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Package Details of Nagpur – Aurangabad - Mumbai Express Highway (Six Lane)

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Abstract: ***Highway engineering is an engineering discipline branching from civil engineering that involves the planning, design, construction, operation, and maintenance of roads, bridges, and tunnels to ensure safe and effective transportation of people and goods. Highway engineering became prominent towards the latter half of the 20th Century after World War II. Standards of highway engineering are continuously being improved. Highway engineers must take into account future traffic flows, design of highway intersections/interchanges, geometric alignment and design, highway pavement materials and design, structural design of pavement thickness, and pavement maintenance. This paper deals with execution package details of samruddi mahamarg and problems they are facing in execution stage.***
Keywords: Samruddhi Mahamarg, Tender, Contract, Risk.

I. INTRODUCTION

The Government of India has planned 10 world class express highways in order to boost the road infrastructure for faster connectivity between different cities. Simultaneously Government of Maharashtra has planned Nagpur Mumbai Expressway (NMEW) which intends to divert and redistribute the heavy traffic on existing corridors. The proposed NMEW is being implemented by Maharashtra State Road Development Corporation (MSRDC) which will pass through 10 districts from Vidarbha through Marathwada to Konkan regions. The major settlements which are set to be part of this plan are Nagpur District, Wardha District, Amravati District, Washim District, Buldana District, Jalna District, Aurangabad District, Ahmednagar District, Nasik District and Thane District. The NMEW will be designated as a Maharashtra State Highway (MSH) built on National Highway standards. The NMEW is a top priority project in the Government agenda. It will start from Shivmadka in Hingna, Nagpur and will end near Bhiwandi, Thane.

The project intends to develop a six lane expressway with paved shoulders from Nagpur to Mumbai in the State of Maharashtra. This six-lane Nagpur-Mumbai Prosperity Corridor has a ROW of 120 M and will bring the travel time between the two cities of Nagpur to Mumbai from 16 hours to six hours. This prosperity corridor will pass through all the five regions that make up Maharashtra Vidarbha, North Maharashtra, Marathwada, Western Maharashtra and Konkan thus linking developed and developing towns. The project ensures greater regional connectivity and equitable development as it passes through Vidarbha, North Maharashtra, Marathwada, Western Maharashtra and the Konkan region. It also promises to open new avenues of economic and social growth along the districts of Maharashtra. The project is so massive that it will open up multiple sectors including township along the expressway emerging as a self-reliant model. From textile sector to IT hubs, each node will have its distinct character developed to tackle the local requirements of livelihood of the people and growth. An equal opportunity to grow and develop is the only way for a region to ensure a prosperous demography. Cities have concentrated employment opportunities, skilled work force, financial independence and the infrastructure to keep the demand-supply cycle intact. Most of the needs of the urban areas in terms of food and electricity are sourced from the rural areas. Urban areas act as the drivers of economy for the rural regions, whereas the rural areas provide necessary resources. Thus the urban and rural areas in any state have an interdependent relationship with each other.

II. PROJECT DESCRIPTION

The NMSCE will be developed as a high-density corridor establishing high-speed connectivity between Nagpur and Mumbai. As a first step in this direction the Government of Maharashtra has decided to develop and strengthen the linkages and connectivity of major cities of state with Mumbai, the state capital. Exploring the viability of one such connectivity between Nagpur Mumbai, which includes links with and through Butibori – Wardha– Karanja – Aurangabad – Sinnar – Ghoti – Vadape along with link from Karanja – Loni - Nagzari corridor. The entire length of the proposed expressway is about 706.2 km and is divided into five packages as follows

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Sr No.	Name of Project work	Approximate Length in KMs	Estimated Cost (Crs.)	Cost per Km (Crs.)
1	Package-I: Jamtha-Butibori MIDC- Wardha-Pulgaon (in Nagpur Division)	89	3348.70	37.62
2	Package-II: Pulgaon-Karanja-Sindhakhedraja (in Amravati Division).	256	8173.00	31.80
3	Package-III: Jalna District Border-Aurangabad-Kopargaon (in Marathwada Division).	154	5372.28	34.88
4	Package-IV: Kopargaon-Sinnar, Sinnar- Igatpuri (in Nashik Division)	127	3668.40	28.88
5	Package-V: Igatpuri to Bhiwandi (in Mumbai Division)	80.2	3105.00	38.71
Total		706.2	23667.38	33.51

As discussed above, for ease in pre evaluation stage of project management had decided to break entire work in five packages to prepare pre feasibility report and EIA (Environmental Impact assessment report) with respect to appointed consultant for each package. For ease in execution of project on site and proper control over project activity, these five were split into sixteen packages. For detail understanding, timeline of the project is given below:-

A. Project Timeline

1) May 2016 - Consultants appointed for making Detailed Project Report
2) January 2017 - Request for Qualification (RFQ) bids opened for civil works
3) July 2017 - Land acquisition process started.
4) May 2018 - MSRDC opened financial bids submitted by qualified contractors
5) May 2018 - Maharashtra cabinet gave its official approval for Concession Agreement for the project
6) Jun 2018: Lowest bidders identified for thirteen packages, bidding for remaining packages to happen soon.
7) Nov 2018: 90% land acquisition done. Work to be done in 16 packages, contractors for which are already identified. Work to start in December.
8) Dec 2018: Hon. Prime Minister Narendra Modi performed ground breaking ceremony for the project on 18-December-2018.
9) Jan 2019: Land acquisition complete, funding secured, expressway to be ready by December 2020. Road construction started.

As shown in project timeline, the execution package and there details are shown below:-

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Sr No	Package No And Detail	Length (Km)	EPC Cost (crore)
1	CP-01,From Km 0.00 To 31.00 (Village Shivmadka To Village Khadki Ambegaon) In Nagpur.	31	1420
2	CP-02,from km 31.00 to 89.413 (village khadki ambegaon to village pimpalgaon) in wardha.	58.413	2520
3	CP03,from km 89.413 to 162.667 (village ashta to village wadhona ramnath) in Amravati.	73.356	2665
4	CP04,from km 162.667 to 217.023 (village donad bk. To village januna kh) in washim.	54.356	1855
5	CP05,from km 217.073 to 259.900 (village kinhiraja to village kenwad) in washim.	42.877	1495
6	CP06,from km 259.900 to 296.000 (village belgaon to village parda) in buldhana.	36.1	1155
7	CP07,from km 296.00 to 347.190 (village banda to village sawargaon mal) in buldhana.	51.19	1720
8	CP08,from km 347.725 to 390.445 (village nhava to village georai) in jalna	42.72	1165
9	CP09,from km 390.445 to 444.485 (village bendewadi to village fatiwabad) in Aurangabad.	54.4	1615
10	CP10,from 444.845 to 502.752 (village fatiwabad to village surala) in Aurangabad.	57.91	1960
11	CP11,from km 502.698 to 532.094 (village dhotre to village derde) in ahmednagar.	29.396	1110
12	CP12,from km 532.094 to 577.739 (village pathare kh. to village sonari) in nashik.	45.645	1560
13	CP13,from km 577.739 to 623.379 (village sonari to village taranganpada) in nashik.	45.64	1630
14	CP14,from km 623.379 to 636.479 (village pimpri sadroddin to village vashala bk.) in nashik/thane.	13.1	1853.3
15	CP15,from km 636.479 to 664.479 (village vashala bk. To village birwadi) in thane.	28	1362.91
16	CP16,from km 664.479 to 701.362 (village birwadi to village amne) in thane.	36.883	2227.15
TOTAL		700.986 (Km)	27313.36 (Crore)

III. PROBLEM FACED WHILE EXECUTION

After visiting Amravati region site (Package 2), there are various problem which are faced by contractors while working on site. Some of them are listed below.

Sr. No.	Source Of Risk	Type of Risk
1	It was observed that, borrow pits are getting dig more than what is allowed on site.	Managerial Risk
2	Water required for carrying out various construction activities is not available in adequate quantity in vidarbha region in summer.	Financial Risk
3	For project execution, Dhaba near project sites were demolished and compensations are given to dhaba owners but what about workers working on this dhaba?	Economical Risk
4	Workers are asking for more daily wedges for working in summer season which is a problem for Sublette contractor.	Managerial Risk Financial Risk
5	Boulders are not available nearby for sub base preparation.	Technical Risk
6	Dust produced due to filling material making area polluted.	Environmental Risk
7	Inconvenience caused to people due to construction and hence they set strike against work.	Financial Risk
8	Due to heavy machineries village road will be damage so people set strike against work.(In Thane)	Financial Risk
9	Site office were demolished due to cyclone in Arvi (Nagpur division)	Financial Risk

IV. CONCLUSION

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Inspired by japan's Tokyo-osaka industrial corridor, the project will upgrade nine mega industrial zones, three ports, and six airports and boost the economy of the state as well as country. It will generate new employment and new education facilities to the society. The NMSCE will have optical fibre all along its stretch so that Wi-Fi connectivity is available. The proposed expressway is passing through a large number of backward districts and the government hopes to ensure their industrial development using the expressway as an infrastructural launch pad. Along with this it is also proposed to have area development, real estate development, emergency landing of plane, medical facilities, food courts, police stations, public toilets, petrol pumps etc.

Mentioned risks are major one which causes significant impact on project goal in either cost or scheduled time delay. Although these risks should not be neglected and taken into prime consideration to avoid them and also keeping record of risk mitigation in practice could help in determining the relative importance of these research and future risk mitigation in any highway project.

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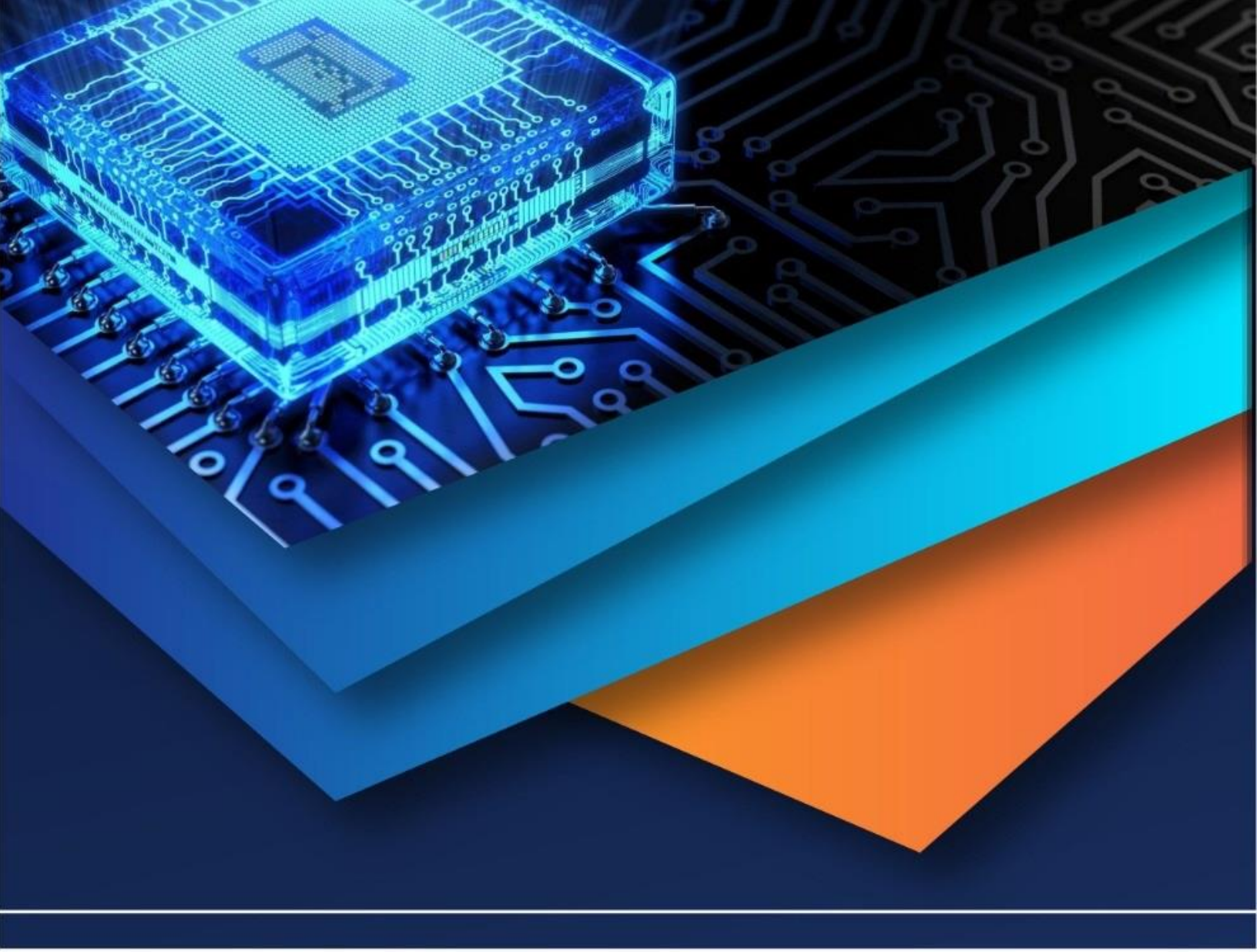

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