

Dholera Special Investment Regional Development Authority

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ALIGNMENT JUSTIFICATION

The Government of India under the National Industrial Corridor Development Program has envisaged development of industrial corridors around the Dedicated Freight Corridor (DFC) alignment. The Delhi-Mumbai Industrial Corridor (DMIC) is one of the industrial corridors being developed under this national program. Dholera Special Investment Region (DSIR) located in Gujarat is one of the largest node being developed on the verge of smart greenfield industrial city on the DMIC corridor and it is one of the ambitious project that adopts next generation infrastructure and smart technologies for improved living standards.



Fig.1 - Development of new Industrial Cities/Nodes along the Delhi-Mumbai Industrial Corridor

DSIR is a greenfield industrial city planned and located approximately 100 kms. south-west of Ahmedabad. Dholera Special Investment Regional Development Authority (DSIRDA) has the responsibility of planning and

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development of DSIR and functions of administration, planning and development of land within DSIR.

The Government of Gujarat on 6th Jan. 2009 enacted legal framework for Special Investment Region (SIR) in the state and accordingly the formation of Dholera SIR was approved by Government of Gujarat in 2010. DSIR is planned with mixed land use including industrial, residential, re-creational, social and tourism etc. to cater the requirement of industries as well as residents of DSIR in future. The objective is to make a liveable city rather than an industrial cluster only.

The development plan of DSIR was approved by the state government in 2012 in which the freight rail connectivity to DSIR through new greenfield Bhimnath-Dholera Rail Line was provisioned and the alignment was planned in coordination with the Indian Railways for connectivity of DSIR with the existing rail network and the proposed Western Dedicated Freight Corridor. As the project was approved by Ministry of Railways for implementation under the Non-Government Railway Model, Dholera SIR as a project proponent prepared the Detailed Project Report (DPR) of the Bhimnath-Dholera freight rail line under the guidance of Western Railways.

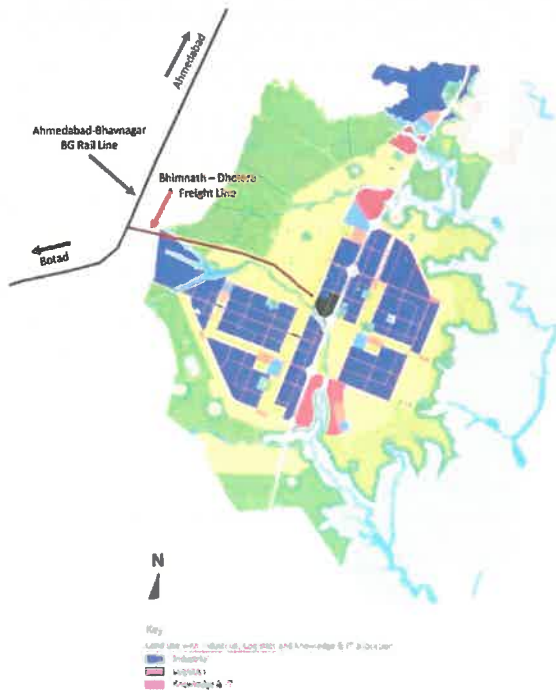


Fig.2 - Industrial landuse in DSIR and connectivity of Bhimnath-Dholera Rail Line

The metropolitan cities of Ahmedabad and Bhavnagar are connected by a western railway line that passes through towns of changodar, bavla, dholka, arnej, dhandhuka, polarpur, botad, vallabhipur, dhola, sihor etc. But there is no direct rail connectivity in DSIR and therefore to cater the logistic movement demand of DSIR industries, the Bhimnath-Dholera freight rail line is planned. This rail line starts from the existing station named 'Bhimnath' located on the Ahmedabad-Bhavnagar line in Botad District and connects DSIR passing through 5 villages of Botad and 4 villages of Ahmedabad district.

Initially, the alignment was proposed by Indian Railways after conducting detailed ground surveys and field level tests. During the DPR preparation stage, the alignment was just improvised in consideration of the proposed town planning and development schemes of DSIR. In consideration of the requirements of environmental parameters, construction methodologies to be adopted for different terrain en-route, design and engineering factors, availability of logistic support during construction, operation and maintenance, and freight rail design parameters for the new rail line from Bhimnath to DSIR, feasible routes were identified during the DPR preparation stage. The study was subsequently supplemented with field reconnaissance surveys and data collection along the feasible routes and after detailed deliberations with Western Railways, the optimum route was arrived after conducting multi-criteria analysis to compare various parameters based on their relative importance index.

Essential key parameters that differentiate the performance of alignment options were identified and assessed in a consistent and objective manner. The key parameters considered for assessment were further categorized w.r.t. to cost and DSIR developments. The alignment was finalized based on below:

- Utilize minimum forest land and avoid tree cutting to extent possible
- Compliance with environment regulations

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- Safety of people and property
- Shortest possible route length
- Avoiding archaeological, protected forest, mining and other sensitive areas
- Minimizing road, rail, river and flood prone areas
- Minimum route distance to meet existing rail network of western railway
- Minimum changes in alignment for DSIR with proposed town planning scheme
- Latest guidelines from Indian Railways for design criteria
- Minimum crossing of water bodies/streams, roads etc.
- Constructability and maintainability by limiting heights of embankment and depths of cutting.

ALTERNATIVE ALIGNMENT ANALYSIS

Western Railways (W.R.) had earlier prepared a Preliminary Engineering-cum-Traffic Survey Report for Gauge Conversion between Botad & Bhimnath with Extension from Bhimnath to Dholera in February 2012. However, later W.R. had initiated Gauge Conversion of Botad-Ahmedabad Railway line in 2015 which did not include extension of Bhimnath to Dholera. Further, as part of its Pink Book Item No. 03# of 2017-18 Western-Railway has prepared a DPR for providing New BG Line Between Bhimnath-Dholera (Km 27.99) and Railway Board has granted 'in-principle' approval to the project. However, in the DPR prepared by W.R., the alignment suggested was not in-line with the DSIR development plans. A review of the DPR prepared by western railways was done with respect to town planning schemes of DSIR and it was identified that the proposed Town Planning Scheme and Masterplan for Dholera Special Investment Region has not been accounted by W.R. in its DPR alignment between Bhimnath and Dholera and the proposed alignment was infringing with the development proposals of DSIR. The project was approved for implementation under non-government railway model, and therefore the DPR was updated with alignment as per DSIR development proposals. Two alignment proposals were conceptualized for developing rail connectivity in line with DSIR overall master plan and TP Schemes.



Fig. 3 Alternative alignment proposals

A detailed geometric design was carried out and it was observed that due to long haul freight trains required to be stationed at Dholera Station Terminal, proposed Alignment Alternative 2 will only be technically feasible as Alternative 1 has sharp curves and parallel roads with other developments restricting space for terminal station and loading/ unloading facilities. Subsequently, to adhere to the objective of updating the DPR for the railway alignment in line with the Masterplan and TP scheme of DSIR, the railway DPR was prepared considering Alignment Alternative 2 only even though small section of it passes through the reserve forest land in ottariya village of Dholera taluka. The alignment deliberations were also done with western railways and thereafter DPR was revised and approved.

IMPORTANCE OF BHIMNATH-DHOLERA RAIL LINE FOR DSIR

DSIR is a first greenfield industrial smart city in India. It is certified as platinum rated green city by Indian Green Building Council. It is one of the largest industrial node on Delhi-Mumbai Industrial Corridor. Of the total 422 Sq. Km. Developable area, 110 sq. km. area is earmarked for Industrial establishments (i.e. 26%). At present, a part of TP Scheme is approved and trunk infrastructure has been developed in this 22.5 Sq. Km. area of TP Scheme. The land use in this area is industrial - 52%, residential-28%, high access corridor-4% and remaining for social

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infrastructure and green space. At present, out of total available 1500-acre industrial land in the 22.5 Sq. Km. activation area of Phase-01, about 400 Acre land has already been allotted to industries and proposals for investments in 600-acre land have been received and are under consideration at present. The first anchor industry has already completed its construction and is about to start production by end of June 2024 for the 2GW solar module manufacturing. Recently, the TATA Group has been allotted land of more than 150 acre for establishing India's first large scale semi-conductor manufacturing facility at Dholera. The ground breaking ceremony was held on 13th March 2024 and the construction of the semi-conductor establishment is to commence in the FY 2024.

To improvise the regional connectivity of DSIR by air, road and rail, projects are planned and under execution. The National Highway Authority of India (NHAI) is constructing a greenfield 110 km. long expressway between Ahmedabad to Dholera SIR that would connect both the cities and reduce travel time to a large extent. More than 60% physical work progress has been achieved in the expressway construction till date and is expected to be completed and operational by end of the year 2024. Construction of Dholera International Airport has also commenced and the airport is located just close to the boundary of DSIR region. Completion of phase-1 of the airport is targeted by 2025-26 and will be operational for cargo movement. Bhimnath-Dholera rail line is envisaged as a dedicated freight line to serve DSIR industries for their logistics needs. The freight line shall connect with western railways rail network through which it will get connected with the Western Dedicated Freight Corridor. Thus, dedicated freight rail line will ease of goods movement from time and cost perspective. The nearest ports to DSIR are Bhavnagar and Pipavav port that are well connected by road and rail lines. The Bhimnath-Dholera rail line will also connect DSIR industries with these ports and therefore seaways will also be available for logistic movements.

With a market focus of Defence, Manufacturing, Heavy Engineering, Auto & Auto Ancillaries, Pharma & Bio Tech (Formulation), Semi-Conductor and Electronics and Agro & Food Processing sectors, DSIR has huge potential of freight traffic generation, both, terminating traffic in terms of raw material required and originating traffic in terms of finished freight produced. To provide better transportation connectivity with DMIC, DSIR is immensely interested in New Railway Line Connectivity between Bhimnath and Dholera Special Investment Region. As DSIR is not having any direct rail connectivity, the Bhimnath-Dholera rail line is identified as critical link and an important last mile connectivity project for DSIR and accordingly it was provisioned in the development plan of DSIR in 2012. Its main objective is to cater entire rail based logistic demand of DSIR industries. The rail line shall serve a very important purpose in the coming years.

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