

Planning Proposal for Spatial Development of National Highway (53) Corridor for the Stretch of ONGC Junction to Magdalla Circle of Surat City

Yash Kirtikumar Ghantiwala¹

¹Student, Master of Town and Country Planning,
Sarvajanic, College of Engineering and Technology, Surat, India

Abstract - A basic prerequisite for the successful realization of the highway corridors is production of plans and projects, which includes a system access and synchronization of multiple activities. In planning and designing of the highway corridor in ONGC junction to Magdalla junction, which part of the using detailed geo-referenced data we analysis the effects of highway corridor development on firm level performance in the logistics sector. Results show that highways have significant implications for logistics firm performance, although with important spatial heterogeneity considerable interest exists in upgrading highways to help make an area more attractive to businesses. Examines the nature and level of economic benefits that result from highway investments. In contrast, for logistics firms' improvements in highway access show a positive impact on employment growth but have also led to a reduction in productivity growth. To propose services and infrastructure for needs and recreational area for public use.

Key Words: Spatial Development, Corridor Planning

1. INTRODUCTION

Human needs on the globe account for physical development and land use changes of various ramifications. Earliest transportation for social contacts, commercial and supply of goods and services. In developing countries, highways are constructed to link urban and rural areas for imperative modernization and development, more so when the rural areas are devoid of serious social amenities. Rural – urban highways not only improve accessibility to the former but also favour every aspects of socio-economy across board. Highway corridor planning problem is defined by the selection of the optimum corridor alignment based on multiple criteria, for example, minimization of construction problems, maximization of the operational functionality of the project, minimization of the environmental impact, and maximization of the results of the economic investment. A basic prerequisite for the successful realization of the highway corridors is production of plans and projects, which includes a system access and synchronization of multiple activities and actors.

1.1 The Theory Spatial Development.

- It includes a continuum of locations where firms produce in one of two industries: manufacturing and services. Production requires labor and land, with technologies being constant returns to scale in these two inputs. Since the amount of land at a given location is fixed, the actual technology experienced at a location exhibits decreasing returns to scale. This constitutes a congestion force.
- Firms can trade goods and services by incurring iceberg transport costs. Given these costs, national goods markets in both sectors clear in equilibrium. Labor is freely mobile and workers can relocate every period, so that all workers obtain a common utility in equilibrium.
- Firms can invest to improve their technology. They can buy a probability of drawing a proportional shift in their technology from a given distribution. Broadly speaking, local technological innovation by firms could be interpreted not only as improving firm technology, but also as adding to the local infrastructure.
- Technology diffuses spatially. Locations close to others with a more advanced technology get access to a spatially discounted version of that technology through diffusion. Firms in each location will produce using the best technology they have access to, whether through invention or diffusion.

1.2 The Theory of Corridor development

- A corridor is defined as a well-defined geographic area in which travel movements occurs and usually it is the place of major facilities of transport such as a freeway, railway, or a busway. A travel shed is defined as a place in which trips are clustered in a linear form.
- While corridor planning is a mean by which the needs for facilities and services are determined for a specific place in addition to defining appropriate transportation investments by which the existing or planned land uses are complemented.
- The corridor planning coordinate with planning of the use of land, transportation planning, urban design planning and regional planning.

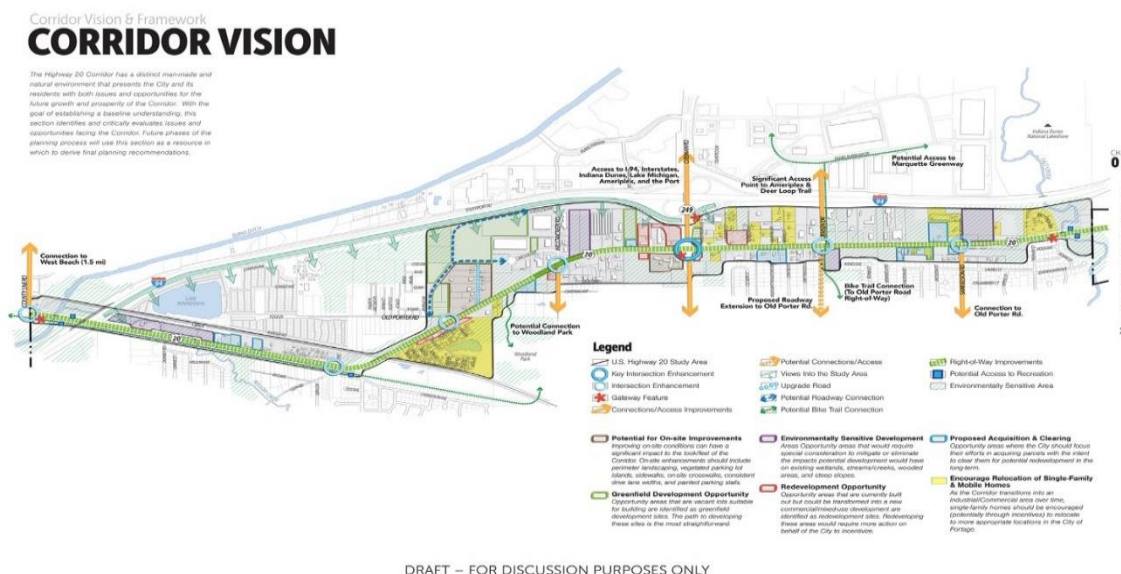
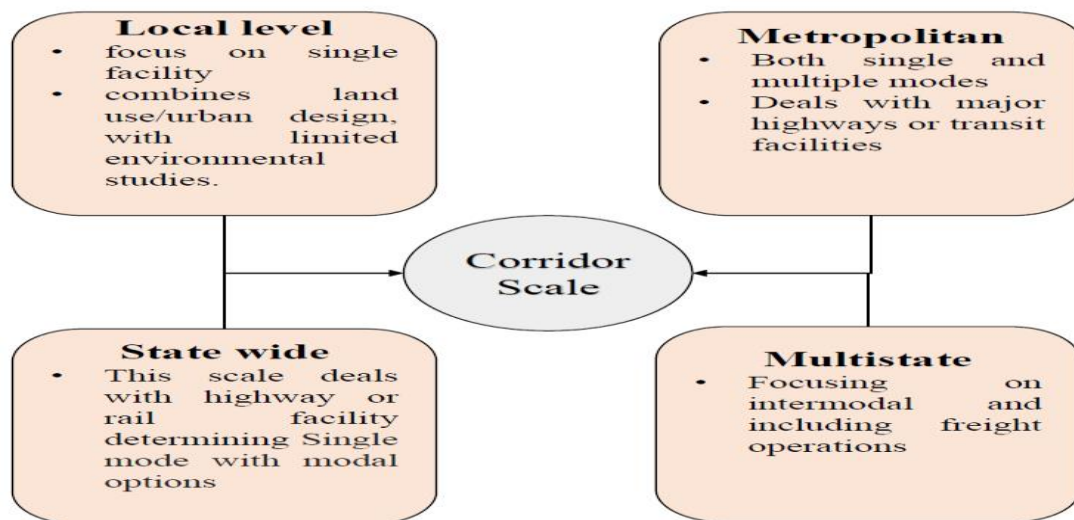
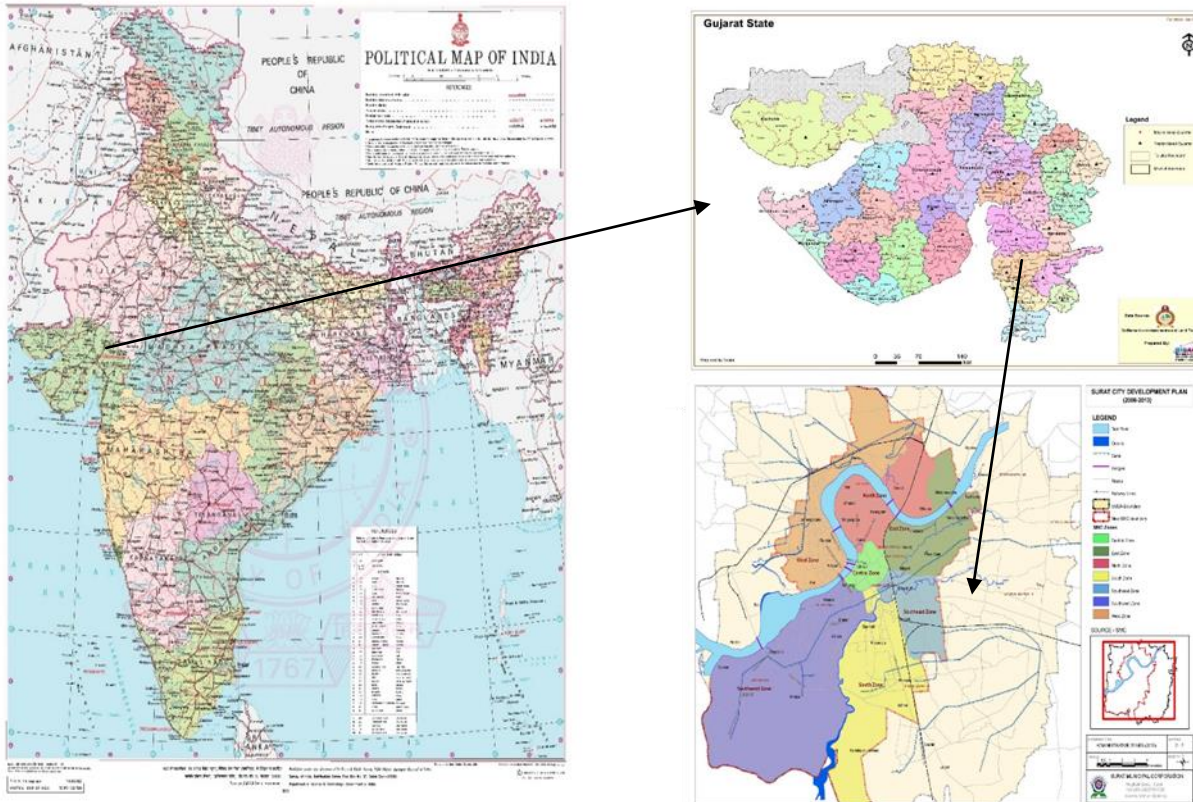


Fig - 1: Corridor Vision

2. Aim of the study.

To prepare planning proposal of ONGC junction to Magdalla circle stretch.

2.1 Demographic Profile of Surat City



Surat is a city located on the western part of India in the state of Gujarat. The city is located 284 Kms south of Gandhi Nagar, 265Kms of Ahmedabad and 289 Kms of Mumbai. The economy of the entire city is based mainly on two industries, the textile industries of manmade fibres/fabrics and the diamond cutting and polishing industry. It is one of the most dynamic cities of India with one of the fastest growth rates due to immigration from various parts of Gujarat and other states of India. Surat is one of the oldest inhabited cities in the world and densely populated with an average 13680 persons/sq.km accommodating about 44.67 lakhs people as per Census 2011. However, decadal growth rate for population for SMC including outgrowth and urban Agglomeration has declined from 85.20% during 1971-81 to 63.30% in 2001-2011. Surat city is one of the fast-growing regions in India, it comprises of 07 Zones, 29 Wards, 116 Councils and decadal growth rate of 55.29% (as per 2011 census) and spreads over the area of 326.515 Sq. Km. Surat City is projected to have population as 69.36 Lakhs in the year 2021. The population of Surat City (comprising of Surat Municipal Corporation, outgrowth area & Urban Agglomeration) has increased from 0.49 million in 1971 to 4.59 million in the year 2011. However, decadal growth rate for population for SMC including outgrowth and urban Agglomeration has declined from 85.20% during 1971-81 to 63.30% in 2001-2011

Table 1: POPULATION GROWTH IN SURAT CITY DURING 1971-2011

S.NO.	CENSUS	POPULATION	GROWTH RATE (%)
01	1971	4,92,700	71.1% *
02	1981	9,12,600	85.20%
03	1991	15,19,000	66.40%
04	2001	28,11,614	85.10%
05	2011	45,91,246	63.30%

Source: Surat DPR 2018

2.2 National Highway (53)

The highway connecting Hajira, Surat, Uchchhal in the State of Gujarat, Dhule, Jalgaon, Akola, Amravati, Nagpur, Bhandara, Deori in the State of Maharashtra Rajnandgaon, Durg, Raipur, Arang, Saraipali, in the State of Chhattisgarh, Bargarh, Sambalpur, Oeogarh, Kanniah, Talcher, Kamakhyanagar, Sukinda, Dubri, Chandhikhhol and Paradip Port in the State of Orissa.

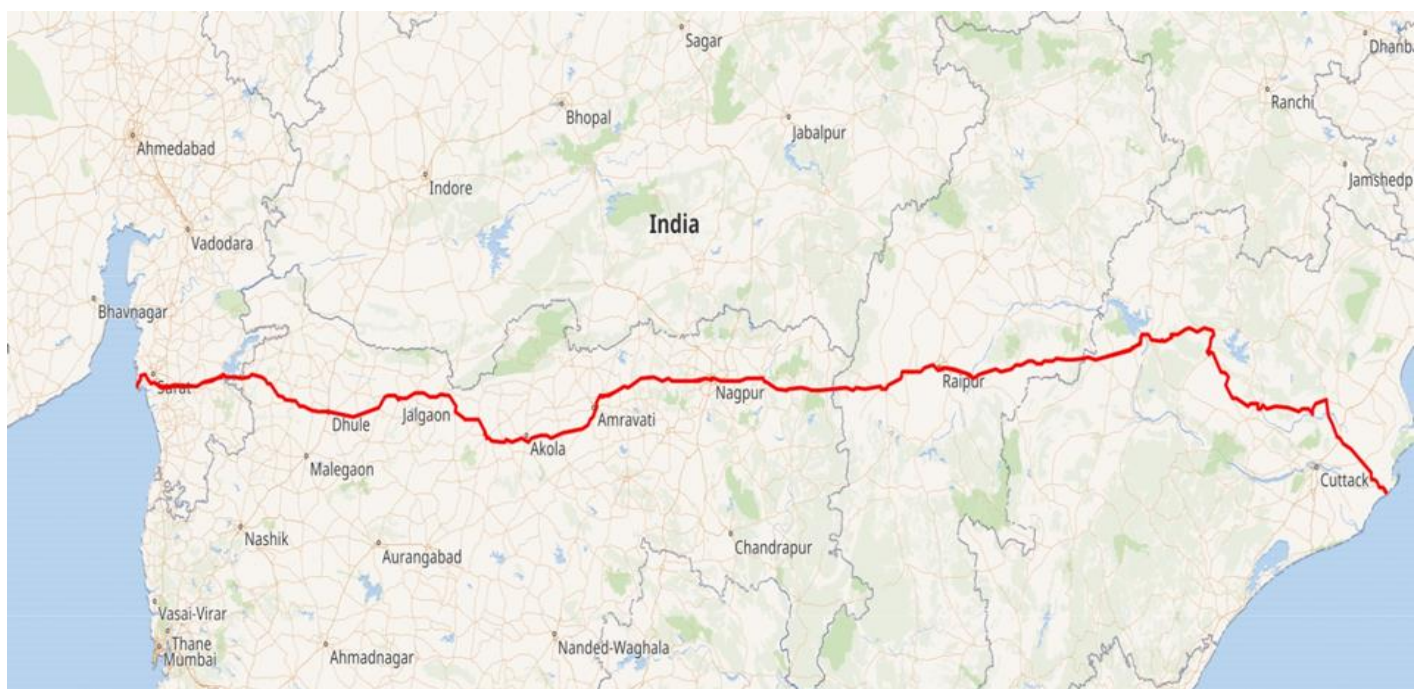


Fig - 2: National Highway Corridor Route

2.3 Study Area

The Stretch taken from ONGC Circle to Magdalla circle around 6 km.

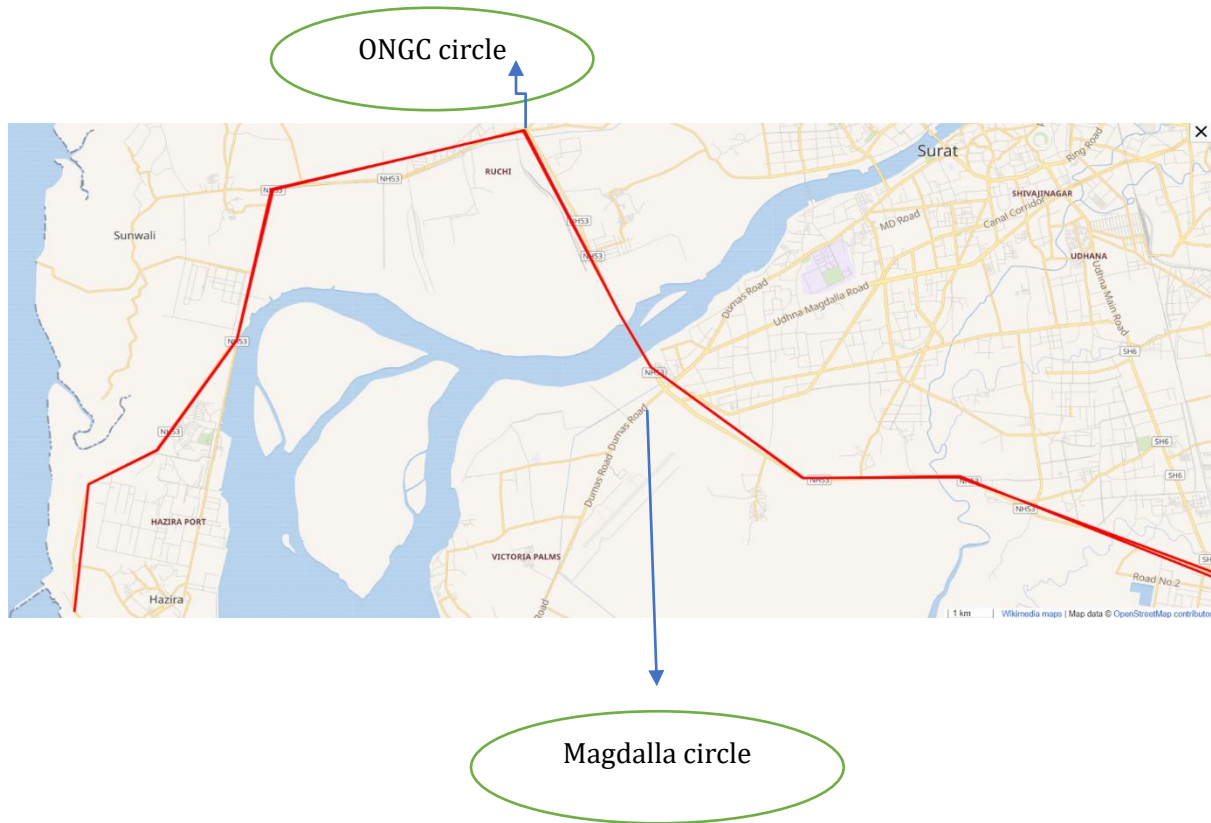


Fig - 3: Stretch from ONGC Junction to Magdalla Circle

ONGC circle to Magdalla circle taken stretch in that Industries which produces oil, etc. and villages are there Bhatpore and Ichhapore. So, these villages are connected to highway so the corridor oh highway needs of infrastructure and some logistics amenities for villages peoples and more over their transportation peoples who makes their responsibilities for their routes. The river passing is the Tapi river which there embarkment the peoples are staying needs provides proper housing and basic infrastructure and makes the recreational place.

3. Recommendation

- Potentials on-site improvement
- Environment sensitive development
- Proposed Acquisition and clearing
- Greenfield development opportunity
- Redevelopment opportunity
- Encourage Relocation of Single-family & mobile homes.

REFERENCES

- [1] Manisha Jain, Mathias Jehling “Analysing transport corridor policies: An integrative approach to spatial and social disparities in India” Journal of Transport Geography 86 (2020)

- [2] Klaus Desmet, Ejaz Ghani, Stephen O'Connell, Esteban Rossi-Hansberg "The Spatial Development of India" *Journal of Regional Science*, vol. 55, no. 1, (2015), pp. 10–30
- [3] Hiral V. Doriwala, N.C.Shah "GIS-Based Analysis of Facility Provision Accessible to Different Socio-Economic Groups in Surat City" *World Applied Sciences Journal* 9 (7) (2010) 740-745
- [4] Nebojša Stefanović, Saša Milijić, Nataša Danilović Hristić "System approach in process of planning and project documentation preparation for Highway corridor as an instrument for establishing the Trans-European Transport Network" *AIIT 2nd International Congress on Transport Infrastructure and Systems, Transportation Research Procedia* 45 (2020) 491–498
- [5] Mathias Spaliviero, Luc Boerboom, Montserrat Gibert, Giovanni Spaliviero & Manka Bajaj The Spatial Development Framework to facilitate urban management in countries with weak planning systems, *International Planning Studies*, 24:3-4, (2019) 235-254
- [6] Sascha Delz "Towards an Integrative Approach to Spatial Transformation Addressing Contextual and Spatial Indifference in Design, Urban Planning and International Cooperation: A Case Study from Addis Ababa" *African Cities and the Development Conundrum*
- [7] Adelheid Holl, Ilaria Mariotti "Highways and firm performance in the logistics industry" *Journal of Transport Geography* 72 (2018) 139–150
- [8] Ilya Chubarov "Challenges and opportunities for the spatial development of Eurasia under the BRI: the case of the Eurasian Economic Union" *Area Development and Policy*, (2018)
- [9] Eugene Modisa Kgantsi, Hermanus Stephanus Geyer, Hermanus Stephanus Geyer Jr "Intra-metropolitan corridor development in the City of Johannesburg and the Social Welfare" *Regional Science Policy and Practice* (2017)
- [10] Anthony Pesek, Jake Smithwick, Kristen Hurtado and Kenneth Sullivan "Utilization of Value and Risk Assessments in Transportation Procurement: A Case Study of a New Highway Corridor" *Construction Research Congress* (2016) 448-456
- [11] Mingzhu Wanga, Hsing-Chung Chang, John R. Merrick, Marco Amati "Assessment of solar radiation reduction from urban forests on buildings along highway corridors in Sydney" *Urban Forestry & Urban Greening* 15 (2016) 225–235
- [12] Alison Todes "The impact of policy and strategic spatial planning" *Wits University Press* (2014) 83-100
- [13] Qing Chang, Xue Li, Xiulan Huang, Jiansheng Wu "A GIS-based Green Infrastructure Planning for Sustainable Urban Land Use and Spatial Development" *International Conference on Environmental Science and Engineering* (2011)
- [14] Surat Municipal Cooperation
- [15] SUDA
- [16] Census 2011