door step Agro logistics using customised metro wagons

- **In Phase One**, Amethi-Gauriganj-Munshiganj Ring Metro will have 3 routes from Amethi to Gauriganj, Gauriganj to Munshiganj and Munshiganj- Amethi . The Amethi to Gauriganj corridor will cover a distance of appx 10 Km.The Gauriganj to Munshiganj corridor will be of total length of appx 12 km.The Munshiganj- Amethi corridor total length of appx 07 km.The complete length Amethi-Gauriganj-Munshiganj Ring Metro Project will be about 29 Km.
- **In Phase Two**, the Amethi Metro will be extended to the routes Munshiganj to Musafirkhana,Gauriganj to Jagdishpur and Gauriganj to Jais .

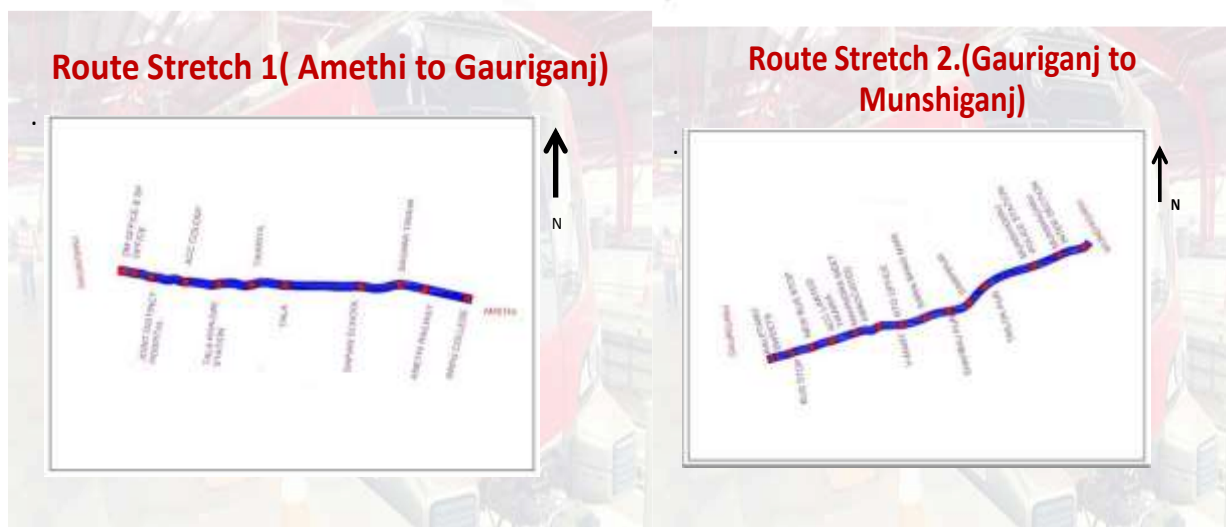




Fig. 6 . Three route stretches are very well feasible in Phase 1

IV. RANGE OF OPTIONS FOR AMETHI RING METRO

The options could be as follows:-

- Surface pattern
- Elevated Pattern
- Underground
- Combination of any 2/all types of above



Fig 7 .Illustrations of various possible metro system configurations

V. PROS FOR THE PROJECT

- Being relatively less urbanised, construction will be faster and system will be in place faster.
- Eco friendliness enables no air pollution and very less sound pollution.
- People will learn to have better transport etiquette and ownership pride.
- This project will be the stepping stone for possible future high speed rail network from Lucknow to Sultanpur.
- Less lead time in transportation of Agri goods to pan india markets.
- Leveraging of current competencies of Gauriganj and Amethi stations is a big positive for the integration of metros with Indian railway network.



Fig. 8 . Gauriganj Station can be the Agro logistics hub of the Amethi region in near future

- Big Cities are getting rapidly too congested to live healthily. Across the world this is becoming an issue of concern. China’s financial hub of Shanghai is already now committed to limit its population to 25 million people by 2035 as part of a quest to manage “big city disease”.It is a matter of time when such policies will be in vogue in other parts of the world also.
- Implementation of this system will act as good incentive for youth not to migrate to big cities and waste their earned money in exorbitant room rents and other aspects. As per a comment in Indian newspaper Live Mint “Urban centres are hubs of economic activity, innovation and consequently, growth, because of economies of scale and positive externalities. But past a certain size and density, negative externalities such as pollution and congestion start reaching critical mass”.
- Increasing trend of using solar energy is making metro projects more “power neutral” and savings of electricity in the long term would be very negligible.As per DNA newspaper ,23 Mar 2017 edition,“Even Delhi Metro Rail Corporation (DMRC) has so far commissioned 6.3 MWp (megawatt peak) of solar power plants across 21 locations in the Delhi Metro network. By March 2017, the DMRC will have commissioned solar power plants with a capacity of about 20 MWp and by March 2018, Delhi Metro will generate 31 MWp of solar power. As per its solar policy, the plan is to generate 50 MWp of solar power by the year 2021.”

VI. CONS FOR THE PROJECT

- The Change Perception to this futuristic leap will need time to communicate to people,bureaucrats,banks,businesses and real estate professionals.
- Changing perception at all levels that metro is not only for megacities but for medium towns also.It is noteworthy that many metro systems in Europe,China,Russia have metros in even small cities.
- High Initial cost. But soft loans and funding is available in market these days from many angel investors.
- Disruption of employment opportunities for rickshaws,auto rickshaws and other such transport. However,overall strategic gains will be much much more in the long run.
- Funding required will be substantial. Based on various RITES reports given in the references in Bibliography below, cost of funding for the proposed metros in Kanpur,Agra,Meerut and Varanasi has been projected to be Rs. 10500 crores,Rs 6500 crores,Rs 6500 crores and rs 7500 crores respectively. The estimated completion cost of the North-South corridor of the Lucknow Metro project is Rs 6,880 crore. A major chunk of this money would accrue from the loans from the European Investment Bank and other foreign institutional lenders.Therefore,Amethi Ring Metro project could safely cost approximately Rs 6500 crore.However,a brave decision must be taken to invest the money as Amethi has the potential to relieve population pressure on other Uttar Pradesh cities including Lucknow,Varanasi,Allahabad etc.. Angel investors can provide all the funds with some conviction.Series of incentives can be provided to real estate companies to leverage the real estate on metro corridors.

VII. CONCLUSION

India’s growing economy is roaring like a hungry tiger and it is looking for growth across the vast subcontinental landmass.The first wave of growth in the cities is now saturating .Move to the hinterland will be essential in next phase. India is facing its 1853 moment now when first railway train run from Mumbai to Thane took place in India. But in hindsight, it was a small beginning to the vast addition of rail network in future years in India. Similarly, Amethi Metro will revolutionise the commuting and Agri Logistics of our region and other Indian towns.Growing Urban-Rural divide will be bridged with this project.Villages and small town folks will not be left out of development pie. It will catapult Amethi to world class standards/efficiency. 24×7 Transport service will be available. Transport of Agri Goods/farm produce/farm products from remote areas to towns will be much much facilitated. It can prove to be a model fit to be emulated by many more cities and towns in India and developing world in Asia and Africa in future.Dream of Amethi Ring Metro must be made a reality sooner than later.

VIII. ACKNOWLEDGEMENT

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