

Response to Issues Raised during 176th meeting of Expert Appraisal Committee

3.3.2 During the deliberation, the Committee noted the following:

- (i) The proposal is for grant of Environmental clearance for development of Access Controlled Nagpur-Mumbai Expressway from Nhava village, Jalna Taluka, Jalna District (Border) to Surala village, Vaijapur Taluka, Aurangabad District (Border) Package III in Aurangabad Division of 155 km length in the state of Maharashtra) by M/s Maharashtra State Road Development Corporation Limited.

No Comment

- (ii) Submission of certificate from QCI/NABET as Accredited EIA consultant organization who prepared EIA/EMP report of above project and self-declaration of EIA consultant organization and experts involved in preparation of EIA/EMP report.

Enclosed in Annexure I

- (iii) NOC from Archaeological survey of India as the proposed project site falls within 1.5 km to 7 km from Archaeological Monuments.

MSRDC has written letter to Archeological Department, Aurangabad for NOC. Letter is enclosed as Annexure – II.

- (iv) Justification of the choosing alignment options of the project not addressed properly in chapter-5 of EIA/EMP report.

Alignment study Report is enclosed in Annexure III. Justification for alignment also updated in Chapter – 5 of EIA/EMP report.

- (v) There is a discrepancy in EIA/EMP report regarding diversion of agriculture land area in Ha.

There was typographical mistake, diversion of agricultural land is 2349.46 hectares including interchanges. Also corrected in EIA/EMP report.

- (vi) Culverts to be constructed and designed based on the hydrological study and animals crossing paths. Wildlife Institute of India to be approached to provide locations of animal crossings if any in the proposed alignment. In case of presence of wildlife corridor/crossings in the region appropriate safeguard measures and mitigation plan to be developed by Wildlife Institute of India.

Explanation is given in Annexure IV

- (vii) Air modeling details to be furnished in tabular form like Baseline values, incremental values due to prediction and total values at all air monitoring stations.

Furnished in Annexure V

- (viii) Noise modeling details to be furnished in tabular form like Baseline values, incremental values due to prediction and total values at all noise monitoring stations.

Furnished in Annexure VI. Proposed noise barrier locations are also enclosed.

- (ix) Details traffic density study to be carried out with its impact due to proposed industrial area.

Furnished in Annexure VII

- (x) Status of Forest clearance for 26.877 ha Forest land involved.

Forest Diversion proposal submitted to Forest Department. Approval obtained from DFO, CCF, Nodal Officer and State Government. Proposal is now with Regional Office, Nagpur of MoEFCC.

- (xi) Details of public hearing issues raised, commitments made by project proponent during public hearing and also time bound action plan for implementation of same along with fund provision.

Issues raised during Public Hearing is enclosed in Annexure VIII

- (xii) Details of CSR activities proposed along with budget provision with special emphasis on water conservation and ground water rejuvenation considering that the area is drought prone region.

- MSRDC proposes to use abandoned quarry location for storing water for construction use. For this existing abandoned quarry is being identified in the vicinity of project site and these abandoned quarries will be developed for water storage. After completion of project local community can use this for their benefit.
- MSRDC has written letter to GSDC to suggest ways for conservation of water. (Letter enclosed).

- (xiii) Green belt/afforestation along the proposed road must be developed using only native species of plants. No exotic species to be used. List of native species can be procured from local forest department or Botanical Survey of India (BSI).

Will be complied



National Accreditation Board
for Education and Training

Reference No. - QCI/NABET/ENV/ACO/16/05/0167

Dated: 24 May, 2016

To,
M/S Louis Berger Consulting Pvt. Ltd,
5th Floor, Tower B, Surinder Jakhar Bhavan
Plot No.-3, Sector-32
Gurgaon-122001,
Haryana, India

Sub: Accreditation of EIA Consultant Organizations under NABET Scheme

Ref.: Your application dated December 09, 2014, subsequent correspondence on subject and office assessment at your premises between Nov. 05 - 07, 2015.

Dear Sir,

We are pleased to send you the detailed results of assessment, as per following Annexures:

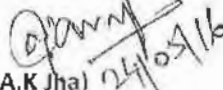
1. Annexure I - Scope of Accreditation
2. Annexure II - Result of Assessment
3. Annexure III - List of experts with approved sectors/ functional areas.
4. Annexure IV - Non-Conformances/ Observations/ Alerts
5. Annexure V - Terms and conditions of accreditation

The results of the above assessment are already mentioned in the relevant minutes of 76th RAAC dated Jan. 13, 2016. The accreditation of your organization is valid for a period of three years starting from Nov. 05, 2015.

However, please note that Version 2 of the Scheme has ceased to exist on Dec. 31, 2015. You are required to comply with requirements of Version 3 and get your accreditation renewed as intimated to you vide NABET letter/mail dated April 18 & 25, 2016.

With best regards,

Yours sincerely,


(A.K. Jha) 24/05/16
Senior Director

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEF Notification dated September 14, 2006 and subsequent amendments
		Sector Number	Name of Sector	Category	
95	Louis Berger Consulting Pvt. Ltd. * Address: B 3/6, Sector 32, Gurgaon – 122001 E-mail: mdave@louisberger.com Tel.: 0124-4044755/ 4578200 09717699584 <i>Conditions apply</i>	29	Air ports	A	7 (a)
		34	Highways, Railways, transport terminals, mass rapid transport systems	A	7 (f)
		38	Building and large construction projects including shopping malls, multiplexes, commercial complexes, housing estates, hospitals, institutions	B	8 (a)
96	M. N. Dastur and Company (Pvt.) Ltd.* Address: P – 17, Mission Row Extension, Kolkata – 700013 E-mail: sandip.m@dasturco.in Tel. : 033 – 22250500, 09433341156 <i>Conditions apply</i>	1	Mining of minerals- Open cast only	A	1 (a) (i)
		4	Thermal power plants	A	1 (d)
		8	Metallurgical industries(ferrous & non ferrous) - both primary & secondary	A	3 (a)
		11	Coke Oven Plants	A	4 (b)
		33	Ports, harbours, jetties, marine terminals, break waters and dredging	A	7 (e)
		37	Common municipal solid waste management facility (CMSWMF)	B	7 (i)
97	Mahabal Enviro Engineers Pvt. Ltd. *	4	Thermal power plants	A	1 (d)
		32	Common hazardous waste	A	7 (d)

CHAPTER - 12: DISCLOSURE OF CONSULTANTS ENGAGED

12.1 DISCLOSURE OF CONSULTANTS

Messrs Louis Berger Consulting Pvt. Ltd, have been entrusted with the Consultancy services for obtaining environmental clearance from the Ministry of Environment, Forests and Climate Change (**MoEF&CC**) , Government of India.

In order to full fill the above task, MSRDC has appointed M/s Louis Berger Consulting, Pvt. Ltd. as Consultants to carry out the above tasks.

Louis Berger is one of the largest multi-disciplinary consulting organizations in the world, being amongst the leaders in the transportation (urban roads, highways, expressways, bridges etc.), urban infrastructure development (water supply, sewerage, solid waste management, etc.) and environmental engineering sectors (as per rankings of the Engineering News Record published by McGraw Hill). With over 55 years of experience worldwide including about 50 years in South Asia, the Berger Group can draw upon the experience, versatility and innovativeness of over 5,000 professional staff members in all facets of planning, design, design vetting, supervision, project management, monitoring, evaluation, technical assistance, operation and maintenance, independent engineering, impact assessment and management of multi-faceted and complex projects worldwide.

12.2 DISCLOSURE OF PROJECT AND EIA/EMP REPORT

In order to enable timely project implementation, continued dialogue and coordination will need to take place between the Client, Consultant and relevant agencies.

Intimation on the availability of the report to the public will be made through mass media. The English version of the document will be available in the offices of MSRDC/PCB and Concerned Collectors.

This EIA report will also be made available on the websites of the MSRDC/MOEF&CC.

12.2.1 Approved Key Professional from QCI

Sl. No.	Name of the Expert	Position	Responsibility	Signature
1	Dr. D K Pandey	EIA Coordinator (Category 7(f), 8(b) Highways, Railways, transport terminals, mass rapid transport system)	Preparation of EIA and EMP, liaising with MOEF/ PCB/Forest Dept., monitoring of data etc.	
2	Dr. D K Pandey	Functional Area Expert- Ecology & Biodiversity	Study of the ecological profile of the project area	
3	Dr. D K Pandey	Functional Area Expert- Noise & Vibration	Study of Noise of the project area	
4	Mr. Anil Sharma	Functional Area Expert- Socio-economic	Study of socio-economic profile of the area, impact of development	
5	K. Mohan	Functional Area Expert- Land Use	Land use mapping	
6	Akhilesh Khairwar/Abhinav Srivastva/Dr. Basu	Functional Area Expert –Water Pollution Monitoring and Prevention Control AP	Study of water pollution source, impact analysis and mitigation measure. Also AP	
7	P.M. Agarwal/Dr. Navin Kr. Singh	Functional Area Expert –Hydrology Ground water & water conservation.	Hydrology	
8	M.S. Kotkar/ Abhinav Srivastva/Dr. Basu	Functional Area Expert –WP,SHW	Study for Water Pollution and Solid waste	
9	D M Godbole/ Dr. Gautam Basu	Geo and SC	Highway Design end Soil conservation, geological study	
10	P. Sawant	Functional Area Expert –Air Quality	Study for Air Quality	
11	Dr. D K Pandey/ Yogesh Amrale	Functional Area Expert-RH	Risk and Hazardous assessment with preparation of DMP	

12.3 Public Hearing and its compliances

Public hearing were held in the district of Jalna and Aurangabad on 3th May and 6th May 2017 respectively. The question/suggestion raised by the people and their representation has been received and incorporated in the EIA in report and related costing has been included in the Chapter-8 and 9. The Details of public hearing are provided in Annexure 7.1 (Advertisement details and minutes of meeting), Annexure 7.2 Compliance of Public hearing and Annexure 7.3 Compilation of public representation and replies.



**Maharashtra State
Development
Corp. Ltd.**

(A Govt. of Maharashtra Undertaking)

No. MSRDC/Abad/MPC/ECA/1639/2017
Date: - 15/09/2017

To,
Assistant Director,
Archaeological Survey of India,
Soneri Mahal
Dr. Babasaheb Ambedkar Marothawada University Campus
Aurangabad

Sub: - No objection Certificate

Access Controlled Nopgur - Mumbai Super Communication
Expressway (Packoge-III) -

Ref: - 176th MOM of Expert Appraisal Committee of Ministry of Environment Forest and Climate Change held on 8th September, 2017

Govt of Maharashtra has decided to construct a Super Communication access controlled Expressway between Nagpur and Mumbai. An announcement to that effect was made by the Hon'ble Chief Minister in the Maharashtra state Legislative Assembly in Budget session on 31st July 2015. Govt has entrusted this work to the MSRDC.

Maharashtra State Road Development Corporation Ltd. (MSRDCL) is undertaking this prestigious project of 701 km length as Maharashtra Prosperity Corridor (MPC) from Nagpur to Mumbai through Green Field Alignment to reduce travel time and vehicle operation cost with targeted design speed of 150 kmph.

The Assignment of carrying out feasibility study and preparation of DPR for Aurangabad Region (package-III) is entrusted to M/s. Louis Berger consulting Pvt Ltd in JV with KPMC Advisory services Pvt Ltd Gurgaon. Consultant has finalized alignment of MPC from Nhava village, Jalna Taluka, Jalna District (border) to Surala Village, Vaijapur Taluka, Aurangabad District (border) for Package-III in Aurangabad Division of 155Km length and same is approved by the Government of Maharashtra by Government Notification dated 7/09/2016. Copy of the alignment plan is enclosed herewith.

Proposed alignment site falls within few Km from Archaeological Monuments of Aurangabad District, therefore, it is requested to grant your NOC for construction of MPC. The proposal was discussed in 176th meeting of Expert Appraisal Committee of Ministry of Environment Forest and Climate Change

held on 8th September, 2017 to grant the Environmental clearance, Committee directed to submit NOC of Archaeological Department. If required by the Department, MSRDC will arrange presentation of the proposed project as per your convenience.

Being Fast track project of the state, it is requested to issue NOC at an earliest.

DA: - As above


(Sunil G Deshmukh)
Chief Engineer
MSRDC Ltd, Aurangabad

- Copy submitted to the **Joint Managing Director (A&F)**, MSRDC Ltd. Mumbai for favour of information please.
- Copy submitted to the **Nodal Chief Engineer**, MSRDC Ltd. Mumbai for favour of information please.
- Copy submitted to the **Shri Narendra Toke , Environmental Advisor**, MSRDC Ltd. Mumbai for favour of information please
- ✓ Copy to Team Leader, **M/s. Louis Berger consulting Pvt Ltd** in JV with KPMC Advisory services Pvt Ltd, 5th Floor, Tower B, Surinder Jakhar Bhavan (IFFCO), Plot No 3, Sector 32 Gurgaon, Hariyana, 122 001 Email india@louisberger.com to keep follow up

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ALIGNMENT ALTERNATIVES: SELECTION APPROACH & METHODOLOGY

Following important points have been considered in defining the alignments:

- The highway should be as direct as possible between the two points to be linked, thereby satisfying the major desire lines. A direct highway link results in economy in construction, maintenance and operation.
- The location should result in minimum interference to agriculture and industry and utilization of barren land up to maximum extent possible.
- As far as possible, the construction of expressway will be designed in such a way that it will require minimum land acquisition as per requirement given in manual of specification. The Proposed ROW envisaged at alignment selection stage is envisaged as 120.0m.
- Where the proposed location interference with utility services like overhead transmission lines, water supply lines etc., decision between changing the highway alignment and shifting the utility services should be based on study of the relative economics and feasibility.
- An important obligatory point in the selection of the route is the location of river crossings. While crossing of major rivers as far as possible right angles crossing will be preferred. Crossing of medium/ minor streams should be generally governed by the requirements of the highway alignment. If necessary, such small stretches could be made skew and located on flat curves.
- Alignment should not fall within municipal limits of towns.
- Availability of land for development of Nodes.
- Alignment option study should consider already identified/studied corridor.
- Avoidance of forest and environmental sensitive areas up to maximum extent possible
- Avoidance of archaeological importance area.
- Minimum disturbance to existing utility to avoid requirement for shifting up to maximum extent possible.
- Availability of space and additional ROW for interchange and grade separator structure near important crossings.

1.1 TYPICAL CROSS SECTION

Typical cross section of expressway have been developed as per guidelines given in manual of specifications and standards for expressway IRC SP: 99-2013.

3 lane of 3.75m width of carriageway along with 3.0m width of paved shoulder, 2.0m width of earthen shoulder with provision of 1 lane inside future widening either side have been proposed as per requirement given in TOR.

8 numbers of typical cross sections have been developed by providing depressed and flush median, with and without service road and provision of right of way for future railway line requirement.

ROW requirement based on all different type of cross sections varies from 90 m to 160 m. However for all the calculation and area requirement along the different alignments for comparison sake, a ROW of 120 m have been considered looking to the average ROW requirement and the ROW requirement given in IRC SP: 99-2013.

1.1 GREEN FIELD ALIGNMENT ALTERNATIVES

This section presents a detailed discussion of the alternative options. The road network around are shown in **Fig. 1** and all the four alignment options has been shown in **Fig. 2**. Out of 6 alignment studied in first stage alignment report following 4 alignment given below are studied in further details.

- Option 1 – North of Jalna and Aurangabad and South of Vaijapur. Total length of this option is 154.203 km.
- Option 2 – North of Jalna, after crossing Jalna moves southward and alignment is south of Aurangabad. Total length of this option is 151.744km.
- Option 3 – Further north of Option 1. Total length of this option is 155.973 km.
- Option 4 – Further north of Option 3. Total length of this option is 159.338 km.

Further based on various site visits and joint site inspection with client engineers, alignment has been updated and coordinated with Package-2 and package-4 consultants for matching start and end point of package-III.

All the four updated alignment alternative have been shown in map in **Fig. 2**. Comparison of all alignment options is given in tabular format from **Tables 1 to 3**.

1.2 DIGITAL TERRAIN MODEL AND VERTICAL PROFILE

Digital terrain model of the study corridor of package-III alignments is created using open source contour data available on World Wide Web.

Vertical profile for each of the four alignment alternatives have been developed using above said digital terrain model. This digital terrain model have been utilized for iterations and refinements in the horizontal alignment and vertical profile by working out no's of structure on each alignment specially length of viaduct and tunnels.

A cut of value criteria 15.0m in filling and 50.0 m in cutting are followed for considering viaduct and tunnels respectively. These cut of values are taken for the sake of comparison of viaduct and tunnel length calculation along the different alignment alternatives only.

Table 1 – Main Parameters Value for Options 1, 2, 3 and 4

Comparison of Studied Alignment – Engineering Aspect																	
Alignment	Flexible road Length, (km)	Relative Marking	Viaduct Length (km)	Relative Marking	Tunnel Length, (km)	Relative Marking	Underpass, (Nos.)	Relative Marking	At Grade / Interchanges, (Nos.)	Relative Marking	ROB, (Nos.)	Relative Marking	Major Bridges, (Nos.)	Relative Marking	Minor Bridges, (Nos.)	Relative Marking	Total Marking
Option 1	154.20	98.41	0.25	100.00	0.60	100.00	86.00	100.00	5.00	100.00	1.00	100.00	2.00	50.00	31.00	70.97	719.37
Option 2	151.74	100.00	4.20	5.95	1.30	46.15	72.00	100.00	5.00	100.00	1.00	100.00	6.00	16.67	22.00	100.00	568.77
Option 3	155.97	97.29	2.50	10.00	0.85	70.59	60.00	100.00	5.00	100.00	1.00	100.00	1.00	100.00	30.00	73.33	651.21
Option 4	159.34	95.23	0.25	100.00	0.95	100.00	68.00	100.00	5.00	100.00	1.00	100.00	2.00	50.00	44.00	50.00	695.23

Table 2 - Comparative Analysis of Alternative Alignments - Based on Environment & Social Aspects

Comparison of Alignment Based on Environmental and Social Issues									
Alignment	Road Length, (km)	Relative Marking	Forest Land, (%)	Relative Marking	Agricultural Land (%)	Relative Marking	Barren Land,(%)	Relative Marking	Total Marking
Option 1	154.20	98.41	1.40	100.00	85.54	98.42	10.13	100.00	396.83
Option 2	151.74	100.00	3.50	40.00	92.05	91.46	7.26	71.67	303.13
Option 3	155.97	97.29	12.16	11.51	84.19	100.00	3.52	34.78	243.58
Option 4	159.34	95.23	1.71	81.81	95.27	88.37	7.36	72.66	338.08

Table 3 -Comparative Analysis of Alternatives Alignments - Alignment Evaluation Matrix

Final Rank Matrix Based on Engineering and Environmental Issues					
Parameters	Weights	Option 1	Option 2	Option 3	Option 4
Flexible Length of Alignment	0.1	9.84	10.00	9.73	9.52
Intersection (At-Grade/Grade Separated)	0.05	5.00	5.00	5.00	5.00
Viaduct	0.1	10.00	0.60	1.00	10.00
Major Bridges	0.05	2.50	0.83	5.00	2.50
Tunnel	0.1	10.00	4.62	7.06	10.00
Forest Land	0.1	10.00	4.00	1.15	8.18
Agricultural Land	0.1	9.84	9.20	10.00	8.84
Barren Land	0.2	20.00	14.33	6.96	14.53
Approx. Civil Cost	0.2	19.34	18.14	20.00	19.74
TOTAL SCORE	1	96.52	66.72	65.89	88.32
RANK		1	3	4	2

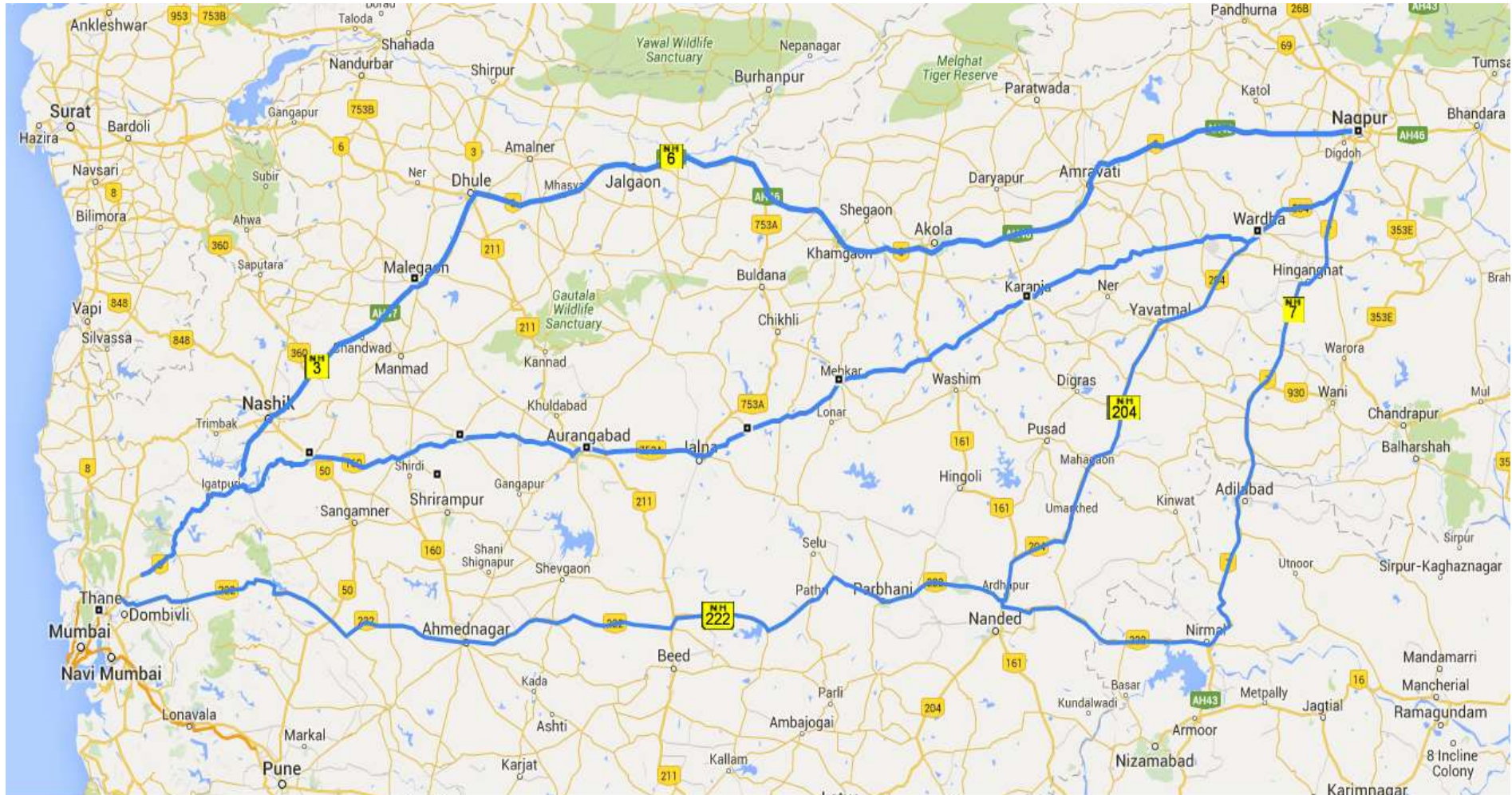


Fig. 1 – Existing Road Network between Nagpur-Mumbai



Fig. 2 - Alternatives of Package-3 of Proposed Nagur Mumbai Expressway

1.4 SELECTION/RECOMMENDATION OF ALIGNMENT

Based on 2nd Stage alignment alternative comparative analysis of engineering, social and environmental aspect of all the alignment alternatives, alignment Option-1 is recommended considering its maximum marks in alignment selection matrix criteria.

Observations given by client on dated 20th April 2016 during presentation and further discussion with client during various site visits and meeting at MSRDC Aurangabad and Mumbai for alignment finalization have all been incorporated including client suggestions to minimize forest area near Sendra based on discussion held between dated 2nd may to 6th may 2016 during consultant engineering, environmental & Social team site visit.

Following are the main features of alignment alternative option-1 and main modifications after first stage alignment submission.

- Start and end points have been matched with adjoining package-2 and Package-4 respectively and design chainage have started from 347+725 (end of package-2 chainage) and end chainage of package-3 is worked out 502+250.844.
- Alignment modification near Sendra by shifting alignment towards south side keeping it in the north side extreme boundary of Sendra industrial area for minimizing forest and tunnel/excessive cutting.
- Keeping alignment outside the Jalna and Aurangabad development plan.
- Modify alignment between chainage 376+000 to Chainage 383+000 for avoiding existing bund near Rajewadi village
- Alignment modification between chainage 348+000 to Chainage 373+000 by shifting it north side to keep alignment away from existing road and avoid hindrances near Jalna.

Note on Crossing Facility for Wild Animals

Package III of Nagpur – Mumbai Expressway is within Aurangabad Revenue Division and is spread in Jalna and Aurangabad Districts. Total Project Length is 155.067 km. There is no wild life sanctuary within 10km distance from project road (Certificate from DCF, Aurangabad is enclosed). During field study we did not found any probable migration route of wild animal. Package II of Nagpur – Mumbai Expressway which passes through wildlife sanctuary, Wildlife Department has suggested to provide few crossings of size 3m x 7m. During project preparation due care was taken for crossing any wild or domesticated animal.

Project Road has following crossing/opening for animal crossing

1. Viaduct – 4
2. Major Bridge – 6
3. Minor Bridge – 56
4. Pedestrian/Cattle underpass - 34
5. Culverts – 154

Except for culvert all structures are of dimension 3m x 7m or more. The size of culvert is 2.5m x 3m. Big culverts are provided keeping in view that such structure will also function as cattle pass. Being high speed expressway, fencing will be provided on both side specifically for the reason that no wild animal or cattle should roam on expressway. Opening in fence will be provided at only designated locations. If we consider opening provided for wild animal or cattle then on average at every 610m there is an opening to cross the project road. Apart from above mentioned structures 45 VUP, 35 LVUP, 6 interchanges has been provided along cross-roads. These opening can also be used as probable animal pass. Strip Plan showing all crossings except culverts is enclosed.

CERTIFICATE NO.:- 10

Wildlife Certificate by the Dy.C.F.

This is to certify that the area proposed for Construction of Nagpur-Mumbai Super Expressway – (Package-III) between Jalna/Buldana district border – Aurangabad/Nashik district border (in Marathwada Division) is not included in the area of any National Park, Wildlife Sanctuary or Nature reserve. Nearest wildlife Sanctuary Boundary (Gautala Wildlife Sanctuary) is located at 40km from proposed alignment of Nagpur-Mumbai Super Expressway (Chainage km453.000, near Dongaon).



Ch...
Deputy Conservator of Forest
Aurangabad Forest Division
Aurangabad

3.1 Results

The year wise predicted worst-case incremental concentrations and cumulative concentrations of pollutants are presented in Table 17 to Table 19.

Table 17 – Predicted Pollutant Concentrations – Year 2019

S. No.	Location Name	Carbon Monoxide (CO) (1-hour mg/m ³)			Particulate Matter <10µm (PM10) (24-hours µg/m ³)			Particulate Matter <2.5µm (PM2.5) (24-hours µg/m ³)			Oxides of Nitrogen (NO _x) (24-hours µg/m ³)		
		Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.
1	MIDC (Shendra Industrial Area,) Karmath (Inpira Infra)	0.41	0.23	0.64	75.13	3.36	78.49	42.46	2.02	44.48	29.58	0.03	29.61
2	Aurangabad Jalna Road Crossing	0.41	0.23	0.64	77.32	3.54	80.86	43.06	2.12	45.18	29.99	0.03	30.02
3	Daultabad Node. Maliwada (Jisa)	0.42	0.12	0.54	77.58	2.90	80.48	44.14	1.74	45.88	30.86	0.03	30.89
4	Wazirpur Node Jambergaon	0.41	0.12	0.53	75.28	3.13	78.41	43.03	1.88	44.91	29.78	0.03	29.81
5	Jalna (Nabhagaoan), Z.P. Achool Navha	0.41	0.12	0.53	74.89	3.77	78.66	42.60	2.26	44.86	29.51	0.03	29.54
6	Jalna Node Nodhona villahe(Rajlaxmi Agrotech)	0.45	0.00	0.45	75.68	1.28	76.96	43.50	0.77	44.27	30.45	0.02	30.47
NAAQ Standards		4 mg/m³			100 µg/m³			60 µg/m³			80 µg/m³		

Table 18 – Predicted Pollutant Concentrations – Year 2034

S. No.	Location Name	Carbon Monoxide (CO) (1-hour mg/m ³)			Particulate Matter <10µm (PM10) (24-hours µg/m ³)			Particulate Matter <2.5µm (PM2.5) (24-hours µg/m ³)			Oxides of Nitrogen (NO _x) (24-hours µg/m ³)		
		Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.
1	MIDC (Shendra Industrial Area,) Karmath (Inpira Infra)	0.41	0.58	0.99	75.13	10.03	85.16	42.46	6.02	48.48	29.58	0.04	29.62
2	Aurangabad Jalna Road Crossing	0.41	0.58	0.99	77.32	10.61	87.93	43.06	6.37	49.43	29.99	0.04	30.03
3	Daultabad Node. Maliwada (Jisa)	0.42	0.46	0.88	77.58	9.34	86.92	44.14	5.60	49.74	30.86	0.04	30.90
4	Wazirpur Node Jambergaon	0.41	0.46	0.87	75.28	10.15	85.43	43.03	6.09	49.12	29.78	0.04	29.82
5	Jalna (Nabhagao n), Z.P. Achool Navha	0.41	0.58	0.99	74.89	11.08	85.97	42.60	6.65	49.25	29.51	0.04	29.55
6	Jalna Node Nodhona villahe(Rajl axmi Agrotech)	0.45	0.23	0.68	75.68	5.10	80.78	43.50	3.06	46.56	30.45	0.02	30.47
NAAQ Standards		4 mg/m³			100 µg/m³			60 µg/m³			80 µg/m³		

Table 19 – Predicted Pollutant Concentrations – Year 2054

S. No.	Location Name	Carbon Monoxide (CO) (1-hour mg/m ³)			Particulate Matter <10µm (PM10) (24-hours µg/m ³)			Particulate Matter <2.5µm (PM2.5) (24-hours µg/m ³)			Oxides of Nitrogen (NO _x) (24-hours µg/m ³)		
		Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.	Baseline Conc.	Predicted Incremental Conc.	Predicted Cumulative Conc.
1	MIDC (Shendra Industrial Area,) Karmath (Inpira Infra)	0.41	1.04	1.45	75.13	20.88	96.01	42.46	12.53	54.99	29.58	0.05	29.63
2	Aurangabad Jalna Road Crossing	0.41	1.04	1.45	77.32	21.98	99.30	43.06	13.19	56.25	29.99	0.05	30.04
3	Daultabad Node. Maliwada (Jisa)	0.42	0.81	1.23	77.58	17.28	94.86	44.14	10.37	54.51	30.86	0.04	30.90
4	Wazirpur Node Jambergaon	0.41	0.92	1.33	75.28	19.02	94.30	43.03	11.41	54.44	29.78	0.04	29.82
5	Jalna (Nabhagao n), Z.P. Achool Navha	0.41	0.92	1.33	74.89	18.27	93.16	42.60	10.96	53.56	29.51	0.04	29.55
6	Jalna Node Nodhona villahe(Rajl axmi Agrotech)	0.45	0.46	0.91	75.68	7.71	83.39	43.50	4.63	48.13	30.45	0.02	30.47
NAAQ Standards		4 mg/m³			100 µg/m³			60 µg/m³			80 µg/m³		

3.2 Interpretation of Results

The worst-case concentration for all pollutants and for all years are inside the prescribed NAAQ standards.

The above results are calculated under worst-case conditions of traffic, emission rates, meteorology and baseline monitoring data. Hence it can be safely said that the actual incremental concentrations, under standard conditions, shall remain lower than the predicted values as well as prescribed limit, even up to year 2054.

Contribution any other future activities to pollution levels from have not been considered in the modeling. However, with newer technologies across sectors, better engines, better fuel availability, stringent emission norms it is expected that the actual incremental concentrations shall remain lower than the predicted values.

Annexure-VI

Noise level predictions for the receptors along the proposed Expressway

S. No	Name of Locations	Baseline 'dB(A)***' Area 2016	Incremental Value dB(A)	Predictions dB(A) 2019	Incremental Value dB(A)	Predictions dB(A) 2024	Incremental Value dB(A)	Predictions dB(A) 2029	Incremental Value dB(A)	Predictions dB(A) 2034	Incremental Value dB(A)	Predictions dB(A) 2039	Incremental Value dB(A)	Predictions dB(A) 2044	Incremental Value dB(A)	Predictions dB(A) 2049
1	Jalna Node - Nidhona Village, 3.0 Meter From Rajlaxmi A.grotech	59	1	60	2	61	4	63	5	64	5	64	6	65	7	66
2	MIDC ShendraIndustries Area, Karmath 5.0 Meter From Inspira Infra	60	1	61	2	62	5	65	5	65	6	66	7	67	7	67
3	Steeping Stone AurangabadJalgaon Road Crossing Sawangi Market 2.0 Meter From Steeping Stone	60	1	61	2	62	4	64	5	65	5	65	6	66	7	67
4	Daultabad Node - Maliwada 1.0 Meter from JISA	59	1	60	2	61	4	63	4	63	5	64	6	65	6	65
5	Waizapur Node Jambergaon, 6.0 Meter From Jambargaon	53	2	55	3	56	5	58	6	59	6	59	7	60	8	61
6	Jalna Near By starting Point Nabhagaon, 2.0 Meter From Z.P School Navha	52	0	52	2	54	4	56	5	57	5	57	6	58	7	59

Table 4.14: Proposed Noise Barrier Location & Distance from Proposed - ROW

S. NO	District	Taluka	Village	From	To	Length	Detail of Habitations/ Villages located within 500 mtrs from the proposed ROW of Nagpur-Mumbai Expressway project		
							Distance from the ROW Edge of the proposed Corridor (both side in Mtrs)	Length of Habitation/Village along with Project corridor , where noise barrier proposed	Side
1.	Jalna	Jalna	Nandapur	354.126	356.292	2.166	350	210	Left
2.			Thar	356.292	358.151	1.859	160	105	Right
3.			Panshendra	358.883	363.059	4.176	0	275	Right
							135	250	Left
4.		Ambadkarwadi	368.105	370.515	2.41	460	85	Right	
5.		Badna Pur	Khadgaon	371.585	375.539	3.954	40	215	Right
6.			Keligavhan	377.056	378.461	1.405	500	250	Right
7.			Nikalak	380.625	383.588	2.963	90	120	Right
8.			Akola	383.588	385.228	1.64	205	390	Left
9.			Dudhanwadi	387.43	390.368	2.938	25	300	Left
Total length of Proposed Noise Barrier in Jalna District							1215		
1.	Aurangabad	Aurangabad	Jalgaon Feran	391.189	393.887	2.698	65	300	Right
2.							30	80	Left
3.			Dudhad	397.565	399.526	1.961	90	500	Right
4.			Bhambarda	399.526	401.117	1.591	70	200	Right
5.			Jaipur	401.454	405.167	3.713	90	160	Right
6.			Gangapur Jahagir	408.893	410.373	1.48	140	120	Right
7.			Kachhighati	411.958	412.983	1.025	265	125	Right
8.			Bakapur	414.7	414.765	0.065	150	105	Right
9.				415.2	415.7	0.5			
10.			Palshi	414.544	417.329	2.785	40	150	Right

S. NO	District	Taluka	Village	From	To	Length	Detail of Habitations/ Villages located within 500 mtrs from the proposed ROW of Nagpur-Mumbai Expressway project			
							Distance from the ROW Edge of the proposed Corridor (both side in Mtrs)	Length of Habitation/Village along with Project corridor , where noise barrier proposed	Side	
11.			Kanhapur	417.329	418.239	0.91	120	150	Right	
12.			Kolthana	419.95	421.555	1.605	90	100	Left	
13.			Naigaon	424.017	426.168	2.151	230	250	Right	
14.				426.459	426.734	0.275				
15.			Gavadari Tanda	430.519	430.555	0.036	160	150	Right	
16.				430.575	431.484	0.909				
17.			Rahatpatti Tanda	431.484	432.121	0.637	110	115	Left	
18.			Jatwada	432.121	434.102	1.981	335	510	Right	
19.			Jogwada	434.102	437.391	3.289	130	210	Right	
20.			Abdimandi	437.391	437.81	0.419	200	300	Right	
21.				438.07	440.432	2.362				
22.			Maliwada	440.432	443.255	2.823	425	500	Right	
23.		Gangapur	Fatiyabad	443.255	445.15	1.895	267	170	Right	
24.			Pekalwadi	445.651	445.722	0.071	30	60	Left	
25.				445.935	447.271	1.336	130	80	Left	
26.				Takli	447.271	449.444	2.173	290	350	Left
27.				Dongaon	451.373	457.343	5.97	450	250	Right
28.		Vaija pur	Lasurgaon	464.122	468.018	3.896	65	525	Left	
29.				Hadas Pimpalgaon	468.018	470.278	2.26	400	530	Left
30.				Agar Saigaon	483.423	484.986	1.563	180	255	Right
			Total length of Proposed Noise Barrier in Aurangabad District					3810		
s			Total length of Proposed Noise Barrier					5025		

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1 TRAFFIC FORECAST AND TOLL STRATEGY

1.1 Introduction

This chapter presents the traffic forecast carried out for the Package 3 of Nagpur – Mumbai Expressway. The results of this analysis will form inputs for forecasting toll traffic and revenue, deciding tolling strategy, planning and designing the pavement, developing capacity augmentation proposals, designing the toll plaza.

The Expressway traffic would consist of three types:

1. Diverted Traffic: This is traffic based on trips that are already being made between various origin and destinations impacted by the Expressway route. In this case, the diversion of such traffic to the Expressway would be estimated.
2. Generated Traffic: This is traffic based on new trips that would be generated due to the development of new nodes along the expressway alignment.
3. Induced Traffic: This is traffic that is based on trips that were not taken earlier due to lack of desired infrastructure.

The following section presents the data, analysis and results for the estimation of diverted traffic followed by generated and induced traffic in the subsequent sections. The fifth section discusses traffic growth rates for future forecast and the final section presents the traffic forecast for the Expressway Package 3 for a 30 year period.

1.2 Estimation of Diverted Traffic for Base Year

The estimation of diverted traffic was done by a two-step process:

1. Step 1: Estimation of Non-Local Traffic – based on the analysis of OD Survey and Traffic Count Data.
2. Step 2: Estimation of Diversion Rates – based on generalized cost analysis

The analysis of traffic count and OD survey data has been presented in the previous chapter. First non-local traffic was obtained from the OD analysis mapped to the various interchanges along the Expressway alignment. The share of non-local traffic thus obtained is given in **Table 1**.

Table 1: Non-Local Traffic

Vehicle Type	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6
Car	93%	48%	80%	60%	72%	98%
Bus	91%	94%	90%	91%	95%	99%
LCV	91%	74%	84%	57%	77%	77%
2-Axle Trucks	92%	66%	87%	79%	89%	99%
3-Axle Trucks	95%	79%	95%	79%	94%	98%
4-6 Axle Trucks	98%	79%	97%	86%	93%	99%
>6 Axle Trucks	100%	60%	100%	100%	50%	0%

The Generalized Cost (GC) function used is as follows:

Generalized Cost (GC) = VOC*TL+VOT*TT+TR

Where

VOC – Vehicle Operating Cost (**Table 2**)

VOT – Value of Time (**Table 3**)

TT – Travel Time

TR – Toll Rates (**Table 4**)

TL – Trip Length

Vehicle Operating Cost and Value of Time values were based on the IRC: SP: 30 - 2012. These values were inflated for current prices as per the tables provided in IRC: SP: 30 - 2012. Toll Rates were based on notifications by the Government of India. Escalation rate used for these analyses are 5%

Table 2: Vehicle Operating Cost (INR/km) FY 17

Vehicle Type	NH/SH	Expressway
Car	11.77	10.33
Bus	48.43	42.19
LCV	17.48	15.98
2-Axle Trucks	19.41	17.30
3-Axle Trucks	31.47	27.96
4-6 Axle Trucks	31.47	27.96
>6 Axle Trucks	31.47	27.96

Table 3: Value of Time (INR/Minute) FY 17

Vehicle Type	Value of Time
Car	4.80
Bus	3.90
LCV	1.70
2-Axle Trucks	1.70
3-Axle Trucks	1.70
4-6 Axle Trucks	1.70
>6 Axle Trucks	1.70

Table 4: Toll Rates (INR/km)-FY 17

Vehicle Type	NH/SH	Expressway
Car	0.0	1.41
Bus	0.0	4.79
LCV	0.0	2.28
2-Axle Trucks	0.0	4.79
3-Axle Trucks	0.0	5.23
4-6 Axle Trucks	0.0	5.23
>6 Axle Trucks	0.0	7.51

Annex- 5 provides a study of alternate routes for the Expressway Package 3 alignment. It provided the following insights:

1. The Expressway Package 3 alignment between Jalna and Daulatabad/ Aurangabad has only one alternate route considering both long and short distance traffic.
2. The Expressway Package 3 alignment between Daulatabad/Aurangabad and Vaijapur has three alternate routes considering long distance traffic and two alternate routes considering short distance traffic.
3. The route choice for short distance traffic for Daulatabad-Vaijapur section is expected to be dependent on exact location of origin-destination as the two alternate routes have similar travel time and distance
4. The Expressway Package 3 alignment between Daulatabad/Aurangabad and Vaijapur is expected to have the following alternate routes:
 - a. Aurangabad-Vaijapur-Igatpuri-Thane-Mumbai
 - b. Aurangabad-Nashik-Igatpuri-Thane-Mumbai
 - c. Aurangabad-Ahmednagar-Lonavala-Mumbai

The Expressway Package 3 alignment can thus be divided into two sections:

1. Jalna to Aurangabad/Daulatbad with one alternate route
2. Aurangabad/Daulatbad to Vaijapur with three alternate routes

Further, the diversion rates calculated using the Cost Ratios given below.

This analysis is based on the guidance provided by the Road User Cost Study 2000 for India, and the diversion curve equations derived under the Technical Assistance Programme funded by ADB for Ministry of Transport.

CR = Cost of Expressway Route/Cost of Alternate Route

Car

CR ≤ 0.634

Diversion Rate = 98.750 - (CR/0.634) * 8.125

0.634 ≤ CR ≤ 1.465

Diversion Rate = 90.625 - ((CR-0.634)/0.831) * 84.375

1.465 ≤ CR ≤ 2.0

Diversion Rate = 6.25 - ((CR-1.465)/0.535) * 5.25

Truck & Bus

CR ≤ 0.750

Diversion Rate = 100 - ((CR/0.75) * 5)

0.750 ≤ CR ≤ 1.250

Diversion Rate = 95 - ((CR-0.75)/0.5) * 90

1.250 ≤ CR ≤ 2.0

Diversion Rate = ((2-CR)/0.75) * 5

Table 5 shows the diversion rate obtained after this analysis and **Table 6** shows the diverted traffic by vehicle type on application of non-local traffic share and diversion rate to the corridor traffic obtained through traffic counts and adjusted for seasonality.

Table 5: Diversion Rate

Vehicle Type	Three Alternate Routes	One Alternate Route
Car	81%	82%
Bus	84%	87%
LCV	76%	80%
2-Axle Trucks	65%	68%
3-Axle Trucks	73%	77%
4-6 Axle Trucks	73%	76%
>6 Axle Trucks	62%	66%

Table 6: Diverted Traffic Estimate for Base Year: Section 1-2 Vajapur to Lasur

Vehicle Type	Traffic (from Counts)	Non-Local Traffic	Diversion Rate	Diverted Traffic
Car	2,013	48%	81%	783
Bus	119	94%	84%	94
LCV	837	74%	76%	471
2-Axle Trucks	330	66%	65%	142
3-Axle Trucks	414	79%	73%	239
4-6 Axle Trucks	437	79%	73%	252
>6 Axle Trucks	56	60%	62%	21

Table 7: Diverted Traffic Estimate for Base Year: Section 2-3 Lasur to Daulatabad

Vehicle Type	Corridor Traffic	Non-Local Traffic	Diversion Rate	Diverted Traffic
Car	3,913	80%	81%	2536
Bus	333	90%	84%	252
LCV	903	84%	76%	576
2-Axle Trucks	593	87%	65%	335
3-Axle Trucks	994	95%	73%	689
4-6 Axle Trucks	730	97%	73%	517
>6 Axle Trucks	60	100%	62%	37

Table 8: Diverted Traffic Estimate for Base Year: Section 3-4 Daulatabad to Sawangi

Vehicle Type	Corridor Traffic	Non-Local Traffic	Diversion Rate	Diverted Traffic
Car	5,615	60%	81%	2729
Bus	1,421	91%	84%	1086
LCV	2,558	57%	76%	1108
2-Axle Trucks	764	79%	65%	392
3-Axle Trucks	994	79%	73%	573
4-6 Axle Trucks	1,125	86%	73%	706
>6 Axle Trucks	72	100%	62%	45

Table 9: Diverted Traffic Estimate for Base Year: Section 4-5 Sawangi to Karmad

Vehicle Type	Corridor Traffic	Non-Local Traffic	Diversion Rate	Diverted Traffic
Car	5,738	72%	82%	3388
Bus	1,087	95%	87%	898
LCV	1,679	77%	80%	1034
2-Axle Trucks	1,035	89%	68%	626
3-Axle Trucks	1,102	94%	77%	798
4-6 Axle Trucks	1,231	93%	76%	870
>6 Axle Trucks	85	50%	66%	28

Table 10: Diverted Traffic Estimate for Base Year: Section 5-6 Karmad to Jalna

Vehicle Type	Corridor Traffic	Non-Local Traffic	Diversion Rate	Diverted Traffic
Car	5,738	98%	82%	4611
Bus	1,070	99%	87%	922
LCV	1,608	77%	80%	991
2-Axle Trucks	1,035	99%	68%	697
3-Axle Trucks	1,102	98%	77%	832
4-6 Axle Trucks	1,231	99%	76%	926
>6 Axle Trucks	65	0%	66%	0

The total traffic diverted to the Expressway is estimated to be about 6,500 vehicles per day for most of the sections of Expressway Package 3 alignment.

1.3 Estimation of Generated Traffic

Generated traffic constitutes the new trips created due to the development of following four prosperity hubs/nodes proposed along the Expressway Package 3 alignment:

1. Jalana
2. Karmad
3. Daultabad
4. Vaijapur

The silent features of the prosperity hubs proposed along the expressway are as follows:

- 4 prosperity hubs to be developed along the expressway
- Located on the Nodes/ Interchanges, where connectors meet the Prosperity Corridor, at every 30 to 40 km interval along the expressway
- Prosperity hub would facilitate industrial as well as socio-economic development along the Prosperity Corridor
- Development of prosperity hub will lead to employment generation, growth of state GDP, rise in standards of living, easy availability of consumer goods, increase in income level and different opportunities for Business
- Depending upon Need & Potential, Prosperity hub will be developed as Tourism hub, Education Hub, Satellite city, Industrial hub, Agro base Industrial hub etc.

Table 11 summarizes the various aspects of the four nodes mentioned above.

Table 11: Development Nodes: Summary

Item	Jalna	Karmad	Daultabad	Vaijapur
Total Area of the Node	1,183	1,063	1,065	1,027
Area occupied by the existing habitat	58	27	23	10
Interchange Area	75	75	75	75
Right of Way compensation area	98	114	108	144
Node acquisition compensation area	281	259	261	254
Area for common utilities and town facilities	337	311	313	305
Area with MSRDC for commercial exploitation	333	278	286	238

The following assumptions were made in estimation of generated traffic for these nodes.

- Most land uses to be developed over a 6 year period with 30% development in year 1, 60% by year 3 and 100% by year 6.
- Certain exceptions apply, such as, sewage treatment plant, electrical substation that would be developed in a shorted time frame.
- Trips on the expressway
 - Non-Local Trips – 25% of total trips generated by new nodes
 - Trips on Expressway – 80% of non-local trips
- Traffic on expressway is divided into passenger and goods vehicles as follows:
 - Passenger – 75%
 - Goods – 25%

Trip Generation rates that are provided in **Table 12** were based on previous studies, experiences and industry standards. The Generated traffic was then distributed to the different Expressway interchanges based on the OD Survey data.

Table 12: Trip Generation Rates

Vehicle Type	Agro Industries/ Cold Storage	Residential/ Commercial	Truck Terminal/ Contained Yard	Recreational	Public Purpose/ Amenities
Car	14.2	47.4	9.5	14.2	9.5
Bus	0.9	4.4	0.9	0.9	0.9
Trucks	2.1	4.2	4.2	0.0	0.8
LCV	2.3	2.3	2.3	0.1	0.5
MAV	1.1	2.1	2.1	0.0	0.4

1.3.1 Jalna

Jalna node has a potential to develop as Ancillary Industry Hub due to the following reasons:

- Development of Ancillary industries such as cotton processing mills, seeds processing, small machine components manufacturing, and auto components manufacturing
- MIDC industrial area and auto manufacturing companies in Shendre to boost the requirement of ancillary products
- Potential industry players could be agro based industries and auto component manufacturing.
- Major industries include pulses mills, oil mills, refineries, steel rolling, plastic, tiles & cement pipe, fertilizers, insecticides, pesticides and the co-operative sugar factories in Jalna district
- Presence of cotton ginning and pressing industries due to APMC handling large quantity of cotton
- JNPT dry port near Jalna city is coming up to enhance the export facility
- MIDC has set up an industrial area in Jalna consisting of large-scale, medium scale and small scale industries and has announced to build Bio-Technology park
- Jalna MIDC industrial area has a large number of steel rolling mills, a unit manufacturing ball bearings, agro based units like dal mills and most significant being large number of seed manufacturing units
- There are 9 industrial areas under MIDC JALNA
- Jawar, Bajra, Wheat, Pulses, Groundnuts, Cotton, Sugarcane are the major crops

Figure 1 shows the development plan for Jalna Node and the land use distribution is given in **Table 13**

Figure 1: Jalna Node Development Plan



Table 13: Jalna Node: Land Use Distribution

Land Use	Area (in ha)	Share
Agro Industries	261	22.1%
Cold storage	39	3.3%
Residential	125	10.6%
Staff housing	6	0.5%
Central Business District	22	1.8%
General Commercial	100	8.4%
Local commercial	10	0.8%
Institutional	35	2.9%
Healthcare	10	0.8%
Sports complex	17	1.4%
Central Park	14	1.2%
Exhibition center	35	3.0%
Truck Terminal	10	0.9%
Container Yard	27	2.2%
Bus Depot	13	1.1%
Electric Substation	9	0.7%
Sewage Treatment Plant	11	0.9%
Recreational Area	54	4.6%
Green Buffer and Solar Farm	98	8.3%
Road Area	203	17.2%
Existing Village	30	2.5%
Buffer area around villages	30	2.5%
Existing industries	27	2.3%
Total	1,183	100%

The node development is assumed to take place in phases over a 9 year period from 2016. Therefore, three phase development is assumed to be completed in 2019, 2022 and 2025 as given in **Table 14**.

Table 14: Jalna Node: Development Phasing

Land Use	2019	2022	2025
Agro Industries	30%	60%	100%
Cold storage	30%	60%	100%
Residential	30%	60%	100%
Staff housing	100%	100%	100%
Central Busines District	30%	60%	100%
General Commercial	30%	60%	100%
Local commercial	50%	100%	
Institutional	30%	60%	100%
Healthcare	50%	100%	100%
Sports complex	30%	60%	100%
Central Park	30%	60%	100%
Exhibition center	30%	60%	100%
Truck Terminal	30%	60%	100%
Container Yard	30%	60%	100%
Bus Depot	30%	60%	100%
Electric Substation	100%	100%	100%
Sewage Treatment Plan	100%	100%	100%
Recreational Area	30%	60%	100%

Table 15, Table 16 and **Table 17** show the expressway traffic generated per day because of the development of Jalna Node in 2019, 2022 and 2025 respectively.

Table 15: Jalna Node: Node Trips Generated per Day in 2019

Land Use	Car	Bus	Trucks	LCV	MAV
Agro Industries	223	14	33	37	16
Cold storage	33	2	5	5	2
Residential	356	33	32	18	16
Staff housing	59	6	5	3	3
Central Busines District	61	6	5	3	3
General Commercial	284	27	25	14	13
Local commercial	47	4	4	2	2
Institutional	98	9	9	5	4
Healthcare	47	4	4	2	2
Sports complex	14	1	0	0	0
Central Park	12	1	0	0	0
Exhibition center	30	2	0	0	0
Truck Terminal	6	1	3	1	1
Container Yard	15	1	7	4	3
Bus Depot	2	0	0	0	0
Electric Substation	4	0	0	0	0
Sewage Treatment Plan	5	0	2	5	0
Recreational Area	46	3	0	0	0

Table 16: Jalna Node: Node Trips Generated per Day in 2022

Land Use	Car	Bus	Trucks	LCV	MAV
Agro Industries	446	28	66	73	33
Cold storage	66	4	10	11	5
Residential	712	67	63	35	32
Staff housing	59	6	5	3	3
Central Busines District	122	11	11	6	5
General Commercial	567	53	50	28	25
Local commercial	95	9	8	5	4
Institutional	197	18	17	10	9
Healthcare	95	9	8	5	4
Sports complex	28	2	0	0	0
Central Park	24	2	0	0	0
Exhibition center	60	4	0	0	0
Truck Terminal	12	1	5	3	3
Container Yard	30	3	13	7	7
Bus Depot	4	0	0	0	0
Electric Substation	4	0	0	0	0
Sewage Treatment Plan	5	0	2	5	0
Recreational Area	93	6	0	1	0

Table 17: Jalna Node: Node Trips Generated per Day in 2025

Land Use	Car	Bus	Trucks	LCV	MAV
Agro Industries	743	46	110	122	55
Cold storage	110	7	16	18	8
Residential	1186	111	105	59	53
Staff housing	59	6	5	3	3
Central Busines District	204	19	18	10	9
General Commercial	945	88	84	47	42
Local commercial	95	9	8	5	4
Institutional	328	31	29	16	15
Healthcare	95	9	8	5	4
Sports complex	47	3	0	0	0
Central Park	41	3	0	0	0
Exhibition center	100	6	0	1	0
Truck Terminal	19	2	9	5	4
Container Yard	50	5	22	12	11
Bus Depot	6	0	0	0	0
Electric Substation	4	0	0	0	0
Sewage Treatment Plan	5	0	2	5	0
Recreational Area	154	10	0	1	0

1.3.2 Karmad

Karmad node has a potential to develop as a Logistics center due to the following reasons:

- With industrial development and Medicine Hub, the region is expected to provide a strong growth opportunities for warehousing and logistics activities
- Mega industrial park at Shendra is expected to provide boost to logistics activity (industrial goods, consumer durables)
- The node is proposed to develop as logistic center for nearby industrial areas and is to be equipped with ICT and automation to facilitate smooth flow of traffic
- Logistic center will also play a vital role for e-commerce in the region
- Potential for development of super specialty hospital in town as the catchment area does not have a good specialty hospital. With the development of node, the demand for good medical facilities will increase.
- With increased logistics activity, there will be a requirement of automotiv service center
- With the increasing industrialization and low level of literacy levels, skill development institute can be a game changer
- With the growing industries, potential for good schools and engineering institute will increase. With the development of node and increasing habitation, the need for good education institutes will rise.

- Affordable housing for industry workers and node habitants will be a great need

Figure 2 shows the development plan for Karmnad node and the land use distribution is given in Table 18.

Figure 2: Karmnad Node Development Plan

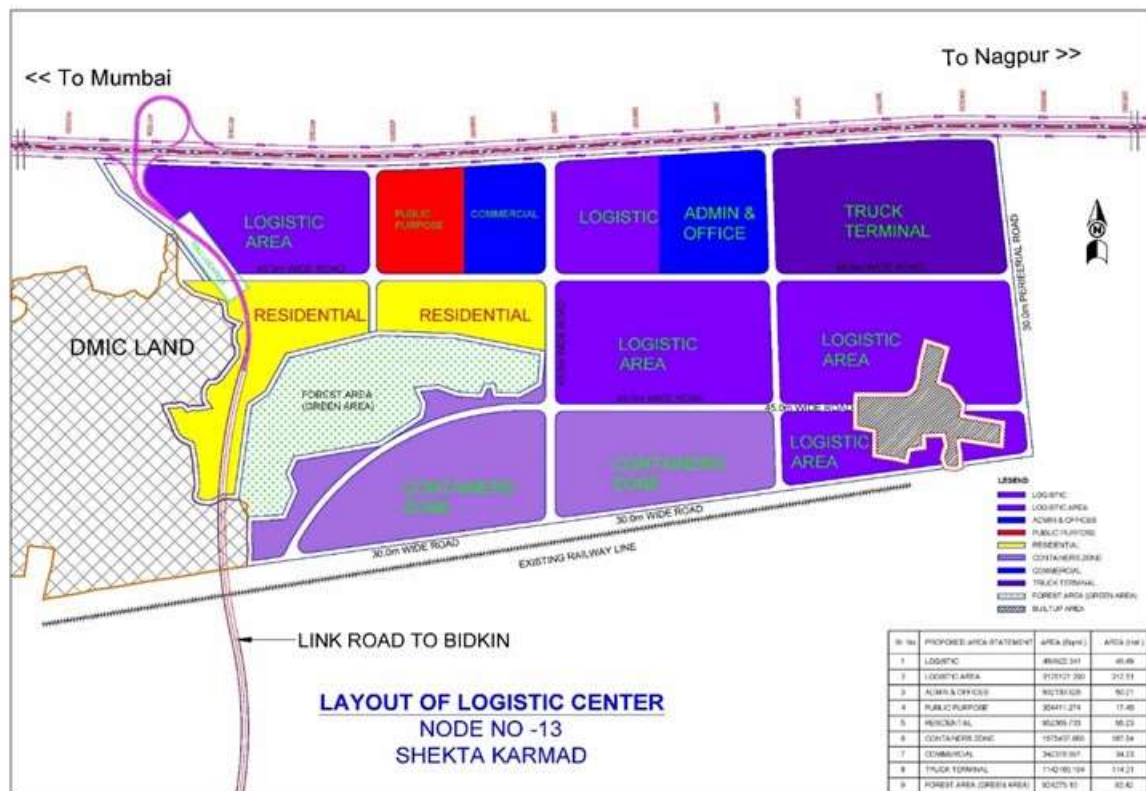


Table 18: Karmnad Node: Land Use Distribution

Land Use	Area (in ha)	Share
Logistics	391	36.8%
Admin and offices	50	4.7%
Public purpose	18	1.6%
Residential	95	9.0%
Container Zone	125	11.8%
Commercial	34	3.2%
Truck Terminal	20	1.9%
Forest Area	92	8.7%
Roads	190	17.9%
Existing Village and Industries	27	2.5%
Buffer zone around existing	20	1.9%
Total Area	1,063	100%

The node development is assumed to take place in phases over a 9 year period from 2016. Therefore, three phase development is assumed to be completed in 2019, 2022 and 2025 as given in **Table 19**.

Table 19: Karmad Node: Development Phasing

Land Use	2019	2022	2025
Logistics	30%	60%	100%
Admin and offices	30%	60%	100%
Public purpose	30%	60%	100%
Residential	30%	60%	100%
Container Zone	30%	60%	100%
Commercial	30%	60%	100%
Truck Terminal	30%	60%	100%

Table 20, **Table 21** and **Table 22** show the expressway traffic generated per day because of the development of Karmad Node in 2019, 2022 and 2025 respectively.

Table 20: Karmad Node: Node Trips Generated per Day in 2019

Land Use	Car	Bus	Trucks	LCV	MAV
Logistics	334	21	99	55	49
Admin and offices	143	13	13	7	6
Public purpose	10	1	1	0	0
Residential	271	25	24	13	12
Container Zone	71	7	32	18	16
Commercial	97	9	9	5	4
Truck Terminal	11	1	5	3	3

Table 21: Karmad Node: Node Trips Generated per Day in 2022

Land Use	Car	Bus	Trucks	LCV	MAV
Logistics	668	42	197	110	99
Admin and offices	286	27	25	14	13
Public purpose	20	2	2	1	1
Residential	542	51	48	27	24
Container Zone	142	13	63	35	32
Commercial	195	18	17	10	9
Truck Terminal	23	2	10	6	5

Table 22: Karmad Node: Node Trips Generated per Day in 2025

Land Use	Car	Bus	Trucks	LCV	MAV
Logistics	1114	70	329	183	164
Admin and offices	476	45	42	23	21
Public purpose	33	3	3	2	1
Residential	903	85	80	45	40
Container Zone	237	22	105	59	53
Commercial	324	30	29	16	14
Truck Terminal	38	4	17	9	8

1.3.3 Daulatabad

Daulatabad Maliwada node has a potential to develop as Tourism Center due to the following reasons:

- Epicenter of the tourist destinations
- It is 15 km from Aurangabad city, 16 km from Bibi ka Maqbara which is a replica of Taj Mahal, 13 km from Ellora caves and 14 km from Grishneshwar
- It is known for Daulatabad fort which comes on the way in a journey from Aurangabad to Ajanta & Ellora caves
- It is considered as one of the seven wonders of Maharashtra
- It has a great potential to be developed for recreational activities
- The node can be developed as a full-fledged tourist circuits due to proximity of many notable tourist destinations
- With the presence of good hospitality industry, Daulatabad has the potential become one of the top tourist destination in Maharashtra
- Development of tourism support activities such as hotels, restaurants, resorts and entertainment facilities will drive the growth of the hub
- Presence of tour operators and travel industry will boost the economic activities

Figure 3 shows the development plan for Daulatabad node and the land use distribution is given in **Table 23**.

Figure 3: Daultabad Node Development Plan

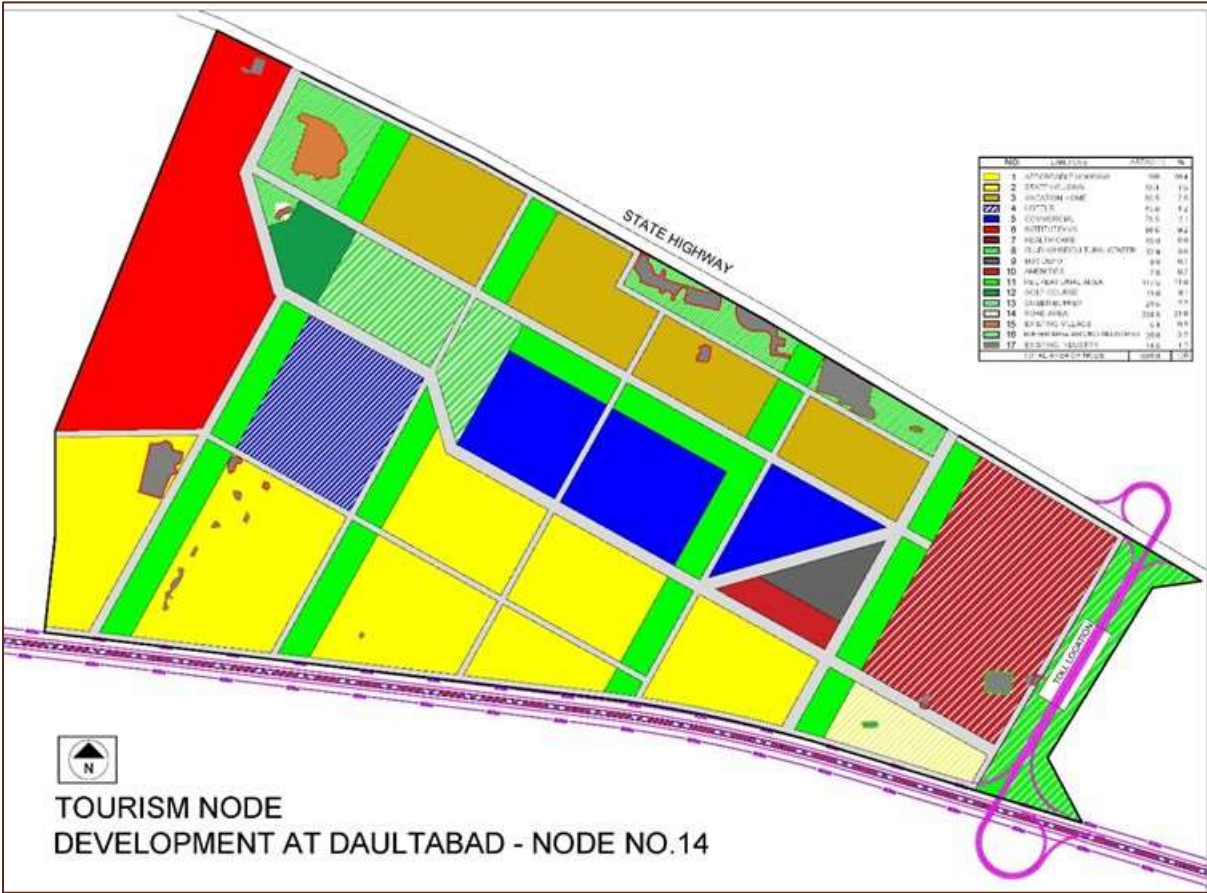


Table 23: Daulatabad Node: Land Use Distribution

Land Use	Area (in ha)	Share
Affordable Housing	180	17.0%
Staff housing	16	1.5%
Vacation home	81	7.6%
Hotels and related industries	85	8.0%
Commercial	79	7.4%
Institutional	99	9.3%
Healthcare	25	2.4%
Club house & cultural center	38	3.6%
Bus depot	10	0.9%
Amenities	8	0.7%
Recreational Area & tourism activities	118	11.1%
Golf course	11	1.0%
Green Buffer	25	2.3%
Road Area	235	22.1%
Existing village	5	0.5%
Buffer area around industries	35	3.3%
Existing industries	15	1.4%
Total Area	1,065	100%

The node development is assumed to take place in phases over a 9 year period from 2016. Therefore, three phase development is assumed to be completed in 2019, 2022 and 2025 as given in **Table 24**.

Table 24: Daulatabad Node: Development Phasing

Land Use	2019	2022	2025
Affordable Housing	30%	60%	100%
Staff housing	100%	100%	100%
Vacation home	30%	60%	100%
Hotels and related industries	30%	60%	100%
Commercial	30%	60%	100%
Institutional	30%	60%	100%
Healthcare	50%	100%	100%
Club house & cultural center	30%	60%	100%
Bus depot	30%	60%	100%
Amenities	30%	60%	100%
Recreational Area & tourism activities	30%	60%	100%
Golf course	30%	60%	100%

Table 25, Table 26 and Table 27 show the expressway traffic generated per day because of the development of Daulatabad Node in 2019, 2022 and 2025 respectively.

Table 25: Daulatabad Node: Expressway Traffic Generated per Day in 2019

Land Use	Car	Bus	Trucks	LCV	MAV
Affordable Housing	256	24	23	13	11
Staff housing	156	15	14	8	7
Vacation home	69	4	0	1	0
Hotels and related industries	242	23	21	12	11
Commercial	223	21	20	11	10
Institutional	281	26	25	14	12
Healthcare	119	11	11	6	5
Club house & cultural center	32	2	0	0	0
Bus depot	1	0	0	0	0
Amenities	4	0	0	0	0
Recreational Area & tourism activities	100	6	0	1	0
Golf course	9	1	0	0	0

Table 26: Daulatabad Node: Expressway Traffic Generated per Day in 2022

Land Use	Car	Bus	Trucks	LCV	MAV
Affordable Housing	512	48	45	25	23
Staff housing	156	15	14	8	7
Vacation home	137	9	0	1	0
Hotels and related industries	484	45	43	24	21
Commercial	447	42	40	22	20
Institutional	561	53	50	28	25
Healthcare	237	22	21	12	11
Club house & cultural center	65	4	0	1	0
Bus depot	3	0	0	0	0
Amenities	9	1	1	0	0
Recreational Area & tourism activities	201	13	0	2	0
Golf course	19	1	0	0	0

Table 27: Daulatabad Node: Expressway Traffic Generated per Day in 2025

Land Use	Car	Bus	Trucks	LCV	MAV
Affordable Housing	854	80	76	42	38
Staff housing	156	15	14	8	7
Vacation home	229	14	0	2	0
Hotels and related industries	806	75	71	40	36
Commercial	745	70	66	37	33
Institutional	936	88	83	46	41
Healthcare	237	22	21	12	11
Club house & cultural center	108	7	0	1	0
Bus depot	5	0	0	0	0
Amenities	15	1	1	1	1
Recreational Area & tourism activities	334	21	0	3	0
Golf course	31	2	0	0	0

1.3.4 Vaijapur

Vaijapur node has a potential to develop as Agro based Industry Hub due to the following reasons:

- The Vaijapur is one of few areas in Aurangabad to grow vegetables
- Agro business trading hub for food processing industries, cotton & textiles, agro-chemical industries and warehouse with handling/ packaging, storage and transportation facilities are proposed to be developed to augment the agro business handling by the APMC
- Agro business hub to act as distribution centre for cotton, sugarcane, onions and other commodities

- Potential for development of super specialty hospital in town as the catchment area does not have a good specialty hospital. With the development of node, the demand for good medical facilities will increase.
- With the development agro business hub, the demand for cold storage will increase to store produce from nearby areas especially to preserve the perishable fruits
- With the increasing industrialization and low level of literacy levels, skill development institute can be a game changer
- With the growing industries, potential for good schools and engineering institute will increase. With the development of node and increasing habitation, the need for good education institutes will rise.
- To provide transportation and distribution facilities as well as a logistics information center to agro processing industry.

Figure 4 shows the development plan for Vaijapur node and the land use distribution is given in Table 28.

Figure 4: Vaijapur Node Development Plan

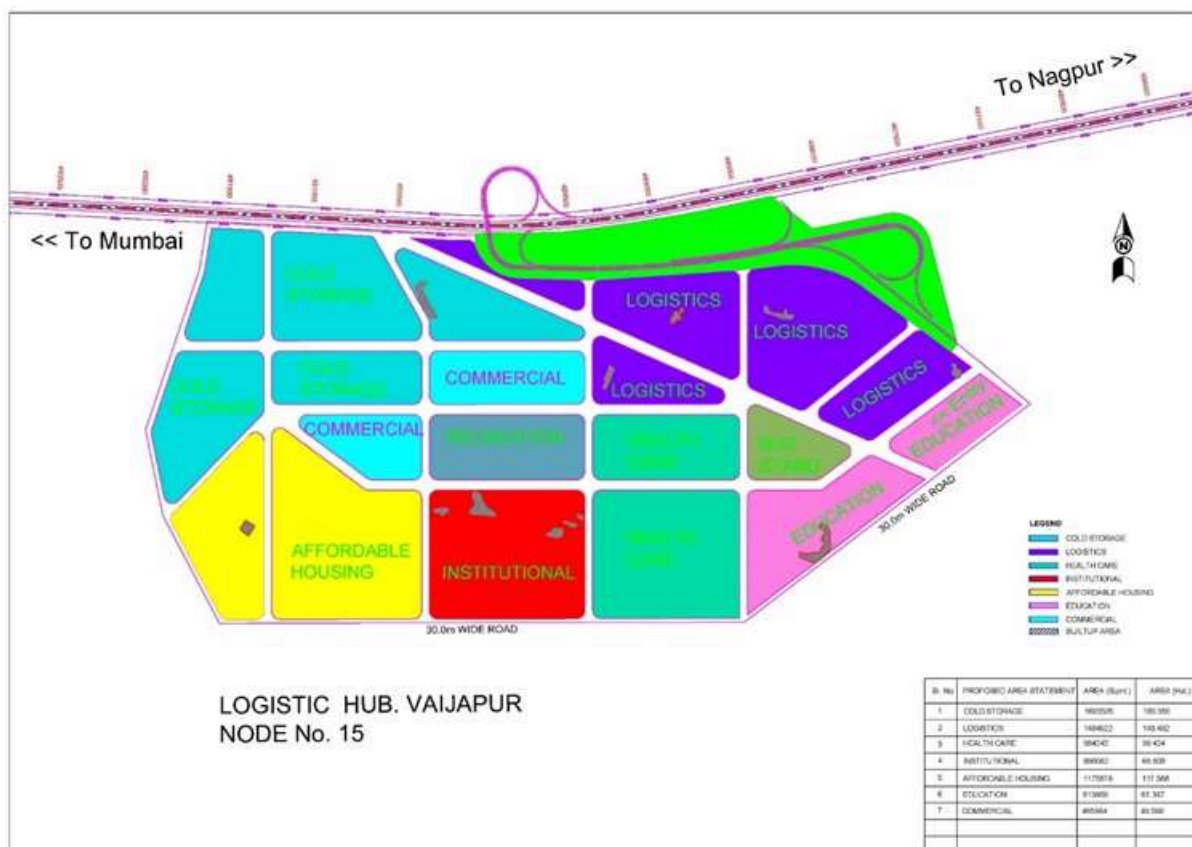


Table 28: Vaijapur Node: Land Use Distribution

Land Use	Area (in ha)	Share
Agro industries	169	16.5%
Cold storage & Logistics	149	14.5%
Healthcare	98	9.6%
Institutional	67	6.5%
Affordable housing	118	11.4%
Education	61	6.0%
Commercial	50	4.8%
Bus Depot	10	1.0%
Roads	184	17.9%
Existing Village and Industries	10	1.0%
Buffer zone around existing	10	1.0%
Green Buffer	102	9.9%
Total Area	1,027	100.0%

The node development is assumed to take place in phases over a 9 year period from 2016. Therefore, three phase development is assumed to be completed in 2019, 2022 and 2025 as given in **Table 29**.

Table 29: Vaijapur Node: Development Phasing

Land Use	2019	2022	2025
Agro industries	30%	60%	100%
Cold storage & Logistics	30%	60%	100%
Healthcare	50%	100%	100%
Institutional	30%	60%	100%
Affordable housing	30%	60%	100%
Education	30%	60%	100%
Commercial	30%	60%	100%

Table 30, **Table 31** and **Table 32** show the expressway traffic generated per day because of the development of Vaijapur Node in 2019, 2022 and 2025 respectively.

Table 30: Vaijapur Node: Expressway Traffic Generated per Day in 2019

Land Use	Car	Bus	Trucks	LCV	MAV
Agro industries	145	9	21	24	11
Cold storage & Logistics	127	8	19	21	9
Healthcare	467	44	41	23	21
Institutional	190	18	17	9	8
Affordable housing	167	16	15	8	7
Education	175	16	15	9	8
Commercial	141	13	12	7	6

Table 31: Vaijapur Node: Expressway Traffic Generated per Day in 2022

Land Use	Car	Bus	Trucks	LCV	MAV
Agro industries	289	18	43	48	21
Cold storage & Logistics	254	16	37	42	19
Healthcare	934	87	83	46	41
Institutional	379	35	34	19	17
Affordable housing	335	31	30	17	15
Education	350	33	31	17	15
Commercial	282	26	25	14	12

Table 32: Vaijapur Node: Expressway Traffic Generated per Day in 2025

Land Use	Car	Bus	Trucks	LCV	MAV
Agro industries	482	30	71	79	36
Cold storage & Logistics	423	26	62	69	31
Healthcare	934	87	83	46	41
Institutional	632	59	56	31	28
Affordable housing	558	52	49	28	25
Education	583	55	52	29	26
Commercial	471	44	42	23	21

1.3.5 Summary

Table 33, Table 34 and **Table 35** provide a summary of the generated traffic from the four development nodes for the different section of the Expressway Package 3 for 2019, 2022 and 2025 respectively.

Table 33: Generated Traffic by Section: 2019 (Vehicles/day)

Vehicle Type	W-1	1-2	2-3	3-4	4-5	5-6	6-E
Car	1,272	3,267	3,325	2,987	2,959	2,502	786
Bus	77	241	246	252	249	257	110
Trucks	160	309	352	403	400	235	60
MAV	102	203	228	257	255	163	37
LCV	80	153	175	200	198	116	30

Table 34: Generated Traffic by Section: 2022 (Vehicles/day)

Vehicle Type	W-1	1-2	2-3	3-4	4-5	5-6	6-E
Car	2,521	6,399	6,501	5,858	5,804	4,891	1,530
Bus	151	471	479	491	483	499	213
Trucks	322	617	703	804	798	463	117
MAV	203	401	449	506	502	316	72
LCV	159	302	344	393	390	225	57

Table 35: Generated Traffic by Section: 2025 (Vehicles/day)

Vehicle Type	W-1	1-2	2-3	3-4	4-5	5-6	6-E
Car	3,916	10,008	10,232	9,250	9,177	7,659	2,378
Bus	230	724	743	766	754	781	329
Trucks	509	971	1,117	1,284	1,276	726	184
MAV	325	636	717	811	806	497	113
LCV	254	483	555	639	634	359	91

1.4 Estimation of Induced Traffic for Base Year

Induced traffic consists of trips that people ‘wanted’ to make but did not due to the lack of desired infrastructure or trips that people now ‘want’ to make because of the availability of desired infrastructure.

Induced traffic share is provided in **Table 36** and is based on the following assumptions:

- Cars are expected to be impacted the most by a new and improved facility as people would now take trips that they ‘wanted’ to take but did not.
- Buses are least impacted as the bus routes are dependent on population and land use. Buses generally serve local areas and would be least impacted by the expressway.

- Smaller trucks (and LCVs) would be more impacted by the expressway compared to large trucks. Large trucks are mostly dependent on the origin-destinations, type of commodity, pricing structure, etc. types of data were used in the estimation of traffic growth. One was vehicle registrations in the state.

The percentage induced/ new generated traffic is calculated using following equations (source: IRC: SP: 30 – 2009 and Toolkit for the Economic Evaluation of World Bank Transport Projects):

$$\frac{[\{\text{Cost (VOC+VOT) without development}\}-\{\text{Cost (VOC+VOT) with development}\}]* 0.33}{[\{\text{Cost (VOC+VOT) without development}\}]}$$

Table 36: Induced Traffic

Vehicle Type	Share of Total Traffic
Car	4%
Bus	11%
LCV	0%
2-Axle	8%
3-Axle	5%
MAV	6%

These induced traffic shares were added to the overall traffic estimated based on diversion and generation.

1.5 Estimation of Traffic Growth Rates

This section presents the data and results for the estimation of traffic growth rates.

1.5.1 Past Vehicle Registration Details

Two types of data were used in the estimation of traffic growth. One was vehicle registrations in the state of Maharashtra and the second was fuel sales at stations in the vicinity of the expressway alignment. This provided regional and local perspectives to traffic growth respectively.

Table 37 provides the vehicle registration data from 2004-2005 to 2014-2015 and **Table 38** provide the fuel sales data from 2013-2014 to 2015-2016.

Table 37: Vehicle Registration Data ('000)

Year	Two Wheeler	Cars	Taxi	Bus	Three Wheeler	LCV	MAV	Tractor	Trailer
2004-05	6,217	1,187	103	62	493	256	243	202	191
2005-06	7,692	1,465	122	67	535	335	287	229	205
2006-07	8,574	1,630	133	89	555	384	317	251	220
2007-08	9,395	1,804	150	95	575	437	344	276	238
2008-09	10,212	1,961	158	98	598	479	367	302	252
2009-10	11,181	2,164	168	103	626	522	375	332	270
2010-11	12,429	2,422	169	109	641	584	390	371	294
2011-12	13,921	2,731	176	119	640	656	411	419	325
2012-13	15,457	3,046	184	131	655	740	441	462	338
2013-14	16,910	3,307	189	144	659	803	470	520	354
2014-15	18,603	3,610	193	144	696	869	492	572	372
CAGR	12%	12%	7%	9%	4%	13%	7%	11%	7%

Table 38: Fuel Sales Data (KL)

Year	Petrol	Diesel	Total
2013-14	2,764	13,386	16,150
2014-15	2,817	13,626	16,443
2015-16	3,143	14,263	17,406

This data was used in estimation of traffic elasticity to calculate the traffic growth rate.

1.5.2 Past Growth of the Economy

Table 39 shows the historical annual growth rates for Population and NSDP for the state of Maharashtra. These are indicators of economic activity in the region. Generally, population indicates the growth of residential areas while NSDP indicates the growth of commercial/industrial areas.

Table 39: Maharashtra Population and NSDP: Historical Growth Rates

Year	Population	NSDP
2005-06	1.50%	13.35%
2006-07	1.48%	13.53%
2007-08	1.46%	11.26%
2008-09	1.44%	2.58%
2009-10	1.42%	9.30%
2010-11	1.40%	11.26%

Year	Population	NSDP
2011-12	1.16%	4.52%
2012-13	1.15%	7.78%
2013-14	1.14%	7.28%
2014-15	1.12%	5.66%

This data was used in estimation of traffic elasticity to calculate the traffic growth rate.

1.5.3 Transport Demand and Elasticity

Elasticity values were calculated based on two different sets of data presented earlier. The values were obtained using a log-log regression analysis between the dependent variable (indicator of traffic) and independent variable (indicator of economic activity).

Table 40 shows the elasticity values obtained based on vehicle registration data, while **Table 41** provides the elasticity values based on fuel sales data. The Goodness of Fit values (close to 1) indicate a very good fit for the log-log relationship between the independent and dependent variables.

Table 40: Elasticity Values Based on Vehicle Registration Data

Vehicle Type	NSDP Elasticity	Goodness of Fit (R^2)	Population Elasticity	Goodness of Fit (R^2)
Car	1.29	0.99	7.80	0.99
Bus	1.04	0.97	6.19	0.95
LCV	1.43	0.99	8.65	0.99
MAV	0.79	0.98	4.75	0.97
Trailers	0.86	0.99	5.21	1.00

Table 41: Elasticity Values Based on Fuel Sales Data

Fuel Type	NSDP Elasticity	Goodness of Fit (R^2)	Population Elasticity	Goodness of Fit (R^2)
Car	1.00	0.92	5.76	0.85
Bus	0.49	0.98	2.85	0.94
LCV	0.58	0.96	3.36	0.92

This data was used in estimation of traffic growth rate.

1.5.4 **Perspective Growth: Population and Economy**

The Population and NSDP were estimated for future years based on the following assumptions:

- The NSDP was forecasted based on the following:
 - Annual growth rate for 2016 was assumed to be 8% as per the Economic Survey of Maharashtra 2015-2016.
 - The annual growth rate was assumed to gradually reduce to a long term growth rate of 6% by 2025.
- Population was estimated by regression as data was available from 1961 to 2011.

Table 42 shows the NSDP annual growth rates estimates for future years.

Table 42: NSDP – Estimated Future Growth Rates

Year	NSDP
2016	8.0%
2017	7.8%
2018	7.6%
2019	7.3%
2020	7.1%
2021	6.9%
2022	6.7%
2023	6.4%
2024	6.2%
2025 onwards	6.0%

This data was used in estimation of traffic growth rate

1.5.5 **Projected Traffic Rates**

Annual growth rates were estimated separately for each vehicle type (car, bus, LCV, 2-axle trucks, 3-axle trucks, 4-6 axle trucks and >6 axle trucks) based for the following Elasticity Values and corresponding future year growth rate estimates:

1. NSDP elasticity values based on vehicle registration data
2. Population elasticity values based on vehicle registration data
3. NSDP elasticity values based on fuel sales data
4. Population elasticity values based on fuel sales data

The final traffic growth rate values were used as follows:

1. Car – Average of Growth Rates based on NSDP and population elasticity values based on vehicle registrations. The rationale is that car traffic is impacted by both population and economic growth.
2. Bus – Same rationale as cars

3. LCV – Average of Growth Rates based on NSDP elasticity from fuel sales and vehicle registration. The rationale is that LCV traffic is impacted by both local and state economy.
4. 2-Axle Trucks – Same rationale as LCVs
5. 3-Axle Trucks – Average of 2 Axle Trucks and MAV growth rates
6. MAV – Growth Rates based on NSDP elasticity values from vehicle registrations. The rationale is that big trucks are mainly impacted by state/national economy.

Table 43 shows the estimates annual growth rates for each vehicle type.

Table 43: Estimated Annual Growth Rates

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle
2019	8.9%	7.1%	7.0%	7.0%	6.5%	6.0%	6.0%
2020	8.7%	7.0%	6.8%	6.8%	6.3%	5.9%	5.9%
2021	8.5%	6.8%	6.6%	6.6%	6.1%	5.7%	5.7%
2022	8.9%	7.1%	6.4%	6.4%	5.9%	5.5%	5.5%
2023	8.7%	7.0%	6.2%	6.2%	5.8%	5.3%	5.3%
2024	8.5%	6.8%	6.0%	6.0%	5.6%	5.1%	5.1%
2025	8.3%	6.6%	5.8%	5.8%	5.4%	4.9%	4.9%
2026	8.3%	6.6%	5.8%	5.8%	5.4%	4.9%	4.9%
2027	8.2%	6.6%	5.8%	5.8%	5.4%	4.9%	4.9%
2028	8.2%	6.5%	5.8%	5.8%	5.4%	4.9%	4.9%
2029	8.1%	6.5%	5.8%	5.8%	5.4%	4.9%	4.9%
2030	8.1%	6.5%	5.8%	5.8%	5.4%	4.9%	4.9%
2031	8.0%	6.4%	5.8%	5.8%	5.4%	4.9%	4.9%
2032	8.0%	6.4%	5.8%	5.8%	5.4%	4.9%	4.9%
2033	8.0%	6.3%	5.8%	5.8%	5.4%	4.9%	4.9%
2034	7.9%	6.3%	5.8%	5.8%	5.4%	4.9%	4.9%
2035	7.9%	6.3%	5.8%	5.8%	5.4%	4.9%	4.9%
2036	7.8%	6.2%	5.8%	5.8%	5.4%	4.9%	4.9%
2037	7.8%	6.2%	5.8%	5.8%	5.4%	4.9%	4.9%
2038	7.7%	6.2%	5.8%	5.8%	5.4%	4.9%	4.9%
2039	7.7%	6.2%	5.8%	5.8%	5.4%	4.9%	4.9%
2040	7.7%	6.1%	5.8%	5.8%	5.4%	4.9%	4.9%
2041	7.6%	6.1%	5.8%	5.8%	5.4%	4.9%	4.9%
2042	7.6%	6.1%	5.8%	5.8%	5.4%	4.9%	4.9%
2043	7.6%	6.0%	5.8%	5.8%	5.4%	4.9%	4.9%
2044	7.5%	6.0%	5.8%	5.8%	5.4%	4.9%	4.9%
2045	7.5%	6.0%	5.8%	5.8%	5.4%	4.9%	4.9%
2046	7.5%	6.0%	5.8%	5.8%	5.4%	4.9%	4.9%

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle
2047	7.4%	5.9%	5.8%	5.8%	5.4%	4.9%	4.9%
2048	7.4%	5.9%	5.8%	5.8%	5.4%	4.9%	4.9%
2049	7.4%	5.9%	5.8%	5.8%	5.4%	4.9%	4.9%
2050	7.2%	5.8%	5.7%	5.7%	5.3%	4.8%	4.8%
2051	7.2%	5.8%	5.7%	5.7%	5.3%	4.8%	4.8%
2052	7.2%	5.8%	5.7%	5.7%	5.3%	4.8%	4.8%
2053	7.2%	5.8%	5.7%	5.7%	5.3%	4.8%	4.8%
2054	7.2%	5.8%	5.7%	5.7%	5.3%	4.8%	4.8%

These growth rates were used to prepare the final traffic forecast.

1.6 Diverted, Induced and Generated Traffic Forecast

Table 44 provides the forecasted expressway traffic for each vehicle type based on the methodology and data presented in this report.

Table 45 provides the corresponding annual growth rates.

Table 44: Expressway Traffic Forecast: Section 1-2 Vaijapur to Lasur

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019	4,081	345	624	307	405	470	22	8,274
2020	4,153	353	657	318	421	486	23	8,432
2021	4,231	361	691	329	438	503	25	8,598
2022	10,711	840	1,028	649	764	921	26	16,962
2023	10,804	849	1,065	661	782	938	28	17,150
2024	10,904	858	1,103	673	800	956	29	17,348
2025	21,017	1,592	1,625	1,172	1,305	1,610	31	30,376
2026	21,128	1,603	1,665	1,185	1,324	1,628	32	30,590
2027	21,249	1,614	1,707	1,198	1,344	1,647	34	30,820
2028	21,378	1,625	1,751	1,213	1,366	1,667	35	31,064
2029	21,518	1,638	1,799	1,228	1,388	1,688	37	31,324
2030	21,667	1,651	1,849	1,244	1,412	1,710	39	31,601
2031	21,828	1,665	1,901	1,261	1,437	1,733	41	31,898
2032	22,001	1,679	1,957	1,280	1,463	1,757	43	32,212
2033	22,187	1,695	2,016	1,299	1,491	1,783	45	32,548
2034	22,388	1,711	2,079	1,319	1,520	1,809	47	32,908
2035	22,602	1,728	2,145	1,341	1,551	1,837	49	33,289
2036	22,834	1,747	2,215	1,363	1,584	1,866	52	33,697
2037	23,080	1,766	2,289	1,387	1,618	1,897	54	34,129
2038	23,346	1,787	2,367	1,413	1,654	1,929	57	34,591

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2039	23,629	1,808	2,450	1,440	1,692	1,963	60	35,081
2040	23,933	1,831	2,538	1,468	1,733	1,998	63	35,605
2041	24,261	1,856	2,631	1,498	1,775	2,036	66	36,163
2042	24,610	1,881	2,729	1,530	1,820	2,075	69	36,755
2043	24,985	1,908	2,833	1,564	1,867	2,116	72	37,388
2044	25,388	1,937	2,943	1,600	1,916	2,158	76	38,062
2045	25,817	1,967	3,059	1,637	1,968	2,203	80	38,777
2046	26,278	1,999	3,182	1,677	2,024	2,251	84	39,540
2047	26,773	2,032	3,312	1,720	2,082	2,300	88	40,354
2048	27,298	2,067	3,450	1,764	2,143	2,352	92	41,215
2049	27,863	2,105	3,596	1,812	2,207	2,407	96	42,134
2050	28,469	2,144	3,750	1,862	2,275	2,464	101	43,115
2051	29,102	2,185	3,910	1,914	2,346	2,522	106	44,136
2052	29,781	2,229	4,080	1,969	2,420	2,584	111	45,224
2053	30,508	2,275	4,259	2,027	2,498	2,649	116	46,384
2054	31,288	2,323	4,448	2,089	2,580	2,716	122	47,620

Table 45: Expressway Traffic Forecast CAGR: Section 1-2 Vajapur to Lasur

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019-2020	2%	2%	5%	3%	4%	3%	6%	2%
2020-2021	2%	2%	5%	3%	4%	3%	6%	2%
2021-2022	153%	133%	49%	97%	74%	83%	6%	97%
2022-2023	1%	1%	4%	2%	2%	2%	5%	1%
2023-2024	1%	1%	4%	2%	2%	2%	5%	1%
2024-2029	0%	1%	2%	1%	1%	1%	4%	1%
2029-2034	1%	1%	2%	1%	1%	1%	4%	1%
2034-2039	1%	1%	3%	1%	2%	1%	4%	1%
2039-2044	1%	1%	3%	2%	2%	2%	4%	1%
2044-2049	2%	2%	3%	2%	3%	2%	4%	2%
2049-2054	2%	2%	5%	3%	4%	3%	6%	2%

Table 46: Expressway Traffic Forecast: Section 2-3 Lasur to Daulatabad

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019	5,962	525	751	538	900	776	39	11,511
2020	6,197	545	792	564	947	809	42	11,915
2021	6,447	566	834	590	995	843	44	12,340
2022	13,213	1,067	1,221	969	1,397	1,327	47	21,263
2023	13,514	1,091	1,266	997	1,448	1,363	49	21,752
2024	13,835	1,117	1,313	1,026	1,502	1,399	52	22,268
2025	24,408	1,887	1,915	1,614	2,115	2,153	55	36,172
2026	24,769	1,914	1,964	1,645	2,170	2,190	57	36,736
2027	25,160	1,944	2,016	1,678	2,229	2,229	60	37,342
2028	25,578	1,975	2,070	1,712	2,290	2,270	63	37,987
2029	26,031	2,008	2,128	1,748	2,355	2,313	66	38,679
2030	26,515	2,043	2,189	1,787	2,424	2,358	69	39,415
2031	27,038	2,080	2,254	1,827	2,496	2,405	73	40,205
2032	27,596	2,120	2,322	1,870	2,572	2,455	76	41,044
2033	28,199	2,161	2,395	1,916	2,653	2,507	80	41,944
2034	28,851	2,205	2,471	1,964	2,737	2,562	84	42,908
2035	29,545	2,252	2,552	2,015	2,826	2,619	88	43,932
2036	30,295	2,301	2,638	2,069	2,920	2,679	92	45,030
2037	31,093	2,353	2,729	2,125	3,020	2,742	97	46,195
2038	31,954	2,407	2,825	2,186	3,124	2,808	102	47,443
2039	32,870	2,466	2,926	2,250	3,234	2,877	107	48,768
2040	33,857	2,527	3,034	2,317	3,350	2,950	112	50,186
2041	34,919	2,592	3,147	2,388	3,472	3,026	117	51,704
2042	36,049	2,661	3,267	2,464	3,601	3,106	123	53,313
2043	37,264	2,733	3,395	2,544	3,737	3,190	129	55,035
2044	38,572	2,809	3,529	2,628	3,880	3,278	136	56,876
2045	39,960	2,890	3,672	2,718	4,031	3,370	142	58,828
2046	41,453	2,975	3,822	2,813	4,190	3,467	149	60,915
2047	43,057	3,066	3,982	2,913	4,358	3,568	156	63,147
2048	44,759	3,160	4,150	3,019	4,534	3,675	164	65,510
2049	46,587	3,260	4,329	3,131	4,720	3,787	172	68,035
2050	48,550	3,365	4,518	3,249	4,917	3,904	181	70,734
2051	50,602	3,475	4,714	3,373	5,120	4,024	189	73,548
2052	52,801	3,592	4,921	3,503	5,334	4,151	198	76,552
2053	55,159	3,715	5,141	3,641	5,559	4,283	208	79,758
2054	57,686	3,845	5,372	3,786	5,796	4,422	218	83,179

Table 47: Expressway Traffic Forecast CAGR: Section 2-3 Lasur to Daulatabad

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019-2020	4%	4%	5%	5%	5%	4%	6%	4%
2020-2021	4%	4%	5%	5%	5%	4%	6%	4%
2021-2022	105%	88%	46%	64%	40%	57%	6%	72%
2022-2023	2%	2%	4%	3%	4%	3%	5%	2%
2023-2024	2%	2%	4%	3%	4%	3%	5%	2%
2024-2029	1%	1%	2%	2%	2%	1%	4%	1%
2029-2034	2%	2%	2%	2%	2%	2%	4%	2%
2034-2039	2%	2%	3%	2%	3%	2%	4%	2%
2039-2044	3%	2%	3%	3%	3%	2%	4%	3%
2044-2049	4%	3%	4%	3%	3%	3%	4%	3%
2049-2054	4%	4%	5%	5%	5%	4%	6%	4%

Table 48: Expressway Traffic Forecast: Section 3-4 Daulatabad to Sawangi

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019	5,825	1,458	1,308	625	803	1,006	47	13,091
2020	6,078	1,543	1,386	655	843	1,051	50	13,625
2021	6,347	1,634	1,466	686	883	1,097	53	14,187
2022	12,490	2,219	1,943	1,120	1,326	1,651	56	22,827
2023	12,814	2,323	2,029	1,153	1,369	1,700	59	23,471
2024	13,160	2,434	2,118	1,187	1,414	1,750	62	24,149
2025	22,777	3,315	2,849	1,864	2,101	2,611	66	37,607
2026	23,165	3,434	2,943	1,900	2,147	2,662	69	38,345
2027	23,586	3,561	3,042	1,938	2,196	2,715	72	39,137
2028	24,036	3,697	3,147	1,978	2,247	2,771	76	39,979
2029	24,523	3,839	3,258	2,020	2,301	2,830	79	40,880
2030	25,044	3,990	3,375	2,065	2,358	2,891	83	41,838
2031	25,607	4,152	3,500	2,113	2,418	2,956	87	42,864
2032	26,208	4,321	3,631	2,163	2,482	3,024	92	43,952
2033	26,857	4,501	3,770	2,216	2,548	3,095	96	45,116
2034	27,558	4,689	3,918	2,272	2,619	3,169	101	46,360
2035	28,306	4,890	4,073	2,332	2,693	3,247	106	47,681
2036	29,112	5,103	4,238	2,395	2,771	3,329	111	49,095
2037	29,972	5,325	4,413	2,462	2,853	3,415	116	50,593
2038	30,898	5,562	4,597	2,532	2,940	3,506	122	52,195
2039	31,884	5,813	4,792	2,607	3,032	3,600	128	53,895
2040	32,945	6,080	4,999	2,686	3,128	3,700	134	55,712
2041	34,089	6,359	5,217	2,769	3,230	3,804	141	57,650
2042	35,304	6,655	5,448	2,858	3,337	3,913	148	59,705
2043	36,612	6,969	5,693	2,951	3,450	4,028	155	61,901
2044	38,020	7,296	5,952	3,050	3,569	4,148	163	64,241
2045	39,514	7,644	6,225	3,155	3,694	4,274	171	66,722
2046	41,120	8,012	6,515	3,265	3,827	4,406	179	69,370
2047	42,847	8,402	6,821	3,383	3,966	4,545	188	72,199
2048	44,679	8,809	7,145	3,507	4,113	4,691	197	75,188
2049	46,646	9,239	7,488	3,638	4,268	4,843	207	78,378
2050	48,759	9,695	7,851	3,776	4,431	5,003	217	81,783
2051	50,967	10,170	8,229	3,921	4,600	5,168	227	85,332
2052	53,334	10,672	8,627	4,073	4,778	5,341	238	89,115
2053	55,871	11,204	9,049	4,234	4,965	5,521	249	93,147
2054	58,591	11,766	9,495	4,405	5,162	5,711	261	97,445

Table 49: Expressway Traffic Forecast CAGR: Section 3-4 Daulatabad to Sawangi

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019-2020	4%	6%	6%	5%	5%	4%	6%	4%
2020-2021	4%	6%	6%	5%	5%	4%	6%	4%
2021-2022	97%	36%	33%	63%	50%	50%	6%	61%
2022-2023	3%	5%	4%	3%	3%	3%	5%	3%
2023-2024	3%	5%	4%	3%	3%	3%	5%	3%
2024-2029	1%	3%	3%	2%	2%	2%	4%	2%
2029-2034	2%	3%	3%	2%	2%	2%	4%	2%
2034-2039	2%	4%	3%	2%	2%	2%	4%	2%
2039-2044	3%	4%	4%	3%	3%	2%	4%	3%
2044-2049	4%	4%	4%	3%	3%	3%	4%	4%
2049-2054	4%	6%	6%	5%	5%	4%	6%	4%

Table 50: Expressway Traffic Forecast: Section 4-5 Sawangi to Karmad

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019	6,482	1,246	1,232	876	1,038	1,177	30	14,101
2020	6,796	1,317	1,305	924	1,092	1,233	32	14,717
2021	7,130	1,392	1,380	973	1,148	1,290	33	15,367
2022	13,288	1,953	1,848	1,423	1,605	1,851	35	24,025
2023	13,691	2,039	1,929	1,476	1,664	1,911	37	24,770
2024	14,120	2,131	2,012	1,530	1,726	1,973	39	25,554
2025	23,752	2,980	2,731	2,224	2,427	2,841	41	39,021
2026	24,234	3,078	2,819	2,281	2,492	2,903	43	39,877
2027	24,757	3,183	2,911	2,342	2,559	2,969	45	40,794
2028	25,316	3,295	3,009	2,406	2,631	3,038	48	41,770
2029	25,920	3,413	3,113	2,474	2,706	3,110	50	42,815
2030	26,567	3,538	3,223	2,546	2,785	3,186	52	43,927
2031	27,266	3,672	3,339	2,621	2,869	3,265	55	45,118
2032	28,012	3,812	3,461	2,702	2,957	3,349	58	46,382
2033	28,817	3,961	3,591	2,787	3,050	3,436	60	47,735
2034	29,688	4,116	3,729	2,877	3,148	3,528	63	49,182
2035	30,616	4,282	3,874	2,972	3,251	3,624	66	50,720
2036	31,617	4,458	4,028	3,072	3,360	3,725	70	52,366
2037	32,684	4,643	4,191	3,179	3,474	3,831	73	54,111
2038	33,834	4,838	4,363	3,291	3,595	3,943	77	55,979
2039	35,058	5,046	4,545	3,410	3,722	4,059	80	57,960
2040	36,376	5,267	4,738	3,536	3,857	4,182	84	60,079

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2041	37,795	5,497	4,942	3,670	3,998	4,310	89	62,342
2042	39,304	5,742	5,157	3,811	4,147	4,444	93	64,741
2043	40,928	6,002	5,385	3,960	4,304	4,586	97	67,306
2044	42,675	6,273	5,627	4,118	4,470	4,734	102	70,043
2045	44,530	6,560	5,882	4,285	4,645	4,889	107	72,944
2046	46,524	6,864	6,153	4,462	4,829	5,052	112	76,043
2047	48,668	7,187	6,439	4,649	5,023	5,223	118	79,354
2048	50,942	7,523	6,741	4,847	5,227	5,402	124	82,855
2049	53,384	7,880	7,061	5,056	5,442	5,590	130	86,594
2050	56,007	8,257	7,400	5,278	5,669	5,788	136	90,586
2051	58,748	8,650	7,752	5,508	5,904	5,991	143	94,747
2052	61,686	9,065	8,125	5,752	6,152	6,203	150	99,184
2053	64,836	9,505	8,518	6,009	6,412	6,426	157	103,916
2054	68,212	9,970	8,934	6,281	6,687	6,659	164	108,961

Table 51: Expressway Traffic Forecast CAGR: Section 4-5 Sawangi to Karmad

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019-2020	5%	6%	6%	5%	5%	5%	6%	4%
2020-2021	5%	6%	6%	5%	5%	5%	6%	4%
2021-2022	86%	40%	34%	46%	40%	43%	6%	56%
2022-2023	3%	4%	4%	4%	4%	3%	5%	3%
2023-2024	3%	4%	4%	4%	4%	3%	5%	3%
2024-2029	2%	3%	3%	2%	2%	2%	4%	2%
2029-2034	2%	3%	3%	2%	2%	2%	4%	2%
2034-2039	3%	3%	3%	3%	3%	2%	4%	3%
2039-2044	3%	4%	4%	3%	3%	3%	4%	3%
2044-2049	4%	4%	4%	4%	3%	3%	4%	4%
2049-2054	5%	6%	6%	5%	5%	5%	6%	4%

Table 52: Expressway Traffic Forecast: Section 5-6 Karmad to Jalna

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019	7,297	1,280	1,107	870	991	1,145	0	14,708
2020	7,724	1,353	1,176	923	1,047	1,204	0	15,447
2021	8,179	1,429	1,248	977	1,106	1,265	0	16,225
2022	13,552	2,008	1,548	1,266	1,398	1,644	0	23,437
2023	14,100	2,097	1,625	1,324	1,460	1,708	0	24,337
2024	14,684	2,191	1,704	1,385	1,524	1,773	0	25,285
2025	22,963	3,069	2,145	1,810	1,953	2,336	0	36,301
2026	23,619	3,170	2,229	1,874	2,020	2,403	0	37,341
2027	24,330	3,278	2,318	1,941	2,091	2,473	0	38,457
2028	25,091	3,393	2,412	2,012	2,165	2,546	0	39,647
2029	25,914	3,514	2,511	2,088	2,243	2,623	0	40,922
2030	26,794	3,642	2,616	2,168	2,326	2,704	0	42,280
2031	27,745	3,779	2,727	2,252	2,413	2,788	0	43,736
2032	28,761	3,923	2,845	2,341	2,505	2,877	0	45,283
2033	29,857	4,075	2,969	2,436	2,602	2,970	0	46,943
2034	31,042	4,235	3,101	2,536	2,704	3,068	0	48,719
2035	32,305	4,405	3,240	2,642	2,812	3,170	0	50,609
2036	33,668	4,586	3,387	2,753	2,925	3,278	0	52,633
2037	35,120	4,775	3,543	2,872	3,044	3,391	0	54,782
2038	36,685	4,976	3,708	2,997	3,170	3,509	0	57,084
2039	38,351	5,189	3,882	3,130	3,303	3,633	0	59,527
2040	40,145	5,415	4,067	3,270	3,443	3,763	0	62,144
2041	42,077	5,652	4,262	3,418	3,591	3,900	0	64,941
2042	44,131	5,903	4,469	3,575	3,746	4,043	0	67,910
2043	46,341	6,169	4,687	3,741	3,910	4,194	0	71,086
2044	48,719	6,447	4,919	3,917	4,083	4,351	0	74,480
2045	51,244	6,742	5,163	4,103	4,265	4,517	0	78,079
2046	53,959	7,054	5,422	4,299	4,456	4,690	0	81,927
2047	56,877	7,385	5,696	4,508	4,659	4,872	0	86,043
2048	59,972	7,730	5,986	4,728	4,872	5,063	0	90,398
2049	63,296	8,096	6,293	4,961	5,096	5,263	0	95,053
2050	66,866	8,483	6,617	5,207	5,333	5,473	0	100,029
2051	70,596	8,885	6,954	5,463	5,578	5,689	0	105,217
2052	74,596	9,312	7,311	5,734	5,836	5,915	0	110,755
2053	78,883	9,763	7,687	6,020	6,108	6,153	0	116,666
2054	83,478	10,240	8,086	6,323	6,393	6,401	0	122,975

Table 53: Expressway Traffic Forecast CAGR: Section 5-6 Karmad to Jalna

Year	Car	Bus	LCV	2 Axle	3 Axle	4-6 Axle	>6 Axle	Total
2019-2020	6%	6%	6%	6%	6%	5%	0%	5%
2020-2021	6%	6%	6%	6%	6%	5%	0%	5%
2021-2022	66%	40%	24%	29%	26%	30%	0%	44%
2022-2023	4%	4%	5%	5%	4%	4%	0%	4%
2023-2024	4%	4%	5%	5%	4%	4%	0%	4%
2024-2029	2%	3%	3%	3%	3%	2%	0%	2%
2029-2034	3%	3%	3%	3%	3%	3%	0%	3%
2034-2039	3%	3%	4%	3%	3%	3%	0%	3%
2039-2044	4%	4%	4%	4%	3%	3%	0%	4%
2044-2049	5%	4%	4%	4%	4%	3%	0%	4%
2049-2054	6%	6%	6%	6%	6%	5%	0%	5%

1.7 Willingness to Pay

Willingness to pay survey is essential to gauge the interest of people about the usage of expressway with higher toll rates as compared to the national highways. Major users of the expressway are expected to be the transports providing logistics services and individual travelers. Various travelers and transporters in and around Aurangabad have been consulted to conduct the willingness to pay survey. The survey focused on the possible benefits of the expressway, impact on their business and users' willingness to pay higher toll rates to use the same.

The travellers at various road side amenities have been interviewed to gauge their willingness to use the expressway and their feedback on the potential benefits. Travellers and transport operators willingly expressed their views on the benefits of the expressway, their willingness to pay higher toll rates and their propensity towards the use of expressway for their travel from Mumbai to Nagpur.

Total 75 participants were surveyed (including 11 transporters) to assess the willingness to use and pay for expressway. Most of the travelers comprised people travelling for their work places, for business trips and truck drivers. Truck transporters survey was done at the respective offices located in Waluj MIDC area. The purpose of travel for the participants surveyed is as follows:

Table 54 - Purpose of travel for the participants surveyed

S.N.	Purpose of Travel	% of samples
1	Truck drivers operating logistic trucks	29.4%
2	Transporters (Waluj MIDC)	21.6%
3	Business Trip	19.6%
4	Personal Travel/Shopping/Entertainment/Tourist places	13.7%
5	Farmers travelling to city/town markets	9.8%
6	Travel to and from workplace	5.9%

Most of the travelers did express negative opinions about the existing highways from Mumbai to Nagpur. The issues highlighted with the existing highways and connectivity options from Mumbai to Nagpur are traffic and congestions (mostly towards Nashik side and beyond Jalna towards Amravati and Nagpur), poor quality of roads, harassment at check posts and toll plazas and single lane state highways.

From the surveys, it was evident that people are aware of the benefits of the expressway and they expressed their willingness to use the expressway with higher toll rates in order to get good connectivity, better road qualities, reduced operational expenditure (fuel and maintenance) and travel time savings. The overall outcome with regards to use of expressway is as shown in table below with proportion of people responding in favour of the expressway:

Table 55- Outcome with regards to use of expressway

S.N.	Particular	% of samples
1	Not satisfied with existing highways	100.0%
2	Awareness about the expressway	92.2%
3	Ready to pay higher toll rates as compared to existing highways	90.2%
4	Ready to use the expressway	80.4%

Based on primary survey, major expressway benefits that could help the travelers and transporters are as follows:

1. Time saving
2. Increased fuel efficiency and reduced fuel consumption
3. Increased turnaround and more revenues
4. Less traffic and very few congestion related issues
5. Low maintenance of vehicles
6. Less damage to goods
7. Less RTO and check-post harassment related issues
8. Drivers will not be fatigued
9. Good quality roads and better driving experience
10. Less accidents and loss of human lives

Additionally, the logistics industry stakeholders (truck-transporters and truck-drivers) were consulted on the possible benefits of the expressway for their operations. The transporters were asked about the potential benefits that could result from the expressway. The responses related to the potential benefits of the expressway as per the transporters are as follows:

Table 56- Potential benefits of the expressway

S.N.	Potential Benefits	% of samples
1	Time saving	100.0%
2	Less maintenance of vehicles	90.9%
3	Increased fuel efficiency and reduced fuel consumption	81.8%
4	Increased turnaround and more revenues	45.5%
5	Less traffic and congestion related issues	18.2%
6	Good Quality roads	18.2%
7	Less accidents	18.2%
8	Less damage to goods	18.2%
9	Less RTO and check post harassment	9.1%
10	Drivers will not be fatigued	9.1%

Another aspect that has been studied as part our market analysis is the travel time and operational expenditure per trip for the truck transporters and savings that they can achieve from the expressway route. Operations and maintenance of logistics service providers have been studied to understand the impact of expressway on their operations. Operations and maintenance expenses for truck transporters vary based on the type of trucks they operate. There are two models operated by the transporters – In the first case, the transporters own the truck and trucks are operated by the drivers and in the second case, trucks are either attached to transporters or hired from the market from the third party service providers. In case of the transporters owned trucks, drivers are paid salary by the transports and transporters decide the route. In case of third party trucks, truck owners are paid lump sum amount per trip based on the route and distance. The common opinion from the primary surveys indicated that there will be significant cost savings due to commissioning of new expressway connecting Mumbai and Nagpur as the expressway will help faster movement of goods.

Environmental Impact Assessment report (EIA) for Nhava village, Jalna Taluka, Jalna District (Border) to Surala village, Vaijapur Taluka, Aurangabad District (Border) in Aurangabad Division of 155 km length (Package-III) of Access Controlled Nagpur-Mumbai Expressway.

Annexure 7.2

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
1	<p>Shri H. M. Desarda, a resident of Aurangabad mentioned that since 2-3 roads from Nagpur to Mumbai are in existence, hence the proposed Nagpur Mumbai Expressway is not required. The statistical data regarding requirement of new connectivity from Nagpur to Mumbai given by Government authority is not true and which is contradicting to the present scenario. Hence, this road is not at all required. He also mentioned that Government of Maharashtra has planned to invest Rs.46, 000 Crores for construction of Nagpur Mumbai Expressway, which is total waste and also mentioned that this money can be utilized for betterment of state and other structures since he is Ex-Member of Planning Commission.</p>	<p>The Government of India is planning to start working on 10 world class Express Highways in order to boost the road infrastructure for faster connectivity between different cities. This project namely; Nagpur Mumbai Super Communication Expressway (NMSCE) is one amongst such proposed Expressways, which will connect Nagpur – Mumbai, two major cities of Maharashtra which are important with developmental, commercial, employment generation and social point of view. In this context, the Union Ministry of Highways and Surface Transport and Government of Maharashtra have joined announced constructions of eight-lane NMSCE project. The objective of this selective venture is to divert and redistribute the heavy traffic on existing corridors. The proposed expressway (NMSCE) will pass through all three regions; Kokan, Marathwada and Vidarbha of the state and navigate, from end to end via twelve districts namely Nagpur District, Wardha District, Amravati District, Yavatmal District, Washim District, Buldana District, Jalna District, Aurangabad District, Ahmadnagar District, Nasik District, Thane District and Mumbai. In doing this the project will, as one of the main objectives, will broaden opportunity to number of villages leading to their socio-economic growth.</p> <p>Apart from easing traffic and cutting short the lead, project also aim sat creation of world class developmental nodes, at a distance of 40-50 km, with a View to facilitating development in commercial, area development, educational,</p>

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
		eco-tourism, Agriculture advancement, Automobile sectors etc. Simultaneously, it will lead to large scale employment generation, industrial growth assisted with top class technological and capacity building. To sum up implementation of this project will result substantially to contribute, among other things, towards infrastructure development, economic growth of the country, particularly in the local regions. Thus it is important for serving public interest as well as commercial interest by offering fasted and safe road traffic movement through use best available technologies like viaducts, tunnels and thus, reducing travel time to half by achieving speed of 100km/hour, connecting industrial places at Butibori, Amravati, Jalna, Chikalthana, Shendra, Waluj, Sinnar to Mumbai, and tourist and religious places at Karanja, Lonar, Sindkhedraja, Verul, Shirdi. Considering above facts, Govt of Maharashtra has decided to develop this expressway, so that the investment is not going to waste, in other term it will enhance the various kind of development in the region.
2	Shri Shriram Baheti , a resident of Aurangabad expressed his displeasure over the construction of Nagpur Mumbai Expressway and mentioned that the proposed alignment of the road has been changed by Govt. at various locations to safeguard the interest of political leaders and others. The change in alignment and its impact on the environment have not been stated and presented in the presentation. He also enquired about natural flow of rain water due to construction of Nagpur Mumbai Expressway. He also expressed his displeasure over non mention of Nahar-E Ambar cannel at Palshi which happens to be source of water	On the basis of existing IRC guidelines, Considered various environmental, social, tree cutting, diversion of forest land, people displacement, enhancement opportunity, connectivity to various growth centers, highway design and public safety issues the alignment has been finalizing. There was no political interference while finalizing the alignment and alignment has finalized considering IRC/ International technical guidelines.

Annexure 7.2

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
	<p>supply in nearby areas. He reiterated that this project is not at all useful project for the people of state of Maharashtra and the officials will have to run away like the proponents of Pasco project, which was not allowed by the people of State of Orissa.</p>	<p>The proposed alignment of the project traversing adjoin 1.680m mtrs away of the Nahar –E Ambar structure and connected pipe lines of Nahar –E Ambar cannel coming within the proposed alignment. The project is not affecting the Nahar –E Ambar cannel because a minor bridges across the Nahar-e-ambar have been proposed to maintain the water supply and its flow within the area.</p> <p>Around 350 KLD water per day will be required and the contractor will be extract from the multiple resources like River, Ponds, Water stored in quarries and underground resource after obtaining due permissions/ approval from concern authorities.</p> <p>A bridge with 25 mtrs long span with 17.5x2 width has been proposed to protect the structure and its pipe network. Underground Aqueduct starts from small sump (8mx8m). Sump is coming in embankment slope. To save Sump and aqueduct 25m span viaduct has been proposed. Viaduct has been planned in such way that minimum 5m distance will be available between sump and foundation of viaduct. Underground aqueduct and sump will remain safe and no harm will be done.</p> <p>The Project will also considered to provide water harvesting and proper drainage along the road. So that water supply and its flow will maintained at all the time.</p> <p>Rain water harvesting arrangement will be made on both side of road formation at a distance of 500m on either side. Total</p>

Annexure 7.2

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
		<p>length of Project Road is 154km so total number of rain water harvesting structure will be 308.</p> <p>The project is very useful because it generate the employment, enhance the tourism, reduce the travel time and fuel consumption of the traveler and also enhance the various opportunity of the region because of that, this project is introduced</p>
3	<p>Shri Nanasaheb Palaskar, a resident of nearby village Palshi, Dist: Aurangabad mentioned that the proposed alignment of Nagpur-Mumbai Expressway is passing through fertile land. Percolation tanks, farm houses and temporary residential arrangements made by the farmers within the area, hence the local people are going to object the proposed project. This project is not at all useful project for common people. He also insisted that if Government is interested to construct the new road, Government should think the alignment from Village Bhambarde to Village Verul, which is passing through the various hills in the adjoining area which will save the fertile land of farmers residing within that area. He enquired about the rehabilitation and resettlement plan of Government and mentioned that unless and until rehabilitation and resettlement plan is discussed, the fanners will not offer their land for the proposed road. Further. He mentioned that the Public Hearing / Meeting should be conducted at various locations.He reiterated that the investment of Rs.46,000 Crores for the proposed road is not at all required and which is waste. He expressed his displeasure and mentioned t1 at about 32000 to 35000 trees are going to be cut within the 112 kms. Of Aurangabad district. He also enquired about the plan of Government regarding the water supply to the nearby area. He also expressed his displeasure over non mention of Nahar-E Ambar</p>	<p>This project is proposed while considering existing IRC guidelines, various environmental, social, tree cutting and diversion of forest land, people displacement, enhancement opportunity, connectivity to various growth centers, highway design and public safety issues. Attention is also given to minimize the forest land as well as agriculture land.</p> <p>Alignment from via village Bhambarde to Verul is not possible due to the various reason like Forest land, hill cutting, stability and people connectivity and safety.</p> <p>On completion of the Joint Measurement Survey with concern revenue department, it is confirmed that the proposed project will impact 3750 trees/shrubs and 82474 number of horticultural crops/plants in Jalna district. Similarly, 17877 trees/shrubs and 46823 horticultural crops/plants in non-forest area and 399 trees in forest area will be getting affected in Aurangabad district. In total, 21627 trees will be getting affected by the entire length of package-III. Since, the horticulture plants/crops are considered under</p>

Annexure 7.2

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
	cannel which happens to be source of water supply in nearby areas.	<p>cash cropping, it will be separately compensated as per the prevailing law and procedures by the MSRDC.</p> <p>Project road passes near to sump like structure which is very old. The water supply system is completely defunct. Anyway, project road has been planned in such way that all these structures will remain as it is. A bridge has been proposed keeping 3m clearance from the corner of sump. This will protect the sump as well as underground pipe.</p> <p>The sump, nahar-e-amber is located at proposed km 416.180 on right hand side 1.68 mtrs away from the corridor near palshi village of Aurangabad district. A bridge with 25 mtrs long span with 17.5x2 width has been proposed to protect the structure and its pipe network. The Aqueduct (nahar) starts from sump. Aqueduct is below ground level. We will protect both sump and aqueduct (drawing of proposed structure is attached as Annexure 7.4.</p> <p>R&R plan and compensation will be as per the prevailing laws and will be disclosed to the project affected people.</p> <p>The proposed project is not displacing cluster or group of habitation but some isolated temporary & semi-permanent structures are getting affected by the alignment for which proper compensation will be paid as per the prevailing law and will be disclosed to the project affected people.</p>
4	Shri Vijay Diwan , a resident of Aurangabad district mentioned that as per the available details with him the proposed Expressway is passing through 30 talukas, 354 villages and 10 districts of Maharashtra, at about 20800	The proposed alignment is passing through 10 districts, 26 Talukas and 392 villages. The new road construction will not

Annexure 7.2

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
5. No	Comments	Compliance
	<p>acres of land will be required for the proposed project which includes land for 24 new townships along the Nagpur Mumbai Expressway. The land required for construction of road is about 8520 hector and remaining of about 12300 hector will be required for the development of new towns / smart cities. Aurangabad district is drought prone area having at about 70% of fertile land through which this proposed Expressway is passing. Due to diversion of this fertile land, whether this proposed road will offer benefits or loss to the society? He further mentioned that the sources of ground water, its quantum and flow needs to be studied in detail. Employment generation due to proposed project vis-a-vis loss of agricultural production due to diversion of land for the proposed project needs to be studied and cost benefit ratio of the proposed project is to be carried out and studied in detail. As per the presentation about 1858 hectores of land and at about 27.877 hector of forest land will be diverted in Aurangabad district.</p> <p>3,00,00,000³ of filling material, 360 kid water and of about 275,00,000m³ of sand is required for the proposed project. It is not clear from where this raw material will be made available by the project proponent? He mentioned that in total about 15000 trees within Aurangabad district will have to cut for the proposed Expressway. It is not estimated that how many temporary water reservoirs created in the fields by the farmers are going to be affected due to construction of this expressway. Considering all the above, he reiterated that considering the above facts and availability of existing roads why there is a necessity of 3rd road i.e. proposed Expressway. It is also mentioned that the travel time from 16 hours will reduce to 6 to 8 hours. What the benefits common people will get out of that. It is felt that this proposed road is being developed only for Chief Minister of Maharashtra. He also pointed out that there is difference in the data mentioned in</p>	<p>interfere with ground aquifer as it is mostly over ground work except for deep foundation for structures.</p> <p>The Road will be constructed over ground which will not act as a barrier to ground water flow through aquifer.</p> <p>As prevalence of groundwater table in Aurangbad region varies from 4m to 17m from ground level, deep foundation may penetrate through groundwater aquifer. Details of structures being constructed in Aurangabad district is given below.</p> <ol style="list-style-type: none"> 1 No of Bridges/Viaducts 124nos 2 Structures having Shallow Foundation depth upto 5m below ground level 89nos 3 Structures having Deep Pile Foundation 35nos 4 Total numbers of piles (approximately) 3550nos 5 Total Cross sectional area Pile 4015sqm <p>Whereas length of Project Road in Aurangabad District is 110 km and assuming 20km width in north-south direction where groundwater movement is obstructed by the natural barriers as cited in technical paper referred during public hearing,</p>

Annexure 7.2

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
	<p>Executive Summary and Power Point Presentation.</p> <p>He also mentioned about the technical paper published by Mr. Stephen Foster and Mr. Yughander Mandavkar regarding the underground current flows of Aurangabad City funded by World Bank. The technical paper mentions that the northern and southern parts of Aurangabad city have barriers for flow of ground water current which means that the ground water flows from east to west in Aurangabad city and if the development of proposed road is on the eastern side of Aurangabad city, the underground water flow will get hampered, hence he strongly objects the project and request Government not to acquire the land of farmers.</p>	<p>total area of groundwater aquifer is about 2200 sq. km whereas total area of deep foundation of the proposed structure in the project will likely be 0.004 sq. km only in the entire 110 kms length in Aurangabad district. Therefore, impacted area by deep foundation is negligible compared with size of aquifer. It is also pertinent to mention that deep foundations for project road will not at all affect the movement of groundwater.</p> <p>Cost benefit analysis is given in Chapter 8 and results revealed that the Cost benefit Ratio is 1:2.97.</p> <p>Water for construction will be procure after approval of the concerned authority from the available sources.</p> <p>Potential positive and negative benefit of the project has been provided in chapter 8 and Quantitative analysis of overall project impact has also provided in chapter 5 of EIA report. Cost benefit analysis has been provided in chapter-8.</p> <p>Trees data was slightly mismatched because at the time of presentation it was updated after completion of JMR activities. As per the JMS, 21,627 number of trees/shrubs are going to be affected by the project in entire length.</p> <p>The Road will be constructed in shallow depth with permeable layers of earth, fine and coarse granular materials which will not act as a barrier to aquifer underground flow.</p> <p>Depth of the water table is varies between 4 mtrs to 17 mtrs in the Aurangabad district.</p>

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
		The deep foundation also will be isolated one and its area will be negligible compared to vast flow length of underground aquifer. Hence, the construction of this highway project in no way will obstruct the underground flow of water.
5	<p>Shri Subhash Lomte, resident of Aurangabad city and active member of Swaraj India, enquired that for whom the road is being constructed? He mentioned that the public hearing is mandatory to understand the feelings of common people about the project. He mentioned that earlier infrastructure like development of MIDC Chikalthana, MIDC Waluj, Five star MIDC, Shendra, Delhi Mumbai Industrial Corridor (DMIC) project are being implemented and during the land acquisition of all the above projects certain commitments were given by the project proponents. It is the time to verify the compliances made by the project proponents during obtaining various clearances. The review regarding the same shall be taken by the District administration. He mentioned about the ground water contamination due to various MIDCs located in MIDC Chikalthana, MIDC Waluj area. He said that this Maharashtra Samruddhi corridor project is not at all required and strongly objected the project.</p>	<p>All the commitment which has been made will be fulfilled by the project proponent.</p> <p>The proposed project is planned in view of facilitating development in the commercial activities, area development, educational, eco-tourism, agriculture advancement, automobile sectors etc. Simultaneously, it will lead to large scale employment generation, industrial growth assisted with top class technological and capacity building. To sum up implementation of this project will result substantially to contribute, among other things, towards infrastructure development, economic growth of the country, particularly in the local regions. Thus it is important for serving public interest as well as commercial interest by offering fasted and safe road traffic movement through use best available technologies like viaducts, tunnels and thus, reducing travel time to half by achieving speed of 150km/hour, connecting industrial places at Butibori, Amravati, Jalna, Chikalthana, Shendra, Waluj, Sinnar to Mumbai, and tourist and religious places at Karanja, Lonar, Sindkhedraja, Verul, Shirdi.</p> <p>Ground water will not be getting contaminated by this road project although Adequate mitigation measures have been provided in the EMP during construction and maintenance</p>

Place of Public hearing –Aurangabad district Date of Public Hearing- 06/05/2017 Public Suggestion /Comments –Aurangabad District		
S. No	Comments	Compliance
		stage of the project and same has been attached in chapter-10 in table no. 10.1 and 10.2.
6	At the end Shri H.M. Desarda once again reiterated that "this project is not at all required, the discussions are of no use. We would like to walk out of the meeting".	Project is very much essential for the development of all three regions; Kokan, Marathwada and Vidarbha of the Maharashtra state.
7	<p>Finally, Shri Naval Kishor Ram, Chairman of Committee and District Magistrate, Aurangabad thanked all the participants for their active participation in the public hearing. He assured that the details mentioned in the presentation by project proponent required some modifications. The suggestions/positive inputs of all the eminent speakers during the meeting will be incorporated in the Minutes of Meeting and will be communicated to MoEFCC, Govt. of India for further needful and then he concluded the Public Hearing.</p> <p>During the course of Public Hearing, Samrudhi Mahamarg Virodhi Kruti Samiti, Aurangabad-Gangapur-Vaijapur and Aurangabad Samajik Manch have submitted written representation to the Panel vide letter dated 06/05/2017. One representation is also received from Ruller Environment Education & Health Awareness Society, Hyderabad vide letter dated 06/05/2017, copies of which are enclosed herewith.</p> <p>The meeting ended with a vote of thanks to the Chair.</p>	All the remarks and representation submitted through letter has been noted down and will be considered appropriately before incorporation in final EIA.

Place of Public hearing –Jalna district Date of Public Hearing- 03/05/2017 Public Suggestion /Comments –Jalna District		
S. No	Compliance	Comments
1	Shri Uday Kakade , a resident of nearby village Akola Digras, Tq. Badnapur, Dist: Jalna suggested to use stone crust instead of sand in the proposed project as the scarcity of sand is well known to everybody and due to excavation of sand from the sand bed area, the rivers are being dried up.	The Project Proponent has accepted suggestion and mentioned that considering the engineering aspect the stone crust will be used if permitted as per specifications of IRC.
2	Shri L.K. Hiwale , resident of nearby village Tanda, Dist: Jalna stated that the proposed project is passing nearby from his village due to which there will be noise problems in the area. He also further enquired about the arrangement made for use of local village roads.	The Project Proponent clarified that in addition to thick plantation along the right of way, adequate number of noise barriers will be installed after carrying out the noise modeling within a distance of 500 meters at the proposed Expressway to tackle the noise issue. Noise barrier details has been attached in chapter-4, table no. 4.14, total length of noise barrier is 4255m and height is 3m and its cost is also being discussed in chapter-9, table no. 9.1.
	Shri Shivajirao Jondhale , the District Magistrate, Jalna & Chairman of Public Hearing Panel clarified that no existing road will be blocked due to construction of proposed Expressway.	Adequate number of under passes will be provided for free flow of traffic along the existing road.
3	Shri Shivaji Bapurao , a resident of nearby village in Jalna district wanted to know about the cost of compensation to be offered by MSRDC to the land owner against the acquisition of their land. He also wanted to know about the provision of service roads along the Expressway. Shri Jondhale clarified that no existing roads will be closed as adequate number of under passes are proposed for free flow	Shri Jondhale assured that the issue will be tackled as per the provisions of law

Annexure 7.2

	of traffic along the existing road As far as the issue regarding cost of compensation is concerned,.	
4	Dr. J.B. Sangewar , Regional Officer, MPCB, Aurangabad & Member of Public Hearing Panel suggested to install two CAAQMS along with display at two locations in Package-III to know the air quality within the area..	Shri Toke welcomed the suggestion and requested to communicate the same to MSRDC so that same can be implemented throughout the whole Nagpur-Mumbai Expressway of 701 km
5	Shri Datta Mhaske , a farmer of nearby village Varud, Dist: Jalna enquired about the policy of land acquisition.He stated that if a small piece of land is left after land acquisition, whether the same land will be acquired by MSRDC or otherwise, since the small piece of land becomes uncultivable..	Shri Jondhale stated that it will be decided on case to case basis and if a small piece of uncultivable land remain available with the farmer, the same can be acquired considering the quantum of left over land.
6	Shri J.A. Kadam , Convener of Public Hearing stated that the views/ suggestions/comments expressed by the public participants will be included in the report and same will be submitted to Government. Thereafter he concluded the Public Hearing with a vote of thanks. The meeting ended with a vote of thanks to the Chair.	Chairman of the Committee promised that the compliance to the suggestions shall be incorporated by MSRDC in final EIA and same shall be appraised to MoEFCC for grant of clearance

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
1	<p>To,</p> <p>The Regional Officer Pollution Control Board, Aurangabad, Babasaheb Avaghad Patil Sapna Shivani Infrastructure Aurangabad, Mobile No. 9850986006</p> <p>In the forming lake excavation and internal work the big group of the Maharashtra.</p> <p>E-mail : babasaheb.avaghdad66@gmail.com</p> <p>About (Nagpur Mumbai Highway property) about Environment subject notice/s and thinking.</p> <p>Congratulations:</p> <p>First of all you are congratulated for the proposed planning. Without development of Road, Rail and Airway connectivity, doors of developments for basic amenities will not open. Basic Amenities take 1% share of entire DGP.</p> <p>1) Tree to be planted on both side of the road Both the sides, and in the divider place trees, kadunim Jambhul mango palm net , chinch of which trees to be planted, Keshar Mango sweet line termind etc. trees upto 20 mtrs. Width and in the divider can be well planted. It should be covered with four side facing, and permanent water supply and water line shall be placed so many formers will be ready to do the farming of the fruits.</p> <p>And every one percent amount of toll collected by the Government that amount should be paid to the said trees planting person, society, company etc. to whom this responsibility to be given, for</p>	<p>1) Trees will be planted on both sides of the road and also suitable trees/plants will be planted in the median of the road as per suggestion with the forest department. Three tier plantation has been provided in chapter-4, point no. 4.3.18.4 and all three rows scheme is also being discussed in chapter-4.</p> <p>As far as sharing the 1% cost of toll, this is a policy decision and MSRDC will do the needful in this regard.</p>

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>arrangement of water supply pipe line, fertilized Murdha Compound etc. like basic amenities, in the project to be erected.</p> <p>That will result in the consumption of pollution generated by the moving traffic which will be consumed by the said plantation and it will become zero.</p> <p>2. By excavation of sand and muram, place for water storage can be created. In the river, cannel, stream etc. wherever digging of sand and muram will be done for the highway and for that no royalty should be charged because of its transportation expenses. That is how a water storage will be prepared. The same can be used by the farmers for farming and drinking water. If this will be done on the big river, barrages, platform than this water can also be supplied to cities and industrial areas.</p> <p>3. For the busses toll should not be there : No toll shall be charged to any public or private bus. That will promote the use of public transport and it will reduce the pollution level as well.</p> <p>4. On the full highway CCTV Camera to be fixed. It is necessary to fix CCTV camera to protect highway from dirtiness, tree cutting/breaking and breaking of traffic rules. This will help in identification of culprit and necessary action can be taken.</p> <p>5. Solar panel and LED Lights to be used for highway lighting and places of vehicles parking shall also be provided the lighting facility.</p>	<p>2) As per the MOEF guidelines, quarries after excavation of material has to be field and restored as to the extent possible. However, wherever it is feasible your suggestion can be requested to MOEFCC to leave them open for water storage, if MoEFCC approve that, the same will be converted in to water reservoirs.</p> <p>3) It is policy matter and will be submitted to Govt. of Maharashtra for consideration.</p> <p>4) Regarding CCTV installation on the highway, it is already under consideration.</p> <p>5) This is also a good practice, it is already under consideration and will be installed at suitable locations.</p>

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>6. Vehicles sounds and horn sounds shall be control by proper management and techniques.</p> <p>7. Proper Police and employees from traffic department shall be posted to provide proper security and things like drink and drive can be avoided or not be permitted.</p> <p>8. Because of the dust, many travelers use to clean and wash their vehicle on highway which shall not be allowed. For that proper washing center shall be established and for that proper water arrangements shall be done.</p> <p>9. Solar or Electric driven vehicle along with CNG vehicle shall be exempted from any toll tax and proper provision for their charging shall also be provided at toll plaza's etc.</p> <p>Babasaheb AVaghad, Aurangabad</p>	<p>6) For controlling the sound at sensitive location or locations near to habitation, will be controlled with Noise barrier and in this regard proper signage's/boards like No horn zone etc will also be installed on highway.</p> <p>7) It will be considered and concerned agencies will be involved for providing proper safety.</p> <p>8) These facilities will be provided at identified rest areas on which is planned on each 40-50 kms distance, the rest area where commercial establishment are proposed, will be environmentally complied that is provision of STP/ETP, Municipal solid waste treatment and disposal system will be provided.</p> <p>9) This suggestion will be forwarded to the concern authorities to consider in policy decision.</p>
2	<p>SAMRUDDHI HIGHWAY against which action committee, Aurangabad, Gangapur, Vaijapur, Bhartiya Community party, Maharashtra State, Kisan Meeting, Aurangabad.</p> <hr/> <p>Date : 6/5/2017</p> <p>To,</p> <p>Hon'ble All members came for hearing Sant Tukaram Drama Hall Aurangabad.</p>	

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>Sub : Regarding Samruddhi Highway considering affected farmers agitation for cancellation of today's Environment hearing.</p> <p>Hon'ble Sir,</p> <p>1) Samruddhi Highway against which in the state, the agitation is going on, we are requesting your intervention. Aurangabad Taluka Kachhi Ghati where a farmers Shri Jadusingh Meher has died because his land will be acquired for Samruddhi Highway. Another, Kalubhai Shaikh, a farmer has tried to commit the suicide in Maliwada village and many other farmers also died due to fear caused by this project. We the Bhartiya Kamgar Party, Krishi Samiti, Kisaan Sabha and Lal Bawata Shetmajdoor Union are opposing the project.</p> <p>2) By Nagpur Mumbai Smruddhi Highway thousands of cattle's, trees, river, canal stream etc. will be affected and both sides of the road a high walls will be erected and that affected or blocked the drainage of water on both sides. That is creating many environmental related issues. Because, it is creating many environmental issues hence, environmental proceedings for 2006 shall be cancelled.</p> <p>3) We demand to provide the Environmental report prepared by Environment department and Environment Expert prepared should make available to open public. We are demanding that by considering agitation of affected farmers</p>	<p>1) The land acquisition for the project is in process as per the persisting law and direct negotiation. A communication team from MSRDC is reaching to each land holder in every village to have direct one to one dialog and along with that direct consent from majority of land holders are already obtained. MSRDC providing best possible support to all project affected land holders.</p> <p>2) The project has provided adequate provision of 7 VOP, 29LVUP, 34 VUP, 22 PUP, 5 MAJOR BRIDES, 43 MINOR BRIDES, 107 CD CULVERTS 61, UTILITY DUCTS AND 112 RAIN WATER HARVESTING STRUCTURES in 112 km road in Aurangabad district only and along this 112km road average 4 utilities provision will be provided. It ensured that water and other crossing for human & cattle shall not be obstruct by the project. Hence, it will help in water drainage management and restoration of water by using water harvesting structures. This project will not have</p>

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>this project and this public hearing shall be cancelled.</p> <p>Thanking you,</p> <p>Yours faithfully,</p> <p>Sd/- sd/- sd/- sd/- K.P.Ram Baheti Nanasaheb Bhausahab Shinde Subhash Barde Palaskar Bhakap District Action Action Action Secretor Committee Committee Committee Co-Ashok Jadhav Aurangabad Taluka Kisan Sabha Co-Kailash Kamble Co-Ganesh Kasbe Dist.Chairman Kisan Sabha Lalbawada Farming District Secretary Labourer Union Balu Hekade, Bhausahab Kolte, Yogesh Dangem Bal Jalgdale, Bhagwant Mate, Pr. Ravindra Marathe.</p>	<p>any such negative affect in the region.</p> <p>3) The EIA report is already posted on State Pollution Control Boards website and an Executive Summary of the project with soft copy of EIA was submitted to each Grampanchats office of affected villages by MPCB. The public notice regarding the public hearing was published in newspapers both in English and Marathi on dated 31.03.2017 and 05.04.2017 for Aurangabad and Jalna districts respectively both in Marathi and English newspaper viz Daily Time and Lokmat i.e. 30 days' prior to conducting public hearing, according to EIA notification 14th sep. 2006.</p>
3	<p>AURANGABAD SAMAJIK MUNCH</p> <p>C/o. Pra.Vijay Diwan, 2 Shakti Nagar, Aurangabad-431001. Tel. No. 91-240-2320029, 9422706585</p> <p>Date: 06/05/2017 Hon'ble Hearing Officer, Samruddhi Mahamarg, Environment Hearing C/o. Maharashtra Pollution Control Board, Aurangabad.</p> <p>Sir,</p> <p>This Nagpur Mumbai Samruddhi Highway with new eight lanes of 710 kms is proposed. Samruddhi Mahamarg Nagpur is traversing through Wardha, Amravati, Buldhana, Vashim, Jalna, Aurangabad, Ahmednagar, Nashik and Thane districts. Regarding concerned highway</p>	

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>Aurangabad Social Forum has some objection for which proper answers are expected.</p> <ol style="list-style-type: none"> 1. The said hearing by the Environment or Dy. Commissioner shall be conducted within the project area which may be more convenient to project affected people instead of this Drama house. This is our first objection. 2. The said proposal Nagpur-Mumbai road is not limited to the road but it is also include the development of new 24 township/cities along the proposed road. The 710 km long road strip will required 20 thousand 820 hect of fresh farm land. This big farm land will be acquired in 354 villages of 30 Talukas. Out of that 8 thousand 520 hect will be for the road purpose and 12 thousand 300 hect land for development of 24 new urban towns. The proposed acquired land shares the 70% of fertile farming land and moreover it will acquire thousands of hect farming and semi-farming which will vanish the tones of farming product, surface water bodies, cannels, rivers and other water resource along with employment of the people. This project will have huge environmental lose. The project should work out the amount of loss and its benefit in terms of percentage. That is not included in the report but without that land marking for acquisition is done on ground. 3. Marathwada in which Jalna, Aurangabad, Nagpur and Vaijapur Taluka Dudhad, Jaipur, Shevga, Shendran, Gangapur, Jagir, Katchhi Ghati, Mahalpimpri, Palashi, Pokhari, Tanapurwadi, Maliwada, 	<ol style="list-style-type: none"> 1) As per provision of EIA notification 2006 the location of P.H. was finalized by D.C. who happens to be chairman of the public hearing committee and MPCB considering the 112 km length of the road within district and likely huge number of attendees. This is the best place available which is in the right middle of the project road length and center of district with easy access from all the parts and adequate facilities to accommodate the visitors for the said hearing. 2) The project road will required 1858 hect of land for ROW in entire Package-III out of which 1335 hact for ROW and 398 hect for development of interchange to provide access to other majority road and areas in Aurangabad district. The said acquisition will be done as per the prevailing law and proper composition will done. Development of node is not a part of this project but it is an initiative taken by the Government of Maharashtra to address many other regional issues which will be planned to adjoining areas of Nagpur-Mumbai Highway. Development of these nodes will help to provide better facilities to the people of region by providing option for alternative livelihood, Industrial Activities, Medical Facilities and Education facilities in the

Public Representation

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Sl. No	Representation	Reply/ Remarks
	<p>Daulatabad, Lat ur, Hads-Pimpalgaon Tekalwadi, Gokulwadi, Takaliwadi, Gimera etc. villages fresh farming land is acquired by the Maharashtra Road Development Co, the Aurangabad district will required 1858 hector fertile farming land and 27 hector forest land will be vanished. As well as 3 crores cubic meter for the filling purpose sand 27 lakhs cubic meter stones, 4 lakhs cubic meter sand and per day 360 thousand liter water will be vanished. At district level the environment loss very high and for the road in Aurangabad District cutting of trees total no. 4309 non forest and forest is also very high similarly it is cleared that full 710 k.m. length road, 10 district more than fifty thousand trees will be cut and Aurangabad district 3 rivers, 26 lakes, 3 channels and 59 bandh will be affected due to this project, 2012 to 2016, in four years, in the Marathwada maximum families are getting affected in five district in which Aurangabad District is also included. That is because the loss of fertile land, trees cutting/acquisition, loss of surface water and land water which is causing the major loses this what we thought and like to say.</p> <p>4. Since from last many years to travel from Nagpur to Mumbai there are two highway are available (1) Nagpur, Amravati, Akola, Khamgaon Deoalgaon Raja, Jalna, Aurangabad, Ahmednagar Pune, Mumbai as one road is in use. As well as (2) Nagpur Wardha, Sindhkheda Raja, Jalna Aurangabad, Vaijapur, Nashik Mumbai, second road is also available as the conditions of these roads are good by</p>	<p>region, which will be helpful for sustainable development.</p> <p>3) Package-III of the Nagpur-Mumbai Highway will required 1858 hect land for ROW in both the district of Jalna and Aurangabad. Out of that 1335 hect land will be acquired in Aurangabad district. An extensive efforts have been made to avoid all environmentally sensitive areas and fertile land. Since, this is a linear project and while designing a road certain guidelines of IRC and other standards have to followed, it not possible to make immediate changes in alignment. By avoiding all sensitive areas, best possible alignment for package-III has been finalized.</p> <p>Yes about 26.8 hect forest land has been affected by the project road, in this regard all the guidelines have been followed and it will be adequately compensated as per the prevailing law. An equal amount of land is also identified for compensatory forestation in Aurangabad district to minimize the environment impact. Tree will be planted in 1:2 against the trees those are likely to be cut in forest area. Moreover, three tier of trees will be planted both side of the road to enhance the ecology of the region.</p> <p>As far as disturbing water bodies are concern, while designing the project it is also taken in consideration and provided adequate provision of culverts and bridge to avoid any negative impact</p>

Public Representation

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Sl. No	Representation	Reply/ Remarks
	<p>acquiring farming land and making third road, the proposal not deem fit and proper. As mentioned both the old road's good and if needed widening can be done on these roads which will required very less land in comparison to new road. By doing it, fertile land, farming production, canals, stream, river, land water source, trees acquisition and farming employment of which is going to be impacted, can be stopped and therefore, we are opposing the construction of Samruddhi Highway.</p> <p>5. In Last few years, Aurangabad district by different reasons thousands of hectors farming lands has been acquired by Chikalthana Industrial colony, Walunj Industrial Area, Shendra Industrial colony Sez scheme, Delhi Mumbai Industrial Corridor, Zalar Area, citizenship etc. In Chikalthana and walunj Industrial colony there are many factories not doing well and many of them are closed down. Delhi Mumbai Industrial Corridor for which three thousand five hundred hector land is taken into custody and further six thousand five hundred hector land will be acquired and after that now 710 k.m. length eight ways Mumbai Nagpur new road to be prepared which required thousand hector land and prior to this due to above said reasons, wherever in the Aurangabad district the land was acquired, influenced persons encroached the land at initial level and said land acquisition got dropped and its proof are enclosed herewith. As this way Bhakad Project the lands are acquired, land bank business and encouragement of land were promoted, this is our old</p>	<p>on water body or drainage of surface water.</p> <p>All the material which will be used for project will be procured after proper permissions as per the law and guidelines form concerned authorities.</p> <p>4) The proposed project is planned in view of facilitating development in the commercial activities, area development, educational, eco-tourism, agriculture advancement, automobile sectors etc. Simultaneously, it will lead to large scale employment generation, industrial growth assisted with top class technological and capacity building. To sum up implementation of this project will result substantially to contribute, among other things, towards infrastructure development, economic growth of the country, particularly in the local regions. Thus it is important for serving public interest as well as commercial interest by offering fasted and safe road traffic movement through use best available technologies like viaducts, tunnels and thus, reducing travel time to half by achieving speed of 100km/hour, connecting industrial places at Butibori, Amravati, Jalna, Chikalthana, Shendra, Waluj, Sinnar to Mumbai, and tourist and religious places at Karanja, Lonar, Sindkhedraja, Verul, Shirdi.</p> <p>5) The project requirement is already summaries in point 4. Proper mitigation measures will be planned to avoid any</p>

Public Representation

Annexure 7.3

SI. No	Representation	Reply/ Remarks
	<p>experience in Aurangabad District. The land holder farmer with the lot of effects on vegetable fruit garden and grain farming which has been developed in Aurangabad and beside city's vegetable sweet lime and mango etc are supplied to nearby town and cities. There is a question that what wealth Mahamandal has planned for these activities along with for affected farmers.</p> <p>Above said things taken into consideration the Nagpur, Mumbai Samruddhi Highway scheme which is passing through Aurangabad and other districts is detrimental for environment hence, same shall be cancelled as request is submitted.</p> <p>Sd/-</p> <p>Pra Vijayniwan</p> <p>For Aurangabad Samajik Munch</p>	<p>encroachment of land which will be acquired for the project.</p> <p>This project will be very helpful for the development of the region. It will provide faster and better connectivity with trigger many essential development in the region.</p>
4	<p>Rural Environment Education and Health Awareness Society Date: 06.05.2017. TO, THE DISTRICT ENVIRONMENTAL ENGINEER, Regional office Aurangabad, Aurangabad Dist. MPCB. Sub:- Review of public hearing of M/s MSRDC Proposes to lay Mumbai-Nagpur Expressway for Jalna to Aurangabad (155 Km Package-III) with 7579.52 Crores Nhava (V) Jalna (Taluk) Jalna (Dist) to Surala (V) Vajapur (Taluk) Aurangabad (Dist) Maharashtra .</p>	

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>Madhubabu Environment Volunteer (REEHAS, Rural Environment Education and Health Awareness Society) R/O of Hyderabad, Most Respectfully Submit That:</p> <p>Respected Sir,</p> <p>In this regard as a Environment Volunteer I'am giving few suggestions to the proponent So Please Kindly Consider the Below Points.</p> <p>All Environmentalists are opposing the industries but I am supporting the industries why because, in the time of Independence our country population is 30 crores but now it increased to 110 crores, every year 50 lakhs Graduates are coming for Employment but Government giving employment to only 5 lakhs people, others are getting job opportunities in private sector so we must welcome to the industries.</p> <p>All are discussing about pollution ... pollution ... but main pollution of our country is unemployment is the most dangerous pollution to all.</p> <ol style="list-style-type: none"> 1. The Proponent of M/S MSHDC Proposes to lay Above Express way 2. The Environment consultant M/s Louis Berger of this project study area covered 10 km radius around the proposed Project area, they studied locations of air ambient quality, noise levels recorded, water samples collected, soil samples also collected these all are in norms of CPCB. This is satisfactory. 	<ol style="list-style-type: none"> 1) Yes, thanks 2) This is done as per the requirement of MOEFCC.

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>3. The consultant please take health states of village people in 10 km radius around is must, why because it is very useful in future.</p> <p>4. Please take Crop production details from near Agriculture lands</p> <p>5. For operation of the project water requirement is 360 KLD. It is taking from groundwater, in summer season chance to down fall water level so please arrange rain water harvesting system.</p> <p>6. Please utilize waste water to plantation, sprinkling on roads. It controls Dust Pollution when your vehicles transport time.</p> <p>7. Your taking 33% for Green belt is very low, it is CPCB norms please increase 50%, if any possible</p> <p>8. You take avenue plantation to near villages, road side it is useful to save environment. Plant fruit bearing and medicinal value trees.</p> <p>9. Please give employment opportunities to local people first.</p> <p>10. Give medical facilities to near villages, Conduct Medical Camps Regularly.</p> <p>11. Give drinking water facility to near villages.</p> <p>12. Give good education to near village children.</p> <p>13. Develop all main roads and street roads of near villages.</p>	<p>3) Health data has been obtained from secondary sources of the reason. And during implementation of the project it will be considered as well.</p> <p>4) Crop production details have been obtained from District statistical handbook.</p> <p>5) Water for construction will be used after proper permission from the concerned authority. For rain water harvesting provision for required structures are already included in design and 308 rain water harvesting pits will be provided to the total length of project road that is 154km, at every 500mt we are providing rain water harvesting pits.</p> <p>6) Yes, it will be used during construction and maintenance phase of the project.</p> <p>7) The provision of plantation is as per IRC guidelines.</p> <p>8) Avenue plantation is already proposed and it will be done with due consultation with concern forest department for maintain the highest survival ratio, in addition to this medicinal plant will be planted considering the local variety of trees.</p> <p>9) The project will provide lot of employment to locals.</p> <p>10) Medical camps will be organized during construction and maintenance phase of the project</p> <p>11) The existing water supply pipe line or source will not be disturbed by the project proponent..</p>

Public Representation

Annexure 7.3

Sl. No	Representation	Reply/ Remarks
	<p>14. The project will contribute additional revenue to the State & Central Govt.</p> <p>I am recommending authorities of pollution control panel of MOEF, for grant a permission to the above proponent.</p> <p>Thanking you.</p> <p>Yours faithfully,</p> <p>H. Madhubabu</p> <p>President (REEHAS, Rural Environment Education and Health Awareness Society)</p> <p>1) Copy to R.O & S.R.O Aurangabad, MPCB.</p> <p>2) Copy to Project Proponent M/s MSRDC.</p> <p>3) Copy to Project Consultant M/s Louis Berger.</p>	<p>12) Education facilities will also enhance with better connectivity and development of nodes in the adjoin areas of project road.</p> <p>13) This road will open up new alternatives and connecting road will also be developed by the state government.</p> <p>14) Certainly, it is anticipated</p>

RADHESHYAM MOPALWAR, IAS

Vice Chairman & Managing Director

D.O. No.: FC-NMSCEW-2016/DE-7/C.R. NO. : FC-01/ENVT/48

Date : 5th June, 2017.



Sub : Water Conservations Measures along proposed Nagpur Mumbai Super Communication Expressway.

Dear *Sheshan,*

In order to give impetus to road infrastructure for faster connectivity, the Government of Maharashtra have announced construction of Nagpur Mumbai Super Communication Expressway (NMSCE). This project aims at providing speedy communication between Nagpur - Mumbai, passing through various districts of Vidarbha, Marathwada and Northern Maharashtra. The eight lane access controlled expressway project is important from developmental, commercial, and social point of view, in addition to massive employment generation particularly in rural areas. Maharashtra State Road Development Corporation Limited has been appointed as an agency for it's implementation. It will also bring Vidarbha, Marathwatha and North Region of State closer to financial capital of Mumbai and enhance participation of rural population in socio-economic, agro based activities.

Considering various important factors, the entire project is divided into five packages for planning purpose and alignment of the Expressway has been finalized. MSRDC has appointed 5 Consultants to prepare DPR for the projects as per Revenue Regions as below.

Sr. No.	Revenue Division	Length (in km)	Name of Consultant
1	Nagpur	89.355	M/s Primove and Uro Studio (JV)
2	Amravati	257.881	M/s Stup India Ltd.
3	Aurangabad	155.02	M/s Luis Burger and K.P.M.G (JV)
4	Nashik	120.696	M/s Wadia techno Engg. And Tata Consultancy Services
5	Kokan	78.90	M/s Sowil Ltd.

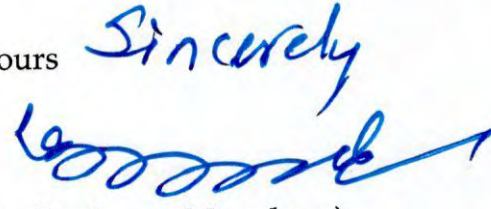
The proposed packages attract provisions of EIA Notification 2006 and accordingly the terms of references for preparation of Environmental Impact Assessment Report were granted. The State Expert Appraisal Committee (SEAC) of Department of Environment, Government of Maharashtra strongly desired that the entire project of 5 packages should be a net water surplus project and further instructed project proponent i.e. MSRDC to initiate water conservation measures involving rain water harvesting along the corridors so that the water required for construction can be tapped from ground water reserves, after obtaining due consent from the Government. Further, also instructed to construct bridge-cum-bandharas structures and convert closed quarry into water reservoirs which can be used by the public for drinking and irrigation purpose.

The proposed Expressway will pass through 10 districts, 26 talukas and 388 villages which will also connect adjoining 20 districts to this fast corridor. It is also proposed to construct 24 new townships along the expressway. The details of villages along with finalised alignment is enclosed herewith along with soft copy (KML File in CD).

Considering the water scarcity and requirement of huge quantum of water for construction purpose as well as proposed township along the expressway, it is proposed to achieve "Prosperity" by implementing various Water Conservation techniques such as "Check Dams" along the alignment of Expressway. MSRDC has studied Shirpur pattern water conservation measures adopted in Shirpur, Dist. Dhule. Considering the Geology and rock morphology of all the 10 districts, it is requested to guide MSRDC for adopting the proper water conservation measures including Check Dams in the proposed alignment area so that project can become net water surplus project. The technical details of the project at District level / Regional level will be provided by the consultants appointed by MSRDC. It is also requested to pass on necessary instructions to the Regional / District offices of GSDA so that proposed water conservation measures can be successfully implemented by MSRDC.

Applicable fees toward Formulating Check Dams Scheme will be paid by MSRDC. The DPRs for the Project are to be finalized on urgent basis, it is requested to send the available data, if any for the proposed alignment through which Maharashtra Samruddhi Corridor is passing.

Best wishes,

Yours Sincerely

(Radheshyam Mopalwar)

Shri Shekhar Gaikwad, IAS,
Director,
Groundwater Surveys & Development Agency,
Bhujalbhavan,
Agriculture College Campus,
Wakdewadi Road, Shivajinagar,
Pune - 411 005

Copy to :

1. Joint Managing Director (Engg. II), MSRDC Ltd., Mumbai
2. Chief Engineer, MSRDC Ltd., Nagpur, Amravati, Aurangabad, Nashik, Mumbai.
3. SE / EE are requested to get in contact with local GSDA offices for successful implementation of project.
4. Team Leader, M/s. Euroestudio S.L., Gurgaon - It is requested to provide all technical information to the GSDA in consultation with concerned EE of the Project.
5. Team Leader, M/s. STUP Consultants, Mumbai - It is requested to provide all technical information to the GSDA in consultation with concerned EE of the Project.
6. Team Leader, M/s. Louis Berger, Gurgaon - It is requested to provide all technical information to the GSDA in consultation with concerned EE of the Project.
7. Team Leader, Wadia Techno-Engineering Services Ltd., Mumbai - It is requested to provide all technical information to the GSDA in consultation with concerned EE of the Project.
8. Team Leader, M/s. SOWIL Ltd., Navi Mumbai - It is requested to provide all technical information to the GSDA in consultation with concerned EE of the Project.



श्री. शेखर गायकवाड, भा.प्र.से.
संचालक

अ. शा. पत्र क्र.भूसवियं/सविक/संकीर्ण-१/प्रक्र-६९/ 30 /२०१७

संचालनालय,

भूजल सर्वेक्षण आणि विकास यंत्रणा,

'भूजल भवन', शिवाजीनगर, म.राज्य, पुणे ४११००५

दूरध्वनी ०२०-२५५१३७१६,१७ फॅक्स २५५३३१०८

ईमेल - dir.gsda@maharashtra.gov.in /

directorogsda@gmail.com

दिनांक : १९ जून २०१७

11/17

विषय - प्रस्तावीत नागपूर मुंबई सुपर कम्युनिकेशन एक्सप्रेस वे च्या दुतर्फा जलसंधारणाच्या उपाय योजना घेणेबाबत .

संदर्भ- १. आपले अर्धशासकीय पत्र क्र. D.O.No.FC-NMSCEW-2016/DE-7/C.R.NO.:FC-01/ENVT/48 Date - 05.06.2017

२. शासन निर्णय क्रमांक : रा कृ यो -२०११/प्र.क्र.७२/जल ७ दि.९.५.२०१३

आदरणीय महोदय,

उपरोक्त संदर्भ क्र. १ अन्वये, महाराष्ट्र शासनाने आठ पदरी नागपूर मुंबई सुपर कम्युनिकेशन एक्सप्रेस वे (NMSCE) च्या बांधकामाची घोषणा केलेली असून, या प्रस्तावित एक्सप्रेस वे च्या बांधकामाकरीता लागणाऱ्या पाण्याची गरज भूजलातून भागविण्याकरीता जलसंधारणाच्या उपाययोजना व Bridge cum Bandhara अश्या उपाययोजना राबवाव्या आणि बंद पडलेल्या खदानी पिण्याच्या व सिंचनाच्या पाण्यासाठी जलाशयामध्ये रुपांतरित करण्यात याव्या, अशा सूचना State Expert Appraisal Committee (SEAC) ने दिलेल्या आहेत असे कळते. यामुळे प्रस्तावित एक्सप्रेस वे च्या दुतर्फा स्थानिक भूस्तर व भूरचनेच्या अनुषंगाने check dam सह इतर जलसंधारणाच्या उपाययोजनांबाबत MSRDC ला GSDA ने मार्गदर्शन करणेबाबत विनंती केलेली आहे.

या अनुषंगाने सादर करण्यात येते कि, ता.शिरपूर जि.धुळे, भेंमडी. ता.वरुड, जि.अमरावती, व सावळी सास्ताबाद, ता.जि.वर्धा येथे राबविलेल्या योजनेप्रमाणे इतर ठिकाणी योजना राबविण्याकरीता अस्तित्वातील सिमेंट नालाबांधातील गाळ काढणे व नाला खोलीकरण करणे आणि खोलीकरणासह नवीन सिमेंट नाला बांध बांधणे याकरीता मार्गदर्शक सूचना उपरोक्त संदर्भ २ अन्वये निर्गमित करण्यात आलेल्या आहेत.

१. शासन निर्णयातील निकषामध्ये नाला खोलीकरण हे फक्त २nd व 3rd order या वर्गीकरणातील जलप्रवाहांवर करणे, नाला तळापासून कमाल ३ मीटर पर्यंत नाला खोलीकरण करणे, तसेच नाला खोलीकरण मुरुमाच्या थरापर्यंतच करणे व कठीण पाषाणात खोदकाम न करणे इत्यादी चा समावेश आहे.

२. प्रकल्पातील विहित निकषांमध्ये बसणाऱ्या उपाययोजनांच्या बाबतीत शासनाने निश्चित केलेले विहित दर आकारण्यात येईल.

M.S.R.D.C.
(BWSP) SITE OFFICE BANDRA

- 5 JUL 2017

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३. महाराष्ट्र भूजल (विकास व व्यवस्थापन) अधिनियम २००९ मधील कलम ८ व ९ कडे आपले लक्ष वेधण्यात येत आहे. या तरतुदीनुसार अतिशोषित पाणलोट क्षेत्रामधील भूजलाच्या वापरावर निर्बंध लावण्यात आले असून भूजल उपश्यावर उपकर आकारण्याची तरतूद केलेली आहे. या तरतुदीचे पालन होण्यास विनंती आहे.

या निकषांप्रमाणे तसेच स्थानिक भूस्तर व भूरचनेनुसार, प्रस्तावित सुपर कम्युनिकेशन एक्सप्रेस वे च्या दुतर्फा जलसंधारणाच्या उपाय योजना राबविण्याकरीता उपयुक्त स्थळे (feasible sites) संबंधित जिल्हा कार्यालयामार्फत सर्वेक्षण करून तेथील प्रकल्प कार्यकारी अभियंता यांचेकडे सादर करण्यात येतील. या अनुषंगाने सविस्तर सूचना संबंधित विभागीय व जिल्हा कार्यालय यांना स्वतंत्रपणे देण्यात येत आहेत. माहितीस्तव सादर.

सहपत्र : शासन निर्णय प्रत

प्रति,

मा .श्री. राधेश्याम मोपलवार , भा .से.प्र.
उपाध्यक्ष व व्यवस्थापकीय संचालक,
महाराष्ट्र राज्य रस्ते विकास महामंडळ,
बांद्रा रिक्लेमेशन बस डेपोच्या समोर,
लिलावती हॉस्पिटल जवळ, के.सी.मार्ग,
बांद्रा (पश्चिम), मुंबई 400 050.

आपला विश्वासू,

(शेखर गायकवाड)

अस्तित्वातील सिमेंट नाला बांधातील गाळ
काढणे व नाला खोलीकरण करणे तसेच
खोलीकरणासह नवीन सिमेंट नाला बांध
बांधणे : मार्गदर्शक सूचना

महाराष्ट्र शासन

जलसंधारण विभाग

शासन निर्णय क्रमांक: राकृतो-२०११/प्र.क्र.७२/जल-७

हुतात्मा राजगुरु चौक, मादाम कामा मार्ग

मंत्रालय, मुंबई-४०० ०३२.

तारीख: ९ मे, २०१३

वाचा — शासन निर्णय, ग्राम विकास व जलसंधारण विभाग क्रमांक:

- १) शासन निर्णय क्रमांक: जलसं-१०९५/प्र.क्र.२५०/जल-७, दिनांक ३० जानेवारी, १९९६
- २) शासन निर्णय क्रमांक: आदर्श-२००७/प्र.क्र.१२१/जल-७, दिनांक ३० नोव्हेंबर, २००७
- ३) शासने निर्णय क्रमांक: जलसं-२००८/प्र.क्र.५६/जल-७, दिनांक ११ एप्रिल, २००८ व १७ एप्रिल, २००८
- ४) नियोजन विभाग, शासन निर्णय क्रमांक: रोहयो-२००७/प्र.क्र.९५/रोहयो-१, दिनांक १६ जुलै, २००७ व दिनांक २८ सप्टेंबर, २००७.
- ५) ग्राम विकास व जलसंधारण विभाग, शासन निर्णय क्रमांक: जलसं-२०१२/प्र.क्र.२३/जल-७, दिनांक ५ मार्च, २०१३
- ६) शासन निर्णय क्रमांक: समक्रमांक १६ नोव्हेंबर, २०११, ११ सप्टेंबर, २०१२, दिनांक २२ जानेवारी, २०१३ व शुध्दीपत्रक, दिनांक २७ फेब्रुवारी, २०१३

प्रस्तावना —

सिमेंट नाला बांधातील गाळ काढणे व नाला खोलीकरण करण्याचे प्रयोग ता.शिरपूर जि.धुळे (स्वयंसेवी संस्था), भेंमडी. ता.वरुड, जि.अमरावती, (कृषि विभाग), सावळी सास्ताबाद, ता.जि.वर्धा (भूजल सर्वेक्षण व विकास यंत्रणा) येथे राबविण्यात आले आहेत. शिरपूर जि.धुळे येथे राबविण्यात आलेल्या योजनेप्रमाणे राज्यात इतरत्र कार्यक्रम राबविण्याबाबतची मागणी लोकप्रतिनिधी व अनेक संस्थांकडून येत होती. ही योजना राज्यभर राबविण्याच्या दृष्टीने भेंमडी. ता.वरुड, जि.अमरावती व सावळी सास्ताबाद, ता.जि.वर्धा येथे राज्य शासनाने प्रायोगिक तत्वावर योजना राबविल्या आहेत. वर नमूद तिन्ही प्रयोगांचा तौलनिक अभ्यास करून सिमेंट नाला बांधातील गाळ काढून नाला खोलीकरण करण्याचे भौगोलिक व Topographical परिस्थितीनुसार मॉडेल सूचविण्याकरिता संचालक, भूजल सर्वेक्षण व विकास यंत्रणा, पुणे यांच्या अध्यक्षतेखाली संदर्भाधीन शासन निर्णय दि.२२ जानेवारी, २०१३ व २७ फेब्रुवारी, २०१३ अन्वये तांत्रिक समिती गठीत करण्यात आली होती. सदर समितीने दि.२० एप्रिल, २०१३ च्या पत्रान्वये शासनास अहवाल सादर केला आहे. सदर अहवाल शासनाने स्वीकृत केला असून अहवालातील शिफारशी विचारात घेऊन अस्तित्वातील सिमेंट नाला बांधातील गाळ काढणे व खोलीकरण आणि खोलीकरणासह नवीन सिमेंट नाला बांध बांधण्याकरिता मार्गदर्शक सूचना निर्गमित करण्याची बाब शासनाच्या विचाराधीन होती.

शासन निर्णय—

सिमेंट नाला बांधातील गाळ काढणे व नाला खोलीकरण करण्याचे प्रयोग ता.शिरपूर जि.धुळे, भेंमडी. ता.वरुड, जि.अमरावती, सावळी सास्ताबाद, ता.जि.वर्धा येथे राबविण्यात आले आहेत. या तिन्ही प्रयोगांचा तौलनिक अभ्यास करून संचालक, भूजल सर्वेक्षण व विकास यंत्रणा, पुणे यांच्या अध्यक्षतेखालील समितीने दिनांक २० एप्रिल, २०१३ रोजी अहवाल शासनास सादर केला आहे. सदर अहवाल शासनाने स्वीकारला असून अहवालातील शिफारशी विचारात घेऊन अस्तित्वातील सिमेंट नाला बांधातील गाळ काढणे व खोलीकरण आणि खोलीकरणासह नवीन सिमेंट नाला बांध बांधणे या उपचारास मान्यता देण्यात येत आहे.

२. नाला खोलीकरण या योजनेचे उद्दिष्ट

- १) नाला खोलीकरण या योजनेचा मुख्य हेतु भूपृष्ठीय पाणी साठवण (Surface Water Storage) नसून भूजल पुनर्भरण हा आहे. पाणीसाठा भूपृष्ठीय असल्यास बाष्पीभवनामुळे मोठ्या प्रमाणावर पाणी वाया जाते. त्याऐवजी भूपृष्ठाखाली पुनर्भरित पाण्याचे बाष्पीभवन जवळ-जवळ निरंक असते.
- २) नालापात्रात गाळ साठल्याने नाल्याचा छेद (Cross Sectional Area) कमी होतो. नालापात्र उथळ झाल्याने त्याची पाणी वाहून नेण्याची क्षमता कमी होते व पूरस्थितीत प्रवाहाचे पाणी मूळ नाला पात्राबाहेरील भागात पसरून लगतच्या शेतातील मातीचा सुपीक थर वाहून जातो. नाला खोलीकरणाने ही समस्या काही अशी कमी होईल.
- ३) खोलीकरणामुळे उपलब्ध होणाऱ्या पाणी साठ्यामुळे पुनर्भरणासाठी अतिरिक्त पाणी व अवधी (Retention Period) मिळाल्याने परिसरातील भूजल पातळीत वाढ होईल. पर्यायाने त्या परिसरात मान्सूनोत्तर काळात अधिक कालावधीपर्यंत भूजल उपलब्ध होऊ शकेल.
- ४) ही उपाययोजना शक्य तेथे अस्तित्वातील ज्या बंधान्यांचे पाणी साठा क्षेत्र गाळ-वाळू इत्यादी मुळे बुजलेले आहे, अशा निरुपयोगी बंधान्यांच्या वरील बाजूस (Up Stream Side) घेणे अपेक्षित असल्याने, असे बंधारे पुनरुज्जीवित होतील व त्या परिसरात नव्याने बंधारा घेण्याचा खर्च वाचेल.

३. अस्तित्वातील सिमेंट नाला बांधातील गाळ काढणे व खोलीकरण करणे व खोलीकरणासह नवीन सिमेंट बंधान्याची कामे घेण्याबाबतचे निकष :

महाराष्ट्राच्या एकूण भौगोलिक क्षेत्रापैकी ९२ टक्के क्षेत्र काळा कठीण पाषाण (Basaltic Rock), ४ टक्के रुपांतरीत पाषाण (Metamorphic Rock) व ४ टक्के भूभाग वालुकामय पाषाण (Sedimentary Rock) असे एकूण ९६ टक्के क्षेत्र हे कठीण पाषाणाने व्याप्त आहे. उर्वरित ४ टक्के भूभाग हा गाळाचा प्रदेश (Alluvial Terrain) आहे. त्यामुळे कठीण पाषाणाच्या भूभागात ही उपाययोजना राबविण्याची तत्वे व गाळाच्या भागासाठीची मार्गदर्शक तत्वे यात अंशतः बदल

होणे आवश्यक आहे. तथापि, आवश्यक तेथेच व भूजल शास्त्रीय दृष्ट्या सुयोग्य स्थळी नाला खोलीकरण उपाययोजना राबविल्यास अधिकाधिक अपेक्षित लाभ मिळू शकेल.

कठीण पाषाणाचा भूभाग (Basaltic Terrain)/ गाळाचा भूभाग (Alluvial Terrain)

३.१ नाला खोलीकरण हे फक्त २nd व ३rd order या वर्गीकरणातील जलप्रवाहांवरच घेण्यात यावे. कारण भौगोलिक रचनेनुसार १st Order Streams या सर्वसाधारण वहनक्षेत्र (Runoff Zone) २nd व ३rd Order या पुनर्भरण क्षेत्र (Recharge Zone) तर ४th Order व त्यापेक्षा मोठे जलप्रवाह हे साठवण क्षेत्र (Storage Zone) या भागांमध्ये स्थित असतात.

३.२ उपलब्ध अपधावेच्या (Surface Runoff Calculation) सिमीत राहूनच नाला खोलीकरणाची लांबी निश्चित करावी.

३.३ ज्या ठिकाणी नालापात्रात वाळू साठा आहे अशा नाल्यांचे खोलीकरण करू नये.

३.४ ज्या ठिकाणी नालापात्रांची नैसर्गिक खोली ३ मीटरपेक्षा जास्त आहे अशा ठिकाणी खोलीकरण भूजल सर्व्हेक्षण व विकास यंत्रणेच्या मार्गदर्शनाने करावे.

३.५ नाला खोलीकरणासाठी कठीण पाषाणात खोदकाम करू नये म्हणजेच मुरुमाच्या थराखाली खोदकाम नसावे. कारण या उपाययोजनेद्वारे भूस्तरावरील उथळ जलधारक (Shallow Aquifer) पुनर्भरित करणे हा उद्देश आहे. कठीण पाषाणाची जलधारक क्षमता अत्यंत कमी असल्याने तसेच त्यातून जमिनीखाली पाणी झिरपण्याची गती अत्याधिक मंद असल्याने कठीण पाषाणात खोदकाम केल्यास योजनेचा खर्च फार जास्त होईल, तुलनेत पुनर्भरण नगण्यप स्वरूपाचे होईल.

३.६ नाला खोलीकरणाची कमाल मर्यादा नाला तळापासून (Nala Bed) ३ मीटर असावी.

३.७ अतिशोषित व शोषित पाणलोट क्षेत्रामध्ये ही कामे अग्रक्रमाने राबविण्यात यावीत.

३.८ अस्तित्वातील बंधान्यांच्या उर्ध्ववाह क्षेत्र (Up Stream Side) मध्ये नाला खोलीकरण केल्यास जास्त लाभदायक होईल.

३.९ गाळाच्या प्रदेशात (Alluvial Area) नाला खोलीकरणाचे काम हाती घेणे योग्य नाही. कारण अशा ठिकाणी Clay चा थर Impervious असल्यामुळे सदर पाणी जमिनीत मुरुन भूजलामध्ये रुपांतरीत होणार नाही. त्यामुळे अशा परिसरात खोलीकरण करण्यात येवू नये. सर्वसाधारणपणे असा भूभाग नाला खोलीकरणासाठी भूशास्त्रीयदृष्ट्या अनुकूल नसतो. अशा परिसरात भूस्तरातील गाळाचा (Clay) थर हा पाणी खाली झिरपू देत नसल्याने नाला खोलीकरण केले तर त्यामध्ये पाण्याची साठवण होईल, परंतु हे साठलेले पाणी जमिनीत मुरुन भूजलात रुपांतरित होणार नाही.

३.१० गाळाच्या भूभागातील "बझाडा" भूस्तराचा भाग हा नाला खोलीकरण या उपाययोजनेसाठी अत्यंत योग्य आहे. कारण सातपुडा पर्वत श्रेणीच्या, पायथ्याच्या टेकड्या (Foot Hills) चा उतार संपल्या- संपल्याच बझाडा प्रकारचा भूस्तर असून तो लहान मोठे टोळदगड (Boulders) व टेकड्यांची धूप झाल्याने वाहून आलेले Silt यापासून बनलेला आहे. या भूस्तराची जलग्रहण क्षमता (Water Intake Capacity) जास्त आहे. गाळाच्या प्रदेशाच्या एकूण विस्ताराच्या तुलनेत बझाडा भूभाग हा फारच कमी आहे. परंतु गाळाच्या भूभागात उपलब्ध होणारे भूजल हे प्रामुख्याने अशा बझाडाझोन द्वारेच भूस्तरात पुनर्भरित होते. त्यामुळे अशा भूभागात मोठ्या प्रमाणावर नालाखोलीकरण उपायोजना राबविण्यात यावी.

४. **मापदंड :** गाळ काढणे व नाला खोलीकरण करण्यासंदर्भातील जलसंपदा विभागाचे Regional Schedule of Rates (RSR) चे दर लागू राहतील. तसेच ही कामे मशीनरीच्या सहाय्याने करणे बंधनकारक राहिल.

५. सदरची कामे ही मृद व जलसंधारणाच्या सर्व योजनांतर्गत योजनांमधून घेणे अनुज्ञेय आहे.

६. या संदर्भातील तांत्रिक व अंमलबजावणीबाबतच्या सविस्तर मार्गदर्शक सूचना आयुक्त (कृषि), महाराष्ट्र राज्य, पुणे यांनी निर्गमित कराव्यात.

सदर शासन निर्णय महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा संकेतांक २०१३०५०९१३२८४८१५२६ असा आहे. हा आदेश डिजीटल स्वाक्षरीने साक्षांकित करुन काढण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने.

Sunil
Sahebrao
Chavan

Digitally signed by Sunil Sahebrao Chavan
DN: c=IN, o=GOVERNMENT OF MAHARASHTRA, ou=RDD & WATER CONSERVATION DEPT, postalCode=400032, st=Maharashtra, cn=Sunil Sahebrao Chavan
Date: 2013.05.10 12:40:16 +05'30'

(सुनील चव्हाण)

उप सचिव, महाराष्ट्र शासन

प्रत,

१. मा. राज्यपाल यांचे खाजगी सचिव,
२. मा. मुख्यमंत्री यांचे खाजगी सचिव,
३. मा. उपमुख्यमंत्री यांचे खाजगी सचिव,
४. मा. मंत्री (जलसंधारण) यांचे खाजगी सचिव
५. मा. राज्यमंत्री, (जलसंधारण) यांचे खाजगी सचिव
६. सर्व मा. मंत्री / मा. राज्यमंत्री यांचे खाजगी सचिव,
७. मुख्य सचिव यांचे सचिव,
८. सर्व अपर मुख्य सचिव/ प्रधान सचिव/ सचिव, मंत्रालयीन विभाग,
९. सर्व विभागीय आयुक्त,
१०. आयुक्त (कृषि), महाराष्ट्र राज्य, पुणे,
११. प्रधान मुख्य वनसंरक्षक व महासंचालक, सामाजिक वनीकरण, महाराष्ट्र राज्य, पुणे,
१२. संचालक, भूजल सर्वेक्षण व विकास यंत्रणा, पुणे,

Government of Maharashtra

By Speed Post

No.FLD-2417/CR-344/F-10
 Room no. 456/ 461 Annex,
 Revenue and Forest Department,
 Madam Kama Road,
 Hutatma Rajguru Chowk,
 Mantralaya, Mumbai-400 032.
 Dated: 25/09/2017

To,
 The Additional Principal Chief Conservator of Forests (Central),
 Government of India,
 Ministry of Environment, Forests & Climate Change,
 Regional Office, West Central Region,
 Ground Floor, East Wing,
 New Secretariat Building, Civil Lines,
 Nagpur-440 001.

Subject: Forest Land-Aurangabad

Diversion of 26.877 ha. of Reserved Forest land under Section - 2 of the Forest (Conservation) Act, 1980 for Construction of Nagpur-Mumbai Super Express Way (Package-III) from Jalna/Buldhana district border (km.00.00) to Aurangabad Ahamadnagar District Border (km 154.90).

The Executive Engineer, M.S.R.D.C Ltd., Camp Office Aurangabad has submitted the proposal is for diversion of 26.877 ha. of Reserved Forest land under Section - 2 of the Forest (Conservation) Act, 1980 for Construction of Nagpur-Mumbai Super Express Way (Package-III) from Jalna/Buldhana district border (km.00.00) to Aurangabad Ahamadnagar District Board (km 154.90). The details of forest land proposed for diversion is as given below: -

Sr. No.	District	Taluka	Village	Compt. No.	Survey No.	Gut No.	Area (in ha.)	Legal Status
1	Aurangabad	Aurangabad	Jaipur	243 B	52	181	4.124	Reserved Forest
2				243 B	52	181	0.041	
3				243 A	80	12	1.386	
4			Warzadi	241 B	61	275	0.287	
5				241 B	68	297	2.43	
6			Sendraban	219	25	56	5.645	
7			Pokhari	211	5	7	0.139	
8				211	5	7	2.425	
9			Krishanapur	210 B	11	5	0.806	
10				210 A	3	2	0.708	
11			Bhikapur	207	11,12	10,21	5.589	
12			Jatwada	202 A	127	110	0.267	
13			Abdimandi	197	58	17	3.03	
Total Forest Area							26.877	Reserved Forest

2. The proposal for Construction of Nagpur-Mumbai Super Express Way (Package-III) from Jalna/Buldhana district border (km.00.00) to Aurangabad/Ahmadnagar District border (Km 154.90) under Forest (Conservation) Act, 1980. This project connected with Nagpur to Mumbai through various section of State Highway which passes through Wardha-Malegaon-Jalna-Aurangabad-Sinnar-Thane. This route has poor geometry at many locations and also congested besides, this route connectivity through National

Highway also exists but it traverses through considerably longer route. The proposed construction of Nagpur-Mumbai Super Express Way will be done through state of art technology with controlled access. It is aimed to attain a speed of 120 km/per by vehicles plying this Expressway, apart from providing speed and connectivity, the project will also support the Development of Marathwada and Vidarbha regions. This is Greenfield alignment and will reduce travel time, fuel consumption, vehicle operation and maintenance cost in comparison to the existing alternatives. It is planned to develop new industrial/educational/commercial/tourism nodes in vicinity of expressway at a regular interval of 40-50 km, this project will side by side generate large scale temporary and permanent employment to the skilled and unskilled workers, thereby offering employment opportunity of mainly to local population.

3. Implementation of entire project will ensure fast and safe road traffic movement, reducing travel time to half by achieving speed of 100 km/hr. for motor vehicles. Project also aims at creation of commercial nodes for multiple development mainly in industrial, commercial, agricultural, tourism sector resulting in job employment generation, capacity building as well as connectivity between industrial place like Butibori, Amravati, Jalna, Chikalthana, Sehdra, Waluj, Sinnar to Mumbai, and tourist and religious places at Karanja, Lonar, Sindkhedraja, Verul Shirdi.

4. This project has been sanctioned by the Government of Maharashtra vide resolution No. P. 2015/C.R.28/Ka.1461, dt.14/1/2016.

5. The area belongs to Eco-value class-III and having density less than 0.4 of Open Forest category.

6. The Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad has certified that no alternate alignment is possible and the forest land required is the barest minimum.

7. There are 396 trees of various species and girth in the area proposed for diversion.

8. The Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad has certified that the proposed project is not included in the area of any/ National Park, Wildlife Sanctuary or Nature reserve, nearest Wildlife Sanctuary Boundary (Gautala Wildlife Sanctuary) is located at 40 km. from proposed alignment of Nagpur Mumbai Super Expressway.

9. The Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad has certified that the proposed project is beyond 10 kms from the boundary of Protected Area (Gautala Wildlife Sanctuary).

10. The proposed area does not form part of any existing National Park, Wildlife Sanctuary, and Nature Reserve etc. as certified by the Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad.

11. The Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad has certified that proposed project is not likely to affect monumental site of cultural, historical, religious, archeological or recreational importance.

12. The Deputy Conservator of Forest Aurangabad Forest Division, Aurangabad has given suitability certificate for 29.10 ha. from Gairan Gut No.138 (3.90 ha.), 145 (8.70 ha.), 146 (11.10 ha.) and 148 (5.40 ha.) at village Pathri, Tal. Phulambri Dist. Aurangabad which are adjoining patches and which is proposed to be transferred to the Forest Department as an alternate land for Compensatory Afforestation in lieu of the 26.877 ha. of forest land required to be diverted for construction of Phase III Jalna/Buldhana District Border Communication Express Way and found it to be suitable for afforestation and management and, it is free from encroachment and any encumbrances.

13. The Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad has certified that the area proposed for compensatory afforestation is not included as forest in the area identified by the expert committee appointed under the judgment of Hon'ble Supreme Court order dtd. 12.12.1996 and not

acquired under provisions of Private Forest (Acquisition) Act -1975 by virtue of application of Sec.-35 of Indian Forest Act 1927 and is not recognized as deemed Reserved Forest.

14. There is no violation of Forest (Conservation) Act 1980, as certified by the Deputy Conservator of Forests, Aurangabad Division, Aurangabad.

15. The User Agency has given an undertaking to defray the cost of Net Present Value.

16. The User Agency has agreed to defray the cost of compensatory afforestation over 26.877 ha. Forest land.

17. The User Agency has given an undertaking to obtain environmental clearance.

18. The User Agency has submitted the certificates of Collector, Aurangabad under Schedule Tribes and Other Traditional Forest Dweller's (Recognition of Forest Rights) Act 2006 issued vide letter No 2016/RB-10/1-2/1054/244 dt.22/11/2016 in prescribed format Form- I as per Government of India guidelines dated 5/7/2013 with all annexures as required.

19. The Deputy Conservator of Forests, Aurangabad Division, Aurangabad and the Chief Conservator of Forests (T), Aurangabad Circle have recommended the proposal for diversion of 26.877 ha. of forest land.

20. The Principal Chief Conservator of Forests (HoFF), Maharashtra State, Nagpur has recommended the proposal subject to the conditions, given in his specific recommendations, under Section-2 (ii) of the Forest (Conservation) Act, 1980. His specific recommendations are enclosed in the proposal.

21. In the circumstances explained in the aforesaid paragraphs and enclosures, the State Government recommends that the said forest land may be allowed to be diverted for the non-forestry use on the conditions proposed by the Principal Chief Conservator of Forests (HoFF), Maharashtra State, Nagpur. The matter may kindly be placed before the Government of India for its approval under Section-2 (ii) of the Forest (Conservation) Act, 1980, be obtained and communicated to this Government at earlier.

Yours faithfully,

Virendra Tiwari

(Virendra Tiwari) 25/09/2017

Chief Conservator of Forests (Mantralaya)

Encl: A) Set of case papers

b) The following documents are enclosed:-

1. Prescribed form as per Rules.
2. Certificate regarding minimum demand for forest land for the project
3. Area Statement
4. Index map of suitable scale
5. Commitment from the Applicant for defraying the cost of exploitation as well as cost of compensatory plantation.
6. An undertaking of Project Authority for Net Present Value.
7. Brief note of the project from the project authority
8. Map of non-forest land for compensatory afforestation
9. Site Inspection Report by Deputy Conservator of Forests, Nagpur.
10. Certificate that there is no violation of Forest (Conservation) Act, 1980.
11. Certificate in Part V.

copy/ks

1. Principal Secretary, Rural Development Department, Maharashtra, Mumbai
2. Principal Officer, Conservation of Forests (Wildlife), Maharashtra State, Mumbai
3. Additional Principal State Conservator of Forests and Tiger Office, Maharashtra State, Mumbai
Reference to his letter No. D.1. (W/C/W/D) 10310/77, dated 25/11/77
4. Additional Principal State Conservator of Forests (W/P/A), Maharashtra State, Mumbai
5. Chief Conservator of Forests (II), Aurangabad
6. Collector, Aurangabad
7. Deputy Conservator of Forests, Aurangabad Forest Division, Aurangabad
8. Executive Engineer, M.S.P.D.C. Ltd., Camp Office, Aurangabad
9. Salechille P. 10

RADHESHYAM MOPALWAR, IAS

Vice Chairman & Managing Director



D.O.No.MSRDC/02/NMSCEW/GSDA/4140

Date: - 1 JUN 2017

Sub: - Implementation of water harvesting measures along
Nagpur Mumbai Samruddhi Corridor Expressway (NMSCEW)

Dear Sir,

MSRDC has undertaken the work of construction of Nagpur Mumbai Samruddhi Corridor Expressway (NMSCEW). The tenders for the construction of expressway for the pre-qualification of the tenderers have been called. This expressway passes through Nagpur, Wardha, Amravati, Washim, Buldhana, Jalna, Aurangabad, Ahmadnagar, Nashik and Thane districts. Length of the expressway is 701 kms and entire stretch is the greenfield alignment.

It is under consideration of MSRDC to execute the work of water harvesting in the land of 5 kms on either side of expressway (total width 10.00 kms). For identifying the works of water harvesting, the works of water harvesting executed at Shirpur in Dhule district have been examined and MSRDC is considering the execution of similar works in 10 km strip along NMSCEW.

It is necessary to investigate whether the water harvesting works of Shirpur pattern will be useful if implemented along NMSCEW. You are requested to direct your local GSDA officers to assist MSRDC in identifying the stretches where Shirpur pattern will be successful. The note giving details of Shirpur pattern is enclosed. The list of villages through which NMSCEW passes (with details of tehasil & district) is also enclosed.

Thanking you,

Warm regards,

Yours Sincerely,

(Radheshyam Mopalwar)

Encl: - As above

Shri Sunil Patil
Director,
Groundwater Survey & Development Agency (GSDA),
Agriculture College Campus,
Wakdewadi Road, Shivajinagar,
Pune - 411005.
Tel: 020 - 25513716 / 25533171
Fax: 020 - 25533108

Copy to: - 1) Joint Managing Director (Engg. I) / (Engg. II) / (Admin. & Finance)
2) All concerned CE's / SE's / EE's

Corporate Office : Opp. Bandra Reclamation Bus Depot, Near Lilavati Hospital, K.C. Marg, Bandra (West), Mumbai - 400 050.
Telephone No.: 022-26400190/201, 26558175/76 Fax No.: 022-26417893

Regd. Office : Nepean Sea Road, Besides Priyadarshini Park, Mumbai - 400 036.
Telephone No.: 022-2368 6112, 2369 6109/3671/3673, Fax No.: 022-2368 4943
Website : www.msrdc.org, CIN : U45200MH1996SGC101586