

Project Information Memorandum

Project Information Memorandum

Construction, operation & maintenance of the Inland Waterway Port Terminal through Public Private Partnership (PPP) on a Build, Operate & Transfer (BOT) basis



Inland Waterways Authority of India

A-13, Sector I, Noida (Uttar Pradesh)

Tel: +91-120-2543972; Fax: +91-120-2543973

Website: <http://iwai.nic.in/>

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1. Introduction

1.1 IWAI

The Inland Waterways Authority of India (IWAI) is an autonomous body under the Ministry of Shipping, Road Transport & Highways entrusted with the development and promotion of National Waterways for shipping and navigation. The Authority primarily undertakes projects for development and maintenance of IWT infrastructure on national waterways. Since formation of IWAI, three waterways namely Ganga, Brahmaputra and West Coast Canal have been declared as National Waterways and three more waterway systems are under process of declaration as National Waterways.

IWAI provides and maintains infrastructural facilities namely fairway, terminals and navigational aids on the three National Waterways. It also operates cargo vessels on NW-1 (the Ganga) for demonstrative voyages.

Inland Water Transport (IWT) is a fuel efficient, environment friendly and cost effective mode of transport having potential to supplement the over burdened rail and congested roads. India has an extensive network of rivers, canals, creeks etc. of about 14,500 km, of which 5700 km are navigable with mechanized vessels. In the last few years, movement of cargo by IWT mode in organized sector has shown upward trend and increased from 1.63 billion tonne km (btkm) in 2003-04 to 3.38 btkm in 2007-08. But it still forms insignificant part of the total transport network. In terms of tonne kilometer of total inland cargo movement, its share is about 0.34% only, (considering total inland cargo of about 1,000 billion ton km).

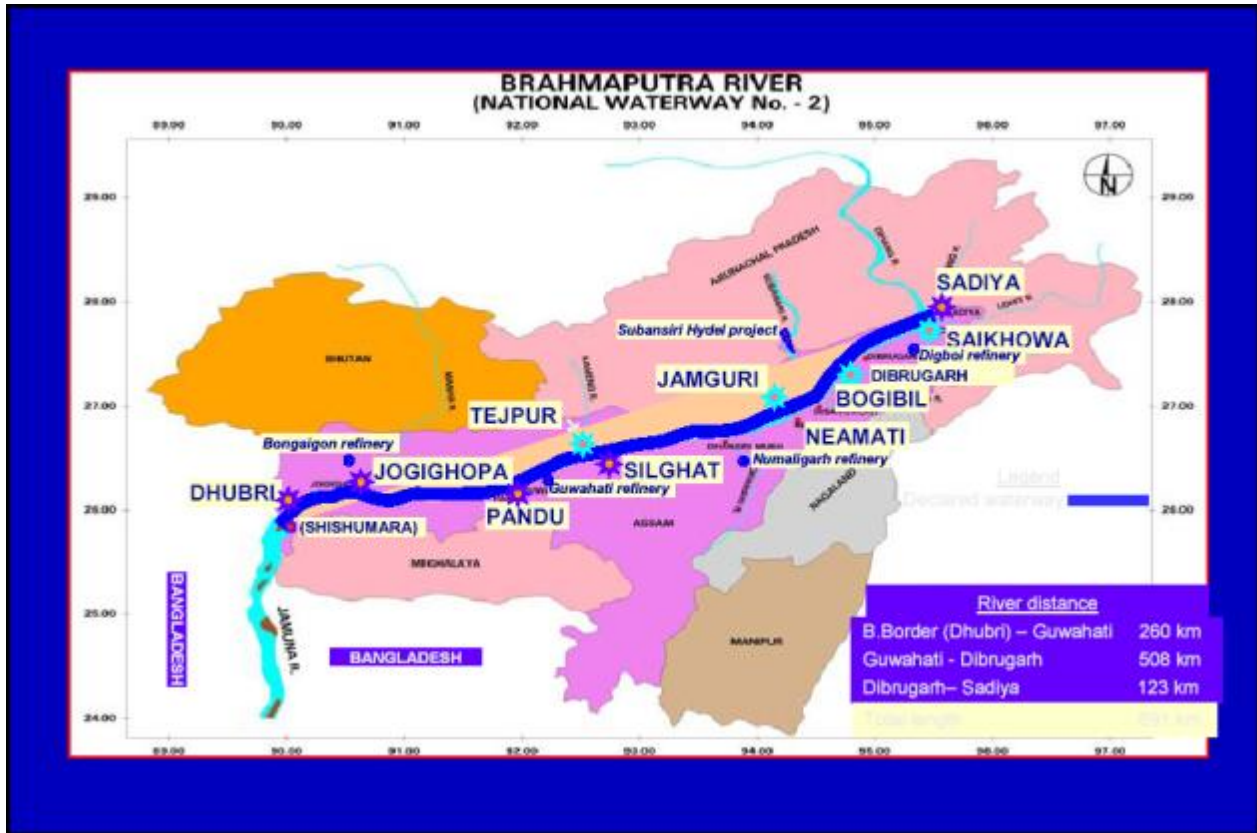
1.2 National Waterway 2

National Waterway 2 is 891 km stretch of waterway in the river Brahmaputra starting at Sadiya and up to Dhubri in Assam passing through Guwahati and Jogighopa.

Traditionally the waterway was used extensively by steam ships and as mechanized vessels for transporting cargo between Kolkata-Guwahati, Kolkata-Dhubri and Guwahati-Dhubri. Cargo comprised grocery items, food grains and heavy machinery. Significant cargo arrived by Inland waterways or roadways up to Guwahati from Kolkata. The same used to be distributed up to Dhubri through waterway.

Despite being Eco- friendly, cost effective and fuel efficient mode, IWT carries only 0.15% of the total inland cargo throughput. The government has realized the same and formulated an Inland Waterway Policy to raise the inland cargo movement from present level of 0.15% to 2% by the year 2025 through

schemes for fairway and infrastructure development, manpower training and through financial fiscal developments. Hence IWT mode is a national priority.



National Waterway 2 is a majestic waterway and one of the most powerful on earth, influencing the lives and livelihoods of tens of millions of people in the three countries through which it flows. Yet, its influence extends beyond these three nations for the Brahmaputra forms part of a great natural river basin, along with the Ganges and the Barak rivers, which covers an area no less than 174 million hectares in four countries, Tibet, Nepal, Bhutan and Bangladesh and India. In India, it covers a region of 109.84 million hectares or one third of the size of the country.

Although the river was used extensively since ancient times for transport, commerce, settlement and conquest, it has fallen into disuse as a major navigational and transport system, especially over the past 50 years. It was designated as National Waterway No 2 to give recognition to its importance as a transport artery.

Traffic has been steadily dropping: It has gone down from 100,000 tons per year in 1995-96 to barely 20,000 tons in 1999-2000 to an insignificant volume in the present. These factors have to be reviewed,

for the Brahmaputra is a natural, 365-day highway which needs far less maintenance expenses and running costs than either the road or the rail sectors.

1.3 Cost Advantages by Mode

A 10-ton truck needs 550-600 litres of diesel to drive from Kolkata to Jorhat. Compare this to a 1,500 ton barge which can carry the equivalent of 150 such trucks and consumes 35 litres of diesel for every kilometre (70,000 litres of diesel for the same distance). If 150 trucks were to travel this distance, they would consume the equivalent of 90,000 litres of diesel. This is a substantial saving and IWT should be promoted just for this one reason. However, little progress has been made on this front despite several reports and studies on the subject. The road network and the railways continue to get much of Central Government support and funding in this regard. A Planning Commission study estimated that by the year 2000, the Indian Railways would carry more than half a billion tons of goods. Yet, in comparison, Inland Water Transport (IWT), which is the cheapest form of surface transport, was expected to carry only a fraction of the railway traffic.

Freight Rates: A Comparison

Route	Freight/MT	
	Road	IWT
Jogighopa-Kolkata	1878	1375
	Freight Savings 503	

1.4 Potential of the Development of IWT

As discussed earlier, while huge investments have been made in creating Railways and Roadways infrastructure in the last 15-20 years, there has been an equal neglect of development of Inland Waterway Transport (IWT) by way of good quality terminals, night navigation facility and availability of barges. While development of rail and road infrastructure has significantly catalyzed movement of goods from rest of the country into north east and vice-versa, some of the goods, which are more suited for transportation by IWT mode have also shifted to road or rail mode, not necessarily because they are cheaper or better but because of non availability of IWT mode. As IWT mode declined, the waterway movement too has declined and has become insignificant.

Brahmaputra is the economic lifeline of the people of Assam, and decline of transport on this waterway has had a negative impact on the economy of the local people.

Inland Water Transportation System has always been a favored manner of movement, largely based on the fact that rivers form a natural highway of sorts, which are fairly easy to utilize. However they have in recent centuries undergone a decline in popularity, with roads and railways being the favored mode of transport. In areas where connectivity and integration are a problem however, there is no reason why IWT cannot play an even greater role. This is why Assam, which is poorly connected via rail as well as by road, can benefit so greatly by implementing a comprehensive and efficient Inland water transport systems, especially in light of the extensive water systems that the region has been blessed with.

1.5 Characteristics of NW 2

- The Brahmaputra from Dhubri to Sadiya – 891 km
- Declared as NW in 1988
- IWAI provide/maintains IWT infrastructure
- Action Plan for making it fully functional by IWAI

Fairway

- Least available depth (LAD) of 2 m maintained between Dhubri-Dibrugarh (768 km); 1.0 m between Dibrugarh-Sadiya
- IWAI has 2 dredgers; 5 more being constructed
- Talway survey of entire river being carried out every fortnight
- For this, IWAI has 6 survey vessels

Navigational Aids

- Day navigation aids available in entire waterway
- Night navigation aids also available between Dhubri and Pandu (255 km)
- Project for providing 24 hrs navigation aids with a modern DGPS based system for entire waterway under implementation

Terminals

- Fixed Terminal (Low level) under construction at Pandu (Guwahati) – nearing completion
- Floating Terminals exist at Dhubri, Jogighopa, Pandu, Tezpur, Silghat, Jamuguri, Neamati and Dibrugarh (Bogibil)

On-going Projects

- A coal terminal is under construction at Jogighopa
- Construction of high level jetty at Pandu to start soon
- New floating terminals are planned at Sadiya and Saikhowa

1.6 Inland Water Transport – Critical Elements

Inland Water Transport system consists of several components – namely Fairway, Vessel Operations, Terminals, Cargo and various Stakeholders.

1.6.1 Fairway

Navigation Channel with desired characteristics on which inland vessels can ply

(a) Physical Characteristics:

Adequate Width, Depth, Markings and Clearances from Structures/Bridges are needed to ensure safe navigation.

(b) Time Dimension:

Availability of channel for round the clock navigation throughout the year is necessary for the effective utilization of inland vessels.

1.6.2 Traffic

Availability of cargo for movement along the waterways and inclination of cargo providers to use the IWT mode is what determines whether the IWT system would flourish or not. For the users to shift to this mode reliability, timeliness, safety, continuity and cost would be the key determinants vis-à-vis the competing modes.

1.6.3 Terminals

Terminals act as an interchange point for the cargo and are entirely dependent for their utilization on vibrant barge operations. With appropriate handling facility and mechanization the turnaround time of barges can be brought down and vessel utilization can be improved resulting in improved economics for the entire system.

1.6.4 Barge Operations

Barge Operations of desired frequency, flexibility, dependability and tariff structure are necessary from the users' perspective. The operations require appropriate channel configuration with markings that is available for 24/7 navigation. From the viewpoint of faster turnaround time and efficient utilization of assets, the operations also require efficient Terminals where minimum time is spent on loading/unloading.

1.6.5 Stakeholders

Participation of various stakeholders viz. Barge Owners/Operators, Terminal Operators, Cargo Providers is a must for the IWT system to function and thrive. Their simultaneous participation can only be ensured when each one benefits from the association. The Cargo Provider would thus expect that in relation to other modes that are available to him/her IWT should be comparable in terms of cost and service levels.

Barge Investor/Operators and Terminal Operators would come forward only when they are in a position to recover a reasonable return on their investment and make profits.

1.6.6 Conclusion

Harmonious presence of all the elements is both necessary and desirable for the transport to take place and absence of any of the element breaks the entire system down.

It can also be inferred that Barge Movement and Mechanized Terminal Development are interdependent and one without the other cannot sustain and survive. Without Barge Movement there is no cargo for the terminal and without an efficient terminal capable of facilitating faster turn-around of the vessels, Barge Movement is not going to be viable.

In view of this, an integrated approach needs to be followed that addresses all the issues relevant for Terminal development as well as Barge Movement.

2. Jogighopa Terminal

Inland Waterway Authority of India (IWAI) is desirous to develop various Inland Waterway Projects under Public Private Partnership (PPP) framework. As a prelude to this, IWAI intends to develop an Inland Waterway Terminal at Jogighopa located in lower Assam by the banks of river Brahmaputra on National Waterway II under Build, Operate and Transfer (BOT) framework.

Jogighopa is developing as a major point for exporting Meghalaya coal and there is a need for a coal-loading terminal at Jogighopa.

Jogighopa is a trans-shipment point for coal originating from Meghalaya, as it has excellent road connectivity with Meghalaya/North East and both Road and Rail connectivity with the Northern and Eastern Hinterland. Currently, coal comes from Meghalaya/North Eastern Region by road to Jogighopa, which is further transported by rail to the Northern and Eastern Hinterland. A small quantity of coal is also transported by road to Assam/NE for local consumption. Based on data collected from the Railways and primary assessment of cargo, the current movement of coal by various modes of transport is as under:

	2005	2006	2007
Incoming coal from Meghalaya to Jogighopa by road (Lac MT)	10	12	16
Rail to UP/Rajasthan/Punjab/Haryana (Lac MT)	9	10	13
Rail/Road to WB (Lac MT)	0.5	1	2
Road to Assam/NE (Lac MT)	0.5	1	1

Coal is the preferred commodity that is being routed through Jogighopa. Jogighopa has been identified as one of the locations for setting up a mechanized IWT Terminal. A detailed assessment of coal traffic has been attached as Annexure I.

The table below shows the projected shift of transportation of coal from road to IWT sector.

Projected shift from road to IWT (Mn MT)

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Road- Barpeta	0.14	0.17	0.20	0.23	0.27	0.31	0.33
Assam Coal							
Road- Barpeta	0.05	0.06	0.07	0.08	0.10	0.11	0.12
Total	0.19	0.24	0.27	0.32	0.37	0.42	0.45

Hence, the total projected freight savings are as under:

Year	1	2	5	8	11	14	15
Total Coal (Mn MT)	0.19	0.24	0.27	0.32	0.37	0.42	0.45
Freight Savings (In Rs 1000)	95570	120720	135810	160960	186110	211260	226350

This shows that shifting from road to IWT for the transportation of coal is a very economical and profitable option.

2.1 Review of Existing Infrastructure

Review of existing terminal infrastructure at Jogighopa has been carried out by way of a site visit to see if the projected cargo movement can be handled at the present facility.

<i>Location</i>	Jogighopa, Assam
<i>Land availability and ownership</i>	25 Acres of land available which is owned by IWAI.
<i>Type of existing jetty/ownership</i>	Pontoon jetty available which is owned by IWAI.
<i>Handling facility</i>	To be developed
<i>Storage arrangements</i>	No storage arrangement at the site is available.
<i>Availability of power, water at the terminal location</i>	Power transmission line is available up to the site. Drinking water could be made available by deep tube well system.
<i>Connectivity of the terminal with existing / proposed rail lines.</i>	Nearest railhead with huge go-down is available at a distance of 1.5 Km from the site at Jogighopa
<i>Connectivity of the terminal with existing/proposed roads</i>	NH-37 is at a distance of 1 Km from the terminal site. IWAI has plans to upgrade the road connecting the site from the highway
<i>Connectivity of the terminal with telecom infrastructure</i>	Satisfactory telecom infrastructure is available at Jogighopa.
<i>Operators/user availing the existing facility</i>	Temporary jetty facility and open air storage facility is being availed by the operators.
<i>Current traffic OD and movement details</i>	Coal (Mainly Kolkata bound)

2.1.1 Critical Assessment/ Conclusion

In view of the potential of IWT mode as assessed it has been found that the existing facility is not adequate for the projected traffic and there is a need to provide a mechanized terminal. In view of this, IWAI is desirous to develop the Jogighopa Inland Waterway Terminal on a Public-Private Partnership (PPP) framework. The existing facility would need to be upgraded and the subsequent sections describe in detail the facility that would need to be created.

Inland Waterway Authority of India intends to promote the use of Inland Waterways and for the same it intends to set up an Inland waterway Terminal at Jogighopa with the following envisaged key components to be developed by a developer.

Floating Pontoon	Available
Material Handling Equipment (Conveyor Belt, Cranes, Tractor Trailers)	To be developed
Warehouses – open and covered	To be developed
Utilities like electricity, roads, drainage, etc	Partially developed
Other On-site Infrastructure including perimeter wall, River Bank Protection	To be developed
Office Complex	Up-gradation of existing office building

The major components of the Project shall be Warehouses both open and closed, Bank Protection, Material Handling Equipment and Conveyor based system for Coal handling.

2.1.2 Objective of the Project

In view of the cargo potential of Jogighopa terminal, IWAI proposes to procure a private sector participant to develop the cargo handling facility at the terminal and then operate and maintain the terminal for a period of 15 years. The objective of procuring a developer is to attract traffic to the National Waterway 2. Detailed below are the minimum developer's obligations to operationalize the terminal. To further incentivize the developer to attract cargo to the terminal, an incentive scheme will be devised which will be based on the cargo attracted to the terminal.

2.1.3 Minimum Developer Obligations

The following shall be the Minimum Obligations of the Developer:

- a) Develop, design, finance, construct, operate and maintain the project facilities. The details of the components of the project facilities which necessarily need to be developed have been provided in section 2.2 of this document.
- b) Make necessary applications to relevant competent authority incl. Environmental clearances

- c) Provide periodic reports to IWAI
- d) Maintain the requisite insurance in respect of the IWT Terminal
- e) Achieve completion of the construction of the Inland Waterway Terminal within 18 months from the date of approval of the Development Plan.
- f) Upon the termination of the development period, transfer the project assets to IWAI or its nominated agency.
- g) The developer recognizes and acknowledges the fact that the proposed project is a common user facility.
- h) The developer will have to achieve financial closure within 120 days of the compliance date or such extended period as IWAI in its sole discretion agrees to.

If the developer envisages a need for additional infrastructure to handle increasing cargo and is desirous to develop the facility, then IWAI may consider it favourably.

If IWAI anticipates the need for any additional infrastructure to handle increasing cargo in the subsequent years, then IWAI reserves the right to procure the needed infrastructure in the best manner it may deem fit. This may include IWAI constructing the facility itself or it may procure the infrastructure through a Public-Private Partnership (PPP) framework. However, in doing so, IWAI will ensure that the new facility created will not in any way hinder the physical operations of the existing facilities.

2.2 Facility Components: Minimum Development Obligations

Following is the list of components along with their brief description which shall be necessarily developed by the developer.

2.2.1 Material Handling

- i. Two cranes of 5 T capacity, each capable of handling 30 Tons/Hr to be provided on the Jetty
- ii. Six tractor-trailers of 10 T capacity to be provided to evacuate cargo from the jetty @ 60 Tons/Hr
- iii. One crane of 5 T capacity, capable of handling 60 Tons/Hr to (due to improved cycle time) be provided at Store

2.2.2 Storage Space

- i. To provide adequate storage space for coal, it is proposed to develop a minimum open storage space of 10,000 Sq m.
- ii. Covered storage space shall be a need-based development, based on the requirement for commodities other than coal in case of potential traffic originating.

2.2.3 Gangway for Jogighopa Terminal

The terminal operator will be required to develop a mechanized coal handling and transportation system from the coal stackyard located on the terminal up-to the barge berthed at the floating pontoon. To provide the developer the basic concept envisaged for this facility, drawings of the same have been attached as annexure III of the Project Information Memorandum.

2.2.4 Bank Protection

Location:

The proposed terminal at Jogighopa is situated at 152 km downstream of Guwahati on the north bank of the river Brahmaputra. The river Manas, a tributary to Brahmaputra, falls at around 500 m upstream of the proposed terminal site. The approximate latitude and longitude of the proposed terminal is 90°34'10"E and 26°13'20"N.

The River System:

The Brahmaputra, originating in a great glacier mass in the Kailas Range in a southern Tibet at an elevation of 5300 m, flows through China (Tibet), India and Bangladesh for a total distance of 2880 km before emptying itself into the Bay of Bengal through a joint channel with the Ganga. Its chief tributaries are the Amochu, Raidak, Sankosh, Manas, Bhareli and the Luhit.

The river Brahmaputra flows through the entire stretch of Assam. The river valley in Assam represents a tectono-sedimentary province 720 km long and 80-90 km wide with elevation ranging from 120 m at Kobo in the extreme east through 50.5 m at Guwahati to 28.45 m at Dhubri in the extreme west. The river channel itself occupies about one tenth of the valley. The river flows in a highly braided channel characterized by numerous mid channel bars and islands. The mighty river changes its course very often. Between the Dibrugarh and the Lakhimpur districts the river bifurcates into two channels – the northern Kherkutia channel and the southern Brahmaputra channel. The two channels join again about 100 km downstream forming the Majuli Island. At Guwahati, the Brahmaputra cuts through the rocks of the Shillong Plateau, and is at its narrowest at 1 km bank-to-bank. (The first rail-cum-road bridge across the Brahmaputra was constructed at this point).

Hydrology and Hydrodynamics:

The Brahmaputra River is characterized by high intensity flood flows during the monsoon season, June through September, with an average annual flood discharge of 48160 m³/s. The highest flood discharge recorded in the Brahmaputra at Pandu (Assam) was of the order of 72148 m³/s (1962), which had a recurrence interval of 100 years. On the other hand, the average annual flood discharge has a magnitude of 48160 m³/s.

Geomorphology:

In a braided river like the Brahmaputra, short time channel migration is quite drastic. The rate of rise and fall, the location and the position of major active channel during floods, the formation and movement of large bed form, cohesion and composition of bank materials along with intensity of bank slumping are main factors governing the movement of bank line. The modification of bank line movement takes place during falling stage when excess sediment deposited as bars within the channel causing change of flow of direction and migration of sand –chors (small islands) there upon. Moreover the location of the system in a highly seismic area has definitely its influence over the geomorphologic behavior of the river system.

The river near the proposed work-site, is about 2 km wide and flows hugging the opposite bank. Manas, the tributary originating from trans-Himalayan range falls on Brahmaputra at nearly 500 m upstream of the study area. The bank line at the confluence is formed by rocky out-crop of Jogighopa hill. During the dry season, like all other tributaries, Manas provides meager base flow to Brahmaputra. As the main river flows hugging the other bank, the sand char grown parallel to the north bank clearly divides the entire river width into two distinct channel, the main channel and the small waterway carrying the base flow of the river Manas.

The erosion at the work site:

The upstream bank of the proposed work site, being part of the foothill of Jogighopa Hill, is naturally protected against erosion and provides little scope to dissipate the dynamic energy of the enormous flood flow of the river Manas, the tributary. But some dissipation takes place as evidenced by the deepening of the riverbed in the vicinity. As the bank material changes from rocky protrusion at upstream to fine silty sand at project site, the stream being fed with silt, taken away from the bank by the process of erosion. Furthermore, eroding bank may contribute in growth of the existing sand bar in front of the proposed terminal site.

Suggested Measure:

Selection of Materials:

Under cutting, caving and mass failure cause the bank failure under study. Typically, the protection of the bank in such a case is achieved by retaining the soil particle in place and at the same time allowing the water flow, to prevent significant pore pressure development. A well designed filter layer placed over the graded bank slope can serve the purpose. To secure the filter layer in place and protect against various forces, hydrodynamic/mechanical and ultra violet ray, an armour layer, conventionally made of stone is used.

To this end, following bank protection technologies are available:

Boulder Pitching:

The conventional system is attained by laying a graded filter media and boulder pitching on top for the dissipation of energy, prevention of erosion and stabilization of bank. While this system offers a simple technological solution which is cheaper to implement, other measures such as use of Geo-synthetics are available for the river bank protection.

Geo-synthetics:

Geo-synthetics are extensively used as filter/draining material/reinforcement and the effectiveness is well established. For this purpose the concept of placing geo-tubes has been explored. However, to protect the geo-tube from ultra violet ray and vandalism, placing a nominal stone cover, consisting of number of small stones placed in gabion has been proposed.

The above are just suggested methods. The Developer will be required to determine the most appropriate technology that would be employed and provide the details accordingly at the time of submission of the bid.

2.2.5 Office Space

An administrative office of 20m x 15m needs to be provided. Initially, an office of 10m x 15m needs to be built which would subsequently be expanded.

2.2.6 Other Infrastructure & Utilities

Works pertaining to ground improvement and filling to provide safe round-the-year storage protected from flooding, river training, fencing, lighting, provision of approach roads, security arrangements, lighting to facilitate 24/7 loading/unloading operations and approach to the floating/permanent jetty, provision of leased office space for the operators and traders also need to be developed.

Infrastructure facilities consisting of power, water, sewage, access roads and fencing needs to be suitably planned.

[A site plan has been attached as Annexure II]

The developer shall be required to submit a detailed technical plan of the proposed project at the time of submission of the bid. This would include the following:

- I. Broad layout plan
- II. Components to be developed
- III. Technology to be employed for bank protection
- IV. System to be installed for transmission of coal
- V. Stackyard area

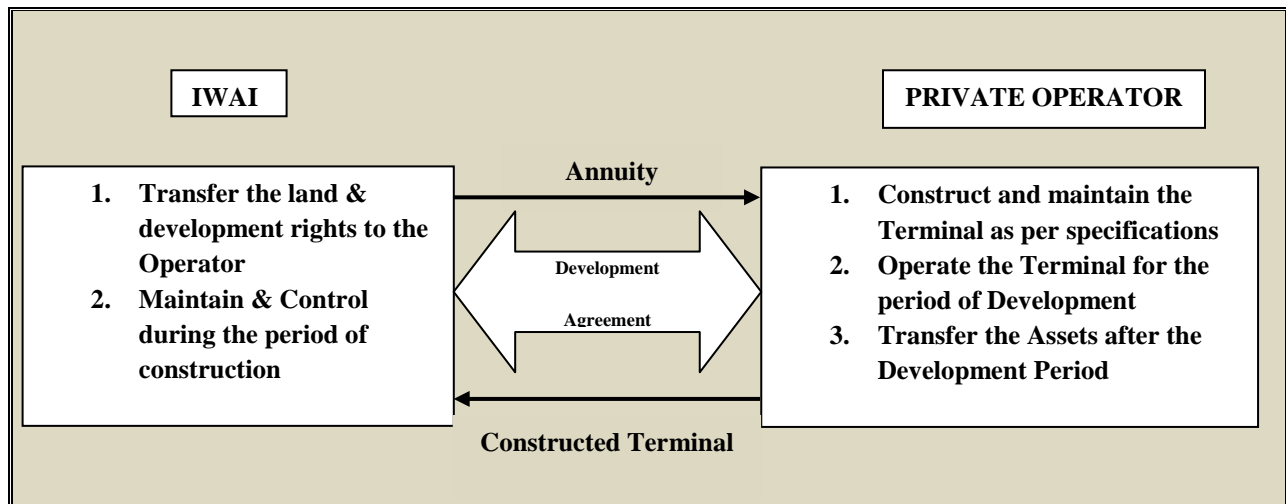
- VI. Closed warehouse if any
- VII. Office complex
- VIII. Estimation of total project cost along with a detailed break-up of component-wise cost as per Appendix I (Annexure IX) of the RFP Document. Detailed assumptions underlying each element of the above would be needed to be provided separately.
- IX. Milestones/Timelines of the Project

2.3 Cargo Incentive Scheme

IWAI fully appreciates the need to properly market the availability of infrastructure to potential customers. Since marketing will have to be an integral part of operations, IWAI proposes to incentivize the developer for attracting cargo to the Jogighopa terminal. In that respect a comprehensive cargo incentive scheme will be devised and entered into with the developer. The mechanism of the scheme shall be worked out suitably at the time of signing of the Development Agreement.

3. Project Structure

The structure of the project has been finalized as shown below:



The selected Bidder, who is either a company incorporated under the Companies Act, 1956 or undertakes to incorporate itself as such prior to execution of the development agreement (the “Developer”), shall be responsible for designing, engineering, financing, procurement, construction, operation and maintenance of the Project[s] under and in accordance with the provisions of a long term development agreement (the “Development Agreement”) to be entered into between the Developer and the Authority. The scope of work will broadly include Construction, Operation and Maintenance of the Inland Waterway Terminal, primarily Gangway, Bank Protection, Warehouses and Utilities.

The selection of the private developer will be based on the least annuity quoted by the bidders (the development period being fixed)

- The Developer (private sector) will be required to meet the entire upfront/construction cost (no grant/VGF will be paid by IWAI/Others) and the expenditure on annual maintenance.
- The Developer will recover the entire investment at a pre-determined return out of the annuities payable by IWAI.
- The Developer shall operate and maintain the facilities for a period of 15 years from the award of development.
- The selection will be made on the least annuity quoted by the bidders (the development period being fixed).

4. Project Development & Bidding Process

4.1 Introduction

The Inland Waterway Authority of India (the “Authority”) is engaged in the development of inland waterways and as part of this endeavour, the Authority has decided to undertake development of Inland Waterway Terminal at Jogighopa on National Waterway 2 (the “Project[s]”) through public-private partnership (PPP) on [Construct, Operate and Maintain] basis, and has decided to carry out the bidding process for selection of the bidder[s] to whom the Project[s] may be awarded.

The Authority intends to select suitable Applicants (the “Bidders”) based on certain technical and financial criteria as given below who will be eligible for participation in the Bid Stage, for awarding the Project[s] through an open competitive bidding process in accordance with the procedure set out herein.

4.2 Submission of Bids

The Authority has adopted a single stage process (collectively referred to as the "Bidding Process") for selection of the bidder[s] for Acceptance of the Project[s] wherein there will not be a separate qualification phase and the interested parties are required to submit only one Proposal. The evaluation of the Proposals would be carried out in two stages. The first stage would be the Qualification Stage. In the Qualification Stage the Qualification Proposal comprising of the information of the parties on their technical and financial capability for undertaking the Project would be evaluated. Stage two would be based on the first stage and only those Proposals that meet the minimum threshold technical and financial capabilities as set out in this RFP for the Project would be short-listed/qualified and their Financial Proposal would be opened for selecting the Successful Bidder.

Bids will be invited for the Project on the basis of the lowest financial annuity (the "Annuity") required by a Bidder for implementing the Project. The development period shall be 15 years and the Developer will be required to build, maintain and operate for the development period and transfer the facilities at the end of the Development Period. **The Annuity amount shall constitute the sole criteria for evaluation of Bids. The Project shall be awarded to the Bidder seeking the lowest Annuity.**

In the Bid Stage, the Bidders will submit their technical and financial offers (the "Bids") in respect of the Project, in accordance with the RFP and other documents to be provided by the Authority (collectively the "Bidding Documents"), The Bidding Documents for the Project will be provided to every Bidder on payment of Rs 10,000 (Ten Thousand Only). The Bid shall be valid for a period of not less than 120 days from the date of submission of the Bid.

In terms of the RFP, a Bidder will be required to deposit, along with its Bid, a bid-security equivalent to INR 15,00,000 (the "Bid Security"), refundable not later than 180 days from the Bid Due Date except in the case of the lowest Bidder whose Bid Security shall be retained till it has provided a Performance Security under the Development Agreement. The Bidders will have an option to provide the Bid Security in the form of a demand draft or a bank guarantee acceptable to the Authority and in such event, the validity period of the demand draft or bank guarantee, as the case maybe, shall not be less than 180 (one hundred and eighty) days from the Bid Due Date, inclusive of a claim period of 60 (sixty) days, and may be extended as may be mutually agreed between the Authority and the Bidder from time to time. The Bid shall be summarily rejected if it is not accompanied by the Bid Security.

4.3 Evaluation Parameters (Stage I)

To be eligible for short-listing for the Bid Stage, an Applicant shall fulfill the following conditions of eligibility:

(A) Technical Capacity:

Technical criteria will comprise of two sections –

- a) Bidders' experience
- b) Financial capacity

Bidders' experience - Relevant projects have been further divided into two parts

- i. Logistics projects
- ii. Core sector projects
 - Logistics sector projects would be deemed to include Warehousing, Logistics, and Coastal Shipping Projects and Inland Waterway Projects (investment in barges and terminals)
 - Core sector projects would be deemed to include power, telecom, ports, airports, railways, highways, roads, industrial parks, petroleum and natural gas, pipelines, irrigation, water-supply, sewerage and real estate development.

The evaluation of technical capacity shall be depend upon following parameters

1. Capital cost of project developed under self owned and operated/ developed and operated under PPP i.e BOT, BOLT, BOO, BOOT or other similar basis for providing its output or services to a public sector entity or for providing non-discriminatory access to users in pursuance of its charter, development or contract, as the case may be;
2. Construction and receipt of payments by the Applicant

The marking criteria will be as follows –

	Construction	Operation (payment)
Logistic Sector projects	<ol style="list-style-type: none">1. For every INR 100 million project cost, the bidder shall receive 1 point up-to a maximum of 10 points2. If the bidder is in the IWT sector, every INR 20 million of project cost will be equivalent to 1 point up-to a maximum of 20 points	<ol style="list-style-type: none">1. For every INR 40 million of payment receipt, the bidder shall get 1.5 point up-to a maximum of 17.5 points2. If the bidder is in the IWT sector, every INR 20 million of payment receipt will be equivalent to 2 points up-to a maximum of 20 points
Other Core Infrastructure Sector Projects	<ol style="list-style-type: none">1. For every INR 150 million of project cost the bidders shall get 1 point up-to a maximum of 7.5 points	

The minimum threshold criteria for any applicant to qualify with respect to technical capacity shall be a minimum score of 5.

The projects which would be considered are the projects which have completed or are under various stages of completion in the last six years starting from the year 2003.

(B) Financial Capacity: The Applicant shall have a minimum Net Worth (the “Financial Capacity”) of Rs. 15 Crore (Rs Fifteen Crore) and a minimum Turn-over of Rs 5 crores (Rs Five Crore) as at the close of the preceding financial year. However, if the Applicant is in the Inland Waterway Sector, then the minimum required Net Worth will be Rs 5 crores.

In case of a Consortium, the combined technical capability and net worth of those Members, who have an equity share of at least 26% each in such Consortium, should satisfy the above conditions of eligibility. However, if a member is from the Inland Waterway Sector having a 10% equity stake, then experience and financial capacity of that member will count in the evaluation of the Bid.

4.4 Evaluation of Financial Proposal (Stage II)

The Authority will open Envelope ‘FINANCIAL PROPOSAL’ for the Bidders, who pass the Qualification stage (Stage I) in the presence of the Bidders’ representatives who choose to attend. The Authority will endeavour to open the Financial Proposals on the date mentioned against the Date for Opening of Financial Proposals in the Schedule of Bidding Process. Thereafter, Bidders will be ranked on the basis of the Annuity quoted by them as. The proposal with the lowest Annuity would be ranked L1 and other proposals would be ranked subsequently.

4.5 Acceptance of Letter of Acceptance and Execution of Development Agreement

Within fifteen (15) days from the date of issue of the LoA, the Successful Bidder shall accept the LoA and return the same to IWAI. The Successful Bidder shall execute the Development Agreement within thirty (30) days of acceptance of LoA. The Successful Bidder (“Developer”) shall incorporate a SPV solely for the purpose of domiciling the project and the Developer shall for due and faithful performance of its obligations during the Construction period furnish Performance Security by way of an irrevocable Bank Guarantee/Demand Draft issued by a Bank, in favour of Inland Waterway Authority of India, equivalent to a sum of INR 15 Million. The Developer shall provide the Performance Security within the period expiring on the 30th day from the date of acceptance of LoA but prior to execution of the Development Agreement.

4.6 Bidding Schedule

The Authority shall endeavour to adhere to the following schedule:

Bid Stage	
1. Sale of Bid Documents	16 th March to 29 th May, 2009
2. Last date for receiving queries	23 rd April, 2009
3. Pre-Bid Meeting -1	24 th April, 2009
4. Authority response to queries	Within 15 days from the last date of receiving queries
5. Bid Due Date(s)	30 th May, 2009
6. Opening of Bids	Within 7 days of Bid Due Date
7. Validity of Bids	Within 120 days from Bid Due Date
8. Acceptance of Letter of Acceptance (LoA)	Within 15 days from the date of issue of LoA
9. Signing of Development Agreement	Within 30 days from the date of Acceptance of LoA
10. Submission of Performance Guarantee	On the date of signing of the Development Agreement
11. Submission of Development Plan	Within 45 days from the date of signing of the Development Agreement
12. Approval of the Development Plan	Within 30 days from the date of submission of the Development Plan
13. Achievement of Financial Closure	Within 120 days from the date of signing of the Development Agreement
14. Construction Period of the Facilities	Within 18 months from the date of approval of the Development Plan
15. Validity of the Performance Guarantee	24 months from the date of signing of the Development Agreement
16. Payment of Annuity	After the commencement of Commercial Operations

Annexure I: Movement of Coal

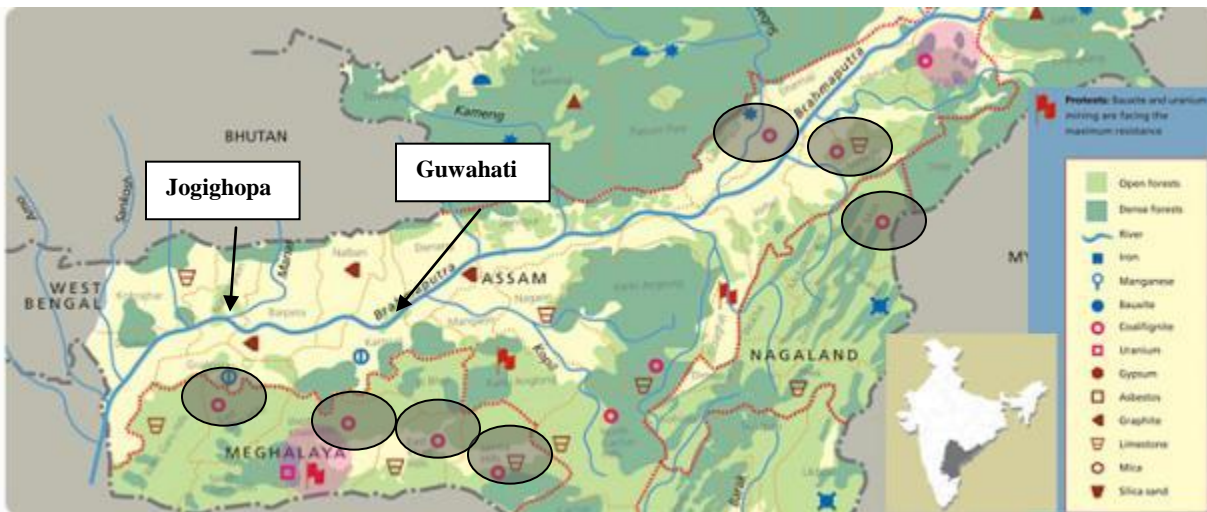
Introduction

North Eastern States of Meghalaya, Assam and Nagaland have coal reserves. Among the North Eastern States Meghalaya has the highest reserves of about 459 Million MT followed by Assam with 376 MT. Nagaland has about 20 Mn MT of coal. The table below gives the coal reserves in the North Eastern states.

Coal Reserves in the North East

	Coal Resources in Million Tonnes			
	Proved	Indicated	Inferred	Total
Assam	315	27	34	376
Meghalaya	117	41	301	459
Nagaland	4	1	15	20
Total	436	69	350	855

The coal found in the above states is not of high quality and is primarily used in Brick Kilns and Cement Factories. This coal has its primary markets in the North Indian states of Uttar Pradesh, Punjab and Haryana. The coal mined in both Assam and Meghalaya uses Railways to transport it to the markets of Uttar Pradesh, Punjab and Haryana. This coal of the North East is transported to the target markets by rail. The major stocking yards for coals are in Beltola(Guwahati) and Jogighopa. The map below shows the location of coal mines in the North East.



Coal Mines in the North East

Assessment of Coal movement

As discussed earlier the primary production of coal in the North Eastern India is in states of Assam and Meghalaya. The total production of coal in this belt is approximately 7.14 Mn MTPA, 6 Mn MTPA is mined in Meghalaya and about 1.4 Mn MTPA is mined in Assam (primarily by North Eastern Coal limited, a 100 % subsidiary of Coal India Limited). Out of this the local consumption of coal is about 2.5 Mn MTPA, the remaining 4.64 Mn MTPA is transported outside the North East primarily by rail. The table below illustrates the fact stated above:

[All figures are in Mn MTPA]

Coal Movement North East India

	Barpeta/Guwahati Stocking Yard	Jogighopa Stocking Yard	Total
Meghalaya Coal	1.375	2.625	4
Assam Coal	0.5	0.14	0.64
Total	1.875	2.765	4.64

Growth of Coal Movement

Historical data analysis shows that the coal outflow from Meghalaya has increased by about 7% year on year. On a long term basis, we have taken a growth rate of 5%. Based on these growth rates the cargo movement of coal shall be as under:

Cargo Growth for Coal

Year	1	2	5	8	11	14	15
Meghalaya Coal	4.00	4.20	4.86	5.63	6.52	7.54	7.92
Assam Coal	0.64	0.67	0.78	0.90	1.04	1.21	1.27
Total	4.64	4.87	5.64	6.53	7.56	8.75	9.19

As the cargo growth increases the inflows at the Beltola and Jogighopa Stocking Yards shall also increase proportionally. Based on the above cargo projections, the throughputs estimated at Jogighopa and Beltola are provided in the table below:

Stocking Yard wise projection of coal

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Beltola Stacking Yard	1.38	1.44	1.67	1.93	2.24	2.59	2.72
Jogighopa Stacking Yard	2.63	2.76	3.19	3.69	4.28	4.95	5.20

Assam Coal							
Beltola Stacking Yard	0.50	0.53	0.61	0.70	0.81	0.94	0.99
Joghophopa Stacking Yard	0.14	0.15	0.17	0.20	0.23	0.26	0.28
Total Coal-Beltola Stacking	1.88	1.97	2.28	2.64	3.05	3.54	3.71
Total Coal-Joghophopa Stacking	2.77	2.90	3.36	3.89	4.50	5.21	5.47

Rail and Road Movement of Coal

Out of the above coal movement 80 % of the coal is being moved by Rail and the rest is being moved by Road. This is based on our interactions with transporters, coal traders and secondary data analysis. Based on the above assumption the rail and road split of the coal being transported is as under. Projected Rail movement is as under:

Projected Rail Movement of coal yard wise

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Beltola Stacking Yard	1.10	1.16	1.34	1.55	1.79	2.07	2.18
Joghophopa Stacking Yard	2.10	2.21	2.55	2.95	3.42	3.96	4.16
Assam Coal							
Beltola Stacking Yard	0.40	0.42	0.49	0.56	0.65	0.75	0.79
Joghophopa Stacking Yard	0.11	0.12	0.14	0.16	0.18	0.21	0.22
Total Coal-Beltola Stacking	1.50	1.58	1.82	2.11	2.44	2.83	2.97
Total Coal-Joghophopa Stacking	2.21	2.32	2.69	3.11	3.60	4.17	4.38

The Road movement of coal is as under:

Projected Road Movement of coal yard wise

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Beltola Stacking Yard	0.28	0.29	0.33	0.39	0.45	0.52	0.54
Joghophopa Stacking Yard	0.53	0.55	0.64	0.74	0.86	0.99	1.04
Assam Coal							
Beltola Stacking Yard	0.10	0.11	0.12	0.14	0.16	0.19	0.20
Joghophopa Stacking Yard	0.03	0.03	0.03	0.04	0.05	0.05	0.06
Total Coal-Beltola Stacking	0.38	0.39	0.46	0.53	0.61	0.71	0.74
Total Coal-Joghophopa Stacking	0.55	0.58	0.67	0.78	0.90	1.04	1.09

Shift of Coal from rail/ road to IWT

Shift of Cargo from rail to inland waterway

The movement by rail is dependent on the timely availability of rakes for coal which is often not the case. Railways offer 3 free stacking days and if the cargo is not evacuated within this timeframe, it starts incurring demurrage at the rate of Rs. 53 /MT/ day. This is a significant amount and to save this amount in case of non availability of rakes the coal is transported by road to Jogighopa/ Kolkata based on the rake position at Jogighopa from where the coal is dispatched to the consignee location by railway.

If inland waterway infrastructure as envisaged is provided then a significant cargo shall shift to inland waterway. It is estimated that about 35% of the cargo using Railways incurs demurrage on non availability of rakes and 10 % of the same shall shift to IWT in the 1st year of operations and 15 % of the cargo shall shift 2nd year onwards for two reasons:

- For shifting the cargo to Jogighopa from Guwahati in case rakes not available at Guwahati but are available at Jogighopa
- Coal transportation for consignment up-to Kolkata

Based on the assumptions stated above the projected movement of coal that shall shift to inland waterway is as under:

Projected Shift from rail to IWT

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Rail-Beltola	0.11	0.17	0.20	0.23	0.27	0.31	0.33
Assam Coal							
Rail-Beltola	0.04	0.06	0.07	0.08	0.10	0.11	0.12
Total	0.15	0.23	0.27	0.31	0.37	0.42	0.45

Shift of Cargo from road to inland waterway

The outward movement of coal from Barpeta by road is either for movement to local area or to Kolkata. Since IWT mode offers much cheaper mode of transport by roadways we have estimated that up to 60% of the cargo from road shall shift to IWT mode Based on the above stated assumptions the shift to IWT shall be as under:

Projected shift from road to IWT

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Road- Barpeta	0.14	0.17	0.20	0.23	0.27	0.31	0.33

Assam Coal							
Road- Barpeta	0.05	0.06	0.07	0.08	0.10	0.11	0.12
Total	0.19	0.24	0.27	0.32	0.37	0.42	0.45

Shift of Cargo from rail/road to inland waterway

Based on the above projection the total projected cargo that is expected to shift to IWT shall be as under:

Total Projected cargo shift to IWT

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Rail-Beltola	0.11	0.17	0.20	0.23	0.27	0.31	0.33
Road- Barpeta	0.14	0.17	0.20	0.23	0.27	0.31	0.33
Assam Coal							
Rail-Beltola	0.04	0.06	0.07	0.08	0.10	0.11	0.12
Road- Barpeta	0.05	0.06	0.07	0.08	0.10	0.11	0.12
Total	0.34	0.47	0.55	0.63	0.73	0.85	0.89

Terminal Projections

The coal that is projected above shall be offloaded at Jogighopa terminal:

Coal Projection to be handled at Jogighopa

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Rail-Beltola	0.11	0.17	0.20	0.23	0.27	0.31	0.33
Road- Barpeta	0.14	0.17	0.20	0.23	0.27	0.31	0.33
Assam Coal							
Rail-Beltola	0.04	0.06	0.07	0.08	0.10	0.11	0.12
Road- Barpeta	0.05	0.06	0.07	0.08	0.10	0.11	0.12
Total	0.34	0.47	0.55	0.63	0.73	0.85	0.89

The coal shall be loaded at Guwahati for onwards movement to Jogighopa. Hence the cargo throughputs at Guwahati for coal are as under:

Coal Projection- Guwahati Terminal

Year	1	2	5	8	11	14	15
Meghalaya Coal							
Rail-Beltola	0.11	0.17	0.20	0.23	0.27	0.31	0.33
Road- Barpeta	0.14	0.17	0.20	0.23	0.27	0.31	0.33
Assam Coal							
Rail-Beltola	0.04	0.06	0.07	0.08	0.10	0.11	0.12
Road- Barpeta	0.05	0.06	0.07	0.08	0.10	0.11	0.12

Shift from Road to IWT

Problems in Road Transportation:

Some of the major problems encountered while transporting cargo through Roadways are:

- Odd Dimensions of the cargo. Often cargo width is more than standard width of 4.5 meters of bridges. Also the load bearing capacity is less than cargo weight being carried.
- Roads are subject to high wear and tear. In such conditions road transportation is risky.
- Accidents on road can lead to major cost and time over-runs for the project. Cargo topping of a major consignment may have a significant impact on project completion.

Waterway as a substitute for Road Transportation:

Inland waterway system has been used, in the past, for cargo transportation. In view of irregular barge operation on National Waterway 2, regular use of IWT is not becoming a possibility. However if there is regular waterway service available cargo transportation will be extremely benefitted. The main advantages offered by IWT are:

- No obstacle on account of bridges/roads unfit for heavy cargo transportation leading to major project de-risking.
- IWT operations are considered safer than road transportation.

Rail as a means of Transportation:

- Although rail transportation is the cheapest mode of transportation of cargo, it is unviable in this area because of its capacity constraint and its suitability for only bulk cargo. Railways are ideal for full rake load of bulk commodities. Less than rake load cargo find road transport convenient.
- There is an added cost of road bridging and trans-shipment at railway yards. In-efficient handling at railway yards leads to cargo damages.

Therefore, it is being envisioned that with full scale commercialization of the waterway in question, significant cargo shall shift to the waterway mode. The freight savings due to a shift from road to IWT transportation has been shown above.

Annexure II

