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PREFACE

Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL) has been given a mandate to construct, maintain and operate Dedicated Rail Freight Corridors across the country. To begin with, the Government of India has entrusted DFCCIL with construction, maintenance and operation of Eastern Corridor between Sanhwal near Ludhiana to Dankuni in West Bengal and Western Corridor connecting Dadri in Uttar Pradesh to Jawaharlal Nehru Port (JNPT) in Mumbai.

The Corporate Plan, akin to the construction of DFCs, is a “work-in-progress”. It includes the business plan, which itself is in dynamic state and therefore, subject to constant updation and modification, as DFCCIL undertakes the challenge of building one of the largest rail transport infrastructure initiatives post-independence. While the role and scope of DFCCIL is clear. The rules of engagement between Ministry of Railways and DFCCIL are detailed in the concession agreement.

The Corporate Plan is an effort to pin point our sense of direction so that there is organizational alignment and focus and clarity about the job at hand.

CHAPTER - I

INTRODUCTION

1.0 Indian Railway is a life line of Indian economy, traversing length and breadth of country with total route length of approx. 68442Kms.

The Indian Railways carried a whopping 1221.48 million tonnes in 2018-19. What Indian Railways achieved from 1950-51 to 2000-01 from 73.2 million tonnes to 473.5 million tonnes, a net increase of 400 million tonnes. Greater achievement was accomplished in next 17 years from 2000-01 to 2018-2019 from 473.5 million tonnes to 1221.48 million tonnes, an increase of 747.98 million tonnes. Going forward, Railways has an ambitious plan of achieving the freight volumes to the tune of 2165 million tonnes in few years. This is achievable as given elasticity of the rail transport demand with GDP growth rates being in the vicinity of 1.1 to 1.2.

However, there are serious challenges and constraints. Many of the key arteries and routes of Indian Railways, particularly those on the Golden Quadrilateral are now bursting at their seams and operating far in excess of their capacity. Today the Indian Railways have mixed corridor where both Mail/Express/Passenger trains share the same track with the freight trains and although, it is the freight traffic which is the bread and butter, the Mail/Express/Passenger trains invariably takes precedence over the freight trains. As a result, the average speed of freight trains is relatively low. The average speed of the freight trains on Indian Railways is approx. 23.6Kmph, and this has an adverse impact on Indian Railway's performance and competitiveness. It is a fact that freight tariff on the Indian Railway is also one of the highest in the world. This translates into higher supply chain costs which in turn results in loss of competitiveness of Railway in the market. Therefore, it is imperative to augment rail capacity so that increased demand for freight transport with growth in economy is met. Indian Railways considered following three options:

- Augment the existing network by laying quadrupled lines
- Create a separate Dedicated Passenger Corridor
- Create a separate Dedicated Freight Corridor

The large scale augmentation of capacity of the existing network was not considered practical as it would have led to large scale dislocation to the running traffic, as well as land acquisition issues, particularly in and around urban centres. More so, it would have remained a mixed corridor with track structure unsuitable for carriage of higher axle load traffic and also restricted schedule of dimensions of the fixed structures like Road Over Bridges and others. It was not considered prudent to go in for a new Dedicated Passenger Corridor on account of the fact that it would have been prohibitively expensive because it had to pass through the urban/city centres to cater to the passenger need and would have required grade separation in terms of longer and higher flyovers due to paucity of space, not only from the existing rail network but also through the congested road network in the urban/city centres. Passenger tariff, being relatively low in India, would have made the proposal financially unviable. Moreover, the limitation of lower axle load and restrictions on account of schedule of dimensions of fixed infrastructure would have remained with the freight operation.

Taking above factors into consideration and recognizing the need for a quantum leap in the Railways' transportation capacity to meet transport requirement for sustainable growth in the national economy, the Ministry of Railways has embarked upon a long-term strategic plan to construct high-capacity, high-speed Dedicated Freight Corridors along the golden quadrilateral and its diagonals. It will not be out of place to mention

that the Golden Quadrilateral and its diagonals constituting 10122 Km is, in fact, backbone of the Indian Railways total Kms because this is contributing more than 60 % of the freight traffic and 52 % of the passenger traffic carried by IR. These routes serve the core sectors of the Indian economy by carrying raw materials to the plants and finished products to centres of consumption, manufacturing and trade. If this DFC is not made then the achieving of the projected GDP growth would not be possible.

In order to implement the Dedicated Freight Corridor project and thereafter to operate and maintain the Dedicated Freight Corridors (DFCs), the Ministry of Railways decided to set up a SPV and accordingly the Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL), a fully owned company of Ministry of Railways under the Companies Act, 1956 has been set up on 30th Oct 2006. The Dedicated Freight Corridor is the most ambitious and biggest project ever undertaken in the railway infrastructure sector in the country.

With the Dedicated Freight Corridors, the Indian Railways aim to bring about a paradigm shift in freight operation with prime objective of reduction in unit cost of transportation with higher speed of freight trains, better turnaround of wagons and thereby much improved wagon productivity in terms of improved ton-km per wagon day, increased payload to tare ratio by introduction of higher axle load wagons on the rail network, improved locomotive utilization and improved specific fuel consumption. The ultimate objective is to reduce the Operation and Maintenance Cost (O&M Cost) significantly and in penultimate analysis; the benefit is passed on to the customer in the form of lower transport Logistics Cost.

Why Eastern and Western Corridor?

The existing trunk routes of Howrah-Delhi on the Eastern Corridor and Mumbai-Delhi on the Western Corridor are highly saturated, line capacity utilization varying between 115% to 150%, and is also primarily passenger service dominated routes. These also represent high demand freight traffic corridors between the Eastern coal belt of Sonnagar-Garhwa Road-Patratu area with the existing and upcoming Thermal Power Houses in the northern region of Uttar Pradesh, Haryana, Punjab and Rajasthan; and the ports of Maharashtra and Gujarat like Jawaharlal Nehru Port, Mumbai Port, Kandla, Mundra, Pipavav etc. the container hubs at one end and the NCR of Delhi, Haryana and Punjab in the northern region on the other.

1.1 DEDICATED FREIGHT CORRIDOR:

❖ Vision

To create a partnership with IR for retaining and expanding the market share of rail through efficient and reliable service with customer focus.

❖ Mission

As the dedicated agency to make the vision into reality, DFCCIL's mission is

- i. To build a corridor with appropriate technology that enables Indian Railways to regain its market share of freight transport by creating additional capacity and guaranteeing efficient, reliable, safe and cheaper options for mobility to its customers.
- ii. To support the Government's initiatives toward ecological sustainability by encouraging users to adopt Railways as the most environment friendly mode for their transport requirements.



❖ Motto

Sincerity, Speed and Success

❖ Objectives

The main objectives of DFCCIL are:

- (a) **Project Delivery:** To construct the dedicated freight corridor network to the highest quality standards, within the budgeted timelines and costs.
- (b) **Operation and Maintenance**
 - (i) **Additional line Capacity:** To make additional line capacity available to IR for running freight trains and assure safe and reliable train operations.
 - (ii) **Reduction in cost of operations:** Achieve significant reduction in the cost of operations by adopting international best practices including long haul/heavy haul operations.

1.2 Concession Agreement and Track Access Agreement

DFCCIL is a special purpose vehicle established by the MOR as a Non-Government Railway to implement the Project and operate and maintain the New Railway consistent with the Project Objectives and is a railway administration under the Railway Act, 1989.

The Concession Agreement has been signed between Ministry of Railway (MOR) and DFCCIL on 28/2/2014 after necessary reviews from Railway Board, duly incorporating the suggestions of DEA and points emanating from joint discussions with Planning Commission with the approvals from DFCCIL Board of Directors. The Track Access Agreement is a part of the Concession agreement and has been signed as Annexure A of the Concession agreement itself. The concession Agreement mainly covers the general representations, warranties, undertakings and obligations by the Concessionaire (DFCCIL) and the Concessions Authority (MOR) and the areas of services, design, delivery, construction, subcontracting, variation, completion timelines, operation and maintenance, Access arrangements, Blocks, intellectual property, risks, insurance, accounting, reporting, termination, handover, etc.

With the timely signing of this agreement, DFCCIL has now been fully empowered to go ahead with the Project construction, operation & Maintenance in a clear legal and rightful manner defining the obligations of the Concessionaire, DFCCIL, and that of the Concessions Authority, the Ministry of Railway (MOR) and actions to be taken for the success of the DFCCIL project ahead.

One of the basic condition under Schedule 1 of the Concession Agreement was the “Condition Precedent” to the Concession agreement which was to be mandatorily fulfilled prior to the execution of this Agreement. The same has been successfully fulfilled on 25.6.2014 to the satisfaction of MOR and with this fulfilment of the “Condition Precedent”, the Concession Agreement is fully operational.

Following are the salient features of Concession Agreement:

- (1) MOR grants to DFCCIL for the Concession Period the right to implement the Project. MOR and DFCCIL shall, at the end of each period of 5 years of the Concession Period, review the performance of DFCCIL of its rights and obligations under the Project Documents having regard to the Project Objectives and any other matters as agreed between MOR and DFCCIL.
- (2) MOR shall grant MOR License in respect of all land required for the Project and associated Railway Infrastructure, as agreed by the MOR and DFCCIL, and at the time required to comply with the Construction Programme.

- (3) MOR will assist DFCCIL to obtain financing on attractive terms from external credit providers (including multilateral agencies) to facilitate the funding of the Project including obtaining relevant Tax exemptions and waivers.
- (4) MOR acknowledges and agrees that DFCCIL shall have autonomy and independence from MOR in relation to its management of the implementation of the Project and the performance of its obligations and exercise of its rights under the Project Documents.
- (5) The MOR accepts certain risks and obligations, including in relation to:
 - (a) A delay in its funding of the MOR Loans and other funding to be made available by it to DFCCIL and any corresponding rise in costs;
 - (b) A delay in giving, or a failure to give, within a reasonable period any Approval required from MOR (subject to DFCCIL having complied with all applicable conditions for the grant of such Approvals);
 - (c) Failure to grant MOR License for all the land required for the Project at the time such land is required to comply with the Construction Programme;
 - (d) Pre-Existing Contamination and MOR Subsequent Contamination;
 - (e) Damage to the New Railway caused by defective trains run by Authorised Rail Users; (the protocol for establishing the cause/cost of damage, etc. shall be unambiguously stated in the disaster management manual or appropriate manual issued by DFCCIL with the approval of MOR);
 - (f) Loss of traffic or inability to carry traffic as a result of corresponding MOR Improvements not being completed as planned.
- (6) MOR shall utilize the DFCCIL network and in return shall pay Track Access Charge (TAC) as per Track Access Agreement. TAC so paid shall be deposited in an Escrow Account to be opened by DFCCIL. TAC Liability shall be worked out by MOR and provisions shall be made under demand under separate Head.
- (7) To the extent reasonable and permissible under the Laws, the MOR shall make all Reasonable endeavours to ensure that any third parties in relation to whom it has the authority or a contractual right to request or direct (in connection with the Project), provide reasonable assistance to, cooperate with, and do not unnecessarily or unreasonably prevent, hinder, disrupt, delay or otherwise interfere with DFCCIL and its Associates in undertaking the Project as contemplated by this Agreement. MOR shall ensure that each Zonal Railway with geographical jurisdiction adjacent to with the terms of mutually agreed program.
- (8) MOR and DFCCIL acknowledge and agree that at present it is intended that DFCCIL shall not own any rolling stock for the purpose of the implementation of the Project and that all such rolling stock used on the New Railway shall be owned or leased by the Authorised Rail Users (with the exception of rolling stock used for construction or maintenance or restoration related purposes).
- (9) For developing the business and strengthening the relation between DFCCIL and MOR, Addendum to Concession Agreement has been proposed.

1.3 Western Corridor:

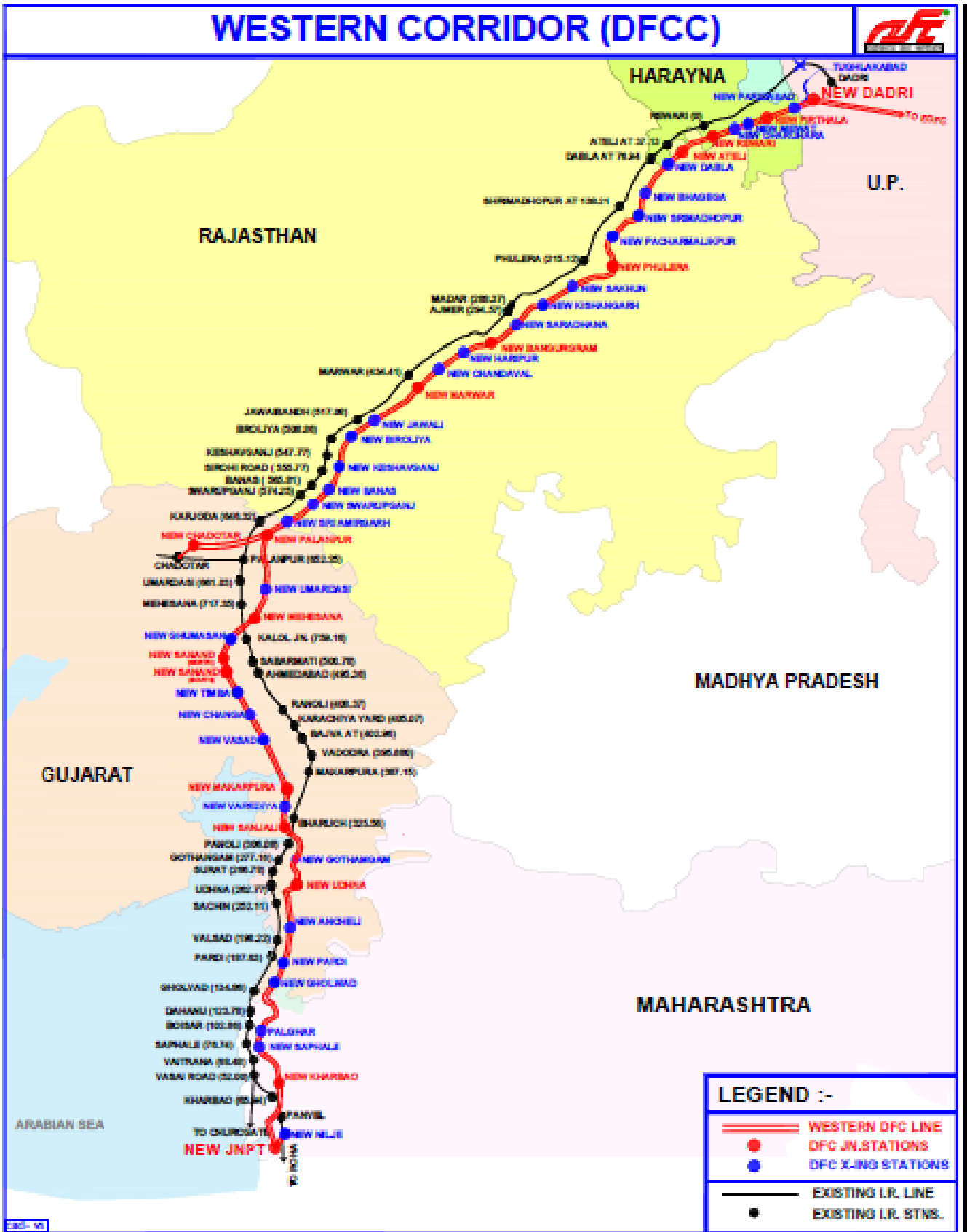
Western Corridor comprising of 1504 km of a double line electrified track from JNPT to Dadri via Vadodara-Sanand-Palanpur-Phulera-Rewari. Alignment has been generally kept parallel to existing lines except provision of detours and entirely on a new alignment from Rewari to Dadri and also from Sanand to Vadodara. This new line portion of DFC is designed to connect with existing New Delhi - Mathura line at Asaoti railway station from Pirthala station of DFC. Moreover, the Western DFC is proposed to join Eastern Corridor near Dadri.

Western DFC (1504 KMs)	
Haryana	191
Rajasthan	561
Gujarat	552
Maharashtra	183
Uttar Pradesh	17
Total	1504

The traffic on the Western Corridor mainly comprises of ISO containers from JNPT and Mumbai Port in Maharashtra and ports of Pipavav, Mundra and Kandla in Gujarat destined for ICDs located in northern India, especially at Tughlakabad, Dadri and Dandharikalan. Besides Containers, other commodities moving on the Western DFC are POL, Fertilizers, Food grains, Salt, Coal, Iron & Steel and Cement. Further, owing to its faster growth as compared to other commodities, the share of container traffic is expected to progressively increase and reach a level of about 70.5 million tonne in 2023-24. The maximum number of trains in the section is projected as 230 trains (both in UP and DN) in Ajmer-Palanpur section in the year 2024..

Network diagram of Western Corridor is given below: -

Network Diagram – Western DFC



1.4 Eastern Corridor:

The Eastern Corridor with a route length of **1861km**, consist of the following distinct segments:

- i. An electrified single line segment of 401 km between Ludhiana and Khurja.
- ii. An electrified double line segment of 46km between Khurja and Dadri.
- iii. An electrified double line segment of 351km between Khurja and Kanpur
- iv. An electrified double line segment of 402 km between Kanpur and Mughalsarai
- v. An electrified double line segment of 126 km between Mughalsarai and Sonnagar.
- vi. An electrified double line segment of 535km between Sonnagar to Dankuni.

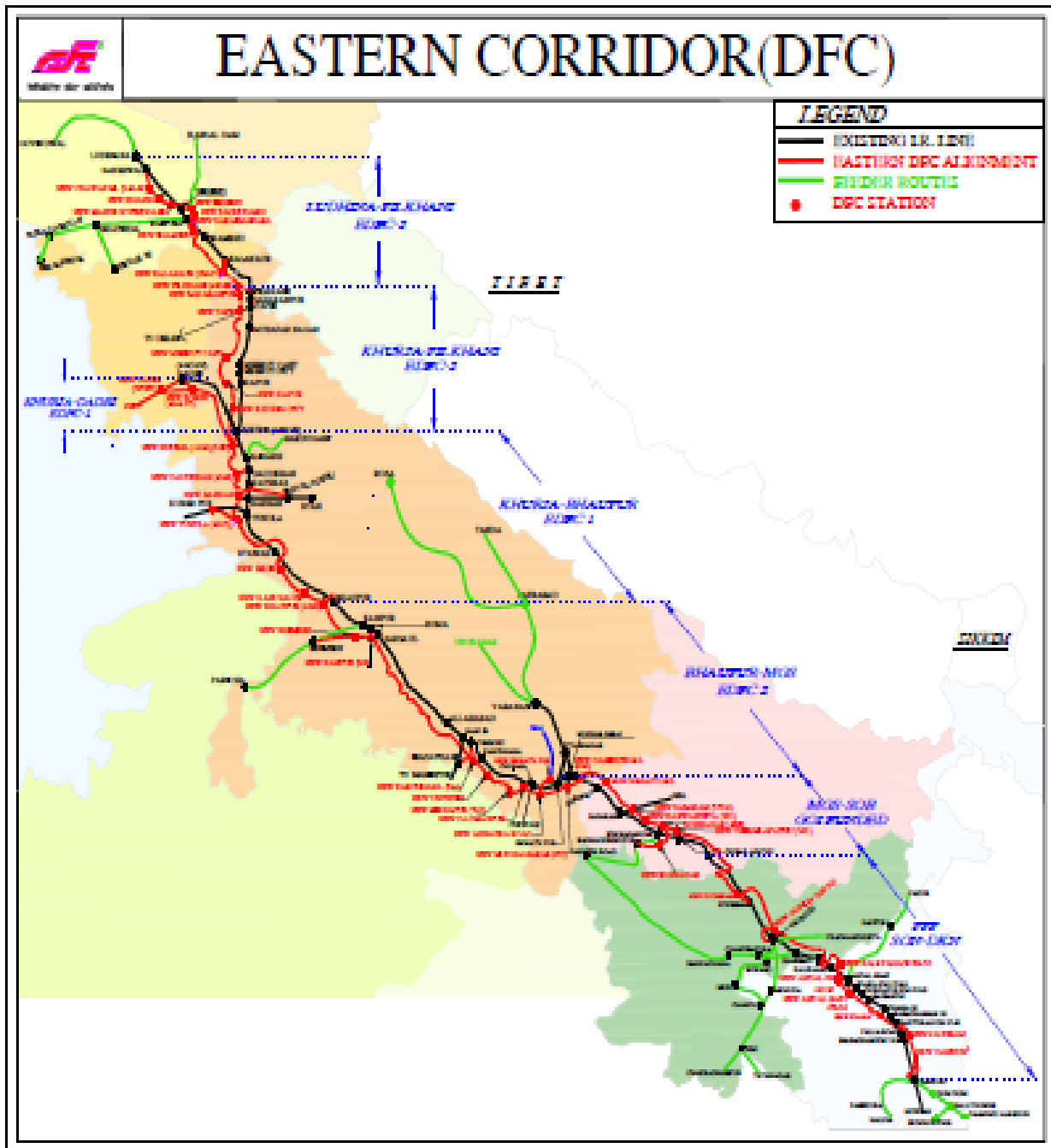
Due to non-availability of space along the existing corridor particularly near important city centres and industrial townships, the alignment of the corridor will take detour at several locations. Since the origin and destination of sizable volume of traffic do not necessarily fall on the DFC, a number of junction arrangements have been planned to transfer traffic from the existing Indian Railway corridor to the DFC and vice versa. The junctions on the Eastern Corridor are planned at Chawapail, Sirhind, Sambhu, Kalanaur, Pilkhani, Boraki, Khurja, Dadri(E), Daudkhan, Tundla, Bhaupur, Bhimsen, Kanpur, Karchchna, Ahraura Road, Mughalsarai, Ganjkhwaja, Sonnagar, Chirailapatu, Gomoh, Andal(W), Andal, Andal(E), Khana and Dankuni. For phase-I opening of the section,temporary junctions are planned at Karwandiya, Sasaram and Durgawati.

Eastern DFC (1861 KMs)	
States	KMs
Punjab	88
Haryana	72
Uttar Pradesh	1063
Bihar	239
Jharkhand	196
West Bengal	203
Total	1861

The traffic on the Eastern Corridor mainly comprises of coal for the power plants in the northern region of U.P, Delhi, Haryana, Punjab and parts of Rajasthan from the coal fields situated in Eastern part of the country, finished steel, food grains, cement, fertilizers, lime stone to steel plants and general goods. The total traffic in UP direction& DN direction is projected to go up to224 million tonnes in 2023-24. The number of trains with 25 tonne axle load works out to a maximum of about 163 trains in both UP and DN direction in Sonnagar-Mughalsarai section of the Eastern Corridor.

Network diagram of Eastern Corridor is given below: -

Network Diagram -Eastern DFC



1.5 FUTURE DEDICATED FREIGHT CORRIDOR

Hon'ble MR has announced in his speech Budget in 2016 to take over the three new Dedicated Freight Corridors. These are: -

1. East –West Corridor (Kolkata – Mumbai) approx. **2328 Km.**
2. North – South Corridor (Delhi – Chennai) approx. **2327Km.**
3. East Coast Corridor (Kharagpur – Vijayawada) approx. **1114 Km**
4. Southern Corridor(Madgaon - Ankola-Rinigunta)approx.**893**

Preliminary Engineering cum Traffic Survey of these Dedicated Freight Corridors have been done by M/s RITES. These reports were submitted for approval to Railway Board.

Vide Letter No.2019/Infra/6/2 dated 15.11.2019 Railway Board conveyed the administrative approval for undertaking and preparing DPR for East-West corridor and North-South corridor to DFCCIL. Details are as under:-

Corridor

- i) East Coast Corridor: KHARAGPUR –VIJAYWADA-1115 km
- ii) East-West Corridor:
 - a) Sub Corridor: BHUSAWAL-WARDHA-NAGPUR-RAJKHARSAWAN-KHARAGPUR- ULUBERIA-DANKUNI-1673
 - b) RAJKHARSAWAN-KALIPAHARI-ANDAL-195
- (iii) North-South Corridor:
Sub Corridor VIJAYWADA-NAGPUR-ITARSI-972 km.

CHAPTER - II

ASSET DESIGN PARAMETERS

2.0 Introduction

The Dedicated Freight Corridor (DFC), a Greenfield network meant exclusively for freight train operations and having planned interface with the existing IR network, provides an excellent opportunity for the adoption of international best practices and innovation in terms of technology, systems design, operation & maintenance and business processes. Dedicated Freight Corridor has been designed for 32.5 tonne loading standard for Bridges & Formation, Track structure of 25 tonne to start with and larger Maximum Moving Dimensions (MMD) as compared to IR. Following are the key area of improvement in DFC over Indian Railways.

2.1 High Axle Load

The Payload to Tare ratio for existing IR Wagons compares very poorly with that of wagons of advanced railway systems which have achieved a ratio generally between 3.5 and 5 even with standard gauge (1435mm) and cape gauge (1067 mm). This is one of the major reasons for poor throughput on the Indian Railways despite a broader gauge. The Table No.2.1 illustrates that the Pay load to Tare Ratio shows considerable increase with increase in axle load. This is because the tare weight of wagon does not go-up in the same proportion as the axle load and thereby giving significant advantage in terms of pay load.

From the economic perspective, Axle load is a vital parameter for increasing the payload in wagons leading to reduction in unit cost of operations and thereby lower freight tariff for the customer. From the Railways point of view, higher axle load would result in lower capital cost in terms of number of rolling stock and reduced operating expenses as compared to normal axle load situation. However, at the same time, it increases the sub and super-structure track costs (track, bridges, formation etc.) and also increases the track maintenance and related equipment cost. But the advantages of heavy haul operation normally outweigh the slight increase in track infrastructure and its maintenance.

The impact on throughput on account of high axle load and Track Loading Density (TLD) is illustrated in the Table No.2.1.

TABLE - 2.1
(Weight in metric tonnes)

Wagon Type	Axle Load	TLD in T/m	Tare	Payload of Wagon	Payload to Tare Ratio	No. of wagons in a rake	Gross Train Load	Payload per rake
BOXN	20.32	7.59	22.5	58.8	2.61	58	4714	3410
BOXN with CC + 9	22.9	8.55	22.5	69.1	3.07	58	5313	4008
BOX NS	25.0	9.33	19.95	80.15	4.94	59	5900	4728
Container – BCS (A) / BCS (B)	25.0 / 25.0	6.89 / 7.6	19.1 / 18.0	80.9 / 82.0	4.24 / 4.56	45	4500	3670

2.2 Maximum Moving Dimension (MMD):

One of the reasons for low productivity in terms of throughput despite broader gauge as compared to other countries is due to adoption of restrictive moving dimensions on the Indian Railways. For example, the MMD of IR is 26.5% less than that of the MMD adopted by AAR. The full benefit of increase in axle load cannot be realized within the IR's broad gauge primarily based on maximum moving dimensions of 1929 which is highly restrictive. The ratio of maximum height from rail level to gauge and ratio of maximum width to gauge are 2.45 and 1.90 respectively. Therefore, in order to get the maximum benefits, MMD requires revision in respect of both maximum height and width. This is required not only for conventional traffic but for new types of commodity-specific wagons such as Ro-Ro traffic, tri-level auto-rack wagons etc, which may come up as future requirements after the dedicated freight corridor is established.

2.3 Double-Stack Container Operation

It has been decided that, in view of container trains forming a major share of freight traffic on the western DFC, the system productivity can be enhanced by double stack container train operation. Trial runs for double-stack operations on flat type wagons under electrified lines have been undertaken by the Indian Railways in collaboration with the JICA Team to check the stability of such double stack containers particularly on curves and high speed and it has been cleared for a maximum of 75 Kmph.

Ministry of Railways has mandated that double stack container train operation on the western DFC will be on flat type of wagons. The impact of double-stack operation on total number of trains on the route has, therefore, been assessed for flat wagon stock with 100% increase in throughput per train. DFC will run long Haul trains with double stack containers leading to 300% increase in through put per train as compared to the single-stack operation. On the contrary, Double-stack operation on Well type wagons, as is the standard practice world over, would have allowed an increase in throughput only to the extent of 42% as compared to the single-stack operation. However, it may not be practicable to run all container trains as double-stack; the possibility can be applied to only such pair of O-D points which have regular and sufficient traffic. This is so because it may not be practicable to hold back traffic at ports or at ICDs for more than a day to form double-stack trains. In the light of these considerations, container trains running between Jawaharlal Nehru / Mundra / Pipavav / Hazira Ports and ICDs in NCR of Delhi / Ludhiana alone have been considered suitable for double-stack operations.

2.4 Higher Speed

The track structure and geometry of the DFC would permit higher speed as compared to that of the Indian Railways. The average speed of the freight trains on the existing Indian Railways network is about than 25 Kmph. This is so because of the fact that the freight trains are given low preference over the Mail/Express/Passenger Trains and they are stopped quite often during their run to give precedence to the Mail/Express/Passenger Trains coupled with the fact that there are higher degree curvature and ruling gradient of the existing infrastructure, which also imposes speed restriction on freight trains. Since the corridor being designed is exclusively for freight trains only, there is no question of any train taking precedence over the other and all trains are supposed to move in a convoy. The ruling gradient of the project has been kept at 1 in 200 and the maximum degree of curvature will not exceed 2.5 degrees. Thus, the corridor is being designed for a maximum permissible speed of 100 Kmph.

2.5 Deployment of High Horse Power Locomotive

It is proposed to deploy high Horse Power locomotive of 9000HP on the Dedicated Freight Corridor so as to haul the heavier train at the designed speed of 100 Kmph. .CLW/Chitranjan will provide 9000HP electric locomotive to DFCCIL.6000HP WAG-

9H locos are also being equipped with TPWS, GSMR & high reach pantographs for use in case of any exigency. This is in contrast to the low horse power locomotive, which has currently been deployed by the Indian Railways. The maximum horse power locomotive on the IR network is 6000 HP in case of electric locomotive and 4000 HP in case of diesel locomotive.

2.6 Modern Signalling and Telecommunication

The DFC network will have modern signalling system with Automatic Signals at 2 Km interspacing, stations would be provided with Electronic Interlocking and the Mobile Train Radio Communication is proposed to be provided for meeting the communication needs. The implementation of such modern system will facilitate optimum exploitation of the rail infrastructure capacity and would require least maintenance.

2.7 Railway Maintenance Practices

Railway infrastructure maintenance practice in general, and particularly for intensively used lines like DFC, is moving away from traditional reactive maintenance to a positive “predict and prevent” approach, using high-output mechanized techniques as far as possible and seeking to minimize human intervention on the track. In the case of a newly build railway, such as DFC that also extends to design and construction for low maintenance.

The capital investment decisions have been based on a trade-off between initial cost and optimum life-cycle cost. Taking a far-sighted view, the Ministry of Railways (MOR) has adopted superior asset standards compared to the existing IR standards, like higher axle load, higher capacity rolling stock, more efficient locomotives and traction systems, advance telecommunication system, etc., that would ensure longer asset lives, require less maintenance, less manpower and, therefore, be more efficient and economical. The fundamental design parameters laid down by the ministry for the DFC are:

Fundamental Design Parameters

Parameter	Specifications
Axle Load	32.5 tonne loading standard for Bridges and Formation. Track structure shall be of 25 tonne to start with.
Traction	Electric, 2x25 kv, 50 hz single phase AC
Maximum Permissible Speed	100 kmph, Average speed 65-70 Kmph.
Rolling Stock	Locomotives: 9000 HP Wagons: 25 ton axle load
Double stack trains	Double-stack container train operation on the Western Corridor
Track	60 kg/m, UIC/90 UTS rails, PSC sleepers, 1660 nos./km density.
Points and Crossings	60 kg rail, 1 in 12 thick web switches
Ballast	300/ 350 mm cushion
Ruling Gradient	1 in 200 (compensated)
Curves	Maximum degree of curvature of 2.5° (700m radius) to ensure sustained speed potential of 100kmph; curve compensation @ 0.04% per degree of curvature.
Formation	Formation width : Double-line – 13.5 m, Single Line – 7.6 m; Side slope of embankment to be maintained at 2:1 ; blanket thickness as per RDSO GE :0014 specification
Moving Dimensions	Vertical MMD of 7.1 m on Western Corridor and 5.1 m on Eastern Corridor
Track Centres	6.0 m on DFC and between existing IR tracks and DFC track, min.6.0, Recommended 7.925 m.

Parameter	Specifications
Bridges	Standard of loading of 32.5 tonne axle load; 12 tonne/m trailing load
Loop Length	Normal loop length 750m with facilities for running Long haul trains through nominated loops of 1500m length at Junction Stations.
Signalling	Double Line: Automatic Block, with Multiple Aspect Colour Light Signalling (MACLS) except Rewari-Dadri which will be with Absolute Block System. Single line: Absolute Block, with around 10 km station spacing and Multiple aspect colour-light signalling.
Station Spacing	40 km apart on double line and 10 km on single line
Junction Stations	<ul style="list-style-type: none"> • Western DFC: 17 Junction Stations • Eastern DFC: 27 Junction Stations

DFCCIL is committed for delivering the project within least time and cost while maintaining the high quality standards envisaged for this unique project. Under the Concession Agreement signed with MOR, DFCCIL has been adequately empowered to innovate and deliver by taking its own decisions with regard to detailed design, contracting and implementation, within the above-mentioned boundary conditions of MOR.

To achieve the above DFCCIL intends to apply the part of the process of World Bank loan for engaging a consultant for Heavy Haul Railway Transport in India for DFCCIL. The objective of appointing a consultant is to recommend strategy and a long term implementation plan for Heavy Haul Freight operations that will maximize the utilization of additional capacity for freight transport and the financial benefits of Heavy Haul Business. Also, to develop a comprehensive and integrated long term plan up to 2030 which will guide India's Railway Planners and Service Providers to improve the capacity, quality, competitiveness and utilization of India's Railway Freight Transport Services in general and Heavy Haul Services in particular.

2.8 Outcome

2.8.1 Much needed Rail Transport Capacity

The commissioning of 3365 Km of Eastern and Western Corridor would provide Industry and rail customers the relief in terms of additional capacity to run more and more freight trains, which is more efficient mode of transport as compared to road, much more environmental friendly and suitable for bulk transportation.

2.8.2 Increase in Rail share

The rail share, which has come down from 80% in the 1950s to less than 30% now, would increase and by the year 2021-22, the rail share is expected to go up from the present level to 40-45% in the total transport sector.

2.8.3 Reduction in O & M Cost

With the commissioning of the state-of-the-art rail infrastructure for the Dedicated Freight Corridor Project and the low cost maintenance regime, it would be possible to reduce the Operation and Maintenance Cost (O & M Cost) drastically to level of 60% of the existing Indian Railway cost. This will give substantial benefits in terms of savings in cost and help in reducing the unit cost of transportation, which is the ultimate objective for creation of DFC infrastructure. It would, then be possible to pass on the benefit in terms of lower tariff for the services delivered to the customers.

2.8.4 Bring in additional Value-added services

Since it would not be a mixed corridor but exclusively for freight trains, it should be possible to run time-tabled trains with guaranteed transit time. Last mile connectivity in terms of door-to-door services can be provided to the customers by DFCCIL by tying up with Truck operators. The DFC network would attract setting up of Multimodal Logistics parks along the corridor to facilitate all kinds of value addition from packaging, retailing, labelling, pelletizing etc. The commissioning of DFC will open new vistas in the rail transport logistics.

CHAPTER – III

BUSINESS PLAN

3.0 Introduction

A detailed Business Plan for DFCCIL was prepared through consultant taking into consideration the Concession agreement and financial arrangement between DFCCIL and Ministry of Railways. The Business Plan has been formulated keeping the following factors in mind.

- i. The relationship between Indian Railways and DFCCIL will be that of a concessioner and concessionaire respectively and will be governed by a Concession Agreement between the two parties for a period of thirty years commencing from the date of operations.
- ii. Indian Railways is the sole owner and, for the present, only customer of DFCCIL.
- iii. DFCCIL has been entrusted with the responsibility of constructing, maintaining and operating two corridors – Eastern Corridor from Ludhiana to Dankuni and Western Corridor from Dadri to Jawaharlal Nehru Port - along with all attendant infrastructures, to enable Indian Railways to run freight trains on them. DFCCIL's role will primarily be that of the infrastructure provider with responsibility of construction, operation and maintenance.
- iv. The DFCCIL will accept freight trains on its system operate them on the DFC and then hand them back to Indian Railways and other qualified operators at the other end. DFCCIL will not own any rolling stock.
- v. DFCCIL will receive from Indian Railways a user charge called Track Access Charge (TAC) in return for its services. However, since Indian Railways is the single buyer, TAC is sought to be fixed in a manner that all costs of DFCCIL get covered. At the same time the structure of TAC will be such so as to incentivize DFCCIL towards better performance.
- vi. Project phasing has been assumed based on loan sanctions, fund availability and estimated progress of construction during the construction period.
- vii. The project is being financed through loan from External bilateral/multilateral funds received via Ministry of Railways and equity contribution from Ministry of Railways. Loan from external funding agencies consist of loans from World Bank and Japanese International Co-operation Agency (JICA). These loans received by Ministry of Finance in the first instance is extended on back-to back basis to the MoR as General Budgetary Support.
- viii. Indian Railways will provide Equity to the extent of shortfall between the Project Cost and loan from World Bank & JICA.
- ix. In respect of Equity from Indian Railways, dividend payment will be decided by the Board of Directors of DFCCIL from time to time.
- x. Since DFCCIL is a corporation registered under the Companies Act, 2013, depreciation has been provided in accordance with Schedule II of the Companies Act. Both depreciation and renewals have not been taken on Sonnagar-Dankuni section as it is proposed to be awarded on Public Private Partnership (PPP) basis. In calculating the financial returns, the cost of Sonnagar-Dankuni section has not been taken.

- xi. All traffic moving over two or more consecutive junctions on the existing route will be assigned to the Dedicated Freight Corridor known as Two Junction Principle.
- xii. Sonnagar-Dankuni section is proposed to be done on Public Private Partnership (PPP) basis and TAC does not include payments to be made to the private operator. A separate payment mechanism would be worked out for the same for example: sharing of freight traffic with Indian Railways.

3.1 Freight Train projections: Eastern and Western Corridors

The total traffic which can move on the Eastern DFC is estimated to grow at CAGR of 4.5% on EDFC. It is expected that 178054 million NTKM traffic will be available on EDFC by 2022 while on the Western DFC it is expected to grow at CAGR 7.7% on expected to be 128064 million NTKM in 2022.

3.1.1 Traffic Flows on Eastern Corridor and Western Corridor

The DFCCIL has carried out detailed, section-wise, traffic assignment exercise to estimate potential traffic expected to move on the DFC routes up to 2021-22. The forecasted number of trains on Eastern and Western DFC corridors in the different reference years is presented below. Traffic in both up and down direction for all reference years in respect of Eastern DFC is given in terms of 25 tonnes axle load wagons. On Western DFC containerized traffic has been estimated considering 25t axle load wagons and partial double stack container train operations.

M/s CDM Smith India Private Limited, in their traffic study, projected traffic in terms of Million Tonne Per Annum (MTPA) for E-DFC and W-DFC are given as under: -

Eastern Corridor

(In MTPA)

Commodity	2020	2021	2022	2023	2024
Container	7.24	7.84	8.49	9.20	9.98
Coal	110.49	114.90	119.50	124.28	128.26
Food Grains	14.55	14.95	15.37	15.80	16.26
Fertilizer	5.64	5.86	6.10	6.34	6.60
Cement	10.82	11.67	12.58	13.56	14.64
Steel	13.70	14.77	15.92	17.16	18.53
POL	4.22	4.31	4.41	4.50	4.59
MISC	22.60	23.27	23.97	24.69	25.43
Total	189.25	197.58	206.34	215.53	224.30
Modal Shift form Road	12.01	12.61	13.24	13.90	14.60
AKIC Traffic	0	0	0	1.16	1.53
Grand Total	201.26	210.19	219.57	230.59	240.42

Western Corridor

(In MTPA)

Commodity	2020	2021	2022	2023	2024
Container	54.3	59.2	64.6	70.5	76.4
Coal	23.3	24.2	25.2	26.2	27.0
Food Grains	8.6	8.8	9.1	9.3	9.6
Fertilizer	12.4	12.9	13.4	13.9	14.5
Cement	7.3	7.9	8.5	9.2	9.9
Steel	1.9	2.0	2.2	2.3	2.5
POL	7.0	7.2	7.3	7.5	7.6
MISC	7.0	7.2	7.4	7.7	7.9
Total	121.8	129.4	137.7	146.6	155.5
Modal Shift form Road	14.0	14.7	15.4	16.2	17.0
DMIC Traffic	8.0	10.6	14.0	18.5	19.0
Grand Total	143.8	154.8	167.1	181.3	191.5

3.1.2 Traffic on Eastern Freight Corridor

The Eastern Freight Corridor originates from Dankuni and via Sonnagar, Mughalsarai, Bhaupur and Khurja extends up to Ludhiana consisting of 1861 Kms out of which 1460Kms is double line and 401 Kms is Single Line.

The Delhi-Howrah route is heavily loaded with passenger as well as freight services. A number of capacity enhancement works including provision of 3rd and 4th lines on certain sections, electrification and signalling improvements, etc. have been taken up during the recent past. However, on most parts of the route, the growth of traffic has exceeded the capacity created.

3.1.2.1 Commodities moved on the route.

The commodities that are transported on this route at present, grouped as principal and others, are as follows:

Principal Commodities

(a) Up direction:

- (i) **Coal:** On the EDFC, coal constitute the dominant commodity. On this route, coal is moved to the Powerhouses, Fertiliser Plants and for Public use to the places located in the States of Uttar Pradesh, Haryana and Punjab mainly from the various Coal Fields of Coal India Ltd. (CIL) which are situated on Eastern Region. These fields are: Eastern Coalfields Ltd. (ECL), Bharat Coking Coal Ltd. (BCCL), Central Coalfields Ltd. (CCL), South East Central Coalfields Ltd. (SECL), Northern Coalfields Ltd. (NCL), and North Eastern Coalfields Ltd (NECL).
- (ii) **Iron & Steel:** At present, Iron and steel to the points on the route moves from Bokaro, Rourkela, Durgapur, IISCO and Tata Steel and some small units on SER and ER via Mughalsarai and from Bhilai and some small units on SECR Via New Katni

(b) Down Direction

- i. **Food grains:** In the down direction, the major commodity transported by rail is food grains which can be transferred to the corridor as it is long distance traffic. On Northern Railway, there are 59 stations from which food grains are dispatched to the various destinations on Eastern and Southern parts of the country and to the Ports, when export is permitted.
- ii. **Fertilisers:** The major fertilizer plants located on the route or on connected routes are in **Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Gujarat, Orissa** and some fertilizers imported through Kolkata and **Haldia ports**.
- iii. **Cement:** Most of the cement plants in India are located in clusters. Along this route, cement produced at the cluster of plants in Satna area serves destinations on ECR, ER and NER. Cement is also moved from this cluster to the points on Kanpur-Ghaziabad section of the NCR and on Saharnapur-Dhandarikalan section of NR. Cement to this area also moves from the Plants on the North Western and Western Railways.
- iv. **Limestone to the Steel Plants:** India has limited reserves of steel grade limestone (SMS limestone). Limestone from the Jaisalmer/Gotan region of Rajasthan and the Katni region of Madhya Pradesh moves on the Delhi-Howrah route only to Bokaro, Durgapur, IISCO and Tata Steel Plants.

Other Commodities

There are other commodities, which move in small quantities. These include

- Coal to the captive power plants
- Containers
- POL traffic
- Fertilisers in up direction
- Onions
- General goods

3.1.3 Traffic on Western DFC

Container traffic will form the major portion of the traffic moving on WDFC .

3.1.3.1 Increase in Rail share in Port based Container Traffic:

Containerized EXIM traffic is and will continue to be the principal traffic stream on the Western DFC route. In 2007-08, the level of containerization of general traffic was less than 50% and rail share in containers handled at ports in the region was about 22%. Since the construction of the Western DFC will not only generate immense additional line capacity on IR network, but also reduce transit times, increase throughput per train (through long haul double-stack container train operation) and enable DFCCIL to offer scheduled freight services between ports and logistics terminals in northern India, the rail share in port-based container traffic is expected to increase to 35-40%. With a higher level of Containerization of general traffic, as is the trend the world over, significant growth in domestic containerized traffic is expected.

The recommendation of National Transport Policy Development Committee in the “Report on Ports & Shippings-2013” gives projections of container traffic growth for all ports with the CAGR 8.1 % in 2015-18 to 8.3 % in 2019-23.

3.1.3.2 Fertilizer:

The movement of fertilizers in India is largely from plants located in Gujarat, Maharashtra, Uttar Pradesh, Andhra Pradesh, Punjab and Haryana and from various ports to consumption centres throughout the country. In so far as the Western DFC route is concerned, major flows of fertilizes traffic emanate from plants in Gujarat

(IFFCO, Kandla and Khodiyar; KRIBHCO, Hazira; GNFC, Bharuch; and GSFC, Vadodara and MotiKhavdi), and Maharashtra (RCF, Trombay and Thal), besides imported fertilizers from ports located in the western region. Though supplies from these sources are made up to the farthest destinations throughout the country, major flows are to the northern states of Punjab, Haryana and Uttar Pradesh. Due to stagnation in fertilizers production in the country, imports have registered a sharp increase during the recent years.

3.1.3.3. POL:

India has to depend upon import of both crude oil and finished products. Major ports in Western India which have facilities for handling import and export of crude oil and petroleum projects are Kandla, Mumbai, Mundra, Pipavav and Hazira. On WDFC, POL is expected to move in both UP and DN directions. The principal supply points for movement in the down direction are the Hindustan Petroleum and Bharat Petroleum Refineries located in Mumbai region, the Bajwa Refinery near Vadodara and Essar& Reliance refineries based in Jamnagar area of, Gujarat.

3.1.3.4. Food Grains:

Food grains are primarily transported from the states of Punjab, Haryana and UP in the north to the whole country and, at times, to ports for export. On the Western DFC, food grains will enter the DFC at Rewari (from Hissar, Delhi and Dadri sides) and travel towards the western region, mainly comprising the states of Rajasthan, Gujarat and Maharashtra. Apart from this, certain quantities of food grains will also enter the DFC at various junction points like Phulera, Vadodara and Sabarmati.

3.1.3.5. Modal Shift in Container Traffic from Road to Rail:

By leveraging transportation capacity and other benefits of the DFC, on one hand, and induction of multiple agencies into Container train operations on the other, IR and DFCCIL will attract a larger share of container traffic, particularly for distances beyond 500 km. IR has already opened up the sector to as many as 17 licensed operators, whose endeavors will increase Railway's share in container traffic.

- Additional container movement by rail on this account has been estimated at 10% from 2016-17 onwards, over and above the rail share indicated in the foregoing table.
- DFCCIL will take the following measures towards increasing its market share in container traffic:
 - Expediently set up the proposed MMLPs, which will not only augment inland handling capacity (the existing facilities being inadequate for the anticipated levels of traffic), but serve as effective staging and destination points for EXIM traffic and consolidation points for domestic traffic; and
 - Encourage improvement in functional efficiency at ports and inland terminals through greater use of IT and close monitoring of handling operations.

3.1.3.6. Creation of New Markets:

In addition to transporting traditional commodities, the Western DFC also offers an opportunity for railways to develop a market in areas where its share has hitherto been negligible, for example, transportation of Automobiles and Ro-Ro traffic. These new market segments have been identified as follows:

- ##### **3.1.3.6.1 Growth in Domestic Container Movement:**
- Whilst the use of containers for EXIM traffic is growing rapidly, the level of containerization for domestic movement is still minimal. Going forward, with greater industrialization, such as the development of the Delhi Mumbai Industrial Corridor (DMIC), domestic container movement would also become a significant market. The DMIC project

is expected to have an enormous traffic generation potential, which, in turn, will bring additional traffic to the Western DFC over and above the normal growth of traffic.

3.1.3.6.2 Automobile Traffic: Out of the five main automobile clusters in the country, NCR based northern cluster and Pune-based western cluster are the most relevant to the Western DFC. As most exports from the northern cluster are channelized through ports in the western region, and the western and northern regions of India also comprise key domestic demand centers, the DFC has a unique opportunity to garner this traffic to rail. In case the Railways capture a reasonable share in EXIM as well as domestic automobile traffic generated in the catchment of the DFC, it will be a huge revenue generating and highly profitable business opportunity.

3.1.3.6.3 RO-RO:
RORO traffic will be an additional traffic on WDFC in sizeable numbers resulting in reduced road congestion apart from avoiding accidents on roads due to considerable reduction in transit times. These can also be exploited for non-bulk traffic particularly at short lead to avoid cost of transshipment and other costs in handling such non bulk traffic.

3.2 Operation & Maintenance Plan

3.2.1 Operation & Maintenance Strategy

The main objective of implementing the DFCCIL through the SPV route is to derive cost efficiencies in operation and maintenance of the DFC. DFCCIL aims to achieve this through:

- i. Improved systems & processes – consisting of modern maintenance philosophies, higher level of mechanization,
- ii. Greater degree of centralized control in operations and greater reliance on information technology. This will lead to a leaner organizational structure and higher productivity per employee as compared to the current IR set-up;
- iii. Improved asset utilization in respect of locomotives and wagons due to higher average speeds (65-70 kmph) on the DFC as compared to the existing IR network (about 25 kmph) and improved payload to tare ratio, complemented by more efficient cargo
- iv. Efficient handling at terminals and logistics parks with logistics support; and, DFCCIL efforts would be to outsource some of the maintenance activities, resulting in reduction in fixed operations and maintenance costs.

3.2.2 Maintenance:

Permanent Way including embankment and bridges form a backbone of any Railway transportation system. For efficient operation, it is necessary to not only keep these assets in safe and sound condition but to also evolve a maintenance system which is cost effective and economical on life cycle basis. Standards of construction are expected to be higher and most modern technology will be used in constructing the DFC. The maintenance practices will also depend on the type of track tolerances permitted for maintenance. It is felt that the track tolerances for DFC can be different from what exists today on IR as the traffic to be carried is only freight and the attempt would be to optimize the cost of maintenance. The tolerances laid presently are based on passenger comfort criteria. The track tolerances are to be evolved duly monitoring the impact/effect of permitting higher tolerances. To start with the tolerances as existing today on IR could be adopted. Therefore, the maintenance system on DFC will be different than what it exists today on IR.

3.3 Operation & Maintenance (O&M) Expenditure

O & M expenses have been estimated based on a 'bottom up' approach to estimate the cost associated with operation and maintenance. Costs are derived by estimating the manpower and materials required for individual tasks and electric power cost is calculated based on the power required to move the estimated traffic. Overheads and miscellaneous operating costs are then added to arrive at the estimate of O&M costs.

For traction power it has been assumed that the power consumption will be **7 units per 1000 GTKM** of traffic moved and the cost of power has been taken at ` **5.16 per unit**. The O&M costs have been separately estimated for the Eastern and Western corridors. The costs at five yearly interval commencing from the year of operation 2023 to 2028 are given in Table below:

O&M Costs

(Rs. in crore; as per IL & FS figure)

2023	2028	Year Ending on March 31	2023	2028
Eastern DFC		1	Western DFC	
298	479	Material	274	443
1312	2086	Traction	1437	2409
346	487	Staff	296	416
27	36	Miscellaneous Op. Cost	16	21
98	153	Overheads (5%)	100	163
2081	3241	Total	2123	3452

Combined O&M Costs

(Rs. in crore; as per IL & FS figure)

Year Ending on March 31	2023	2028
Total O&M Costs	4204	6693

*The figures are based on IL&FS study done in year 2012.

3.4 Revenue Projections as per Business Plan

DFCCIL revenue will consist mostly of Track Access Charges realized from Indian Railways. After examining the practices followed by different railways of the world where ownership of infrastructure has been separated from the user of the infrastructure, it has been decided to adopt a two part tariff for computing the Track Access Charges (TAC) payable by Indian Railways to DFCCIL. The two part tariff will consist of a fixed component and a variable component. The fixed component will be payable irrespective of volume of traffic and the variable component will be payable based on volume of traffic in terms of 000 GTKM moved over the system. The separation into fixed and variable components of TAC has been done on the basis of fixed and variable elements of costs. No statistics exists to separate present Indian Railways costs into fixed and variable.

3.4.1 Proposed Principles for setting up TAC for DFCCIL

(1) Concession Agreement and Track Access Agreement (CA& TAA) signed between Ministry of Railways (MOR) and Dedicated Freight Corridor Corporation of India Ltd (DFCCIL) provides for payment of access charges by MOR for use of DFC infrastructure for transportation of freight trains. To implement the provision of Concession agreement regarding TAC, Railway Board has constituted a committee comprising of ED/PP, Advisor FX, EDF(B), Railway Board and Director (OP & BD)/DFCCIL for developing methodology for establishing Track Access Charges for MOR and its systems.

(2) A no. of meetings of the TAC committee has been held. The TAC committee has also taken into account the reports of core consultancy service for developing Business Plan for DFCCIL developed by M/s IL&FS and M/s KPMG - engaged under Technical assistance (TA) component of World Bank with the assigned job of suggesting Track Access Charge regime for initial period and for non-discriminatory access and methodology based upon the best international practices along with track capacity allocation, licensing, safety and transitional issues for DFCCIL.

(3) TAC committee submitted its recommendations on 31.03.2017. The broad principles regarding TAC recommended by TAC committee are as follows:-

- a. The recommended approach is based on achieving full cost recovery through a TAC regime that incorporates fixed and variable costs. Variable costs may be allocated on a per GTKM basis reflecting the marginal costs incurred by each service and fixed costs are allocated on a per train-path basis, with MOR bearing the cost of unused train paths in the ramp-up period between scheme opening and full capacity utilization.
- b. In view of advantages of 'Regulated Asset Base' (RAB) approach, a dynamic model which takes into account the investment and capital recovery, the committee is in favour of RAB approach. This model will ensure an arm length relationship of MOR with the DFCCIL and will ensure that the method of setting Track Access Charge is transparent even during the scenario when non-discriminatory access is permitted by MOR on DFC network.
- c. Track Access Charges each year will cover efficient costs of operation. This revenue requirement includes:
 - i. Cost of capital.
 - ii. Operating costs.
 - iii. Depreciation.

Where:

- Cost of capital includes interest on loans, return on equity and interest on working capital.
- Operating costs include operating and maintenance expenditure.
- Depreciation to be used to pay down the principal of the loan and maintain the value of equity by part-funding renewals.

(4) Railway Board has accorded In Principle Approval to the TAC proposal submitted by DFCCIL. In case of single user regime, following component of TAC have been mentioned:

- a. O&M Expenses
- b. Depreciation
- c. Interest on loan
- d. Land lease charges @ Re 1/-.

(5) DFCCIL is hiring consultancy service on Track Access Charges and Key Performance Indicators (KPIs) on DFCCIL network.

3.4.2 TAC and Revenue Streams in Future years with no change in tariff

(In crore)

Particulars	Units	2021	2022	2023
Total TAC	INR	11,897	12,533	13,020
Apportioned revenue due to DFC				

Revenues with DFC (Moderate Scenario)	INR	31,224	33,416	35,607
<i>The figures are based on PWC study (2017)</i>				

3.5 Business development

While the major revenue generation for DFC will be agreed Track Access charge between DFC and IR initially, the imperative need for adopting models for additional business can't be ruled out. The development of catchment areas around major junctions and the upcoming industries around the major business districts will provide adequate business opportunity for DFC. These are shortlisted presently as development of MMLPs/Freight terminals, development of User Facilities at Station buildings, Advertisements on Railway Assets and development of Theme Parks near major industrial hubs and attracting non-conventional traffic such as Ro-Ro, Automobiles etc.

3.5.1 Multimodal Logistics Parks/Freight terminals along side DFC.

The freight traffic on Indian Railways is being handled at goods sheds, private railway sidings, container terminals, rail-side Warehouses, bulk terminals etc. In the wake of high growth of freight traffic near major production /consumption centres, a need has been felt to have multi user, multi-facility and multi-commodity transportation hubs serving major centres of economic activity which would be helpful in reducing total logistic cost to customers. Such transportation hubs are also known as Multi-Modal Logistics Parks. Multi-Modal Logistics Park is defined as a rail-based inter-modal traffic handling complex comprising of container terminals, bulk/break-bulk cargo terminals, warehouses, inter-modal transfers, sorting/grading, cold chain, and aggregation/dis-aggregation with facilities for mechanized handling along with other support services.

DFCC aims to develop Multi Modal Logistics Parks (MMLP) along with its alignment which would yield sizable volume of traffic for the DFC by consolidation of cargo. The objective is to enhance the presence and share of rail transport in the overall transport chain and attain increased rail freight volumes by offering integrated, efficient and cost effective logistics and warehousing options to users. The proposed MMLPs shall serve to increase global competitiveness of domestic users and promote further economic activities by facilitating efficient access to business sources and markets.

Benefits of Logistics Park

- i. Excellent transport links compare to “stand alone” distribution centre with easy access to long haul rail network as well as to delivery points in the catchment areas by trucking.
- ii. Custom clearance facilities where ever required.
- iii. Round the clock service, being generally located away from congested urban settlement areas,
- iv. Cost saving as all the facilities are provided at one location,
- v. Enhance security systems
- vi. Availability of more options for selection of competitive and reliable logistics service providers.

At present, DFCCIL is planning to develop logistics parks at New Nilje and New Kanpur. 34 locations have been identified for development of logistics parks/freight terminal/parcel terminals and feasibility study for these locations is being done through consultancy services. DFCCIL is exploring to expand business and will further explore possibilities of development of freight terminals at locations in addition to the above identified locations.

3.5.2 Other Opportunities

The needs of the customers arriving at and leaving from Station premises are growing more towards convenience and ease in terms of time saving, etc. Stations being centrally located in the cities, they assume commercial significance with increasing population growth and business dynamics.

Hence, there are ample opportunities to develop the station premises and the business locations for additional revenue .

These may include development of **theme Parks** near major industrial hubs, development of **Serviced and virtual Office Centres**, facilitations for **Advertisement Gateway & Business Event Hubs, Parking space** etc. by incurring least investment for constant commercial source earning apart from reaping benefits of customer facility and their satisfaction derivatives.

3.6 Consultancy for Technical Assistance under World Bank

Four Consultancy Studies have since been awarded to different International Consultancy Service Agencies who will be studying the respective areas allotted to them for enhancement of technical, institutional, commercial and other allied aspects to strengthen and enhance the capacity of DFCCIL to derive investment benefits as a game changer in the transport logistics.

Four areas have been selected and these are as under:

1 - Institutional Strengthening Module of DFCCIL (ISMD)

The primary objective of this module is to review the management and organizational structure, control system, processes and procedures, HR system, MIS, and make recommendations for DFCCIL to make it an efficient, commercially oriented provider of infrastructure services. The module will therefore review and recommend, capacity building, skill development, process re-engineering and system improvement in areas such as organization and corporate governance of the company, including management and organization structure, human resource planning and development, staff training/study tours, financial management, social and environmental systems, governance systems etc.

Consultancy Contract for Engagement of Consultant for Consultancy Services for Institutional Strengthening Module of DFCCIL (ISMD) was awarded to M/s CPCS Transcom International Limited Barbados in a Joint Venture with CPCS Transcom Limited (Canada). Subject Report/Strategy Report have been submitted which are under approval.

2 - Development of Marketing and Commercial Strategies for DFCCIL and its Catchment Areas (DMCSD)

The main objective of the assignment is to develop a long term marketing and commercial strategy and devise step wise plan including policy framework to maximize commercial value of the project and to achieve higher modal share for railways in freight traffic market. This is to be based on, operational strategy, proposed allied infrastructure including freight terminals & logistics parks and induction of special purpose rolling stock for DFCCIL & IR taking into account the traffic in catchment areas along the two corridors being built and on/through the feeder routes of Indian Railways covering followings:

- (i) To validate the demand forecast for different horizon years on DFC up to 2030 supported by secondary data as applicable.
- (ii) To identify potential of additional freight traffic in catchment areas of DFCCIL for increasing modal share of rail using relevant experiences of international freight market with a view to enhance profitability of DFCCIL.
- (iii) To develop costing and pricing strategy for promoting modal shift of traffic in favour of railways.

- (iv) To suggest possible heavy haul DFC network including feeder routes embedded with existing IR network taking into account operational feasibility and associated commercial issues.
- (v) Identify need for special purpose wagons for selected commodities and main technical parameters along with financial justification for the same.
- (vi) Propose operational parameters and operational standards covering train length, speed, service quality, enhanced services and improvements in infrastructure.

The plan, inter alia, should include tangible, actionable and time bound monitorable measures for DFCCIL and IR

Consultancy Contract for Engagement of Consultant for Consultancy Services for Development of Marketing and Commercial Strategies for DFCCIL and its Catchment Areas (DMCSD) was awarded to M/s Pricewaterhouse Coopers Private Limited in Joint Venture with M/s PWC Strategy & (India) Pvt. Ltd., M/s Hamburg Port Consulting GmbH, Germany and M/s UNICONSULT Universal Transport Consulting GmbH, Germany. Final Report was submitted on 28.03.2019 and it is under process of approval.

On the basis of recommendations mentioned in Final Report on ‘Development of Marketing and Commercial Strategies for the DFC and its catchment areas’ (DMCSD), the following plans are under consideration in DFCCIL:

- (i) **Wagon Availability & Special Designed Wagons:** It is recommended in the report on DMCSD that Wagon Investment Schemes should be launched for assured wagon supply for committed large volume players. A Scheme for Special Designed Wagons for transportation of Automobile and Finished manufacturing goods is also recommended. Wagon Investment Scheme for introduction on DFC is under consideration and will be issued after consultation with Ministry of Railways.
- (ii) **Cargo Consolidation:** It is recommended in report on DMCSD that new consolidation centers are required at New Nilje, New Tundla, New Shambhu, New Mirzapur and New Meerut Cantt, so as to allow freight forwarders to help consolidate and form full rakes at these centers. A policy for Freight Forwarders will be formulated after consultation with Ministry of Railways.
- (iii) **Timetabled and reliable transit :** DFCCIL’s mission is *‘To build a corridor with appropriate technology that enables Indian railways to regain its market share of freight transport by creating additional capacity and **guaranteeing efficient, reliable, safe and cheaper options for mobility to its customers**’*. To achieve its mission about guaranteeing efficient and reliable mobility, DFCCIL is planning to introduce ‘Timetabled Goods Train’. It will also help to fetch additional traffic by transporting EXIM Containers, Parcel and Retails, Fruits and Vegetables and Automobiles.
- (iv) **Ro-Ro Service:** It is recommended in the report that Ro-Ro service can be a tool for attracting incremental traffic for transportation of Cement, Wheat, Salt, Edible Oil, Fruits & Vegetables and Household appliance. Moreover, there is a scope for transporting Commercial Vehicles from manufacturing points to the delivery points. A scheme will be introduced after consultation with Ministry of Railways.
- (v) **Storage and Warehousing:** It is recommended in the report on DMCSD that Storage and Warehousing will be require for export rice and retail. In view of the recommendation, DFC is in process for assessing the need for provision of such facilities at various locations over DFCCIL. For the purpose, an MoU has been signed with Central Railside Warehousing Company for setting up of railside warehouses at

various locations over DFCCIL. It will help DFCCIL to attract sizable volume of traffic. Presently, CRWC is conducting feasibility study and the report will be submitted thereafter.

3. - Heavy Haul Rail Capacity Development in India (HHRCDI)

The overall objective of the Heavy Haul Research & Development Program will be to increase the technical capacity of India's railways to implement heavy-haul freight initiatives that will improve the safety, transport capacity, quality, competitiveness and share of India's rail freight transport services and to prepare concrete proposals of an effective and cost-efficient heavy-haul freight Research, and capacity Development Program including plans for establishment in India of a world class Heavy-haul Research Institute (HHRI). This will include detailed program for development and research capabilities identifying the major areas of the heavy haul Cost drivers viz productivity enhancements through increased axle loads, reduced wagon requirement, higher pay load to tare weight ratio, energy saving technologies, reduced human resource requirement & desired skill enhancements.

Consultancy Contract for Engagement of Consultant for Consultancy Services for Heavy Haul Rail Capacity Development in India (HHRCDI) was awarded to M/s Deloitte Touch Tohmatsu India Private Limited. Final Report was submitted on 01.12.2016 and accepted on 24.03.2017.

4- Consultancy Services for Non-discriminatory Access for DFCCIL (CSNDAD)

The objectives of the study are to

- (i) consider options for institutional arrangement for providing non-discriminatory access for rail freight train operations;
- (ii) analyse international experience with non-discriminatory access for freight train operations and suggest a practical system(s) suitable for application in the Indian context,
- (iii) establish a detailed methodology for setting track access charges at start up, and
- (iv) Identify how the institutional arrangements for licensing, regulation of traffic, capacity allocation and safety, including the methodology for calculating track access charges, would need to change to accommodate multiple users.

Consultancy Contract for Engagement of Consultant for Consultancy Services for Non-discriminatory Access for DFCCIL (CSNDAD) was awarded to M/s KPMG Advisory Services Private Limited (INDIA) in Joint Venture with M/s JSC KPMG (KPMG Russia) and M/s KPMG (KPMG UK). Final Report submitted in March'2017 and accepted on 23.11.20

CHAPTER – IV

ORGANIZATIONAL STRUCTURE AND TRAINING

- 4.0** DFCCIL has planned a lean manpower organization, with staff and managers having functional rather than linear responsibilities. During the project delivery phase, DFCCIL plans to limit the size of the establishment by using the services of consultants for preliminary design, and project management and supervision, as far as possible. During the operation phase, DFCCIL will resort to automization & mechanization to optimize staff costs, to the extent possible. To this end international practices like risk based maintenance regime combined with intensive monitoring of assets and mechanized maintenance of the infrastructure has been planned.

DFCCIL has planned separate staffing structures for the construction and operational phases of the project, reflecting the different skill-set requirements of each phase. The project delivery organization has a predominance of staff with the requisite engineering and related backgrounds, conversant with design, tendering, procurement and supervision of works, land acquisition processes, etc. These along with the senior management staff are based in the DFCCIL headquarters at Delhi. DFCCIL has outsourced work packages to General Consultants responsible for the planning, design, tendering, systems integration, and supervision of contractors and progress monitoring, under the oversight of DFCCIL officers. DFCCIL staffs are also engaged in critical activities like planning, prioritization and integration of different activities/construction packages, estimation, budget control, MIS reporting, coordination with the Ministry of Railways and other concerned Government authorities, etc. functions that can be best performed in-house given the public utility character of the project. In the field there are 14 Chief General Manager (CGM) offices at suitable locations, to deal with land acquisition, yard planning, liaison with government authorities etc. The CGM will also do overall monitoring of the work being done at site by construction contractors and the General Consultants.

At the operational stage, DFCCIL will consist of Corporate Headquarters at NOIDA, Eastern and Western Corridor Headquarters at Allahabad and Ahmedabad respectively, a Training School, keeping in view the centrality of operational requirement even in scheduled train path running, DFCCIL has planned Operation Control Centres (OCCs) on the two corridors i.e. at Allahabad on EDFC and at Ahmedabad on WDFC. Apart from these there will be a provision for replica control at Corporate Office of DFC to take over and monitor during exigencies/breakdowns as a part of Disaster Management Plan. In the Corridors there will be field offices including Integrated Maintenance Depots and Sub-Depots, Track Machines and Ballast Depots at suitable locations. The Corporate Headquarters will have the senior managers and staff of different disciplines of Engineering, Traffic, Finance, HR and Administration. Maintenance staff will be stationed at integrated maintenance depots located 160 kms apart on the DFCCIL as well as at sub depots located 80 kms apart. There will be one control office for each corridor for planning and controlling the movement of trains. Operating staff will be located at stations and control offices. Day to day working of the maintenance and operation work as well as liaison with Zonal Railways and local agencies will be done by the Eastern and Western Corridor Headquarters. Eastern and Western Corridors will be headed by Executive Directors, who will report to Top Management. Both corridors would be independent cost and revenue centres. Policy matters, finance, budget, HR, design changes, security, purchases, etc. will be managed in the Corporate Headquarters. The Corporate Office will also do Business development, coordination with Railway Board and other Government Departments.

4.1 Learning & Development Policy of DFCCIL

1. Title & Commencement

This policy will be called the **DFCCIL Learning & Development Policy**. It will come into force w.e.f 01.10.2018.

2. Learning & Development Philosophy

The Learning & Development initiatives are planned to be strongly aligned with the current and future leadership requirements to achieve organizational aspirations articulated in terms of vision, mission and objectives. The initiatives will be designed and administered with the intent of unlocking the potential of human capital across the organization, develop a leadership pipeline at all level and to build critical organizational capabilities required for achieving corporate plans. The employees in the organization will be given wise exposure to varied Learning & Development opportunities based on the business requirements and their individual potential.

3. Scope

This policy applies to all permanent employees and employees on deputation. This policy doesn't cover employees who are on contract, reemployed or consultants.

4. Learning & Development Objectives

1. To assess, on a regular basis, the learning and development needs of both individuals and the organization.
2. To help employees to attain competence in basic work skills and knowledge with regard to their individual responsibilities.
3. Optimum utilization of the existing resource pool of knowledge within the establishment for the growth of organization.
4. Enable employees to keep abreast with the latest knowledge and skills and enable them to undertake current and future responsibilities in a more effective manner.
5. To provide fair opportunity to all the employees for self-development through training.
6. To create an atmosphere of learning which motivates the employees for acquiring higher degree of knowledge and skills
7. Provide linkages of training activity with overall Human Resource function

5. Terms and Definitions

- a) **Training:** Training shall include a training programme, seminar, convention, workshop, symposium or any other structured learning or developmental programme based on organizational needs and/or Training Need Analysis.
- b) **Training Year:** Training Year shall mean a period of one year commencing from 1st April till 31st March of the subsequent year.
- c) **In-house Training Programme:** A training programme designed, developed and conducted within the Corporation, exclusively for its employees, with or without the assistance of external agency (ies).
- d) **External Training Programme:** A training programme designed, developed and conducted within India, by an outside agency, not exclusively for the employees of the Corporation and to which one or more employees of the Corporation may be nominated.
- e) **Customized Training Programme:** Training program conducted by external agency in consultation with DFCCIL.
- f) **Need-based Programme:** A training programme, designed, developed and conducted on the basis of the developmental needs felt and identified for the employees concerned in the Training Needs Form.

6. Types of Training

- Induction Training
- Technical Training
- Refresher Training
- General Management Training
- Behavioral Training
- Leadership Training

7. Nature of Training Areas

- a) **Essential:** Developmental needs which, if not met, may affect job performance
- b) **Desirable:** Developmental needs which are necessary for personal development and growth
- c) **Short-term:** Developmental needs that need to be fulfilled for immediate job performance
- d) **Long-term:** Developmental needs that need to be fulfilled for future job performance, in next two years or so.

8. Training Target

1. It shall be the endeavor of the Corporation to provide five man-days of need-based training in training year to every employee.
2. Employees shall make full use of the Learning & Development System to support this endeavor to create a learning organization.
3. To establish learning & development function as mandatory, disciplined and scientific activity with special focus on implementation of training programs in their respective work area through the formation of Core Groups in various areas as directed by HR and supported by top management.

9. Categorization of Programmes

On the basis of duration, training programmes would be categorized as

Short-duration: 3 days or less

Medium-duration: 4-7 days

Long-duration: More than 7 days

Limit on the Number of Programmes

An employee may be nominated for training programmes within the limits stipulated herein.

Short-duration: Maximum of 3 in a year

Medium-duration: Maximum of 2 in a year

Long-duration: Maximum of 1 in a year

The competent authority will have respective powers to permit relaxation of the limits on the number of training programmes for an employee in a year as stipulated above.

10. Training Code Directory

A training code directory, listing out codes for various-training courses/programmes shall be evolved, maintained and circulated by HR Department for uniform compilation and classification of training needs identified and training programme attended by employees. The needs may be analyzed on the basis of the training course codes give in Code Directory. All such courses, which do not appear in Directory, shall be marked as 'AAAA' for initial consideration/registration. Subsequently these would be reported to HRD for inclusion in the Code Directory.

11. Empanelment of Training Institutes/ Trainers/ Infrastructure Partners

A robust empanelment process shall be developed and managed to identify individuals and institutions who could partner with DFCCIL to deliver the training mandate of DFCCIL for its employees. Additionally, in the absence of a full-fledged Training Centre/Academy this exercise could also be undertaken to identify an Infrastructure Provider who can lease their premises for DFCCIL to use it for the immediate training delivery needs of the organization. Focus should be on identifying long term partners who are aligned to the organizational needs of DFCCIL and are willing to design, deliver customized programs both onsite and offsite to DFCCIL. The empanelment process will look at the following aspects -

- Placement of advertisements in leading domestic and international publications
- Proactive reaching out to global institutions to be partners to DFCCIL in the training delivery mandate
- Response management to identify the right partners for DFCCIL across individuals and institutions
- Negotiation with individuals and intuitions for specific training delivery support and necessary contracting
- Roll out of the agreed training calendar and necessary monitoring of individuals/ intuitions
- Focus to be on programs which are customized, have pre and post training work and delivery onsite in DFCCIL premises to improve reach and cost efficiency

12. Training Need Analysis

The objectives of Training Need Analysis are to:-

1. Systematically identify developmental needs of employees
2. Integrate so-identified individual needs with organizational needs
3. Enhance relevance and acceptance of training programmes

Identification of training needs is done at various levels -

- **Individual Level:** Mainly through recommendation from the Annual Performance Appraisal System
- **Functional / Departmental Level:** Customized Training programs are developed for the departments in consultation with the Departmental Heads
- **Organizational Level:** Individual Development Plan obtained from the Competency mapping exercise is used to provide specific Training to bridge the observed the employee skill gaps.

For assessing training needs of employees, a questionnaire is enclosed as annexure IV.

13. Training Delivery

Training delivery (Internal):

13.1 Short-term

The internal plan would involve on the job training in the desired areas. A system of continuous assessment and evaluation method will also be put in place so as to plan for sharpening the skills and capabilities of the employees. As the setting up of the specialized training institute with its teaching faculty and other infrastructure facilities will take time, the basic training during the construction phase will be imparted to the employees by making suitable arrangements with the specialized training institute of Indian Railways in discipline like Civil, Electrical, S&T, etc. Arrangements will also be made with these institutes to design short duration modular training courses in specific areas as per the specific needs.

13.2 Long-term

Since DFCCIL will adopt state of the art technology and modern international system of maintenance, a *specialized training institute* will be set up. The institute will provide induction training to new recruits as well as refresher training at periodical intervals to the managerial, supervisory and artisan staff. The training institute will be located at National Capital Region of Delhi. The institute will have dedicated Principal, Vice Principal, Sr. Instructors and Instructors of specialized disciplines besides other staff.

13.3 Training delivery (External):

The external plan would involve exposure to world class technology, practices and corporate culture through specialized training programs to be imparted in the training Institutes or through seminar, conferences, workshop, etc., talent exchange programme with the leading national and international organizations engaged in Heavy Haul Freight Railways, employee exchange programme with other organization engaged in heavy haul freight movement.

14. Training Calendar

A Training Calendar will be prepared every year which covers various topics in which training (Domestic as well as International) is to be imparted. It will cover grade/level of participants to be imparted training, man-days of training and training cost. The calendar will be prepared by HR on basis of inputs of training needs of various departments.

15. Training Nomination Process

HR Department will process the case of nomination of employees for attending training. Director in charge will nominate officials for the training program. HR Department will issue the nomination letter to the employees for participation in the training program.

16. Coverage on Policy of Training

Training is imparted so that the needs of the organization and the individuals are met. These needs are driven by an external environment as well as the challenges arising internally in DFCCIL. Therefore, the entire spectrum of training activities should be shaped to ensure that these needs are effectively met.

Training Policy of DFCCIL for new recruits will cover training in the following forms:-

- i. Total period of training for new recruits is approximately 6 -8 months depending on the function/category for which they are recruited. This is divided as under -

Induction Training	One month
Corporate Orientation	One week
Technical Training	One month to four months depending on the function
Field training	One month
On the Job training	Two months

- ii. Additionally, in service training will also be given to officials as under-

S N	Programme Name	Eligibility/ Years of Service
1	Function Related Programmes/ Technical Training	Junior and Middle Level (2 -5 years) employees of all disciplines
2	Management Development Program	Middle level /E5 -E7 (5- 10 years of service)
3	Advanced Management Program (including training component abroad)	Middle/Senior Level Management: E7/E8 (15 - 20 years)
4	Leadership Training	E7/E8 (20 -25 years)
5	Strategic Management Course	E8 and above (25 -30 years)
6	Relevant Courses	Director/MD

16.1 Mentoring & Coaching

Due to the large influx of newly recruited officers, there is a requirement of imparting training inputs through these interventions. Hence, it is essential that the Training System will facilitate on-the-job training and prepare material that will enable mentoring and coaching to be more effectively implemented in the organization.

16.2 Refresher Programme

Refresher level programme will be conducted periodically to sharpen functional and cross functional competencies of employees in discharging their duties.

16.3 E-Learning

Programmes designed to be delivered through intranet facilitating self-learning and evaluation on the topics/subjects, both technical/behavioral.

16.4 Pre-Promotion Training for SC/ST Employees:

HR shall ensure that employees of Scheduled Caste and Scheduled Tribe categories are adequately nominated to training programmes. HR shall also endeavor to organize pre promotion training programmes exclusively for SC/ST employees.

16.4 Training Facilities for persons with disabilities

In accordance with guidelines issued by Department of personnel and Training (DoPT) and Railway Board, post recruitment and pre – promotion training facilities will be organized for persons with disabilities. Training programs will also be organized for them, keeping in view any change in job, introduction of new technology, after promotion of the employee etc. The venue of the training will be fixed as considered suitable for such training.

17. Foreign Training

A training programme, conducted outside India, wholly or partially to address training needs, which are individual and/or, specialized in nature. As a part of HR intervention, DFCCIL deutes its employees for foreign training in order to provide them with international exposure to the best practices in the field of technology and management.

17.1 Objectives:

- a) The objective is to provide appropriate training and development opportunity to employees to equip them with global practices in construction, operation, maintenance and other techno-managerial competencies.
- b) To equip that critical mass of employees who have potential to assume higher responsibility with global exposure and /or who need such training for their competency.

17.2 Managerial Training: Officers of E-7 and above would be sent for training abroad once in four years

17.3 Technical Training : Executives/non-executives at all levels can be sent for foreign training in functional areas specific to their job requirement and also need based foreign training subject to approval of the competent authority

17.4 Training Report: The employee on return from foreign training will submit the "Training Report" within one month of return highlighting major learning's, utility of training etc. and should make a presentation of learning to DFCCIL officers.

17.5 Training Bond: For mandatory foreign trainings such as Advanced Management

Program or in the event of sponsorship to programs exceeding 14 training days duration, the concerned employee will be required to execute a suitable service bond to serve the organization for a minimum period of 3 years on return. In the event of his/her failure to do so, he/she will undertake to pay back the total cost of the training including airfare, TA/DA etc.

17.6 Post training Placement: The individual would normally be posted for a minimum period of 2 years in the area of work for which he/she has been deputed for training abroad.

17.7 Guidelines for participation in foreign training

With a view to streamline the process of foreign trainings and to ensure uniformity, following guidelines shall be followed: -

1. As per SOP, MD is the Competent Authority to approve foreign training abroad. The proposal will be sent to Railway Board for approval of training of MD and Directors.
2. All cases of foreign training should be dealt by HR, through Finance for MD's approval. This shall include trainings which are part of contracts (system or PMC). In such cases, the concerned corridor will

send a note along with the provisions of the contract and scope of training for nomination of officers.

3. All cases where DFCCIL expenditure is involved, including DA, per diem etc. should be routed through Finance.
4. For trainings/seminars/conferences/workshops/exhibitions which are covered under the World Bank Training Plan, approval/consent of World Bank and DEA as per extant guidelines, will be taken.
5. The complete proposals for any foreign visit should be given to HR at least 2 months before the scheduled date of journey.

17.8 Guidelines for sponsoring of senior level executives of DFCCIL for Advanced Management Programmes

Objective

A corporation is driven by its corporate leaders who are first to envision its future and define a strategy for making that vision a reality. It is thus essential that senior level executive be provided adequate exposure in various aspects of General Management to help them in the effective discharge of their duties. This will also help in building a leadership pipeline for the future. These Guidelines on advanced management programme are aimed as a systematic intervention towards achieving this goal and will be a part of the overall training framework of DFCCIL.

Coverage and Eligibility

The Guidelines are for consideration of nomination of regular executives to specific Advanced Management Programmes being conducted by various eminent institutes such as IIMs, ASCI Hyderabad, MDI Gurgaon, IMI, New Delhi etc. All executives in the grade of E7 and above are eligible to be considered under these guidelines. Nominations to these programmes shall however be considered keeping in mind the Grade held by the concerned Executive, inter-seniority, previous foreign trainings attended, performance, availability of employee, etc. the concerned employees must have a minimum of three years' service left.

Duration of the Programme

The Advance Management Programme as is being run by various Management Institutes shall be duly selected and is generally of the duration 3-4 weeks including a foreign training component up to 1-2 weeks.

Course Coverage

The programme should focus on developing leadership roles and strategic management expertise amongst the concerned executives and cover areas of General Management apart from Business strategy, Corporate Governance, etc. They should also inter-alia allow some exposure to global benchmarks, best practices etc. so as to enable concerned executives to develop a wider horizon and frame of reference.

Course Fee and Entitlement

Programme fee shall bear all expenses including course fee. TA/DA will be paid as per the Rules of DFCCIL.

Approving Authority

The Managing Director shall be the Competent Authority for the approval of a nomination to the Advanced Management Programme subject to delegation of power applicable for allowing foreign travels in case of Board level executives.

18. Training Evaluation

The objective of training evaluation is to enhance value addition through training programmes by building on the strengths and by removing the shortcomings, if any, and measure the impact of training programmes on job behavior.

Training Evaluation would be done at three levels:

1. Pre-training Evaluation
2. Programme Feedback
3. Impact Assessment

18.1 Pre Training Evaluation

Pre-training Evaluation is aimed at detecting shortcomings in the programme design before the commencement of the programme. For this, in case of all in-house programmes, HR Department shall review the programme design, content etc. in the light of the feedback obtained from a sample of participants.

18.2 Program Evaluation

The Training Centre/ HR Department, as the case may be, shall seek participant Feedback at the end of the training programme in the Programme Feedback Form as in Annexure I for making modifications/ improvements in future programmes.

18.3 Post Training Feedback Report

Employees sent for training will submit feedback of the training in prescribed format. (Annexure I)

18.4 Impact Assessment

It involves measuring the change in job behavior of the employee on account of the learning during the training programme. The information would be collected through the Impact Assessment Form (IAF) as in Annexure II after completion of six months of the programme.

Impact Assessment is required in case of all customized and foreign training programmes and Planned Interventions.

18.5 Program Evaluation Report

After Impact Assessment HR Department would prepare a Programme Evaluation Report in case of all Long-duration programmes and Planned Interventions of duration of not less than 10 training days in the proforma given in Annexure III and circulate it to all the participants concerned.

19. Sharing of Learning:

Employees who have attended training programmes shall normally share their learning with other employees in for a like Professional Circles, Quality Circles, and Departmental Meetings etc. and submit a report on the same to his Controlling Officer. In case of medium and long-duration programmes for employees, the participant shall submit an action plan to his Reporting Officer, with a copy marked to HR, detailing the steps that would be taken by him/her for implementing the learning in his/her job. The information will be made available on the knowledge portal.

20. Learning & Development Budget

Adequate funds, for learning and development activities for meeting the stipulated training required will be allocated. A budget at around 1% of the total General & Admin (G&A) expenses of DFCCIL and progressively to be increased with necessary approvals of the competent authority based on performance and needs of the organization.

21. General: The system shall be reviewed from to time to keep it in line with the latest in the area of Learning and Development. The management reserves the right to modify, cancel, add or amend any of these provisions at any time.

ANNEXURE - II

IMPACT ASSESSMENT FORM

(To be filled in only the case of Medium and Long Duration programs, six months after the completion of the training program and responsibility of getting the form filled lies with the Training Department)

PART I - BACKGROUND INFORMATION

(to be filled in by Programme Co-ordinator)

Course Title:
Period:
Venue:
Programme Objectives

(to be filled in by the Participant)

Name:	Emp. No.
Designation :	Place of posting:
Department:	1.1.1

PART II - IMPACT ASSESSMENT

1. The programme introduced me to new concepts and tools that helped me to perform my job better

No impact	----- →			Great Impact
1	2	3	4	5

2. How often do you apply the knowledge/skills gained during the programme?

Occasional	----- →			Daily
1	2	3	4	5

3. Are there any significant achievements as a result of the application of your knowledge to your organization?

Not Significant	----- →			Significant
-----------------	---------	--	--	-------------

1	2	3	4	5
---	---	---	---	---

4. Would you like to elaborate on some/any of the achievements?
5. Was action planning done as part of the programme? If yes, how far have you been able to implement the action targets set?
6. What barriers have you experienced in trying to apply your new knowledge and skills?

	Not Significant ----- → Significant				
Lack of finances 1.1.2	1	2	3	4	5
Lack of team support 1.1.3	1	2	3	4	5
Lack of Institutional Support 1.1.4	1	2	3	4	5
Change of role 1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.1.10
Others (please explain) 1.1.11 1.1.12 1.1.13 1.1.14 1.1.15	1.1.16	1.1.17	1.1.18	1.1.19	1.1.20

7. Would you like to explain in detail, any of the above barriers?

Signature of the participant

PART III - ASSESSMENT REVIEW

(To be filled in by the Reporting Officer)

1.1.21

1.1.22

Do you agree with the information furnished by the participant in Part II? Kindly elaborate.

1.1.23

1.1.24

1.1.25

1.1.26

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1.1.38

1.1.39

1.1.40

1.1.41

Signature of the Reporting Officer

Name:-----

Designation:-----

Unit : -----

Head of Department

Head of HR

ANNEXURE - III

PROGRAMME EVALUATION REPORT

Programme Title:
Period:
Venue:
Programme Co-ordinator:

PART I - BACKGROUND INFORMATION

PROGRAMME OBJECTIVES: 1.1.42 1.1.43 1.1.44
PROGRAMME SCHEDULE: 1.1.45 1.1.46 1.1.47
PARTICIPANT PROFILE: 1.1.48 1.1.49 1.1.50 1.1.51
ANALYSIS OF PROGRAMME FEEDBACK: 1.1.52 1.1.53 1.1.54 1.1.55

PART II - IMPACT ASSESSMENT

EXTENT OF IMPACT OF LEARNING ON JOB PERFORMANCE:

1.1.56

1.1.57

1.1.58

1.1.59

1.1.60

AREAS OF APPLICATION OF LEARNING:

1.1.61

1.1.62

1.1.63

1.1.64

1.1.65

SIGNIFICANT ACHIEVEMENTS OF PARTICIPANTS ON APPLICATION OF LEARNING:

1.1.66

1.1.67

1.1.68

1.1.69

1.1.70

1.1.71

Signature of the Programme Co-ordinator

Annexure IV

Individual TNA Form

Employee Code	1.1.72
Employee Name	1.1.73
Designation	1.1.74
Department	1.1.75
Location	1.1.76
Mobile No	1.1.77
Email id	1.1.78

Note: The given questionnaire is to help you reflect on your job role and to identify any areas where you may benefit from further training and development. The more honest and accurate you are with this, the more effective will be the resulting training and development plan.

Instructions:

Current Need: The skill level is low and so this area needs to be administered on a priority basis (within 6 months).

Future Need: The skill level is moderate but this area could be administered in the near future (after 6 months).

Not Needed: The skill level in this particular area is high and therefore not required.

Remarks: Please specify your personal needs that should be highlighted in the training program.

S N	Training Topic Areas	Current Need	Future Need	Not Needed	Remarks
1	Behavioral Areas	1.1.79	1.1.80	1.1.81	1.1.82
1.1.83	Program 1	1.1.84	1.1.85	1.1.86	1.1.87
1.1.88	Program 2	1.1.89	1.1.90	1.1.91	1.1.92
2	General Management Program	1.1.93	1.1.94	1.1.95	1.1.96
1.1.97	Program 1	1.1.98	1.1.99	1.1.100	1.1.101
1.1.102	Program 2	1.1.103	1.1.104	1.1.105	1.1.106
3	Functional Areas -HR, Finance, IT, Procurement, Legal	1.1.107	1.1.108	1.1.109	1.1.110
1.1.111	Program 1	1.1.112	1.1.113	1.1.114	1.1.115
1.1.116	Program 2	1.1.117	1.1.118	1.1.119	1.1.120
4	Technical Areas- Operations, Maintenance, S&T, Civil, Mechanical	1.1.121	1.1.122	1.1.123	1.1.124

1.1.125	Program 1	1.1.126	1.1.127	1.1.128	1.1.129
1.1.130	Program 2	1.1.131	1.1.132	1.1.133	1.1.134

Other Details

1. What have been the main aspects of professional and personal development provided in your job over the past year? (This can include projects undertaken, courses attended, or other activities that have contributed to the enhancement of your skills/expertise) -----

2. Please specify your future interest areas: -----

3. Other skills, abilities and strengths? (What other skills and abilities do you have that are not fully used and which you would like to develop?)

4. Which training location do you prefer?

In-house Off-site

5. Please use this space to provide any additional information: -----

Signature

Date

DFCCIL's CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY POLICY

4.2 Introduction

Corporate Social Responsibility (CSR), also called corporate conscience, corporate citizenship, social performance, or sustainable responsible business) is a form of corporate self-regulation integrated into a business model. It is the continuing commitment by business to perform ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large. CSR policy functions as a built-in, self-regulating mechanism whereby business monitors and ensures its active compliance with the spirit of the law, ethical standards, and international norms.

The Government of India enacted the Companies Act 2013 in August 2013 Section 135 of the Companies Act 2013 (hereinafter referred to as 'the Act') deals with the subject of Corporate Social Responsibility (CSR). It lays down the qualifying criteria based on net worth, turnover, and net profit for companies which are required to undertake CSR activities and, inter-alia, specifies the broad modalities of selection, implementation and monitoring of the CSR activities by the Boards of Directors of companies.

DFCCIL's CSR Vision

At DFCCIL, Corporate Social Responsibility is envisaged as a commitment to meet its social obligations by playing an active role to improve the quality of life of the communities and stakeholders on a sustainable basis, preferably in the project areas where it is operating.

DFCCIL's CSR Policy Statement

DFCCIL's Corporate Social Responsibility Policy is "To remain a responsible corporate entity mindful of its social responsibilities to all stakeholders including shareholder, employees, local community and society at large".

Key results area to be covered under Corporate Social Responsibility

Generally the underprivileged and backward communities/areas where DFCCIL has its business operations would be covered under the policy. The focus is to address the basic needs of the deprived, under privileged, neglected and weaker sections of the society which comprise of SC,ST, OBC, minorities, BPL families old and aged, women/ girl child, physically challenged etc.

Implementation of CSR

Partnership Approach

As per the requirement, DFCCIL may carry out the identified activities on their own or engage specialized agencies/NGOs Trusts/ Missions/ Government/ Semi-Government/ autonomous organizations/ contracted agencies for work etc, which have requisite expertise of carrying out the identified activities. The agency/organization will be appointed to work singly or in collaboration with other agencies. DFCCIL will monitor and ensure delivery of services as planned in accordance with the needs of the community. The activities would be taken up in a project mode with milestone and deadlines.

Broad guidelines and parameters:

- a. Discussion and interactions with Central and State Govt. officials be held to identify the areas for undertaking CSR activities to avoid duplicity of the same with the programmes run by Central, State and Local Government. Initiatives of

Government and Self Help Groups (SHGs) etc. would be dovetailed / synergized with initiatives taken by DFCCIL.

- b. While identifying the CSR activities, emphasis is on the areas related to the business of DFCCIL. The target beneficiaries, the local authorities, institution etc. involved in similar activities if need be, may be consulted in the process of planning and implementation of CSR programme.
- c. Assign the CSR projects to NGOs/specialized agencies under a MoU/Agreement reflecting the mutual terms and conditions.

Allocation of funds:

- a. As per the Companies Act and the DPE Guidelines it is mandatory for all profit making CPSEs to undertake CSR activities. Even the CPSEs which are not covered under the eligible criteria based on threshold limits of net worth, turnover, or net profit as specified by Section 135(1) of the Company Act, but which make profit in any particular year, would also be required to take up CSR activities within the provisions of the Act, the CSR Rules, and the Guidelines. Such CPSEs are expected to spend at least 2% of the profit made in the previous year on CSR activities. Accordingly, funds may be allocated amounting to at least 2% of the average net profit of the company made during the three immediately preceding financial years or MoU target whichever is higher.
- b. Allocation to CSR Fund can be increased with the approval of CSR Committee and would require subsequent ratification by Board of Directors.

Monitoring and Evaluation

- a) The impact of the CSR activities undertaken should be quantified to the extent possible with reference to baseline data, to be created before the start of any project. Therefore, Base-line surveys would be an integral part of CSR programme so that progress can be measured. Photographic record may be maintained wherever possible.
- b) For proper and periodic monitoring of CSR activities, if considered necessary, the programmes undertaken under CSR may be evaluated through a suitable independent external agency and the evaluation should be both concurrent and final.

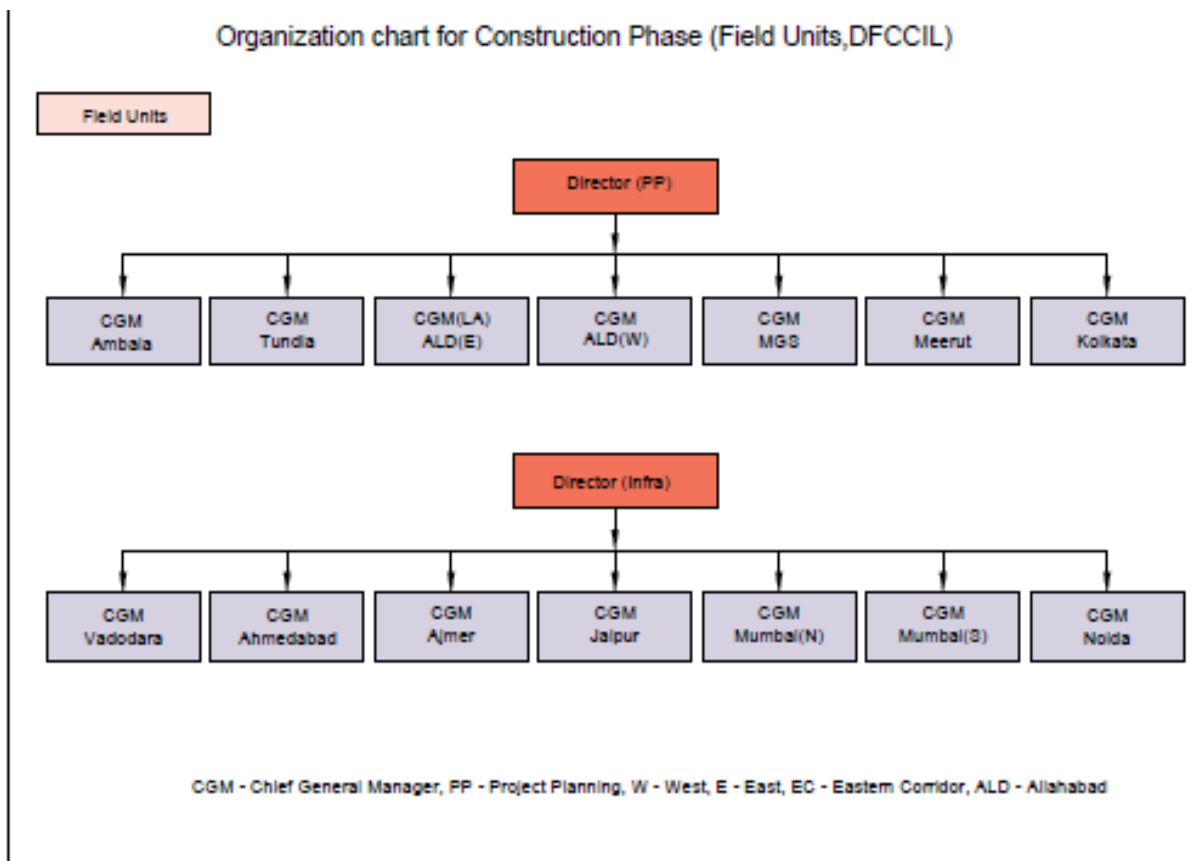
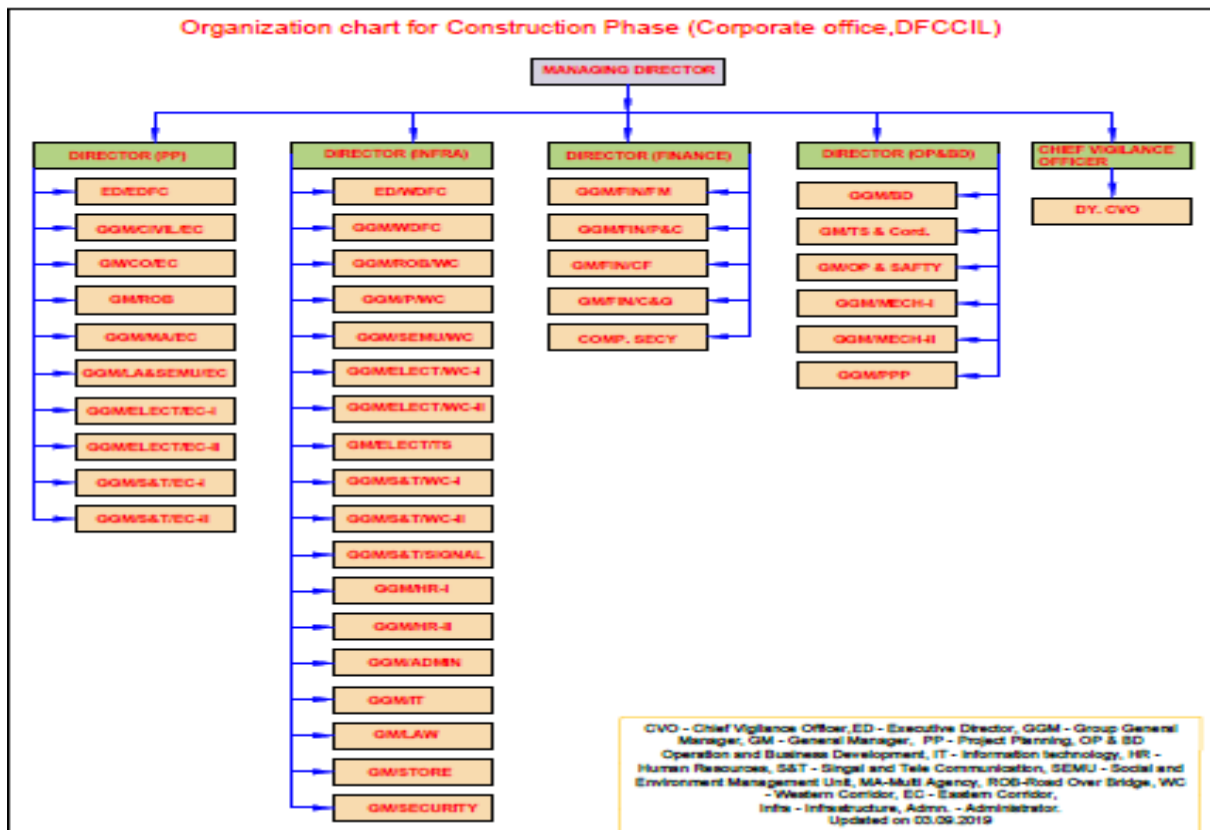
Reporting of CSR Activities

The CSR activities will also be reflected in the Annual accounts of DFCCIL under the head 'Expenditure under CSR Activities'.

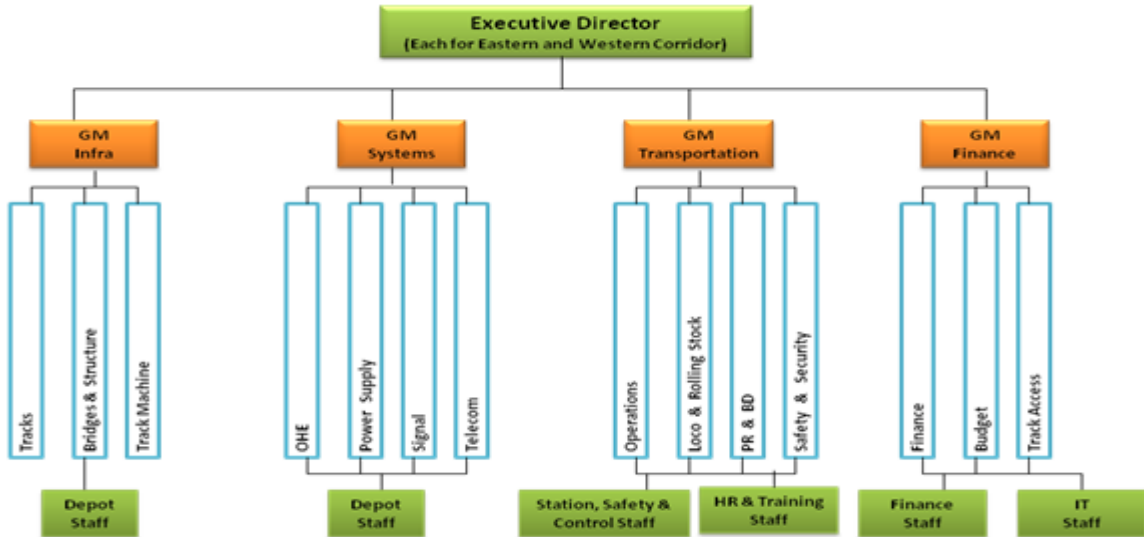
Display of CSR activities on DFCCIL website

The CSR policy of DFCCIL, duly approved by the BOD shall be displayed on the company's website.

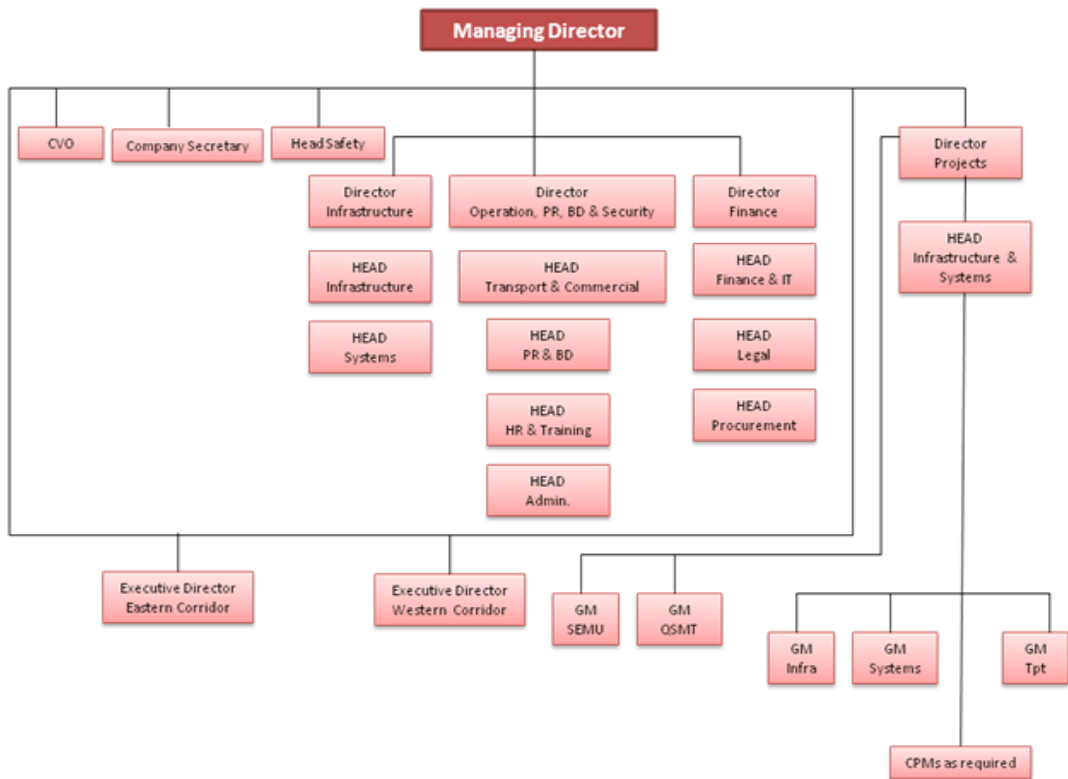
Organisational Chart of the Corporate Office of DFCCIL is given below: -



Operational Phase – Regional Office



Operational Phase – Corporate Office



CHAPTER - V

CONSTRUCTION PLANNING

5.0 The Construction Model

Design-Build Lump-sum Contract strategy is being used for construction of the two corridors. The selection of contractors is through open bid, Prequalification, Post qualification and Bidding process. Project Management Consultants engaged as Engineer for overall supervision of the work. The Civil Contracts is followed by System Contracts including Signalling & Telecommunication and Electrical OHE Equipment. The size of packages is decided based on cost and availability of agencies to achieve good competition and also manageability of contracts from contractors as well as supervision point of views. In addition, the market appetite is considered to ensure there is price discovery through open competition. For the Western Corridor, the entire length is divided into packages having a length of about 110 to 350 km. Electrification as well as S&T Contracts are undertaken for longer stretches.

On the Eastern Corridor, the length between Ludhiana and Mughalsarai has been divided into three Adaptable Program Lending (APL) packages. APL-1 covers Khurja-Bhaupur (351km), EDFC-2 covers Bhaupur- Mughalsarai (402 km) and EDFC-3 is Ludhiana-Khurja-Dadri (401 km. S/L + 46 Km D/L). Civil work is undertaken separately for these APLs, followed by system Electrification & S&T Works.

Road Over Bridges has been sanctioned by Ministry of Railways on cost sharing basis as per available procedure and funded through Road Safety Fund/other funding.

5.1 Progress

The Project is now in advanced phase of Construction. All Works and Consultancy Contract for WDFC/EDFC awarded except System Contract for Khurja-Dadri and Khurja-Sanehwal Section of EDFC.

5.1.1 Land Acquisition:

Land is being acquired by DFCCIL on behalf of Central Government, Ministry of Railways (MoR) through the nominated Competent Authorities (CA) who are mainly Revenue Officers of the State Government. DFC project has been declared as a Special Railway Project by MoR and land acquisition is being done as per Railway Amendment Act, 2008. DFC alignment passes through 68 districts of 9 states in both the corridors and involving 11796 hectares of land (EC-5796 ha & WC-6000 ha) covering 3365 Km.

Project Description	Total Scope	
	Length (Km.)	Area (Ha.)
EDFC (without Sonnagar-Dankuni)	1326	4567
Sonnagar-Dankuni	535	1229
WDFC	1504	6000
Total of EDFC & WDFC	3365	11796

The detailed procedure for land acquisition for DFC project is provided in RAA 2008, highlights are mainly as under:-

- i. Appointment of Competent Authority through Gazette notification.
- ii. Preparation of land plans
- iii. Gazette notification u/s 20A of RAA 2008 i.e. Intention to acquire land for public purpose.
- iv. Publication of 20A notification in local newspapers in vernacular language
- v. Hearing of objections received from land losers by Competent Authority
- vi. Submission of report u/s 20E(1) by the CA
- vii. Gazette notification u/s 20E i.e. Land vested with the Central Government free from all encumbrances
- viii. Declaration of award u/s 20F i.e. Land compensation
- ix. Payment of compensation to land losers

Land acquisition in DFCCIL is being done in most transparent manner by conducting Social Impact Assessment (SIA) prior to land acquisition to ascertain the socio-economic condition of the Project Affected People (PAPs). As per section 20-O of the Railway (Amendment) Act, 2008, the 'National Rehabilitation and Resettlement Policy, 2007' is to be adopted. A robust Entitlement Matrix duly approved by MoR has been prepared encompassing all categories of beneficiaries incorporating various benefits under National Rehabilitation and Resettlement Policy 2007. With the passage of "the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 followed by the Amendment Ordinance, the provisions of the new act with regard to compensation & R&R are applicable to all acquisition being undertaken by DFCC from 01.01.2015. A new Entitlement Matrix has been issued by Railway Board as per the provisions of the new Act and has come into force from 01.01.2015. The same has been made available on DFCCIL web site, all the CPM office, Public places in affected villages for the public information.

Due care has been taken to avoid or minimize land acquisition and involuntary resettlement impacts by exploring all viable alternatives and to ensure adequate rehabilitation package and expeditious implementation of rehabilitation process. DFC has a well formulated Resettlement Policy Framework (RPF)¹ to take appropriate resettlement and rehabilitation measures for persons / household adversely affected due to implementation of DFC project. Social Impact Assessment studies have been conducted for EDFC & WDFC to meet the World Bank & JICA Social safeguard policies.

A Resettlement Action Plan (RAP) detailing the road map for resettlement of PAPs has also been prepared in consultation with the Multilateral funding agency. DFC has also hired NGOs for smooth implementation of RAP to facilitate the PAPs in the resettlement process. An independent consultant for Social and Environmental Monitoring has also been put in place. DFC is the first project in the country to implement NRRP 2007 by including it in the act itself.

Land is being acquired under RAA 2008. Progress as on May 2019 is as under:

Project Description	Land to be Acquired (Ha.)	20A issued (Ha)	20E issued (Ha)	20F Award declared (Ha)
Eastern DFC (without Sonnagar-Dankuni)	4567	4559	4459	4402
Western DFC	6000	6000	5999	5976
		1.2	1.3	1.4
		1.5	1.6	1.7
Sonnagar-Dankuni	1229	1120	1016	918
Total	11796	11679	11474	11296

Para 5.1.2 Procurement Plan & Progress

Para 5.1.2.1 Eastern DFC - The Eastern DFC is being executed in a phased manner. The World Bank funding finalized in three tranches for Ludhiana – Mughalsarai Section. Phase -1 of Loan was sanctioned for Khurja – Kanpur Section for USD 975 Million. During June 2017 USD 175 Million was surrendered during restructuring and Khurja – Dadri Section was also included in EDFC – 1 Loan. Another USD 245 Million surrendered during December 2018 and EDFC – 1 extended up to May 2019.

Phase -2 from Kanpur to Mughalsarai was sanctioned for USD 1100 Million. During restructuring USD 190 Million was surrendered.

Phase – 3 for Khurja – Ludhiana Section is sanctioned for USD 650 Million.

Para 5.1.2.1.1 Eastern Dedicated Freight Corridor Project – 1 (EDFC- 1)

For EDFC – 1 (Khurja – Bhaupur Section (351 km): World Bank Loan amount Agreement for USD 975 million was signed in October 2011. Loan No. is 8066 – IN. Lot 101, 102 & 103 involving Civil, Structure and Track Works Contract Packages of approx. 115km each were awarded in January 2013 to TATA – ALDESA JV. System Work involving Electrification, Signalling and Telecommunication Works was awarded to ALSTOM Consortium in July 2015. Construction work for Civil and System Works are in progress. Civil Works for Khurja – Dadri Section awarded to GIL- TPL JV during June 2016. System Work for Khurja – Dadri Section Technical Evaluation of bids completed during November 2018 and Contract likely to be awarded by August 2019. Trail run for Khurja – Bhadan Section done with Diesel Loco during November 2018. Khurja - Bhaupur Section is planned for Commissioning by November 2019.

Para 5.1.2.1.2 Eastern Dedicated Freight Corridor Project – 2 (EDFC – 2)

For EDFC – 2 (Bhaupur – Mughalsarai section (402km): World Bank Loan amount for USD1100 million signed in September 2013. Loan No. 8318 IN. During restructuring USD 190 Million surrendered. Lot 201& 202 involving Civil, Structure and Track Works Contract awarded in March 2015 to GIL – SIL JV. S&T and Electrical Works Contract awarded in June 2016 to Beijing National Railway Research and Design Institute of Signal & Communication Group Co. Ltd., China and L&T – INABENSA JV respectively. Civil and System Works are in progress. Section is targeted for Commissioning by December 2020.

Para 5.1.2.1.3 Eastern Dedicated Freight Corridor Project – 3 (EDFC – 3)

USD 650 Million Loan was sanctioned by World Bank for Khurja – Sanehwal Section. Loan was signed on 21.10.2016. Lot 301 for Civil, Structure and Track Works Section for Pilkhani – Sanehwal Section was awarded to GIL – TPL JV in June 2016. Lot 303 for Civil Works Khurja – Pilkhani Section awarded to Larsen& Toubro Limited during February 2018. System Work for Khurja – Pilkhani and Pilkhani – Sanehwal Technical Evaluation of bids are in progress. Tender likely to be awarded during August / September 2019. Civil Works in both sections is in progress. Sections are targeted for completion by December 2021.

Para 5.1.2.1.4 Mughalsarai – Sonnagar Section (126 KM) This section is being constructed through Railway funding. Durgauati – Sasaram Section completed. Section is targeted for Commissioning by December 2020.

Para 5.1.2.1.5 Sonnagar - Dankuni Section (535 KM) through PPP - It has been decided to implement Sonnagar - Dankuni Section under PPP mode. As the size of the project is substantial, based on investor feedback, it has been decided to split the project in two phases viz. Sonnagar – Gomoh Section (Phase – 1) and Gomoh - Dankuni Phase – 2. The total land acquisition involved in this section is approximately 2189 Ha. 85% land (including Railway land) is already in possession. Target for this section will be decided after appointment of concessionaire.

Para 5.1.2.2 Western DFC

Para 5.1.2.2.1 JICA Funded Section: Phase-1 (Rewari - Vadodara, 953 km) The Loan Agreement for the first tranche for a total of 90,262,000,000 JPY (Ninety Billion Two Hundred Sixty Two Million JPY) has been signed on 31st March 2010. The Loan Agreement for the second tranche for a total of 103,664,000,000 JPY (One Hundred Three Billion Six Hundred Sixty Four Million JPY) has been signed on 31st March 2016. The construction works of Phase-1 project will be carried out in seven contract packages namely: Civil Packages: CTP-1, 2 & 3, Special Steel Bridge Packages: CTP-3AR, Electrical: EMP-4, Signalling & Telecom: STP -5&5A, & Procurement of Track/OHE Machines: PE-6. All contract package except PE-6, have been awarded. All the civil and system works are in various stages of progress.

Para 5.1.2.2.2 JICA Funded Section: Phase 2 (Vadodara - JNPT & Rewari – Dadri 551km) The Loan Agreement for the first tranche for a total of 136,119,000,000 JPY (One Hundred Thirty Six Billion one Hundred Nineteen

Million JPY) has been signed on 28th March, 2013. The Construction works of Phase-2 project will be carried out in nine contract packages namely: Civil Packages: CTP-11, 12 & 13, Integrated Packages: CTP-14 & Special Steel Bridge Packages: CTP-15A, 15B & 15C, Electrical: EMP-16, Signalling& Telecom: STP-17. All the contract packages have been awarded and work is in progress.

Para 5.1.2.2.3 Bridge Construction (Railway Funded) Contract for Construction of 54 Important and major Bridges between Vaitarna and Surat on WDFC are in progress as a part of separate contracts. Works on 27 bridges are complete. Work is in progress for remaining bridges.

Para 5.1.2.2.4 Road over Bridges (Railway Funded): 118 Level Crossing on WDFC are to be converted to ROBs and are being executed by various agencies as per mutual agreed and terms with State Govt. 11 ROBs are already completed and awarded for 65 ROBs.

"On EDFC there are 146 ROBs from Sanehwal to Sonnagar, out of which 34 ROBs have been completed. Work is in progress at 24 ROBs. Remaining ROBs are at various stages of planning."

Para 5.1.3 Timeline for Completion of DFC– DFC would be operationalized in phases starting from the year 2019-20. For a massive project of this size and complexity, it is natural to consider phased implementation and start driving benefits by early commencement of operation. The project phase of the DFC plan comprises of construction of Dedicated Freight Corridor (DFC) spanning the Mumbai – Delhi (Western DFC) and Ludhiana - Delhi – Kolkata (Eastern DFC) legs of the golden Quadrilateral, covering a total length of 3,365 Route KM. Plan for commissioning of sections is as under.

Eastern DFC

Bhaupur /Kanpur – Khurja	:	351KM	March, 2020
Bhaupur /Kanpur – Mughalsarai	:	402 KM	December 2020
Khurja – Ludhiana	:	401KM	December 2021
Mughalsarai – Sonnagar	:	126KM	December 2020
Khurja – Dadri	:	46KM	December 2020
Sonnagar – Dankuni	:	535KM	Based on finalization of PPP Contract

Western DFC

Phase-1	1.	1.7.2	1.7.3
Rewari- Palanpur	:	(641Km.)	March,2020
Palanpur – Makarpura	:	(308 Km)	September,2021
Phase-2			
Makarpura - JNPT	:	(428Km.)	December,2021
Rewari-Dadri	1.	(127 Km)	March, 2021

CHAPTER - VI

Information Technology

6.0 DFCCIL embarked on a journey to create and deploy a World Class Enterprise-wide Integrated IT System which will completely automate its Core Organizational business functions and provide each employee with an environment to conduct its regular office activities more efficiently and effectively. DFCCIL is in the process of implementing SAP-ERP System. The Project aims at the Centralized implementation of a Software Solution integrating Financial Management, Human Resource Management, Project Management, Enterprise Asset Management, Land Acquisition Information Management, Geographical Information Management, Portal and Document Management System. The ERP solution would be utilized for managing the most critical functions of the organization. The system is both horizontally and vertically scalable. The solution would provide Dashboard and GIS based reporting, enabling effective decision making by senior management.

6.1 Envisaged Benefits

The proposed IT system will help DFCCIL to preserve important artefacts (plans, drawings, notes, documents, reports etc.) in a secure and manageable environment in digitized format. The envisaged system would expedite decision making, ensure better planning and co-ordination between different functions, better data management, effective reporting, knowledge management, etc. Time lost in accessing information will be reduced. State-of-the-art processes will be established to ensure that best practices are followed. The IT Solution will provide senior management with critical information related to various contracts, activities and funds in the form of Management Dashboards with inbuilt triggers to ensure timely decision making. The Integrated IT system would thus, at any point of time capture a complete picture of what is going on in the organization. It would be a very powerful tool to drive important business decisions based on various business parameters. Not only decision making, it would also be a tool to measure outcomes of the decisions taken on real-time basis.

6.2 IT Related Developments

A state of the art Data centre has been set up at DFCCIL. This Data Centre has been connected with all the 14 CPMs locations by using MPLS (Multi-Protocol Label Switching) based WAN (wide area network) and CPM Sub-Offices are connected through VPN. Thus all CPM offices in both Eastern and Western corridor are connected to the DFCCIL's data centre.

To improve Network availability and access speed redundant MPLS connectivity between Corporate Office Data Centre and CPM Offices is under implementation. DFCCIL is considering shifting Data Center to a spacious location along with its capacity augmentation. Also Disaster Recovery Data Center proposal has been initiated.

User Acceptance Testing (UAT) for the system has been completed for all modules. Operational Acceptance phase is under process. Partial Acceptance has already been issued for four Modules i.e. Land Acquisition Information System Module, Geographical Information System Module, Portal and Document Management System. Operational Acceptance testing of Human Resource Management System Module has been completed by HR Department and they are working regularly through SAP. Finance Module is also under advanced stage of Testing & Development. All the payments (except Major Contracts) are being made through ERP system.

DFCCIL is now undergoing the final stage of ERP implementation. Almost all the work is being done in the ERP system at Corporate Office. In CPM Offices all Modules are being used except for PMS Module which is in the process of being implemented. DFCCIL's Payroll is being generated from the ERP system since Feb, 2014.

Almost all DFCCIL employees have been provided SAP License with ESS (Employee Self Service) rights. Thus through the Portal each employee can access his pay slip, apply for leave and access various user manuals and other information as well. Employees can file their property returns online. All posting and transfer orders are generated through the SAP-ERP System.

The Project Contractors and Project Management Consultants are also accessing the SAP-ERP System through VPN for online submission of bills. Since SAP implementation is a dynamic process, any future requirements will be taken care with the help of users.

CHAPTER-VII

Risk Management

7.0 Risk Management

7.1 A key factor for an organization's capacity to create sustainable value is the risks that the organization is willing to take at the strategic and operational levels and its ability to manage them promptly and efficiently. An organization's capability to identify and manage the risks in a competent manner is a critical aspect of corporate governance. Risk management is a structured process which enables an organization to address the risks existing in its various activities with the goal of achieving desired benefit from these activities. It increases the probability of success and reduces both the probability of failure and the uncertainty of achieving the organization's overall objective.

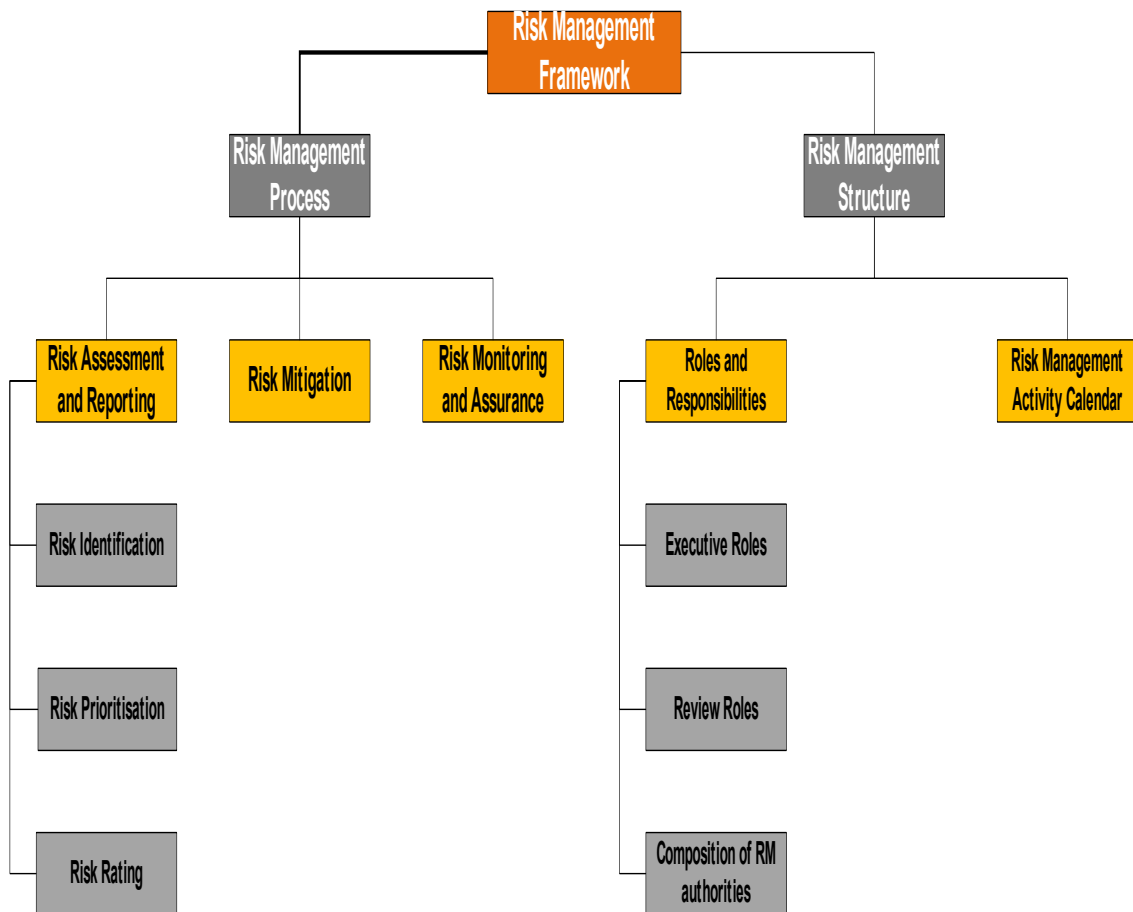
7.2 The Company has developed the Enterprise Risk Management Framework which has been approved by the Audit Committee and also by the World Bank. The Enterprise Risk Management Framework has been implemented with effect from 1st December 2014. The Top 20 risks each perceived at this stage during "Planning & Construction Phase" and "Operation Phase" have been identified and prioritized. A Risk Management structure has already been defined, which comprises of a Risk Management Committee (RMC) consisting of three members. A Chief Risk Management Coordinator (CRMCO) being the nodal point for coordinating and managing all the risk management activities reviewed and approved by RMC. The head of various departments such as Civil, S&T, IT, Administration, Electrical, Operation, Business Development, Finance, Human Resources etc. and all CGMs act as Risk Mitigation Plan Owners (RMPOs) and would be responsible for risk identification, its prioritization and for framing the mitigation plan. In order to ensure that there are appropriate controls in place for the risk management activities, a risk monitoring and assurance mechanism through MIS has been provided for a part of Enterprise Risk Management Framework to assess the effectiveness of mitigation plan for a particular risk.

While striving to meet the corporate mission and corporate objectives, risks and concerns go hand-in-hand along with the opportunities. Risk Management Policy strike a balance between company's strength, weaknesses, opportunities and threats on one hand with the real and potential risks on the other hand.

The Company Risk Management Policy established documented Risk Management Framework and assign responsibilities to its employees to take corrective and preventive measures. The Risk Management Framework is being reviewed and upgraded periodically and also Company strives to increase awareness among its employees to implement the Risk Management Policy.

7.3 Risk management framework (RMF)

Ernst & Young LLP after detailed discussion with various stake holders prepared a draft of Enterprise Risk Management Framework for DFCCIL, which had been approved by the Audit Committee of Board of DFCCIL and finalized in consultation with competent authorities of DFCCIL and process of Implementation of Risk Management Framework within the DFCCIL has already been started from 01.10.2015. In this regard, 2 resources for the post of RMCO taken from Ernst & Young LLP to implement the said RMF within the DFCCIL which is as under:



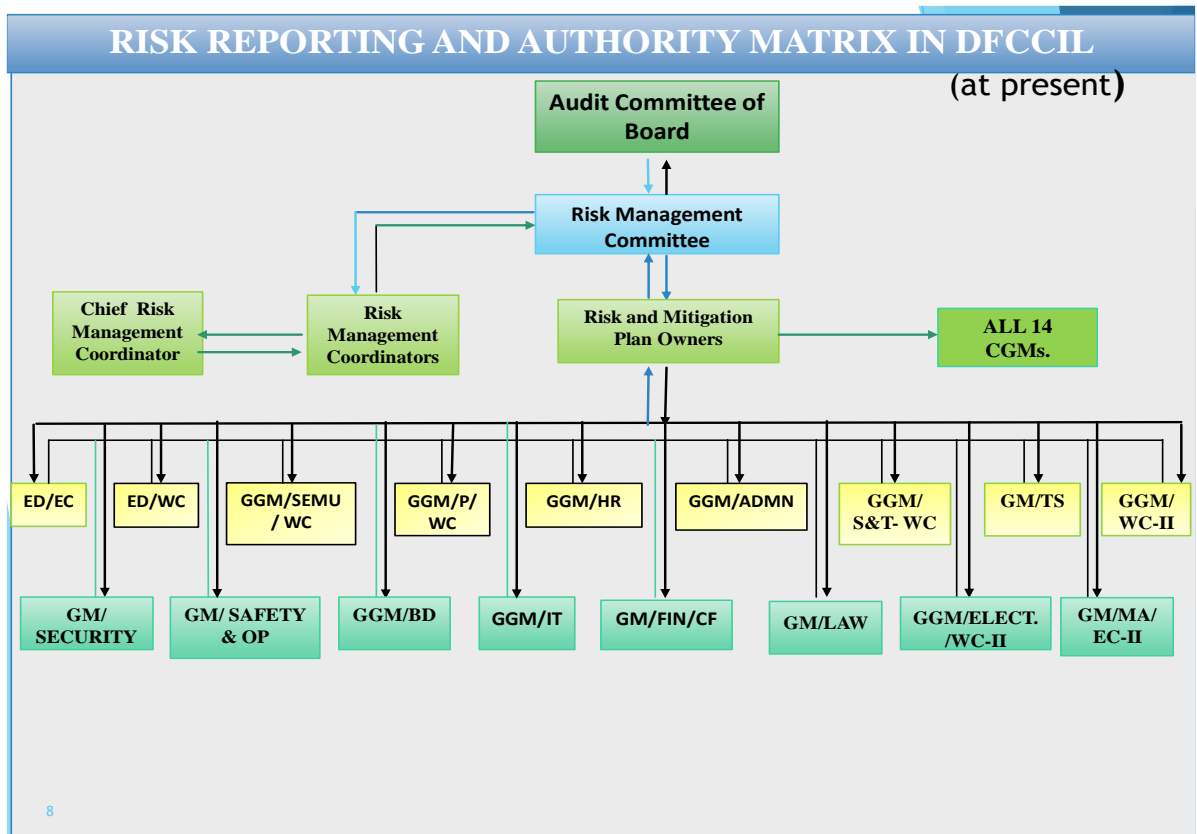
A robust risk management framework assists DFCCIL in:

- Early assessment of risks/challenges likely to affect various activities of DFCCIL
- Viewpoint of major vs minor risks, enabling the organization to identify key risks on which organization resources can be used to ensure minimization of their materialization
- A monitoring framework to develop and implement mitigation plans to counter the impact of possible risks
- Forum for senior management to keep track of organization risk profile and their mitigation plans

and it also assist DFCCIL in systematic review to better understand the level of risk embedded within the organization strategy, processes and activities. This allow DFCCIL to recognize and prioritize significant risks and identify the weakest critical controls that may exist, and develop-implement-monitor mitigation plans for them.

7.4 Risk Management Structure

The Risk Management Structure is basically the organization structure of the risk Management within DFCCIL and inter-alia defines the responsibilities of various department / executives for identifying, prioritization and mitigating the risks. The organization's Risk Management Structure at present, is as under:



7.5 Composition of Risk Management Authorities

Authority	Composition
Risk Management Committee	GM/Fin./CAG(Convenor), ED/EDFC, ED/WDFC
Risk and Mitigation Plan Owners	Corridor-wise functional heads- GGMs/ GMs and CGMs/GM(Co-ord.)
Corporate Internal Audit	DFCCIL internal auditors
Chief Risk Management Coordinator	GM/Finance/CAG
Risk Management Coordinators (RMCO)*	The role of RMCOs are being performed by one DGM , against the three personnel from risk management department (responsible for both the corridors) RMCO 1: JGM/Civil RMCO 2: JGM/Civil RMCO 3: DGM/Finance

7.6 Risk Management Process

- (i) Risk Management Process is the process through which Risks are identified, its prioritization and mitigation is done and reporting through structured MIS is achieved. During the year 2018-19 Risk Library of DFCCIL was finalized on the basis of Risk Assessment Report received from all RMPOs. DFCCIL has identified and prioritized Top 20 risks for Planning & Construction and Operation Phase stage based on deliberation with various stake holders and Senior

Management of the DFCCIL and now in the process of Self-Assessment of Implementation of Mitigation Plans and Status for those top 20 -risks. Top 20 risks identified and prioritized as per the Concurrent Risk Assessment Phase are as under:

Top 20 risk: Planning & Construction and Operation Stage

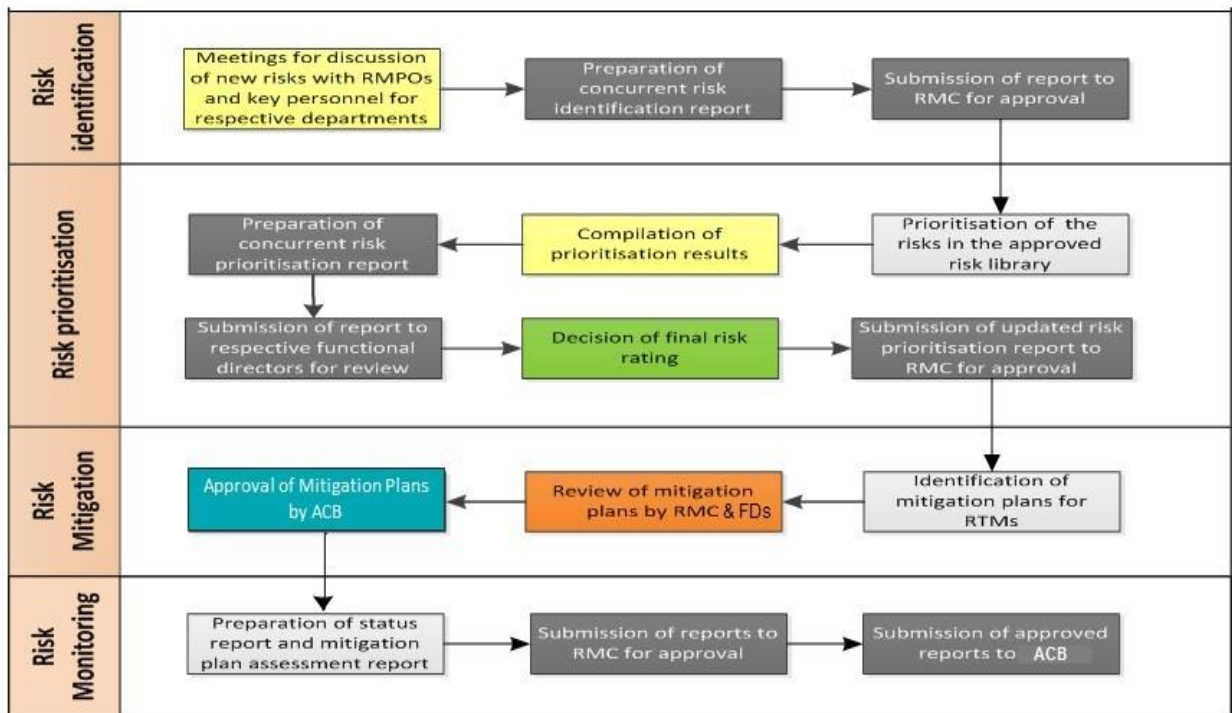
TOP 20 RISKS OF DFCCIL FOR 2018-19			
Risk No.	Risk Definition	IRR (I*P)	Level of Risk (Severity)
1	Delay in design submission	625	Critical
2	Inefficient Land Acquisition Management System	500	Critical
3	Inadequate staffing	500	Critical
4	Design Failure	500	Critical
5	Fault in ERP-SAP system	500	Critical
6	Ineffective handling of ERP-SAP system	500	Critical
7	Delay in Implementation of PMS module of SAP	500	Critical
8	Cash constraint with the contractors for execution of works	500	Critical

TOP 20 RISKS OF DFCCIL FOR 2018-19			
Risk No.	Risk Definition	IRR (I*P)	Level of Risk (Severity)
9	Delay/ difficulty in construction of RUBs/ROBs (Issues pertaining to construction of RUBs/ ROBs)	400	Critical
10	Disaster management	400	Critical
11	Resource planning	400	Critical
12	Arbitration cases/ Award of land	400	Critical
13	Accidents and Mishaps at construction sites	400	Critical
14	Delay in finalization of PPP Process	400	Critical
15	Inadequate management of contractor	400	Critical
16	Problem of Office Management	375	Critical

TOP 20 RISKS OF DFCCIL FOR 2018-19

Risk No.	Risk Definition	IRR (I*P)	Level of Risk (Severity)
17	Distortion/ non-accuracy of Employee data.	375	Critical
18	Grievance Redressal Mechanisiam	375	Critical
19	Increased cost/ budget overrun in DFCCIL	300	Critical
20	Problems in matching of IR assets at junction and relocating of IR assets	300	Critical

(iii) After the risks have been identified & prioritized mitigation plans have to be implemented to mitigate such risks. This should be done once in a year and a review undertaken on half yearly basis to ensure that the risk is relevant and the mitigation plan is actually implemented and is effective. In this regard, DFCCIL has completed the ground work for Risk Assessment and Reporting through the Concurrent Risk Identification (meeting mode) and Concurrent Risk Prioritization (meeting mode) and at present in the process of Self-Assessment of Implementation of Mitigation Plans and Status. Concurrent Risk Assessment and Reporting process is as under:



Key	Activities performed/Document prepared by
	Risk Management Coordinator (RMCO)
	Risk Mitigation Plan owner (RMPO)
	Chief Risk Management Coordinator (CRMCO)
	Risk Management Committee (RMC)
	Functional Directors(FD)
	Audit Committee of Board(ACB)

7.7 Periodic Review of the Risk Management Framework

The status of Risk Management Framework is being regularly coordinated by the AGM/Fin -II (CRMCO) in association with the Risk Management Coordinators (RMCOs) which is further reviewed by the Risk Management Committee (RMC) and the Audit Committee at regular intervals. The summary of review and Risk Management Committee meetings held till date is as under:

- a. Five review meetings have been held till date at CRMCO level on 16th September 2015, 16th October 2015, on 21st January 2016, on 27th January 2016 and on 16th March 2016 respectively.
- b. Four RMC meetings have been held till date on 16th May 2016 , 24th May 2016, 03 nov,2016 ,30 March , 2017 and 8th September ,2017 respectively.
- c. To enhance the ability of the Risk and Mitigation Plan Owners (RMPOs) two half days Knowledge Transfer Sessions were held on 09th February 2016 and 26th February 2016 and two full days Knowledge Transfer Sessions conducted on 27th June 2016 and 28th June 2016 for the officials reporting to RMPOs.
- d. In the light of Audit Committee's directives vide minutes of the 32nd Audit Committee a review of the progress made till date was presented before the 33rd Audit Committee meeting held on 18th July 2016 in the form of presentation. Audit Committee further directed to put up the status before the Board and the same was also presented before the Board in the Board of Directors' meeting held on 26th July 2016.
- e. Risk Management Committee also decided that after completion of award by the E & Y, the work would now be done 'in house' as a regular DGM/RM has already been posted in DFCCIL.
- f. Risk Management Committee also decided that the calendar for the year 2016-17 (starting from 01-10-2016 to 30-09-2017) would be quarterly one i.e. at the end of each quarter and generated in the month of December, March, June and September.

CHAPTER – VIII

SOCIAL AND ENVIRONMENTAL MANAGEMENT

8.1 As per provisions of Entitlement Matrix approved by Railway Board under The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCT-LARR) – 2013, Land Acquisition under Railway Act 1989 (24 of 1989), National Rehabilitation and Resettlement Policy (NRRP) -2007 and Operation Policies of the World Bank and JICA, Social Impact Assessment (SIA) and Environment Impact Assessment (EIA) is required to be carried out to reduce and manage project technical risk and to ensure that social issues are thoroughly evaluated in decision making. SIA provides a platform for the participation of stakeholders in project design/planning and have been an important instrument for building ownership among local populations, which put forward the likely impacts and mitigation measures. The objective of social management is to apprise project proponent about the policies, to prevent and mitigate undue harm to people in the development process. SIA study is being conducted with the following objectives & methodology:

- i. To ensure adequate R&R package and expeditious implementation of rehabilitation process, with the active participation of affected families.
- ii. Develop institutional mechanism for planning, implementing and monitoring the process and the R&R activities;
- iii. To minimize involuntary resettlement, exploring all viable project alternatives;
- iv. Where involuntary resettlement is unavoidable, assess the magnitude of adverse social impacts and propose mitigation measures;
- v. Address other social issues (resulting from the proposed project interventions) related to vulnerable groups (including tribal population)
- vi. To provide better standard of living and providing sustainable income to PAPs.
- vii. Special drive to educate PAPs regarding Grievance Redressal Mechanism.
- viii. Identification of the key social issues in the affected area with PAPs,
- ix. Consultations with the likely PAPs including vulnerable groups, PAPs representatives, village heads as part of Focus Group Discussions were carried out. Stakeholders consultations, meetings and other participatory tools were used to develop rapport with the stakeholders,
- x. Assessment of likely impact on livelihood, structures, social cohesion, and the views of the people's on various aspects of design gathered during the field survey.
- xi. Initial Social Survey was carried out, administering a questionnaire for collection of information on affected people, properties/structures, likely impact on land, type of ownership and social groups etc.

8.2 Identification of Impact

The census and baseline socio economic survey establishes likely social impacts of projects. Some key aspects to be included in the survey are size of land holding, economic wellbeing including annual income, employment/livelihood, indebtedness, educational status of the school going population, living conditions including type and side of housing, fixed and movable assets, problems arising among the affected population (declining crop yields, high incidence of disease, and decline in family income) requiring remedial action.

Developing a database with estimates of different categories of PAPs.

Key indicators for measuring the impact of land acquisition and physical relocation includes health and welfare of affected population and the effectiveness of impact mitigation measures, including livelihood restoration and development initiatives. In addition to these quantitative indicators, impact monitoring will involve the use of qualitative indicators to assess the satisfaction of PAPs with LA and R&R process and the adequacy of these initiatives, especially with functioning of the grievance redressal mechanism, consultation and people's participation, transparency and accountability in the LA and R&R process, information dissemination and communication with the affected population.

8.3 Land Acquisition, Compensation and Social Safeguards Rehabilitation & Resettlement benefits

Land is being acquired by DFCCIL on behalf of Indian Railways (Government of India). IR is the custodian of land and all facilitating work is being done by DFCCIL. The land shall be given to DFCCIL on lease terms as per Concession agreement.

- a. Land is being acquired by Competent Authority (CA), who is generally State Government Revenue officer, nominated by MoR through Gazette notification.
- b. Notification under various sections of Railway Act 1989 (24 of 1989) for land acquisitions are being done by MoR.
- c. In order to speed up the land acquisition process Addendum-2 (2018) is issued on 14.12.2018 an addendum to Resettlement Policy Framework, 2011 (Revised in 2015). This has been undertaken by DFCCIL as guiding principle for its project, The Mutual Consent Policy also refer as Direct Purchase method works as an efficient tool to fasten up the land acquisition process.
- d. Different State Government like Government of Uttar Pradesh has issued a Direct Land Purchase Policy in March 2015 with an objective of reducing the time and effort in procuring land through formal acquisition process.
- e. Award/Order given in case of Direct purchase of land from land owners on mutual consent shall be treated as 20F (Award) given by the Competent Authority for processing of acceptance of award within DFCCIL and shall be dealt in a manner similar to 20F(Award) is dealt by officials in DFCCIL.
- f. Land compensation is prepared by the Competent Authority (CA) based on the provisions of RFCT-LARR 2013 supplemented by Entitlement Matrix approved by MoR.
- g. Market value of land is determined as per the Railway Act 1989 (24 of 1989). With the passage of "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 followed by the Amendment Ordinance, the

provisions of the new act with regard to compensation & R&R are applicable to all acquisition being undertaken by DFCC from 01.01.2015. A new Entitlement Matrix has been issued by Railway Board as per the provisions of the new Act and has come into force from 01.01.2015.

- h. Any person interested in the land may, within the period of 30 days from the date of publication of the 20A notification for declaration of intention of land acquisition, can object to the acquisition of land.
- i. Market value of the building and other immovable property or assets, trees, plants and standing crops attached to the land or building which are to be acquired are determined by specialist persons with their respective fields, who generally happen to be Govt. Functionaries.
- j. Award is declared within one year period from date of notification u/s 20E of Railway Act 1989 (24 of 1989). In case of unavoidable circumstances it can be extended by 6 months. Provided further that where an award is made within extended period, the entitled person shall be paid an additional compensation for the delay in making of the award, every month for the period so extended, at the rate of not less than 5% of the value of the award, for each month of such delay.
- k. As per NRRP-2007, in addition to compensation, an ex-gratia amount not less than ₹20000 is being given to each affected family whose land is being acquired.
- l. As per NRRP-2007, PAPs who're rendered landless or reduced to the status of small or marginal farmer due to land acquisition shall be entitled to rehabilitation grant equivalent to 750 days of minimum agricultural wages.
- m. As per RFCT-LARR 2013, choice of annuity will be provided to affected family wherein they can opt for annuity that shall pay not less than ₹ 2,000 per month per family for twenty years (with appropriate indexation to the Consumer Price Index for agricultural labourer) or one time financial assistance of ₹ 5,00,000 per affected family.
- n. As per RFCT-LARR 2013, one time financial assistance of not less than ₹ 25,000 will be granted to artisan, small traders, and certain others. Each affected family will also be granted one time resettlement allowance of ₹ 50,000 and transportation allowance of ₹ 50,000.
- o. The CA may take inputs from the independent evaluator before deciding the compensation for the land who can assist to assess the replacement cost of land and assets as follows and provide inputs to the CA:
 - (i) Apprise recent sales and transfer of title deeds and registration certificates for similar type of land in the village or urban area and vicinity.
 - (ii) Appraise circle rate in urban and rural area and vicinity.
 - (iii) Appraise agricultural productivity rate for land - 20 years yield.
 - (iv) The compensation for houses, buildings and other immovable properties are being determined on the basis of replacement cost by referring to relevant Basic Schedule of Rates (BSR) as on date without depreciation. While considering the BSR, the independent evaluator registered with the Govt. will use the latest BSR for the residential and commercial structures in the urban and rural areas of the region, and in consultation with the owner.
 - (v) Institution of Arbitrators have been put in place to adjudicate upon R&R benefits and land compensation respectively.
 - (vi) A new Ombudsman for addressing Grievances will be appointed shortly.

(vii) For Grievances, Grievances Redressal Committee at district level has been formed along with helpline numbers to resolve grievances of PAPs in facilitation by social team of CGM units.

8.4 Special R&R benefits to Schedule Tribes and BPL

As per World Bank Operation Policy 4.10, a separate tribal development plan has to be prepared after having separate consultations with the affected tribal community. Each affected ST family shall get an additional one time financial assistance equivalent to five hundred days minimum agricultural wages for loss of customary rights or usage of forest produce. Each BPL family shall get an additional one time financial assistance equivalent to 300 days minimum wage.

8.5 Monitoring and Evaluation

Monitoring and Evaluation will focus on effective implementation of Resettlement Action Plan (RAP) for this dedicated LA&SEMU unit of DFCCIL monitors RAP implementation and routine Social Safeguard issues with different CGM units. To monitor the Physical progress of land acquisition, disbursement of compensation, public consultations and participation activities, sustainable income restoration and other development activities third party Social Environment Safeguard Monitoring and Review Consultancy has been engaged. The objective of monitoring is to provide feedback on RAP implementation and to identify problems and provide suitable solution as early as possible in order to allow smooth implementation arrangements of RAP. The monitoring plan identifies organizational responsibilities, methodology, and schedule for monitoring and reporting. Three components of monitoring plan include: Performance monitoring, impact monitoring and end term evaluation or completion audit.

8.6 Completion Audit/End Evaluation

The key objective of this external evaluation, or completion audit, will be to determine whether the efforts made to restore the living standards of the affected population have been properly conceived and executed. The audit will verify how far the physical inputs committed in the RAP have been delivered and the services have been provided. In addition, the audit will evaluate whether the mitigation actions prescribed in the RAP have had the desired effect.

To carry out the implementation of the RAP, third party consultants have been engaged along with funding agencies, DFCCIL conducts field visits in order to check proper implementation of RAPs along the stretches as part of Audit.

As per the safeguard's policies, project is in its commissioning stage are due for "End-Term RAP Impact Evaluation of Land Acquisition and R&R Implementation" end term reports prepares in order to keep the process transparent for general assurance.

The socio-economic status of the affected population will be measured against the baseline conditions of the population before displacement, established through the census and socioeconomic studies. This evaluation will be undertaken after all RAP inputs including payment of compensation and R&R assistance have been paid and other supplementary development initiatives have been completed prior to project closure. This evaluation will enable DFCCIL to undertake corrective actions, if any, as

recommended by evaluation before the project is complete. The third party impact assessment will be carried out at least twice during the project cycle including the end term evaluation.

8.7 Resettlement Policy Framework

There is a Resettlement Policy Framework (RPF) providing guidelines for identification and managing social impacts. Addendum-2 (2018) is issued on 14.12.2018 an addendum to Resettlement Policy Framework, 2011 (Revised in 2015). This will be applied as a guideline to projects undertaken by DFCCIL. It incorporates provisions relating to Negotiation (Mutual Consent) Policy. The LA and R&R Policy including Entitlement Matrix and the implementation arrangements has been elaborated in the RPF, which will apply to the mitigation of any additional impacts identified during the implementation, that may be assessed in advance of undertaking civil work for that activity as per the terms of references adopted for carrying out social impact assessment for preparing this RAP. This procedure will also be applicable for any new or associated activities linked to this project.

8.8 Corporate Environment Policy.

The Environment Policy of DFCCIL is guided by its commitment to integrate environmental protection and social development in its mandates, in a proactive manner, to contribute towards sustainable development. To achieve the fine balance among developmental imperatives and environmental wellbeing, DFCCIL gives due importance to environmental considerations in adopting the projects to minimize adverse impacts and risks to the environment and people that may be affected. This policy statement emphasizes DFCCIL's sensitivity and concern to environmental issues, commitment towards compliance, and responsiveness towards environmental requirements of its projects. The Environment Policy is implemented through a well-structured Environmental Management Framework (EMF) for sustainable development approach.

At the onset of construction activity for constructing corridor, at the beginning with the aim and approach for Sustainable Development, DFCCIL has formulated its Corporate Environmental Policy and in year 2011 it got approved and embedded in all technical documents.

CORPORATE ENVIRONMENT POLICY

Sustainable development for inclusive growth as the key objective of the national economy in India would call for rapid growth of infrastructure. Rail transport is one of the major components of vehicle for growth of Indian economy. DFCC is a major initiative in this direction to acquire the quantum jump in Rail transport capacity in the Pan India Network by providing high capacity, high efficiency backbone connecting the major economic hubs of the country.

It is natural that DFCCIL adopts a corporate environment policy to adopt not only an environment friendly mode of transport system but also takes initiatives in each aspect of its working to foster growth and sustenance of healthy environment. The corporation is thus committed towards compliance of all regulations and guidelines relating to environment. It is also our endeavor to adopt -

- Integrated Environment Management and Practices
- To exhibit sensitivity towards environmental responsibilities and conduct our activities accordingly.
- Efficient utilization of energy resources.
- Associate in direct activities towards environmental improvement through development of green belt and conservation of water resources.
- Make efforts for preservation of ecological balance & heritage.
- Mitigation measures for noise, vibration and waste pollution.
- Sensitize human resource of the corporation towards environmental needs.
- Sustain improvement of environmental performance of the organization

8.9 Corporate Safety, Health and Environment (SHE) Policy and SHE Manual.

In DFCCIL, an approved Corporate Safety, Health and Environment (SHE) Policy is in place. SHE Policy aims to ensure sustainable development and safe, healthy work environment and pollution free condition. Corporate Safety, Health and Environment Policy were formulated in 2012. Keeping in view of the SHE Policy, Safety, Health and Environment (SHE) Manual has been prepared. SHE Manual is a reference document which provides elaborate guidelines on Safety, Occupational Health, Environment Protection and Penalties for not adhering to SHE procedures at DFCC work sites.

Safety, Health and Environment (SHE) Manual of DFCCIL was approved in 2013 and is a part of all works tenders providing the minimum yardstick on the project safety and health issues. Contractors are being made to commit for implementation of all the SHE provisions.

Dedicated Freight Corridor Corporation Ltd. is committed to conduct business with commitment to excellence in Safety, Health and Environment ensuring sustainable development, safe & healthy work environment and pollution free condition at work places. We in DFCCIL shall –

- (i) Establish and maintain effective standards for safety of employees & workers, assets and provide adequate control of the safety, health, pollution risk arising from work activities.
- (ii) Comply with relevant Rules and Regulations on Safety, Occupational Health and Environment Protection.
- (iii) Integrate Safety, Health and Environment and Practices in work activities.

- (iv) Plan, Design, Construct, Operate and maintain all facilities to secure sustained Safety, Health and Environment Protection.
- (v) Create awareness on SHE and develop required level of knowledge & skills in all personnel through need based training, internal communications and continue to enhance the said skills & competence.
- (vi) Make reasonable effort to prevent accident, work related ill health during construction & operation and preservation of ecological balance & heritage.

8.10 Current Initiatives

8.10.1 Environment Impact Assessment (EIA) is critical for obtaining Environmental Clearance (EC) as per EIA Notification dated 14.09.2006. Though Railway Project is exempted from Environmental Clearance (EC) as per EIA Notification dated 14.09.2006, DFCCIL has proactively conducted Environment Impact Assessment (EIA) study for all DFCCIL sections, prepared **Environmental Assessment (EA) report & Environmental Management Plan (EMP)**. All the contractors are required to comply Environmental Management Plan during construction phase for achieving the goal of Sustainable Development, besides obtaining all applicable Regulatory Clearances.

8.10.2 To encourage green energy, DFCCIL has taken Steps for utilizing **alternate source** of energy on DFCCIL network. Solar plants have been planned along the corridor & its corporate building. Provision of **Energy Efficient** LED light fitting, occupancy sensor & efficient monitoring & control mechanism for operation of Air-conditioning & lighting services also has been made & implemented. New Air-conditioning system of 30 hp capacity working on inverter technology & environment friendly R-410 refrigerant has been provided.

To improve the quality of life of the communities and stakeholders on a sustainable basis, Project **“Jyoti”** under Corporate Social Responsibility (CSR) is also being executed through Central Electronics Limited, a PSU under Ministry of Science & Technology of India, under which the LED based street lightning system has been specifically designed for better illumination. New-design LED luminaries provide the opportunity to use energy more efficiently and in a more environment-friendly way in lightning applications.

DFCCIL has also conducted **“Energy Optimization Study”** as initiatives for Conservation of Energy. Through use of Energy Efficient Train Performance Software to calculate optimal driving strategies for various train configurations & routes.

Based on the routes & train configuration, Driver Advice System (DAS) shall be developed with the following features:

- Accurate inputs regarding driving style provided in loco cab.
- Real time in cab advisory systems that assist drivers to save energy & improve train operation.
- Saving in energy consumption of 8-10% possible.

- 8.10.3** DFCCIL is also actively playing a key role in community Development Work. DFCCIL recognizes its social responsibility and provide utmost importance to communities with whom we share local resources. The corporation requires land for construction of track, Stations. During construction, all individuals, whose land is acquired, are consulted and the affected persons are duly compensated for their land as per the Entitlement Matrix. Beyond the land compensation DFCCIL also provides Resettlement and Rehabilitation assistance within the social entitlement framework and various community developments works in villages adjoining the track. Like Pond Development, Vermicomposting Pit in Villages, construction of religious structure and public toilet etc.
- 8.10.4 DFCCIL contribution in enhancement of Carbon Sink has been increased. Beside double the plantation vis a vis tree cut during construction phase DFCCIL is also distributing tree sapling as a token of honor and regular plantation drive during all events. Separate fund is earmarked for Green Belt Development and Plantation Drive. Opportunity for minimizing trees cutting while construction activities has been carefully envisaged during construction phase. All possible measures for saving tree has been taken and less trees has been cut as targeted to be cut in Environmental Assessment Report. Turfing to minimize the soil erosion have also been proposed at high embankment area.
- 8.10.5 Climate Change Risk Impact Assessment of the DFC project in the sections, Mughalsarai-Bhaupur and Khurja-Pilkhani, was conducted to assess the impact of environmental changes in the long term on the project.

For ensuring environmental Safeguard DFCCIL has a third party monitoring Consultants i.e. Social and Environmental Monitoring and Review Consultants (SESMRC). Regular coordination with other stakeholder or Ministries for providing Environment Friendly, less Polluting, clean and hygienic environment to customers during Operational Phase being regular ensured.

DFCCIL is taking various initiatives for “Conservation of Water” via adopting Rain water harvesting provision at various location. Reuse of generated waste water after treatment, use of water efficient fixtures to reduce water consumptions. DFCCIL have earmarked budget for different activities under Swachh Bharat Mission / Namami Gange and energy conservation equipment. All efforts are being made to further reduce carbon footprint on DFCCIL.

Regular capacity building workshop to sensitize the officials on project related Environmental issues are conducted by DFCCIL in collaboration with other agencies regularly.

During the operation phase of DFC necessary measures for amelioration of air, noise, vibration along the newly constructed railway line, effectiveness of the Noise Barriers, waste and energy use reduction measures shall be taken up by DFCCIL.

8.11 Towards a Low Carbon Freight Transportation System

- The implementation of the DFC is expected to generate two major impacts on the freight movement; shift of freight from road to the low carbon intensive mode rail transport and inherent improvement in energy efficiency of freight rail through adoption of improved technologies. As a responsible corporate entity, DFCCIL undertook study of Green House Gas emissions saving with implementation of eco-friendly electrified bulk goods movement DFC projects.

The Eastern DFC would produce less GHG emissions as compared to the Western DFC since the Western DFC would cater to a higher volume of traffic load than the Eastern DFC. Coal and iron-ore transportation are the major contributors to the GHG emissions of the Eastern DFC while container and RO-RO transportation are the major contributors of the GHG emissions of the Western DFC.

On a cumulative basis (over 30 years), in the Eastern Corridor, the No-DFC scenario produces 2.5 times more GHG emissions than the DFC scenario while for the Western Corridor, the No-DFC scenario produces 6 times more GHG emissions than the DFC scenario as depicted in following chart.

[India's Intended Nationally Determined Contribution (INDC) Document to UNFCCC, 2015]
In the first phase, two corridors viz. 1463 km Mumbai-Delhi (*Western Dedicated Freight Corridor*) and 1856 km Ludhiana-Dankuni (*Eastern Dedicated Freight Corridor*) are being constructed. The project is expected to reduce emissions by about 457 million-ton CO₂ over a 30-year period.

- DFC intends to follow a low carbon path adopting various technological options which can help DFC to operate in a more energy efficient fashion and at the same time explore options to offset its own GHG emissions by investing in low carbon assets such as solar power, wind power and afforestation. Some of the interventions which could reduce GHG emissions are communication based train control (CBTC), driver advice system, regenerative braking, aerodynamic profiling in rolling stock and on-board lubrication system. DFC project team is working closely with various experts and technology suppliers to assess feasibility of implementing these ideas for low carbon growth.

CHAPTER – IX

MATERIAL MANAGEMENT

The operation of train movement in various section is about to begin soon. DFCCIL has very big network running across length and width of the country and for maintenance of the assets/running of trains. It requires an efficient and robust Material Management system to cater for the material's need.

The procurement system needs to be transparent and competitive with view to deliver the right material at right time and ensure value for money.

A new SAP system is under implementation and the material management module of SAP will be used for auto generation of the demands for various items required regularly. Similarly the demands for the items required once in a while will be generated as and when required on the system.

A team of procurement specialist will be responsible for material availability and make procurement through e-tendering over CRIS's web portal www.ireps.gov.in. This portal will facilitate the organisation in finalising the tender online and no manual proceedings/noting will be required for finalisation of tender. The acceptance of the contract will go to the vendors online with digital signature.

Special focus will be on having a long term contracts with vendors for ensuring regular and smooth supply of materials.

The items available on GeM will be procured through GeM portal and material management module of SAP will be linked with GeM procurement for accounting and payment purpose.

Further, post contract activities viz: amendment in contracts, receipt and account of material, bill submission of vendor and payment to vendor to be made through SAP online.

In the area of warehousing the Automatic Storage and Retrieval system will be required. Similarly for material handling, transportation and its despatch to various locations, a comprehensive contract mechanism will be required to be put in place.

CHAPTER –X

OTHER INITIATIVE

9.1 CORPORATE COMMUNICATIONS

Corporate communication plays a vital role in creating and maintaining the business image of any corporate entity. It is an effective strategy to communicate the brand value and reputation to its clients, stakeholders and the target audience. There are many processes of corporate communication with which one can create the desired business impact.

As a public sector corporate entity Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL) understands the role and importance of Corporate Communication and this clearly reflects in its efforts for a good communication. A team consisting of experienced officers and skilled professionals take care of the department of Corporate Communication. This team is led by a GM level officer who undertakes various initiatives for a better communication inside as well as outside the organization. General public relation activities like sending Press Releases, organizing Press Conferences on important occasions, printing of Publicity Material and House Journal etc. are undertaken by the department. Apart from this, other routine exercises like publishing of tender notices, notifications and other classified advertisements are also done by the Corporate Communication team.

The nature of DFC project demands high need of communication as it involves many stake holders who may directly or indirectly affect the objectives of the company. Since it is a linear project and is spread in thousands of villages of several states, the need of the communication starts right from the process of land acquisition and continues even after the completion of the project. For the effective execution of the Corporate Strategy it was important to adopt a systematic approach. The DFCCIL appointed an agency to assess its communication needs. On the basis of recommendations of the Communication Needs Assessment (CNA) Report, a comprehensive Communication Strategy and Action Plan was prepared for DFCCIL. The Action plan is being implemented by the concerned departments and many remarkable achievements have been made in this regard so far. Several other plans are in pipeline, which can be summed up in following points:

1. Using Social Media for effective communication: With the increasing number of internet users and growing popularity of Social Media, communication strategy must include use of platforms like Facebook, Twitter and Youtube etc. DFCCIL acknowledges the importance of Social Media and has already started sharing information, updates, images and videos on its official Facebook page, Twitter handle and Youtube channel. This will help any visitor to get latest information and watch videos of the DFCCIL. It provides unique advantage of two way communication which is lacking in traditional media.

2. DFCCIL website: The website of DFCCIL is the main gateway of information for internet users. DFCCIL strives to put all important information which need to be disseminated among general public so that they should be well informed about DFCCIL and at the same time transparency is maintained on the project activities and developments. As part of efforts of improving the website and make it more user friendly, DFCCIL has planned to give it a refreshing look and make it interactive.

3. Corporate Film on DFCCIL: DFCCIL has made a Corporate Film which includes general information; progress of project etc. to help the viewer to get a complete picture of the project as real visuals from the locations have been used in the film.

4. Regular Interaction with the Media: Media plays an important role in making a good brand image of an organisation. It is very important to keep the media always updated by sending the Press Releases on any important development of the project. DFCCIL directly interacts with media by organizing Press Conference once or twice in a year. This gives Media an opportunity to interact with DFCCIL officials on the project and at the same time it also helps DFCCIL to reach people via media.

5. Training & Workshop on Communication: DFCCIL executes its Corporate Plan through nominated PR staff working in different field units. The staff involved in PR activities need to be trained on new practices of communication and should be updated on the communication strategy which keeps on changing according to time and situations. For this, workshops and training sessions are being organized by DFCCIL regularly.

To summarize the Corporate Communication Plan of DFCCIL, it can be said that the planning is need based. DFCCIL reviews its communication strategy on regular basis based on the feedback of the efforts, while the goal remains unchanged.

9.2 Whistle Blower Policy

DFCCIL believes in conduct of its affairs with highest standards of professionalism, honesty and integrity and is committed to ensure ethical behaviour by all its employees. The company, therefore, believes in creating a culture where it should be safe for all employees to raise concerns about any unethical practices or misconduct. Accordingly Whistle Blower policy has been adopted in the organization. This policy provides a framework to enable employees wishing to raise a concern about serious irregularities within the Company without fear of victimisation and covers protected disclosures by employees of DFCCIL including those on deputation. The Policy covers malpractices or unethical behaviour involving:

- a. Demanding and/or accepting gratification other than legal remuneration in respect of an official act or for using his influence with any other official.
- b. Obtaining valuable thing, without consideration or with inadequate consideration from a person with whom he has or likely to have official dealings or his subordinates have official dealings or where he can exert influence.
- c. Obtaining for himself or for any other person any valuable thing or pecuniary advantage by corrupt or illegal means or by abusing his position as a public servant.
- d. Cases of misappropriation, forgery or cheating or other similar criminal offences.
- e. Negligence causing substantial and specific danger to public health and safety.
- f. Manipulation of company data/records.
- g. Financial irregularities, including fraud, or suspected fraud or such other criminal offence.
- h. Any other unethical behaviour or misconduct

While DFCCIL will ensure that genuine Whistle Blowers acting in good faith are accorded protection against victimization or unfair treatment for “Protected Disclosures” under this policy, any abuse of the Policy by way of deliberate and false or bogus allegations made with mala fide intentions shall invite appropriate and severe disciplinary action.

9.3 Rajbhashaha

In DFCCIL special emphasis is being given to ensure maximum use of Hindi in official work i.e. in office notings and communication among constituents. Officials Language Implementation Committee meets every Quarter. Senior officers of DFCCIL participate in such meetings to review the work of official language. At the end of each quarter, Quarterly

progress report regarding use of Hindi is prepared and sent to Railway Board and Nagar Rajbhasha Implementation committee (A committee constituted under the Ministry of Home Affairs) for necessary action.

During the Pakhwada celebration different Competitions like Hindi Word Knowledge, Hindi Essay, Hindi Typing and Rajbhasha quiz are organized in which officials from all level take interest enthusiastically. Kavi Sammelan is also organized during pakhwada Hindi workshop are also organized regularly in an effort to inculcate the habit of doing more and more work in Hindi by the officers and staff of DFCCIL to ensure the compliance of Section 3(3) of Official Language Act i.e. all the office orders, land acquisition and gazette notification are issued in Hindi and English bilingually. The HR Manual, Vigilance manual, Quality manual, Manual of office procedure, Works manual, Safety, Health and Environment manual, Accident manual, Operating manual, G7SR, freight policies, code of conduct for executives have been translated in Hindi. Apart from the above the Annual report of DFCCIL is being translated in Hindi every year. The website of DFCCIL is also updated in Hindi regularly. In DFCCIL website, a separate Tap has also been provided for Rajbhasha related information and activities.

Glossary of Terms

ADM	Additional District Magistrate
BoD	Board of Directors
CPM	Chief Project Manager
CR	Central Railway
DMIC	Delhi - Mumbai Industrial Corridor
DPE	Department of Public Enterprises
ECoR	East Coast Railway
EDFC	Eastern Dedicated Freight Corridor
EOI	Expression of Interest
ER	Eastern Railway
ERP	Enterprise Resource Planning
EXIM	Export – Import
GM	General Manager
GTKM	Gross Tonne Kilometre
HSIIDC	Haryana State Industrial and Infrastructure Development Corporation
IBRD	International Bank for Reconstruction and Development
ICD	Inland Container Depot
IDA	International Development Association
IR	Indian Railways
JNPT	Jawaharlal Nehru Port Trust
LAN	Local Area Network
MMLP	Multi Modal Logistics Park
MoR	Ministry of Railways
MoU	Memorandum of Understanding
NCR	National Capital Region
NCR	North Central Railway
NGO	Non-Government Organization
NR	Northern Railway
NTKM	Net Tonne Kilometre
NWR	North Western Railway
O&M	Operation and Maintenance
PAP	Project Affected Persons
PETS	Preliminary Engineering cum Traffic Survey
PIU	Project Implementation Unit
POL	Petroleum-Oil-Lubricants
RAP	Resettlement Action Plan

RINL	Rashtriya Ispat Nigam Ltd
RITES	Rail India Technical & Economic Services
S&T	Signal & Telecommunication
SCR	South Central Railway
SECR	South East Central Railway
SEMU	Social Environment & Management Unit
SER	South Eastern Railway
SEZ	Special Economic Zone
SPV	Special Purpose Vehicle
SR	Southern Railway
WAN	Wide Area Network
WCR	West Central Railway
WDFC	Western Dedicated Freight Corridor
WR	Western Railway
