

Pre-Feasibility Report

NAME OF THE PROJECT- Construction of New Four-lane National Highway (NH-152D) from Gangheri to Narnaul in the state of Haryana.

SUBMITTED BY

National Highways Authority of India

NHAI, Sector- 10, Dwarka, New Delhi-110075

1.0 EXECUTIVE SUMMARY

The **National Highways Authority of India (NHAI)** is a nodal agency of the Ministry of Road Transport and Highways (MoRTH). The NHAI was created through the promulgation of the National Highways Authority of India Act, 1988. In February 1995, the Authority was formally made an autonomous body. It is responsible for the development, maintenance and management of National Highways.

The Ministry of Road Transport and Highways (MoRTH) / National Highways Authority of India (NHAI) has decided to develop the proposed project to improve the efficiency of freight movement in India under Bharatmala Pariyojana..

In pursuance of the above M/s. SA Infrastructure Consultants Pvt. Ltd. is appointed for Consultancy Services for preparation of DPR for development of Highway Gangheri to Narnaul section under Bharatmala Pariyojana in the state of Haryana (Lot 6, Package No.6). The length of the proposed alignment is 230 km, which lies in Southern region of Haryana.

The Gangheri to Narnaul Highway is a green field alignment, and is proposed for 4-Lane with partial service road. The main objective of the Highway is to reduce the distance and travel time between Ambala and Jaipur and to decongest the traffic in Delhi, NH1 & NH44. The project lays emphasis on development of these areas and makes them available with the resources. This alignment is located in southern part of Haryana.

The proposed project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The junctions with existing road will be planned in the form of interchanges and flyover to ensure uninterrupted flow of traffic.

The proposed road would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety, and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality. The compensatory plantation and road side plantation shall further improve the air quality of the region.

A SALIENT FEATURES OF THE PROJECT

Project name	Construction of New Four-lane National Highway (NH-152D) from Gangheri to Narnaul in the state of Haryana. (Lot-6/Package-6)
Location	The Highway starting from its junction with NH-152 near Gangari(near Ismailabad),passing through Kaul Dharath,Lakhanmajara,Kalanaur,Charkhi Dadri and terminating at its junction with NH-148B Narnaul bypass & covering Districts Kurukshetra, Kaithal, Karnal, Jind, Rohtak, Bhiwani, Dadri and Mahendergarh in the state of Haryana.The length of the proposed alignment is 230km, which lies in Southern region of Haryana.
Latitude & Longitude	Start Location : 30° 3'32.46"N 76°39'5.56"E End Location: 28° 3'5.00"N 76° 9'48.44"E
Land use	Agricultural land
Nearest railway station	Dadri Railway Station (approx. 2.10 Km, aerial)
Nearest Airport	Chandigarh International Airport (Approx. 70.0 Km, aerial)
Seismic Zone	Zone-II (As per 1893:2002)

a. PROPOSED PLANNING

Type of project	-	Highway
Project cost	-	Approx. INR. 7500 Cr (approx.)
Project Length	-	230 Km

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

a. IDENTIFICATION OF PROJECT PROPONENT

The Ministry of Road Transport and Highways (MoRTH) / National Highways Authority of India (NHAI) have decided to develop the proposed project to improve the efficiency of freight movement in India .. The proposed highway is planned to save time between Ambala and Jaipur and to decongest the traffic in Delhi, NH1 & NH44. The highway is passing through 8 districts namely Kurukshetra, Kaithal, Karnal, Jind, Rohtak, Bhiwani, Dadri, and Mahendergarh.

b. BRIEF INFORMATION ABOUT THE PROJECT

The project road takes off from junction with NH-152 near Gangari(near Ismailabad)and ends at Narnaul bypass near Haryana-Rajasthan Border. The length of the proposed alignment is 230 km stretch, which lies in Southern region of Haryana.

c. NEED FOR THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY OR REGION

The proposed highway is a part of an exclusive transport corridor under Bharatmala Pariyojana and alignment is a part of this and is being planned between Gangheri to Narnaul by the Government of India.

The proposed highway project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The junctions with existing road will be planned in the form of interchanges and flyover to ensure uninterrupted flow of traffic. The proposed project will decongest the traffic at NH-1 and NH44.

The proposed road would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety, and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality. The compensatory plantation and road side plantation shall further improve the air quality of the region.

d. DEMAND-SUPPLY GAP

The NH-152D Gangheri to Naraula Highway is a green field alignment and is proposed for 4-Lane with partial service road. Vehicle operating cost will be reduced due to improved road quality and transportation will improve between the two cities. It will also help in the development of Haryana state and the Nation.

e. IMPORTS VS. INDIGENOUS PRODUCTION

Import/Indigenous production does not apply in the present case.

f. EXPORT POSSIBILITY

Not applicable in the present case.

g. DOMESTIC/ EXPORT MARKETS

Not applicable in the present case.

h. EMPLOYMENT GENERATION

During the construction of the road project around 1500 persons would be employed temporarily for a period of 3 years and in toll plazas approx. 120 persons will be employed on permanent basis. The Project will enhance economic development in the area through industrial growth, agricultural, and commercial development and consequent employment generation, savings in travel time in between Gangheri to Narnaul and shall provide easy access to social infrastructure.

3.0 PROJECT DESCRIPTION

a. TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY

The Proposed project is independent project , however it is part of the Bharatmala Pariyojana.

b. LOCATION

The project road takes off from junction with NH-152 near Gangari(near Ismailabad) and ends at Narnaul bypass near Haryana-Rajasthan Border. The length of the proposed alignment is of 230 km stretch, which lies in Southern region of Haryana.

c. DETAILS OF ALTERNATE SITES

Three alternative alignments have been considered, (i) widening of Existing Gangheri-Narnaul highway with bypasses at major Towns. (ii) Straight Greenfield alignment from Pehwa to Narnaul. (iii) The Proposed alignment option . The final alignment (iii) is fixed avoiding major habitations, forests, and is passing through predominantly agricultural and waste land.. Also it provides better alternative from Pehowa – Rohtak - Narnaul. It shall also cater away the traffic of NH-1 on itself.

d. SIZE OR MAGNITUDE OF OPERATION

The length of the proposed project is of 230 Km having proposed RoW of 70m.

e. GEOLOGY

The geology of Haryana is predominated by the Quaternary alluvium and Aeolian sediments covering nearly 95% of area. The rest of the area comprises Proterozoic and Tertiary rocks exposed in the southern and northeastern extremities of the state, respectively. The alignment comprises mainly of alluvial soil and is part of the flood plains of rivers Ghaggar and Yamuna.

f. PRODUCTION PARAMETERS

Not Applicable in the present context.

g. DESIGN PARAMETERS

The proposed highway shall be constructed as per IRC-37 (Design of Flexible Pavements), IRC-84 (Four line), IRC-062 (pavement), IRC-102 (traffic survey), IRC-108 (traffic survey), IRC-41 (traffic survey) "Manual of Specifications and Standards for Highways" design standards. The proposed RoW will be 70 m.

h. PROJECT DESCRIPTION WITH PROCESS DETAILS

No process is applicable being a construction project.

i. BLASTING

No blasting is proposed to be done.

j. 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 major construction material are Soil, sand, Aggregates, Cement, Steel and Bricks. The Construction Materials requirements for the project Cement (MT)- 310000 ,Course Sand (cum)-3000,Course Agg. (cum)- 1700000, Fine Agg. (cum)-

3400000,Steel (ton)- 10000,Bitumen (ton)- 37000000,Emulsion (ton)- 3200000,Borrow Earth/Fly Ash (cum)- 16000000 .EPC Contractor before the start of construction would assess the actual quantity required and take necessary approval, if required. Steel and Cement would be sourced from Authorized Vendor. Soil, Sand and Aggregate will be procured from operational licensed borrow areas and quarries located around nearby areas. If any new borrow area or quarry site require to be opened, requisite permission will be obtained from concerned department before extraction of materials.

k. RESOURCE OPTIMIZATION/ RECYCLING AND REUSE

Tau Devilal Thermal Power Plant at Panipat (37km from the proposed alignment), Indira Gandhi Super Thermal Power Plant at Jhajjar (11km from the proposed alignment) and Rajeev Gandhi Thermal Power Plant at Hisar (60km from the proposed alignment) are falling within 300 km of proposed project alignment. The fly ash will be used in the construction stage depending upon their availability of fly ash quantities available in these power plants..

I. AVAILABILITY OF WATER ITS SOURCE, ENERGY / POWER REQUIREMENT AND SOURCE

• Water Requirement

The Peak water requirement is 15500 KLD during construction stage and will be extracted from local surface water sources.

• Power

Diesel generator will provide electricity required for construction equipment. Labour camps will be provided with LPG as fuel sourced from GOI authorized Supplier.

m. QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL

• Solid Waste Generation & its Disposal

Solid waste will be generated from construction camp and dismantling of existing structures. Unproductive/wastelands shall be selected for dumping sites away from residential areas and water bodies. The following precaution will be taken for disposal:

- Dumping sites must be having adequate capacity equal to the amount of debris generated.
- Public perception and consent from the village Panchayats has to be obtained before finalizing the location.
- Develop waste management plan for various specific waste streams (e.g., reusable waste,
- Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach.

- Segregate and reuse or recycle all the wastes, wherever practical.
- Prohibit burning of solid waste
- Collect and transport non-hazardous wastes to all the approved disposal sites. Vehicles transporting solid waste shall be covered with tarps or nets to prevent spilling waste along the route
- Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process.
- Provide refuse containers at each worksite.
- Request suppliers to minimize packaging where practicable.
- Place a high emphasis on good housekeeping practices.
- Maintain all construction sites in a cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal

• Liquid Effluent

The sewage water generated in construction camp will be disposed through soak pits.

4.0 SITE ANALYSIS

a. CONNECTIVITY

The proposed route is connected and approached through various State highways and National Highways. At present proposed alignment connects various SH and NH such as SH-6, SH-9, SH-8, SH-11, SH-12, SH-14, SH-10, SH-16A, SH-20, SH-24 and SH-26 and NH65, NH-71 and NH-10. The project starts at 0.00 km from NH-65 at Gangheri in Kurukshetra district and ends at km 230 at Narnaul bypass near Haryana-Rajasthan Border.

b. LANDFORM, LANDUSE AND LAND OWNERSHIP

• Land Use

The project area is mostly agricultural.

• Land Ownership

The existing landuse around the proposed highway primarily comprises of agricultural land both under private and government ownership.

TOPOGRAPHY

The project area passes through 8 districts of Haryana i.e Kurukshetra, Kaithal, Karnal, Jind, Rohtak, Bhiwani, Dadri and Mahendragarh. The topography in the proposed project area is mainly plain area. The areas have an elevation ranging from 307 to 210m.

EXISTING LAND USE PATTERN

The existing landuse around the proposed highway primarily comprises of agricultural land both under private and government ownership, land for cattle grazing, forest, some village settlements.

e. EXISTING INFRASTRUCTURE & SENSITIVE ECOLOGICAL LOCATIONS

S.No	Item	Distance and Direction
1.	Nearest railway station	Dadri Railway Station(approx. 2.10 Km)
2.	Nearest Hospital	Phogat Hospital Charki Dadri-1.4 km
3.	Nearest Airports	Chandigarh International Airport (Approx. 70.0 Km, aerial)
4.	Nearest School	Kanaya College at Dand-1.28 km
5.	National Park/Wildlife Sanctuary/Biosphere Reserve	Chhilchhila lake WLS - 2.35 km
6.	Eco sensitive Zone	ESZ of Chhilchhila lake WLS - 2.29 km
7.	Water bodies	Total 53 canal & 14 drains (water bodies) are crossing the proposed alignment, some of them are Saraswati Drain, Kheri Drain, Lakhan majra Drain, Palri River

a. SOIL CLASSIFICATION

The soil in the Project corridor is entirely almost alluvium. The soil is well drained, Sandy loam to clay loam/silty clay loam as observe. The maximum area comprises of flood plain and old alluvial plain.

CLIMATIC DATA FROM SECONDARY SOURCES

Project area experiences a monsoon-influenced Composite climate .The area experiences four distinct seasons - spring (February - March), summer (April - August), fall/autumn (September - October) and winter (November - January), along with the monsoon season setting in towards the latter half of the summer. Summers, from early April to mid-October, are typically hot and humid, with an average daily June high temperature of 40 °C (104 °F). The season experiences heat indices easily breaking 44 °C (113 °F). Winters are cold and foggy with few sunny days, and with a December daytime average of 3 °C (37 °F). The Western Disturbance brings some rain in winters that further adds to the chill. Spring and autumn are mild and pleasant seasons with low humidity. The monsoon season usually starts in the first week of July and continues till August. Thunderstorms are not uncommon during the Monsoon.

b. SOCIAL INFRASTRUCTURE

The social infrastructure like educational facilities (primary and higher secondary schools, Degree College), drinking water supply, post office, public transportation are by and large are available in the study area.

PLANNING BRIEF

PLANNING CONCEPT

The state will have its own self-sustaining eco-system consisting of economic drivers through industrialisation, utility & logistic infrastructure, Social Infrastructure including education, healthcare and other public amenities. It will connect Gangheri to Narnaul by a 4-lane Highway as an effective means of transportation between the cities.

a. ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL & SOCIAL)

Only basic infrastructure facilities are available in the vicinity of in the study area. The proposed road is essential for improving faster and economical transportation facilities between Gangheri to Narnaul and other major cities in the country.

b. AMENITIES/FACILITIES

Office, Workshop etc.

Proper site services such as First Aid, Rest Shelter, toilet with soak pits & drinking Water will be provided to the workers.

Rest Shelter

Rest shelter along with first-aid station complying with all the provisions of State Rules shall be provided by project proponent.

Water Supply

Water will be supplied for human consumption, dust suppression and for plantation from surface water sources.

Power Supply

The power supply for project and construction camp will be done through D.G. Sets and State Electricity Board.

Transport of Men and Material

Employee will report to the duty on own means. The material from the site will be transported by trucks / tractor trolleys.

Communication

Mobile phones shall be used for communication.

Security Arrangements

Appropriate security arrangement shall be made.

5.0 PROPOSED INFRASTRUCTURE

a. CONSTRUCTION SITE

Temporary arrangements like site office, rest shelters, & approach roads etc shall be provided. No permanent infrastructure is proposed.

b. RESIDENTIAL AREA

As the local person shall be employed, no residential building/ housing are proposed. However, temporary construction camp will be established.

c. SOCIAL INFRASTRUCTURE

In-line with the Social Responsibility Activities at other operational sites, relevant developmental assistance shall be rendered depending on the local needs identified through studies.

d. CONNECTIVITY

The proposed route is connected and approached through various State highways and National Highways. At present proposed alignment connects various SH and NH such as SH-6, SH-9, SH-8, SH-11, SH-12, SH-14, SH-10, SH-16A, SH-20, SH-24 and SH-26 and NH65, NH-71 and NH-10. The project starts at 0.00 km from NH-65 at Gangheri in Kurukshetra district and ends at km 230 at Narnaul bypass near Haryana-Rajasthan Border.

e. DRINKING WATER MANAGEMENT

Local Water supply is used for drinking purpose.

f. SEWERAGE SYSTEM

Soak pits shall be provided to workers camp & construction site.

g. INDUSTRIAL WASTE MANAGEMENT

Not applicable, as the activity will not be generating any industrial waste.

h. SOLID WASTE MANAGEMENT

No industrial solid waste will be generated. However, municipal / construction waste generated during construction will be disposed in environmental friendly manner.

6.0 REHABILITATION AND RESETTLEMENT (R&R) PLAN

The Project requires approx. 1700 ha land. Total 3000 no. of structures are coming in the proposed RoW. And approximately 6000 number of families will be affected in terms of land acquisition & structures.

7.0 PROJECT SCHEDULE & COST ESTIMATES

a. LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION

Project will be started after getting requisite statutory clearances. A construction period of 3 years (2019, 2020 and 2021) has been envisaged with a phasing of 30%, 40% and 30% respectively.

b. ESTIMATED PROJECT COST ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT

The capital cost of proposed project is estimated to be approx. INR. 7500 (in Cr).

8.0 ANALYSIS OF PROPOSAL

a. FINANCIAL AND SOCIAL BENEFITS WITH SPECIAL EMPHASIS ON THE BENEFIT TO THE LOCAL PEOPLE INCLUDING TRIBAL POPULATION, IF ANY, IN THE AREA

The proposed highway is part of an exclusive transport corridor being planned between Ganheri to Naraul by the Government of India. The proposed access controlled highway project with new alignment has been envisaged through an area which shall have the advantage of simultaneous development as well as shall result in a shorter distance to travel. The junctions with existing road will be planned in the form of interchanges and flyover to ensure uninterrupted flow of traffic.

The proposed road would act as the prime artery for the economic flow to this region. It will enhance economic development, provide employment opportunities to locals, strengthen tourist development, ensure road safety, and provide better transportation facilities and other facilities such as way side amenities. Vehicle operating cost will also be reduced due to improved road quality. The compensatory plantation and road side plantation shall further improve the air quality of the region.