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## Ideas and suggestions for integrating future urban areas with roads & highways development for economic prosperity

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### ABSTRACT

*This paper focuses on how we should effectively utilize and develop the civil engineering infrastructure - for the much-needed growth and development considering that 42% of India's population will be staying in urban areas by 2030. it will be highly imperative that India builds more infra facilities in urban areas and develop suburbs and satellite cities and focus on smart area development/ smart satellite cities to accommodate the movement & shift to the cities/ urban areas. this needs government support in terms of land, buildings, medical personnel, and their training colleges in the first place. there has to be some nodal and well-established government body that drives the entire process of creating a healthy infrastructure first.*

**Keywords:** India, Development, Infrastructure, Highways, Roads, Income Tax, Decongestion, Leveraging Existing Development in Roads and Highways, Growth, Medical, COVID-19

#### **Items that are discussed more specifically are as under:**

- Leveraging current /existing development and fresh investments in the form of infrastructure to kick start further growth on an all India basis.
- Leveraging infrastructure growth with urbanisation
- Creating benefits for creating health care facilities to spur development by using the already well done highway infrastructure
- Creating hubs for education and medical excellence along with highway development.
- The paper takes the liberty of proposing multiple but closely related issues as listed above which should be possibly considered by the Government for further improvement and mainly swift improvement of our country.

### **INTRODUCTION**

#### **1.0 Some important statistics related to India.**

India is the second most populous country in the world, with a population of 135 crore (1.35 billion) people. In 2019, about 26.62 percent of the Indian population was in the 0-14 year category, 67 percent into the 15-64 age group and 6.38 percent were over 65 years of age. India is one of the largest countries in the world and its population is constantly increasing. It is the world's sixth-largest economy by nominal GDP and the third-largest by purchasing power parity (PPP). According to the International Monetary Fund (IMF), on a per capita income basis, India ranked 142nd by GDP (nominal) and 124th by GDP (PPP) in 2020.

#### **2.0. Movement of population into cities, a global and Indian phenomenon**

By 2050, the global population is projected to increase to around 9.8 billion. It's estimated that more than twice as many people in the world will be living in urban (6.7 billion) than in rural settings (3.1 billion). i.e. 2/3 rd of the world will be living in cities. The same matches with the situation in India. This movement of people to cities can trigger an urban crisis in time to come, especially during any pandemic. Have a look at the current scenario in India:

- 350 million ( 35 crore ) Indians will live in the cities by 2030.
- 700 million ( 70 crore ) Indians will live in the cities by 2050 ( 2 times the current entire current population of the USA )
- To accommodate these people India needs 100 to 200 new cities / towns/ satellite towns
- In India farming accounts for 58% of India's population, but accounts for only 14% of its GDP.

- To survive, Indian needs to grow at 8% but agriculture can only sustain growth at 3%. It is inevitable that millions of Indians will move from villages to the cities for employment, daily wages and lower level jobs.
- When we decided to create 100 Smart Cities, urbanisation was considered as an important and unavoidable necessity and for which smart cities were thought of as a solution.

**3.0 The Main Question**

Despite the above schemes announced the main question remains as to how we can urgently implement action to create new and adequate infrastructure facilities under the new initiatives. The question remains of implementation and execution and delivery, something that the country has always lacked in, except some niche area or projects. What is needed is action to deliver and not just budgetary allocation and planning

**4.0 India: A comparison between Overall Budget V/S for Allocation for Highways**

( All values in INR Crore ) Typical conversion factor as in May 2021 is USD 1 = INR 73

The emphasis of this chart is on depicting percentage spends of total.

Year	Allocation for Highways (INR) crores	Percentage share of the total budget %	Overall Budget for the year(INR ) crores
2014-15	28881	1.6	1794892
2015-16	42914	2.4	1777477
2016-17	55000	2.7	1978000
2017-18	64900	3	2147000
2018-19	71000	2.9	2442213
2019-20	83015	2.9	2786349
2020-21	91823	2.6	3450205
2021-22	108230	3.1	3483236

The **National Highways Authority of India (NHAI)** is an autonomous agency of the Government of India, set up in 1988 and is responsible for management of a network of over 50,000 km of National Highways out of 1,32,499 km. NHAI is mandated to implement the National Highways Development Project (NHDP) which is India’s largest ever Highways Project in a phased manner. The National Highways have a total length of 1,32,499 (approx. ) km to serve as the arterial network of the country.

The allocation for highways on the last budget is INR 108230 crores of which NHAI has a major responsibility of executing projects. It would be appropriate that all the capacity building for civil construction could be entrusted to NHAI as a lot of synergy would be created between highway development and driving the economy.

**5.0 India is a place where mega projects are getting built, but did holistic infrastructure get left behind all these years?**

Some of the older construction projects planned and now in execution are the Delhi Mumbai Industrial Corridor -originally conceived in the year 2009. ( Cost approx. USD 100 billion / INR 700,000 Crores approx. with a length of 1483 km ) which is required for the industrial growth of the nation. Another one is the Dholera Smart City or Dholera Special Investment Region ( cost USD 5.70 billion or approx. Rs. 40,000 crores ), planned long time ago. We still have a laundry list of investment projects coming up. Who will be investing in the manufacturing in these proposed industrial areas is possibly going to be a major issue. The same investment spread across the entire state in part perhaps would have been a better option-including executing the same. Now is the time to think and link a very fast and successful vehicle moving forward (i.e the highways) with something that needs hand holding and assistance and ensure actual delivery of what is needed for the economy & healthcare. To explain in layman’s terms, a basic method would be to ensure manufacturing hubs, educational hubs and hospital hubs of different types all along the highway- existing and planned within 5 kms. of any side of the toll booths created or in zones of excellence at every 10 kilometres NHAI/ State Highway bodies / and other bodies have mastered the art of and procurement, contracts, leases and PPPs and they can fast leverage their expertise into action. Also one National body involved in the entire operation can perform faster and better with ownership of existing highway assets in a big way.

**6.0 Phenomenal growth in road infrastructure already achieved to be leveraged into quick development in all sectors of infrastructure**

We must note that we have already built around 50,000 kms. of highways in the last 7 years. The construction of highways reached 9,829 km during 2017-18, with an all-time high average pace of 27 km per day. Just 3 years later, 2020, NHAI itself built on a commendable average of 37 km of highways per day. By March 2020 , India built 1,37,625 kms. of highways compared to only 91,287 kms in April 2014 The National Highways Authority of India (NHAI) recently achieved a major feat by building a four-lane highway of 2,580 metres length within 24 hours, creating a world record.

Under the Union Budget 2021-22, the Government of India has allocated Rs. 108,230 crore (US\$ 14.85 billion) to the Ministry of Road Transport and Highways.

The NHAI awarded 1,330 km of highways in the first half of FY21, which was 1.6x of the total awards in FY20 and 3.5x of the FY19-levels. NHAI, the nodal authority for building highways across the country, has set a target of awarding 4,500km of projects in FY21.

In December 2020, the MORTH ( Ministry of Road Transport & Highways )proposed to develop additional 60,000 kms of national highways (in the next five years), of which 2,500 kms are expressways/access controlled highways, 9,000 kms are economic

corridors, 2,000 kms are coastal and port connectivity highways and 2,000 kms are border road/strategic highways. The ministry also intends to improve connectivity for 100 tourist destinations and construct bypasses for 45 towns/cities.

The Government, through a series of initiatives, is working on policies to attract significant investor interest. A total of 200,000 km of national highways is expected to be completed by 2022.

In the next five years, National Highway Authority of India (NHAI) will be able to generate Rs. 1 lakh crore (US\$ 14.30 billion) annually from toll and other sources.

### **7.0 Examining improvement and developments in economy due to highway spends- imperative to build satellite towns / smart urban areas in coordination with highways development & not highways in isolation**

7.1 Worldwide, highways are built to connect people and creation of jobs and boost economic development. In India it is the same, but perhaps the last two objectives are not being achieved, the way they were originally expected to.

7.2 In a research paper presented way back in the Journal of Advanced Transportation, Vol. 21, Spring 1987, based on work being performed at the University of Minnesota under contract to the Minnesota Department of Transportation; titled HIGHWAY IMPACTS ON REGIONAL EMPLOYMENT, the time-series analysis presented indicated that increases in highway expenditures do not, in general, lead to long term increases in employment levels. During the years of construction, employment levels do increase. However, this effect is only temporary and disappears when the construction ends. In conclusion, generally, changes in highway expenditures do not cause changes in total employment. Hence there have to be other methods of driving economic growth and employment to ensure investments in highways will ensure local development, and not just help move goods better and faster between two places.

7.3 In a research report on ECONOMIC DEVELOPMENT BENEFITS OF TRANSPORT INVESTMENT published in 2008 by Ian Wallis, Booz and Company (NZ) Ltd (formerly Booz Allen Hamilton, Ltd) Auckland, New Zealand for NZ Transport Agency Research ( Report 35 ) the conclusions and observations were summarised as under :

- Evidence of a 'special role' played by transport infrastructure investment for economic growth (as opposed to the growth generated by other public spending, such as on education or health) is limited. The high rates of return to transport investment claimed by some past studies are likely the result of statistical correlation or other model specification issues.
- Likewise, there is nothing 'special' about investment in transport infrastructure from a regional perspective. While there is some evidence regarding the responsiveness of growth to investment in transport infrastructure, this is no less true than other forms of public spending. It is unlikely that investment in transport infrastructure will have dramatic effects on regional economies.
- In general, development of transport infrastructure is a necessary, but not a SUFFICIENT condition for national and regional economic development and growth.
- The incremental economic gains of further investment in transport infrastructure in developed economies are likely to be small. Arguably, there is a spectrum within which some developed economies may experience greater gains more than others, but solid evidence to this effect is lacking.

7.4 A research paper on HIGHWAY INFRASTRUCTURE AND THE ECONOMY- IMPLICATIONS FOR FEDERAL POLICY, published in 2011 by the well known RAND Corporation in the USA, confirms that broad measures of public infrastructure have a positive and significant effect on economic outcomes, and that highways have such an effect on productivity and output specifically. However, it also observed that studies often do not take the next step of calculating whether the benefits stemming from the infrastructure outweigh the costs of building it. It also observed that private capital investment tends to have larger effects on economic outcomes than public capital investment or highway investment, although the public investment can serve as a complement to the private investment. In this connection, it has become really important that we must have some practical and rational ways of measuring the economic changes that the highway or overall government investments in transport infrastructure bring in to the economy of a particular region. A solution would be to promote hospital infrastructure along all types of highways

## **8.0 Methodology For Change And Recommended Stages For Implementation**

### **8.1 First stage ( developmental stage )**

Exempt builders and developers from taxes if they set up office complexes for rent/ selling, and hospital parks in designated areas far from cities, and in the earmarked hospital code zones on the highways that will connect the new urban areas with the main cities. Smart cities have to be included in this initiative if they are green field projects and at least 100 km away from existing cities. Example: For say every 50 kilometres, there will be a particular number of hospitals, schools and public amenities. The entire master planning must be driven by the NHAI itself, though local bodies will ensure engineering and architectural compliance. Tax benefits to those investing in greenfield smart cities is also a must.

### **8.2 Second stage: ( Investment stage )**

Anyone investing in infrastructure in these locations will get GST benefit. ( 5 year time frame from date of completion of road project construction )

### **8.3 Third Stage( Delivery/ Output stage)**

I.T. benefits will be applicable only for specific investments made / outputs from earmarked locations . ( Set a 5 year time frame from date of commencement of the hospital project for tax free status )

### **8.4 Modifying tax filing and measuring returns and giving tax concessions for moving out to newer areas ( for investors, contractors and manufacturers )**

8.4.1 If industry and offices and work places have to move out, we need excellent communication in the form of highways, roads, building infrastructure and telecommunications. All this seems to be falling in place now, or actually has in the last 10 years, but still industry and business is not moving out to smaller cities and towns. Despite being a well-connected nation, our industry, workplace and population seem to be working and residing in the urban areas. The issue as of date in front of the government is not as much of possessing monetary resources for development, collecting more and more taxes, and financing projects; but of driving the economy, creating employment and ensuring demand generation for new products and services. Creating new demand in semi urban areas and smaller towns and creating job opportunities at all levels of society seems a viable option. As of now jobs and employment are restricted to major cities, and this has to change. Industry and business will never move to smaller towns unless fiscal incentives drive this change.

8.4.2 That support accordingly can come in only from tax benefits like reduced GST and reduced Income Tax for employers and employees which are ready to move to smaller cities or towns. We must reward companies which will set up offices, and factories in lesser known cities and towns, with linked benefits to their staff, and also to the Government officers who move in there. The highways already built and industrial areas already created have to be used as a tool for the massive change.

We need to link the actual road infrastructure created, with industrial development and measurable gains. Example: Currently, industry is paying GST and Income tax for years, from which indirectly highways are getting funded. In return once infra projects like highways are in place and when a little later, more industrial estates are in place, the industry should have the option to fully or partly move in there / or expand at those locations at reduced tax rates, and thus recover the taxes they paid- which in the first place financed the development. This could be ideally for the first 5 years of an industry's operations- at a new location earmarked by the government - ensuring tax rebates on the production generated / sales turnover actually created. If they do not produce, at the new location, automatically they do not get any benefit. Thus if we can indirectly 'refund' the tax paid by the investors, we will see more and more industries moving out to new locations.

If such initiatives are not taken, we will still have industries and commercial service providers in the cities and existing locations paying huge taxes from wherever they are and funding national development without creating new job opportunities / industrial in the country side and without getting tangible benefits themselves. The movement into new locations will ensure they get the returns and also ensure development of new areas and promote decongestion. With lower real estate costs, lower rentals and lesser taxation, our international service providers / BPOs and KPOs can be also be more cost effective in the international market. Only financial benefits can drive this.

## **9.0 Here is a list of a few key steps as a road map**

### **9.1 Primary Step / Policy Step**

(i) Identify National Highways in existence as of now and those locations ( towns ) on the same, which are approximately 200- 300 kilometres away from any major cities . These are to be considered as investment hotspots.

Example: When a National Highway project is declared, a declaration of incentives applicable to locations ( using PIN codes ) through which the highway passes must be announced . Example The **Mumbai-Vadodara Expressway** is an under-construction, 380 km (long, six-lane, controlled-access expressway, connecting the cities of Vadodara, Gujarat and Mumbai, Maharashtra . The cost of the project is expected to be ₹44,000 crore. When we are investing so much, then we may as well fuel job growth and livelihood for people in the entire region. So we may give a consideration to tax holidays/ tax incentives for companies investing in this region, but only outside municipal limits of those Urban Local Bodies that are present around/ on the highway.

9.2 Step (ii) Identify towns and cities on national highways by their PIN codes, which are between 2 major cities and which have a population base under 10 lakh, and publicise the information well in advance of a green field highway or extra lane creation happening on the existing highways.

Once you have identified these towns and cities, implement steps to promote development to these areas.

## **10.0 Making a new developmental body that includes NHAI to drive integrated development ( Highways and industries / Schools & colleges /Healthcare combined )**

We have multiple bodies dealing into various objectives of development. We have Urban Local Bodies, Municipal corporations, Zilla Parishads, and now we have Smart Cities ( and the SPVs created ) , and we have the state PWDs / road development corporations in the business or process of developing roads . An integrated plan for development of roads, specially with health care, industrial corridors / hubs and real estate investment or even FDI needs to be driven by one organisation. NHAI as a national organisation with a fantastic delivery record, could be entrusted with a wider task and made responsible as an overall development authority for healthcare. A formula for driving calculated growth through investment in roads and highways with hospitals/ healthcare facilities in tow, associated residential and hostel hubs, all possibly needs to be driven by one single body, perhaps countrywide. The 35 crore ( 350 million ) to 70 crore ( 750 million ) Indians that are going to live into Urban India from 2030 to 2050 need to be spread over 50 to 100 new locations and you where you will need to have healthcare facilities in place.

When we say that 35 crore ( 350 million ) Indians are going to live. Move into urban areas, they are actually going to move to new towns/ suburbs of existing cities and extensions of urban conglomeration that are under way automatically or in an planned manner. They all are going to need medical assistance/ hospitalisation someday. All these locations are actually closer to new highways being constructed. So highways are going to be the new link to economic prosperity and even healthcare in the years to come.

### **11.0 Standardisation of new facilities across India to cut down on design and development cost and other repetitive time consuming processes and make fast construction of new services possible.**

- Setting standardised government hospitals/ schools/public utility buildings at multiple locations ( Say Type 1 , A, B and C, Type 2 ) depending on population, and so on.
- Setting open spaces for private hospitals ( where private bidders can set up their own customised models on free government land acquired on lease , procured by NHAI.)
- Using standardised prefab modules/ manufacturing technology/ steel buildings construction and latest BIM ( Building Information Modelling ) applications to ensure quick turnaround, and standardised drawings and interiors for mass purchase and cost reduction .
- The technical proposals and commercial proposals should be standardised using latest software and quantity estimation and cost control methods. This will save time each new hospital project comes up. Standardised tender documents for multiple facilities could be utilised with one tendering body such as NHAI which is adept contract management.

## **12. CONCLUSIONS**

12.1 While the highways sector is doing a fantastic job by even over exceeding the demands, it is pertinent to link the regional and local efforts into/ with the highways and budget in terms of infrastructure creation. Highway budgets should not be considered in isolation.

12.2 One sets the process of go /no go of highways ( greenfield / brownfield ) after a detailed feasibility study is made, and after it is established that the highway is a necessity for the growth of the region. Automatically, government facilities should also logically exist in those locations on the roads/ highways within certain norms set and these should be considered as part of the feasibility calculations.

12.3 NHAI/State highways act and acquire land and develops hospitals as its extension of activities, within a well defined model(s) such as PPP/ Cash contracts etc. The monitoring and progress of the facilities such as healthcare will be a extra commercial responsibility of NHAI

12.4 Similar to toll collection , NHAI should get a revenue share from those government hospitals/ facilities which it builds and finances to make a commercial success.

12.5 If we do not give the industry the sops to move to cheaper/ accessible destinations at a low cost and close to the population, healthcare initiatives and manufacturing and real estate developments will keep happening at select locations only and migration will keep happening to larger cities for healthcare which are more developed.

12.6 All the above be now be done considering that huge development has already happened in the roads sector and many places are now accessible, which were not earlier. The government has done a commendable job to get so many things in place and we have reached an adequate mass for a take off.

### **Written by**

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( All opinions and views are personal ones of the author )

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## **CONVERSION CALCULATIONS**

**Approx. conversion: 1 BILLION USD = INR 7000 CRORE**

**1 CRORE= 10 MILLION**

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