Pre-Feasibility Report

NAME OF THE PROJECT- Construction of Ahmedabad-Dholera Expressway Road (110 km) (NHAI/BM/21) in the State of Gujarat

SUBMITTED BY

National Highways Authority of India
Project Implementation Unit,
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1.0 EXECUTIVE SUMMARY

The **National Highways Authority of India (NHAI)** is a nodal agency of the Ministry of Road Transport and Highways. 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 Government of India is setting up a multi-modal Dedicated Freight Corridor (DFC) between Delhi and Mumbai. Out of the total 1483 kms of the length of DFC, 38% is falling in Gujarat. The area of 150 kms on the both sides of the DFC will be developed as Delhi Mumbai Industrial Corridor (DMIC).

Delhi Mumbai Industrial Corridor Development Corporation Ltd. (DMICDC), a special purpose company, was incorporated to establish, promote and facilitate development of DMIC project. It undertakes project development services for investment regions / industrial areas / economic regions / industrial nodes and townships, for various central government agencies and also assists state governments.

DMICDC has planned to develop Special Investment Regions (SIRs) and Industrial Areas (IRs) having world class infrastructure along the Delhi Mumbai Dedicated Freight Corridor. Dholera Special Investment Region in Gujarat (DSIR) is the first investment region to be designated under the proposed Delhi-Mumbai Industrial Corridor project (DMIC). Dholera Special Investment Region (DSIR) will be one of the five SIRs that will be developed as part of Phase 1 of the DMIC and will be the first major investment region in Gujarat. It will be a major new industrial hub located on a Greenfield site about 100 km south of Ahmedabad and about 130 km from Gandhinagar. DSIR will comprise of 22 villages of Ahmedabad District measuring about 920 Sq km.

Government of Gujarat has created legislative framework for formation of a Special Investment Region Act 2009. Under the act, a regional development authority for DSIR has been established. The Dholera Special Investment Region Development Authority (DSIRDA) has the responsibility of planning and development of DSIR and will encompass the function of administering government land within DSIR. An SPV named Dholera Industrial City Development Limited (DICDL) is created between Central Government (DMICDC Trust) and State Government (DSIRDA) Gujarat to implement the project.

Dholera City 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 be connected with Ahmedabad by a 6-lane access controlled expressway & MRTS (Metro Rail) in one common corridor providing seamless connectivity & Rail-Road transition as an effective means of transportation between the 2 cities.

An international airport is being developed to the North-East of DSIR by a SPV called Dholera International Airport Company Limited (DIACL).

The project road takes off from Sardar Patel Ring Road near Sarkhej between Santhal Junction and Bakrol Junction in southwest of Ahmedabad, 2 km east of National Highway NH-8A. The corridor runs southerly towards Dholera between NH-8 (in the west) and SH-4, SH-6, Sabarmati river course/Gulf of Khambat (on east side)

The proposed expressway is part of an exclusive transport corridor being planned between Ahmedabad and Bhavnagar by the Government of Gujarat, keeping the development of SIR around Dholera in centre. As of now, it is planned upto Dholera SIR. The proposed expressway corridor is sited between two existing road routes to Bhavnagar; Amhedabad-Bagodara-Dhandhuka-Bhavnagar route at its west and Ahmedabad- Dholka-Wataman-Dholera-Bhavnagar route to its east. However, the proposed expressway merges with the later before Dholera and follows thereafter.

The proposed access controlled expressway 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 Ahmedabad-Dholera Expressway road (110 km) (BM/21) in the State of Gujarat
Location	The project road takes off from Sardar Patel Ring Road near Sarkhej between Santhal Junction and Bakrol Junction in southwest of Ahmedabad, 2 km east of National Highway NH-8A. The corridor runs southerly towards Dholera between NH-8 (in the west) and SH-4, SH-6, Sabarmati river course/Gulf of Khambat (on east side)
Latitude & Longitude	Start Location : 22^0 56' 46" N 72^0 29' 06" E End Location: 22^0 02' 21" N 72^0 05' 59" E
Land use	Agricultural and Barren Land
Nearest railway station	Ahmedabad (approx. 14.5 Km)
Nearest Airport	Sardar Vallabhbhai Patel International Airport, Ahmedabad (Approx. 20 Km)
Seismic Zone	Zone-III (As per 1893:2002)

a. PROPOSED PLANNING

Type of project	-	Construction of Ahmedabad-Dholera Expressway road (110 km) (BM/21) in the State of Gujarat
Project cost	-	INR.745177.721 lakhs
Project Length	-	109.019 Kms

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

a. IDENTIFICATION OF PROJECT PROPONENT

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Dholera City will have its own self-sustaining eco-system consisting of economic drivers through industrialization, utility & logistic infrastructure, Social Infrastructure including education, healthcare and other public amenities. It will be connected with Ahmedabad by a 6-lane access controlled expressway & MRTS (Metro Rail) in one common corridor providing seamless connectivity & Rail-Road transition as an effective means of transportation between the 2 cities.

b. BRIEF INFORMATION ABOUT THE PROJECT

The proposed road from Ahmedabad to Dholera has a total length of 109.019 Kms. The project road takes off from Sardar Patel Ring Road near Sarkhej between Santhal Junction and Bakrol Junction in southwest of Ahmedabad, 2 km east of National Highway NH-8A. The corridor runs southerly towards Dholera between NH-8 (in the west) and SH-4, SH-6, Sabarmati river course/Gulf of Khambat (on east side)

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

The proposed expressway is part of an exclusive transport corridor being planned between Ahmedabad and Bhavnagar by the Government of Gujarat, keeping the development of SIR around Dholera in centre. As of now, it is planned upto Dholera SIR. The proposed expressway corridor is sited between two existing road routes to Bhavnagar; Amhedabad-Bagodara-Dhandhuka-Bhavnagar route at its west and Ahmedabad- Dholka-Wataman-Dholera-Bhavnagar route to its east. However, the proposed expressway merges with the later before Dholera and follows thereafter.

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d. DEMAND-SUPPLY GAP

The construction of expressway will help in development of Delhi-Mumbai Industrial Corridor. Vehicle operating cost will be reduced due to improved road quality and transportation will improve between the two cities. It will help in development of Gujarat 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

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 Ahmedabad and Bhavnagar and shall provide easy access to social infrastructure.

3.0 PROJECT DESCRIPTION

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

The project is independent project not interlinked with other project.

b. LOCATION

The proposed road from Ahmedabad to Dholera has a total length of 109.019 Kms. The project road takes off from Sardar Patel Ring Road near Sarkhej between Santhal Junction and Bakrol Junction in southwest of Ahmedabad, 2 km east of National Highway NH-8A. The corridor runs southerly towards Dholera between NH-8 (in the west) and SH-4, SH-6, Sabarmati river course/Gulf of Khambat (on east side)

c. DETAILS OF ALTERNATE SITES

Alignment of Expressway is fixed in conformity with approved alignment of Mass Rapid Transit System (MRTS) project falling on Right side of expressway alignment.

d. SIZE OR MAGNITUDE OF OPERATION

Length of the project: 109.019 Km.

e. GEOLOGY

The Geological rock formations include a variety ranging from Lower Eocene to inter-tappean bed deccan trap, Upper (Cretaceous), are represented by the Cambay shale whereas the recent formation are represented by the tarapur shale and Kalol formations.

f. PRODUCTION PARAMETERS

Not Applicable in the present context.

g. DESIGN PARAMETERS

The proposed road shall be constructed to **IRC: SP:99-2013 "Manual of Specifications and Standards for Expressways"** design standards. The width of RoW will be 90-120 m in rural section.

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. EPC Contractor before the start of construction would assess the actual quantity required and take necessary approval, if required. However, 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

Not applicable in the present case.

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

• Water Requirement

.The Peak water requirements is 450KLD 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 Kerosene/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,
- Flammable waste, construction debris, food waste etc. Prior to commencing of Construction and submit to BBA for approval.
- 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 site is approachable by road from Ahmedabad district. The city is approx 5 km away from project site. The project starts at 0.00 km in Ahmedabad and ends at km 109.019 in Dholera, Bhavnagar.

b. LANDFORM, LANDUSE AND LAND OWNERSHIP

• Land Use

The project area is mostly agricultural lands.

• Land Ownership

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

TOPOGRAPHY

The project area is located in the state of Gujarat in West India in the district of Ahmedabad and Bhavnagar. The topography in the proposed project area is mainly plain area. The areas have an elevation ranging from 0 to 150m.

EXISTING LAND USE PATTERN

The existing landuse around the proposed expressway primarily comprises of agricultural land both under private and government ownership, land for cattle grazing, forest, village settlements and village ponds and mangrove vegetation along Gulf of Khambhat.

e. EXISTING INFRASTRUCTURE & SENSITIVE ECOLOGICAL LOCATIONS

S. No.	Areas	Name / Identity	Aerial distance (within 15km.)Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Yes	Velavadar Black Buck National park, 3 km from end point of alignment at Bhavnagar
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Yes	Velavadar Black Buck National park, 3 km from end point of alignment at Bhavnagar
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	Yes	Important species of flora & fauna present in Velavadar Black Buck National park, 3 km from end point of alignment at Bhavnagar
4	Inland, coastal, marine or underground waters	Yes	Bhogavo River, Bhadar River, Ghelo River and Lylka River crossing the alignment
5	State, National boundaries	No	-
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	-

7	Defense installations	No	-
8	Densely populated or built-up area	Yes	Small built up areas & village located near to the proposed alignment.
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	9 small Temples are present in the proposed RoW. And need to be relocated.
10	Areas containing important, high quality or scarce resources. (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	No	Not applicable
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	No	Not applicable
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	Yes	The area falls under seismic zone III which is categorized as moderate seismic zone.

a. SOIL CLASSIFICATION

The soil in the Project corridor is mostly grey brown soils in this subzone. The southern most portion of the corridor near to the Gulf of Khambat has shallow black soils. Most of the area in the region of this subzone is arable land under irrigated agriculture. These are interspersed with forest, grassland and scrubs.

a. CLIMATIC DATA FROM SECONDARY SOURCES

The project area experiences semi-arid tropical to arid climatic conditions. The region has four seasons namely summer, south-west monsoon, post monsoon and winter. The summer season starts from March and continues up to June end. October and November constitute the post monsoon season. The weather is generally cold during December to February. Aside from the monsoon season, the climate is dry.

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

Government of Gujarat has created legislative framework for formation of a Special Investment Region Act 2009. Under the act, a regional development authority for DSIR has been established. The Dholera Special Investment Region Development Authority (DSIRDA) has the responsibility of planning and development of DSIR and will encompass the function of administering government land within DSIR. An SPV named Dholera Industrial City Development Limited (DICDL) is created between Central Government (DMICDC Trust) and State Government (DSIRDA) Gujarat to implement the project.

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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 the Ahmedabad and Bhavnagar.

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

Site is connected to city of Ahmedabad and Bhavnagar.

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.1500 ha land. Total 103 no. of structures are coming in the proposed RoW of the expressway. The land will be acquired as per procedure laid down in RFCT LARR Act, 2013.

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, 20 and 21) 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 INR.745177.721 lakhs.

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 expressway is part of an exclusive transport corridor being planned between Ahmedabad and Bhavnagar by the Government of Gujarat, keeping the development of SIR around Dholera in centre. As of now, it is planned upto Dholera SIR. The proposed expressway corridor is sited between two existing road routes to Bhavnagar; Amhedabad-Bagodara-Dhandhuka-Bhavnagar route at its west and Ahmedabad- Dholka-Wataman-Dholera-Bhavnagar route to its east. However, the proposed expressway merges with the later before Dholera and follows thereafter.

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