

PRE-FEASIBILITY REPORT (PFR)
for
ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND ENVIRONMENTAL
MANAGEMENT PLAN (EMP)

for
Proposed New National highway 753 BB Inter corridor route of Bharatmala project Route 3
from Songir village, Dhule Taluka - Dhule District to Visarwadi village, Navapur Taluka –
Nandurbar District approximately 114.50 km



Submitted by



NATIONAL HIGHWAYS AUTHORITY OF INDIA

(Ministry of Road Transport & Highways Government of India)

1. Executive Summary	4
2. Introduction of the Project / Background information	6
i. Identification of Project and Project Proponent	6
ii. Brief Description of nature of the Project.....	6
iii. Need for the Project and its importance to the Country and or region	7
iv. Demand Supply Gap.....	8
v. Imports vs. Indigenous production.....	8
vi. Export Possibility	8
vii. Domestic / Export Markets	8
viii. Employment generation (Direct and Indirect) due to the project	8
3. Project Description	8
i. Type of project including interlinked and interdependent projects, if any.....	8
ii. Location (map showing general location, specific location and project boundary and project site layout) with coordinates	9
iii. Details of alternative sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.....	9
iv. Size of magnitude of operation	9
v. Project description with process (a schematic diagram / flowchart showing the project layout, components of the project etc. should be given.)	10
vi. Raw material required along with estimated quantity, likely source, marketing area of final product/s, Mode of transport of raw Material and Finished Product.	10
vii. Resource optimization/ recycling and reuse envisaged in the project, if any, should be briefly outlined.....	11
viii. Availability of water its source, Energy/ power requirement and source should be given.	11
ix. Quantity of wastes to be generated (liquid and solid) and scheme for their Management/disposal.....	11
x. Schematic representation of the feasibility drawing which give information of EIA purpose	12
4. Site Analysis.....	12
i. Connectivity.....	12
ii. Land form and land use.....	13
iii. Topography	13
iv. Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wildlife sanctuary, eco-sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.	13
v. Existing Infrastructure	15

vi.	Soil Classification	15
vii.	Climatic data from Secondary sources	15
viii.	Social Infrastructure.....	16
5.	Planning Brief.....	16
i.	Planning Concept (type of industries, facilities transportation etc.) Town and Country Planning/ Development authority Classification	16
ii.	Population Projection	16
iii.	Land use planning (breakup along with green belt etc.)	16
iv.	Assessment of Infrastructure Demand (Physical & Social)	16
v.	Amenities / facilities	17
6.	Proposed infrastructure	17
i.	Industrial Area (Processing Area).....	17
ii.	Residential Area (Non-Processing Area)	17
iii.	Green Belt	17
iv.	Social Infrastructure.....	17
v.	Connectivity.....	17
vi.	Drinking Water Management (Source and Supply of Water).....	18
vii.	Sewerage System	18
viii.	Industrial Waste management.....	18
ix.	Solid Waste management	18
x.	Power Requirement and Supply / Source	18
7.	Rehabilitation and Resettlement (R & R) Plan:.....	19
i.	Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).	19
8.	Project Schedule & Cost Estimates	19
9.	Analysis of proposal (Final Recommendations).....	19
i.	Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.	19

1. Executive Summary

The proposed project is a part of the Bharat Mala Project which has been envisaged as an umbrella program under the Ministry of Road Transport and Highways. The project involves constructions or improvement of national highways/ newly declared National Highways with an aim to improve road connectivity to border areas, ports, backward areas, religious and tourist sites. The project has identified 44 economic (freight) corridors, inter-corridors and feeder-routes for development.

The Bharatmala Project consists of connecting National Highways by improvement of State Highways in 3 states viz.

- Telangana – 2 packages
- Madhya Pradesh – 7 Packages
- Maharashtra – 5 Packages

Out of 5 packages in Maharashtra, there are 3 Inter Corridor stretches & 2 Feeder Routes. The details are as follows:

Sr. No	Route	Stretch	Start & End locations of Corridor	Length in km (approx.)
1	Inter Corridor	Banda – Madhkhoh – Sankeshwar section	Banda - Sankeshwar	103.60 km
2	Inter Corridor	Sangamner – Nira – Pune – Kedgaon section	Lonand - Kedgaon	51.375 km
3	Inter Corridor	Devmogra – Shree Mangal Harchand Nagar – Patan section	Songir - Visarwadi	114.50 km
4	Feeder Route	Nandur Shingote – Ahmednagar section	Kolhar – Nandur Shingote	48.70 km
5	Feeder Route	Ulwe – Raigad section	Padeghar - Barapada	26.50 km

The project corridor is proposed for development to 4-lane access-controlled roads depending upon traffic and the Right of Way available. In this regard, NHAI has been entrusted with the assignment of Development of Economic Corridors, Inter-Corridors, Feeder Routes and Coastal Roads primarily to improve freight movement in the Country. NHAI has invited proposal from Technical consultants for carrying out detailed project report.

Bharatmala Route 3:

The Pre-feasibility Report is for Route 3 (Songir to Visarwadi) of approximately 114.50 km length, which passes through Dhule and Nandurbar District. The alignment passes through approximately 45 villages.

Components of the Project

- The project corridor is proposed for development to 4 - lane access-controlled roads depending upon traffic and the Right of Way available;
- Provision of basic amenities like toll plazas, administrative buildings, rest areas, etc., and other ancillary structures;
- Two bypasses are proposed at Dondaicha and Nandurbar which will be 2+2 lane will be, access-controlled road, with service roads on either side;
- Avenue plantation shall be provided as per Green Highway (Plantation and Maintenance) policy and Green Highways (Plantation Trans-plantation beautification and Maintenance) policy 2015.

Need and Importance of the Project:

Cities have concentrated educational infrastructures, employment opportunities, skilled work force, financial independence and the infrastructure to keep the demand-supply cycle intact. Thus, for a young developing nation, exposure of the youth to the industries and business opportunities in the cities plays a very important role in deciding the future and its demography. Transport infrastructure forms the backbone of a country's economy and provides a vital linkage between the urban and the rural areas.

- The project corridor is one of the identified inter-corridor for improvement which interlinks the different Highways.
- This corridor speeds up the freight movement and provides the better access to freight vehicles as a link to the National Highway.
- Connectivity with the remote and sensitive areas will enhance, it will also ensure faster road vehicular and train movement and also reduce accidents.
- It also connects the rural areas to better prospects of medical support for humans as well as cattle.
- Temporary employment generation
- An important aspect which may not be always thought about is the frequency and impact of accidents. Improving highway geometry and widening it from 2-lane to 4-lane will reduce probability of accidents.

Thus, this will not only reduce travel time but also improve the district's economic growth. The entire region will be benefitted from the Project, while the project area will gain through economic development and increased access to markets and social services.

2. Introduction of the Project / Background information

i. Identification of Project and Project Proponent

Project name: Consultancy Services for preparation of feasibility Study and Detailed Project Report of Bharatmala Project– Route 3 from Songir in Dhule district and ending at Visarwadi in Nandurbar district. (Design = 114.50 km approximately) in the state of Maharashtra.

Project Proponent: National Highway Authority of India (NHAI)

ii. Brief Description of nature of the Project

Proposed New National highway 753 BB Inter corridor route of Bharatmala project Route 3 starting from Songir Village, Dhule Taluka (Dhule District) to Visarwadi Village, Navapur Taluka (Nandurbar District) (Design = 114.50 km) 4-lane access-controlled roads from 2-lane, depending upon traffic and the Right of Way available. This proposed alignment passes through two districts viz Dhule district and Nandurbar district in the state of Maharashtra and is a project by M/s. National Highway Authority of India, PIU Kolhapur.

There are two bypasses proposed along the alignment, at village Dondaicha and Nandurbar. The ROW of the bypass is 60 m and the bypass are proposed to be upgraded into 2 + 2 Lane, access-controlled road, with service roads on either side.

Villages
Songir
Sonadale
Dangurne
Darana
Dalwade P.S.
Chimthane
Salwe
Methi
Kampur
Vikhram
Vikhurle
Mandal
Dondaicha- Warwade(Mc-1)
Rami
Dhawde
Khokrale
Nyahali
Ghotane
Ranale

Vawad
Chaupale
Nandurbar (Rural)
Khamgaon
Virchak
Pachorabari
Dhekwad
Bal Amrai
Kalamba
Bijadevi
Ghogal
Bardipada
Bhadwad
Vatri
Khandbara (Ct)
Shrawani
Sagali
Vadade Bk.
Chhireve
Khatgaon
Kadwan
Pach Mauli
Mothi Kadwan
Bhardu
Nawapada
Visarwadi

There are two bypasses proposed along the alignment, at village Dondaicha and Nandurbar. The bypass alignment run through the side with minimum habitation to keep the bypass length optimum. The alignment also passes through 15 Ha of forest area.

iii. Need for the Project and its importance to the Country and or region

This projected corridor interlinks different State & National Highways. The improvement will speed up the freight movement and provide a better access to vehicles as a link to the National Highways. Apart from that, it promises to revive the agriculture, tourism, education as well as better connectivity in and around the district. Thus, this planning will not only reduce travel time but also improve the district's economic growth.

The projected corridor has proposed 2+2 lane, access-controlled bypasses with service roads on either side at major villages where the habitation is excessive. This will avoid traffic congestions. Another important aspect to be considered is the frequency of accidents. The widening and

efficient planning on the geometrical aspects of the highways may reduce the probability of accidents.

The entire region will be benefitted from the Project, while the project area will gain through economic development and increased access to markets and social services.

iv. Demand Supply Gap

Not Applicable

v. Imports vs. Indigenous production

Not Applicable

vi. Export Possibility

Not Applicable

vii. Domestic / Export Markets

Not Applicable

viii. Employment generation (Direct and Indirect) due to the project

Highway construction broadly encompasses the process of construction and maintenance, including the design, contracting, implementation, supervision, and maintenance of highways and related structures, such as bridges and interchanges. The areas covered includes public works, private contracting of civil works, and labor-based construction techniques. For this purpose, 200 labours shall be employed per day.

Direct employment generation: During the construction phase manpower will be needed to take the part in various project activities. Skilled, semi-skilled and unskilled labors, will likely to get work. In the post construction phase, it is expected that the project will provide social benefits to local people in terms of direct employment by way of better commercial and industrial development of the area.

Indirect Employment: The project shall also induce indirect employment generation for cleaners, guards, local vendors, operation and maintenance workers etc. Local vendors, construction material traders, electrician, plumbers etc. will be benefitted through employment generated during construction and maintenance phase.

3. Project Description

i. Type of project including interlinked and interdependent projects, if any.

Not Applicable.

ii. Location (map showing general location, specific location and project boundary and project site layout) with coordinates

Map attached as **Annexure 1**

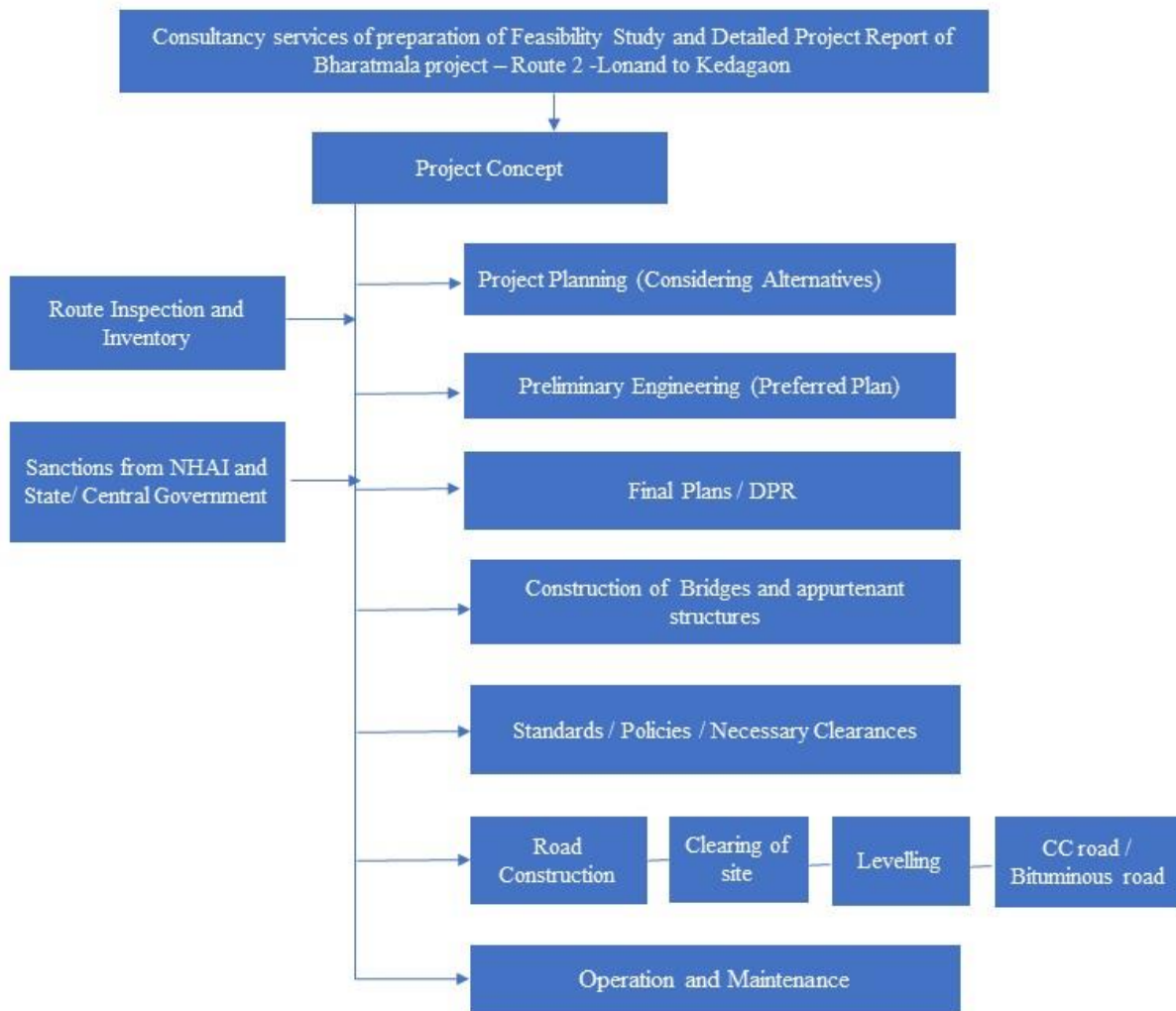
iii. Details of alternative sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

This PFR is prepared as per selected alignment. Comparison and detailed report on alternative alignment analysis will be furnished in EIA.

iv. Size of magnitude of operation

The total stretch of proposed route 3 of Bharatmala is 114.50 km (approx.) starting from Songir in Dhule District and ends at Visarwadi in Nandurbar District. This stretch will also have 4 lane (2+2) carriageway.

- v. **Project description with process (a schematic diagram / flowchart showing the project layout, components of the project etc. should be given.)**



- vi. **Raw material required along with estimated quantity, likely source, marketing area of final product/s, Mode of transport of raw Material and Finished Product.**

The material requirement during the construction phase of the project for a period of 24 months in broad view per kilometer is as below:

- Aggregate: 1510295 (CUM)
- Steel: 11277 (MT)
- Cement: 92093 (MT)
- Bitumen: 32765 (MT)

The highway construction will require minor minerals like stones, gravel, ordinary clay, ordinary

sand, limestone, boulders, kankar, murum, brick earth, bentonite, road metals. As per MINES AND MINERALS (DEVELOPMENT AND REGULATION) ACT, 1957, excavation of minor minerals during construction of roads shall be executed after prior permit.

vii. Resource optimization/ recycling and reuse envisaged in the project, if any, should be briefly outlined.

NA

viii. Availability of water its source, Energy/ power requirement and source should be given.

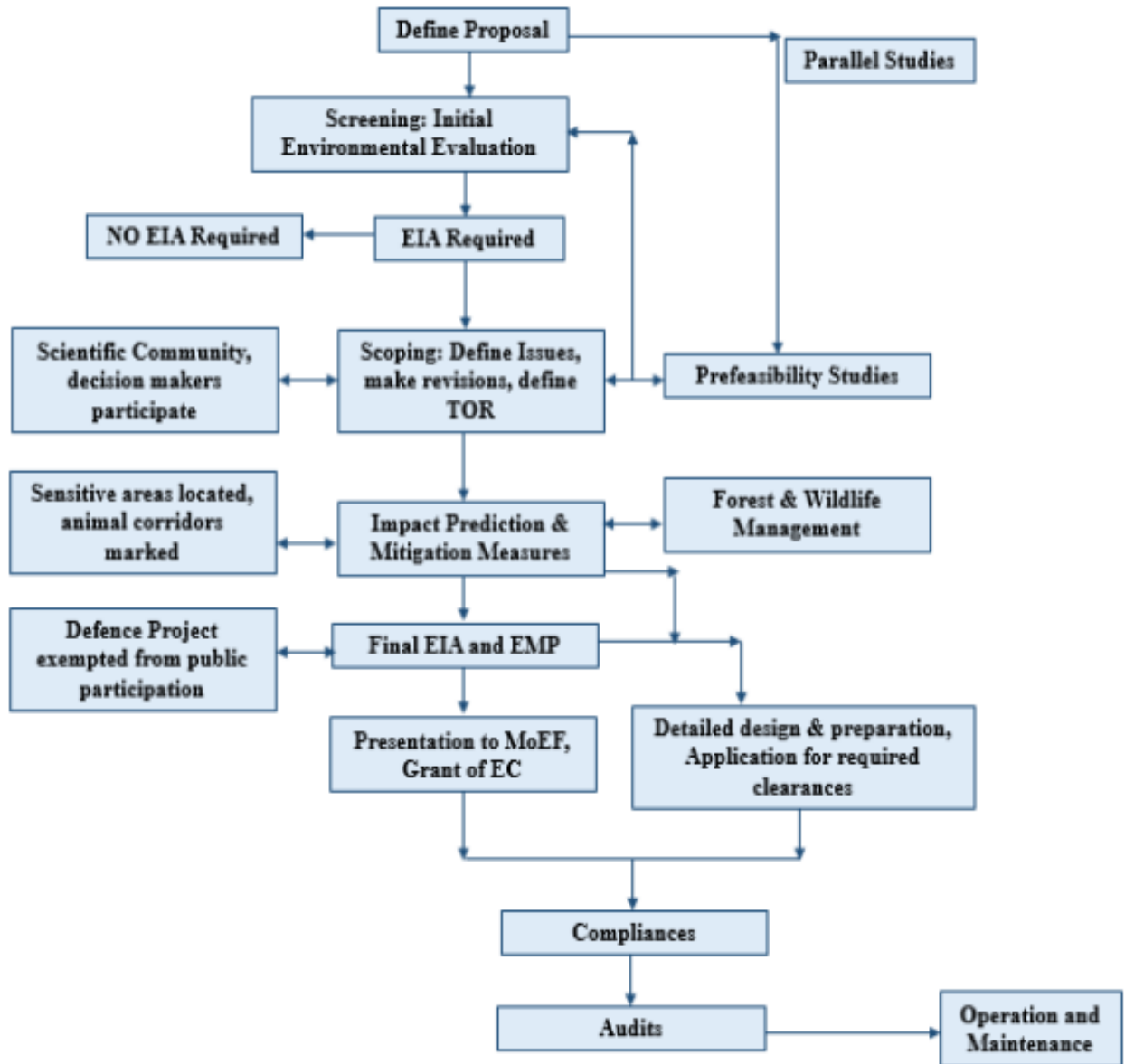
Water: Water will be provided through bore wells/ water tankers with prior consent. Details will be furnished in EIA report.

Power: LSD D.G sets shall be used for power for onsite construction sites, wherever grid power supply is not available.

ix. Quantity of wastes to be generated (liquid and solid) and scheme for their Management/disposal.

Wastes generated within the site would be of food items, paints, cement, grit, bitumen, tar, cement, concrete, oil & grease etc. Waste shall be segregated and collected in separate bins and disposed-off according to MoEF&CC regulations.

x. Schematic representation of the feasibility drawing which give information of EIA purpose



4. Site Analysis

The latitude and longitude are 21° 4'11.58"N latitude, 74°47'10.69"E longitude at Songir, Dhule District and ends at 74°47'10.69"E latitude, 73°57'37.31"E longitude at Visarwadi in Nandurbar District.

i. Connectivity

The proposed project passes through several villages Songir – Methi – Dondaicha – Ranale - Vawad – Nandurbar – Khandabara – Mothi Kadwan - Visarwadi of Dhule and Nandurbar district.

xi. Land form and land use

The general land use pattern is agriculture. Some of the habitant villages are developed along the project route. There is residential, commercial & institutional development of major villages like Chimthana – Dondaicha – Ranala – Devmogra – Visarwadi.

The area falling under the proposed Right of Way (ROW) and the proposed bypasses majorly passes through agricultural land, hence there will be permanent change in the land use from agricultural to non-agricultural land. Near residential areas the land use will change from private to Government land. Details of Land use breakup will be described in EIA.

xii. Topography

The alignment passes mainly through flat terrain. The project site is bounded by agricultural lands.

xiii. Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wildlife sanctuary, eco-sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.

The area falling under the proposed Right of Way (ROW) and the proposed bypasses majorly passes through agricultural land, hence there will be permanent change in the landuse from agricultural to non-agricultural land. Near residential areas the landuse will change from private to Government land. Details of Land use breakup will be described in EIA. There are several villages and settlements located in the vicinity of the existing route. The proposed project passes through several villages Songir – Methi – Dondaicha – Ranale -Vawad – Nandurbar – Khandabara – Mothi Kadwan - Visarwadi.

Table 4-1: Village List

Sr.No.	Village
1	Songir
2	Sonadale
3	Dangurne
4	Darana
5	Dalwade P.S.
6	Chimthane
7	Salwe
8	Methi
9	Kampur
10	Vikhram
11	Vikhurle

12	Mandal
13	Dondaicha-Warwade(Mc-1)
14	Rami
15	Dhawde
16	Khokrale
17	Nyahali
18	Ghotane
19	Ranale
20	Vawad
21	Chaupale
22	Nandurbar (Rural)
23	Khamgaon
24	Virchak
25	Pachorabari
26	Dhekwad
27	Bal Amrai
28	Kalamba
29	Bijadevi
30	Ghogal
31	Bardipada
32	Bhadwad
33	Vatri
34	Khandbara (Ct)
35	Shrawani
36	Sagali
37	Vadade Bk.
38	Chhireve
39	Khatgaon
40	Kadwan
41	Pach Mauli
42	Mothi Kadwan
43	Bhardu
44	Nawapada
45	Visarwadi

- **Water Bodies**

The alignment of the expansion route passes through mainly plain terrain and agricultural areas. The project site is bounded by surface water reservoirs within 10 km. The project will cross the Burai River near Sindkheda, and Amravati river near Dondaicha Village.

Sr. No	Water body	Average aerial distance in km
1.	Burai River	Alignment crosses the water body
2.	Amravati River	Alignment crosses the water body
3.	Keli lake	1.03 km
4.	Songirpada Reservoir Lake	2.19 km

- **Sanctuaries and Wildlife parks:**

No identified and notified protected area within 15km from the project boundary.

xiv. Existing Infrastructure

Majority of the alignment traverse through agricultural areas with intermittent built-up patches at village like Chimthana – Dondaicha – Ranala – Devmogra – Visarwadi, etc. The built-up patches comprise of settlements, market place, educational institutes, etc.

xv. Soil Classification

Soil profile of the State: The soil status of Maharashtra is residual, derived from the underlying basalts. In the semidry plateau, the black-cotton soil is clayey, rich in iron and moisture-retentive, though poor in nitrogen and organic matter. When re-deposited along the river valleys, the kali soils are deeper and heavier, better suited for Rabi crops. Farther away, with a better mixture of lime, the morand soils form the ideal Kharif zone. The higher plateau areas have pather soils, which contain more gravel.

- **Dhule District**

The soils are deep black and extremely fertile except in some portions near the main river and its tributaries, which have cut down the land very badly and removed the top soil. Otherwise the soils grade from the deep fertile soils to coarse shallow to stony soils away from the river either northwards towards the Satpudas or south ward towards the residual hills and dykes. (*Source: CGWB report for Dhule district 2013*)

- **Pune District**

Mainly three types of soils are observed in the district i.e., coarse shallow soils, medium deep soils and deep black soils. The soils of the district are basically derived from Deccan Trap Basalt to the south of Tapi River. North of Tapi River the soils are from Deccan Trap Basalt as well as from Alluvial formations. The northern part of the district has dark brown to yellowish brown coarse shallow to medium deep soils, with clayey loamy deep soils of Tapi River and Narmada River valley to its south and North respectively. Below the Tapi River valley comes the belt of medium deep soils mostly with interception of medium and shallow soils in scattered patches, depending on the local conditions. (*Source: CGWB report for Nandurbar district 2013*)

xvi. Climatic data from Secondary sources

- **Dhule district**

The Climate of the district is characterized by a hot summer and general dryness throughout the year except during the south-west monsoon season, i.e., June to September.

The daily mean minimum temperature was 16°C and mean maximum temperature was 45°C. From about the latter half of February, temperatures increase at 40.7 degrees Celsius. From November, both day and night temperatures drop rapidly till January which is the coldest month with the mean daily minimum at 16.2 degree Celsius. Except during the south-west monsoon season when the humidity is above 70 per cent, the air is rather dry over the district during the rest of the year. (Source: CGWB report for Dhule district 2013)

- **Pune district**

The climate of the district is on the whole is agreeable. The winter season is from December to about the middle of February followed by summer season which last up to May. June to September is the south-west monsoon season, whereas October and November constitute the post-monsoon season. The mean minimum temperature is about 12°C and mean maximum temperature is about 39°C. (Source: CGWB report for Pune district 2013).

xvii. Social Infrastructure

This existing alignment is passes through villages like Chimthana – Dondaicha – Ranala – Devmogra – Visarwadi, etc. This villages mainly consist of Residential settlement and people mainly depends upon the agricultural for their income source. The basic social infrastructure of this villages is not well developed along the route. The villages on the proposed route have primary health care facilities, basic education, markets, police station, transportation, roads etc., but for Higher education and Health Care facilities people have to go main city areas of Nandurbar and Dhule Districts.

5. Planning Brief

i. Planning Concept (type of industries, facilities transportation etc.) Town and Country Planning/ Development authority Classification

Not Applicable

ii. Population Projection

Not Applicable

iii. Land use planning (breakup along with green belt etc.)

Landuse change is partially applicable as there is 15-20 m of available Right of Way (ROW) which would require additional land acquisition and also the area falling under the proposed bypasses which majorly passes through agricultural land.

iv. Assessment of Infrastructure Demand (Physical & Social)

Not Applicable

v. Amenities / facilities

The amenities proposed during operation phase are toll plaza, administrative buildings, weighing stations, parking areas & rest areas and office cum residential complex of PIU. The toll plaza location will be selected based on the traffic studies and a study of the existing physical features including the availability of land & designed as per IRC 84.

6. Proposed infrastructure

i. Industrial Area (Processing Area)

Not Applicable

ii. Residential Area (Non-Processing Area)

Not Applicable

iii. Green Belt

Avenue plantation shall be provided as per Green Highway (Plantation and Maintenance) policy and Green Highways (Plantation Trans-plantation beautification and Maintenance) policy 2015.

iv. Social Infrastructure

Not Applicable

v. Connectivity

• **Road Infrastructure**

This alignment passes through villages like, Shivthar – Wathar – Lonand – Nira – Morgaon – Supe. The existing structures on the present alignment are minor/ major bridges, culverts, etc. The existing road condition is good and the carriageway ranges between 6-7 m throughout the alignment. The existing ROW (Right of Way) observed is from 15 m to 20 m.

• **Railway Stations**

1. Hol Railway Station from Songir End end: 13.55 Kms.
2. Nardana Railway Station from Songir End: 10 kms.
3. Nandurbar Railway Station from Nandurbar: 1.30 kms.
4. Khatgaon Railway Station from Visarwadi end: 7.80 kms
5. Baripada Railway Station from nandurbar: 7.30 kms
6. Chnchpada Railway Station from Visarwadi end : 4.36 kms.

7. Dhule Railway station from Songir end: 20.14 km

- **Bus Depots**

1. Visarwadi Bus Depot from Visarwadi end: 0.50 Kms.
2. Sindkheda Bus depot from Songir end: 21.32 kms.
3. Central Bus stand from Visarwadi end: 35.53 kms

- **Airport**

Dhule Airport: 19 km from Songir (aerial distance)

vi. Drinking Water Management (Source and Supply of Water)

Drinking water will be purchased. Details will be furnished in EIA report.

vii. Sewerage System

Mobile toilets with package STP will be provided for the workers in construction phase. Toilets and STPs shall be provided in the amenities area. Details will be furnished in EIA report.

viii. Industrial Waste management

Not Applicable.

ix. Solid Waste management

50 kg of municipal waste is expected to be generated during construction considering 200 labours. During operation phase, the municipal solid waste generated from the amenities proposed along the alignment. Waste management during construction and operational phase shall be done as per Solid Waste Management Rules, 2016.

x. Power Requirement and Supply / Source

Power requirement during construction phase will be met with LSD D.G sets in case of non-availability of electric supply. For operational phase, electrical supply will be used wherever available.

7. Rehabilitation and Resettlement (R & R) Plan:

i. Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).

Most of the land coming under the project area is agricultural and cultivated land. The land required for the construction of Bypass will be acquired by NHAI before the commencement of construction work and the R&R plan will be prepared and will be submitted in EIA.

8. Project Schedule & Cost Estimates

i. Likely date of start of construction and likely date of completion:

The project shall start its construction work as and when DPR is finalized and will get Environmental clearance from state level MoEF&CC. The completion period of the project construction is estimated about 24 months. The anticipated period of completion is in the year 2021.

ii. Estimated project cost along with analysis in terms of economic viability of the project.

The estimated Civil cost of the project is approximately Rs. 936.11 Cr.

9. Analysis of proposal (Final Recommendations)

i. Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.

The project will have multiple benefits. It will reduce the travel time substantially between Dhule and Nandurbar. Overall improvement will be expected in local area in following ways:

1. Development and improvement in transportation infrastructure facility will connect villages with the nearby cities
2. Better approach to Medical & Educational services and quick transportation of perishable goods like fruits, vegetables and dairy products.
3. Development of tourism and pilgrimage
4. Transporting, processing and marketing of agricultural products
5. Fast and safe connectivity resulting in savings in fuel, travel time and total transportation cost to the society
6. Reduction in accidents due to curve improvements at various sections of the alignment
7. Reduction in pollution due to reduction in congestion
8. Indirect and direct employment opportunity to people from all skilled, semiskilled and unskilled streams will act as social benefits

It is assumed that the overall Bharat mala project will boost socio-economic development in the entire central region of Maharashtra. Accordingly, Route 3 will contribute towards this objective.

Annexure I

