

road of 170m is considered as 0.68 crores and that of existing road development is worked out as Rs. 2.12 crores. The total cost of road connectivity is worked out as Rs.2.78 crores.



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
—	0.53	11/11	0		2.12	0	2.12
—	0.17	7/8	2	KOPT	0.68	0	0.68

Rail Connectivity:

The rail connectivity from the nearest rail head is not found feasible and also inside the boundary of IWT Terminal. Further the traffic level of 3 MTPA at the 2031-32 level indicates inadequate for considering exclusive rail connectivity. Therefore, rail connectivity is not considered for this terminal.

Total Development Cost:

It is envisage that a sum of Rs.58 crores is required for the development of IWT Terminal at Kolkata. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 5 crores
Road Connectivity	: Rs. 3 crores
Terminal Development Cost	: Rs. 50 crores
Total Investment	: Rs. 58 Crores

4.3.3 TERMINAL AT KATWA

Katwa (At Ch: 334.50km of NW-1) is located in the Bardhaman District and surrounded by the coal mines in the region. Ajay River is confluencing with Bhagirathi river near Sakhai Ghat. Katwa's economy has grown significantly in recent years. The traditional backbone of the economy was agriculture but the town has since developed into a major trading hub with booming retail and service sectors. Katwa is also a transit point for agricultural products grown in nearby villages. Raniganj Coalfield is primarily located in the Asansol and Durgapur subdivisions of Bardhaman district in the Indian state of West Bengal. It spreads over to the neighbouring districts of Birbhum, Bankura, Purulia and Dhanbad. NTPC is planned to setup a 1320MW powerplant at Katwa, which is in advanced stage of land acquisition process.

Traffic:

Projected divertible traffic through Katwa Terminal

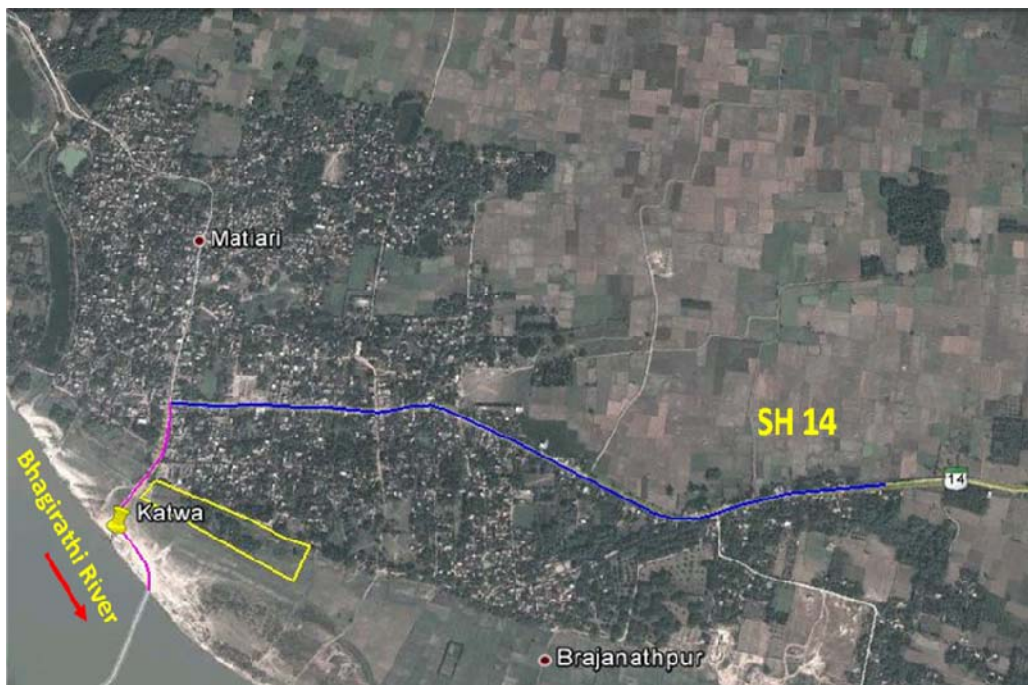
Katwa Total Traffic (MT)			
Year	Originating	Terminating	Total
2011-12	7.12	1.77	8.89
2021-22	10.47	2.61	13.08
2031-32	20.78	6.56	27.34
Important Commodity:		Coal	

Presently a floating pontoon jetty of 30m length is being used to handle boats. The area in the vicinity of river front is congested and the connectivity to the terminal is planned as follows:

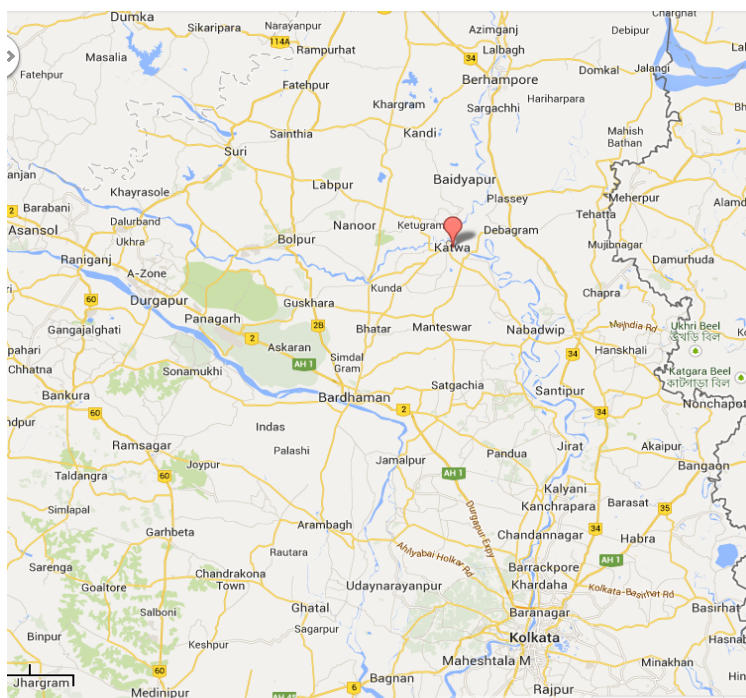
Road connectivity:

The State Highway SH-14 is 2.00km from the terminal location. Out of this 2km road, existing metalled road from the SH is of 1.50km length and 3m wide. This stretch is planned to be widened to 10m and strengthening. Further, near the river front a 500m length/3m wide un-metalled road is planned to be taken-up by laying a new two lane road, The cost for development of this two stretches is worked out on normative basis as Rs.10 crores, including the land cost for widening the stretch.

The satellite imagery of the Terminal location and road connectivity proposed from the nearest State Highways is depicted in the Figure below.

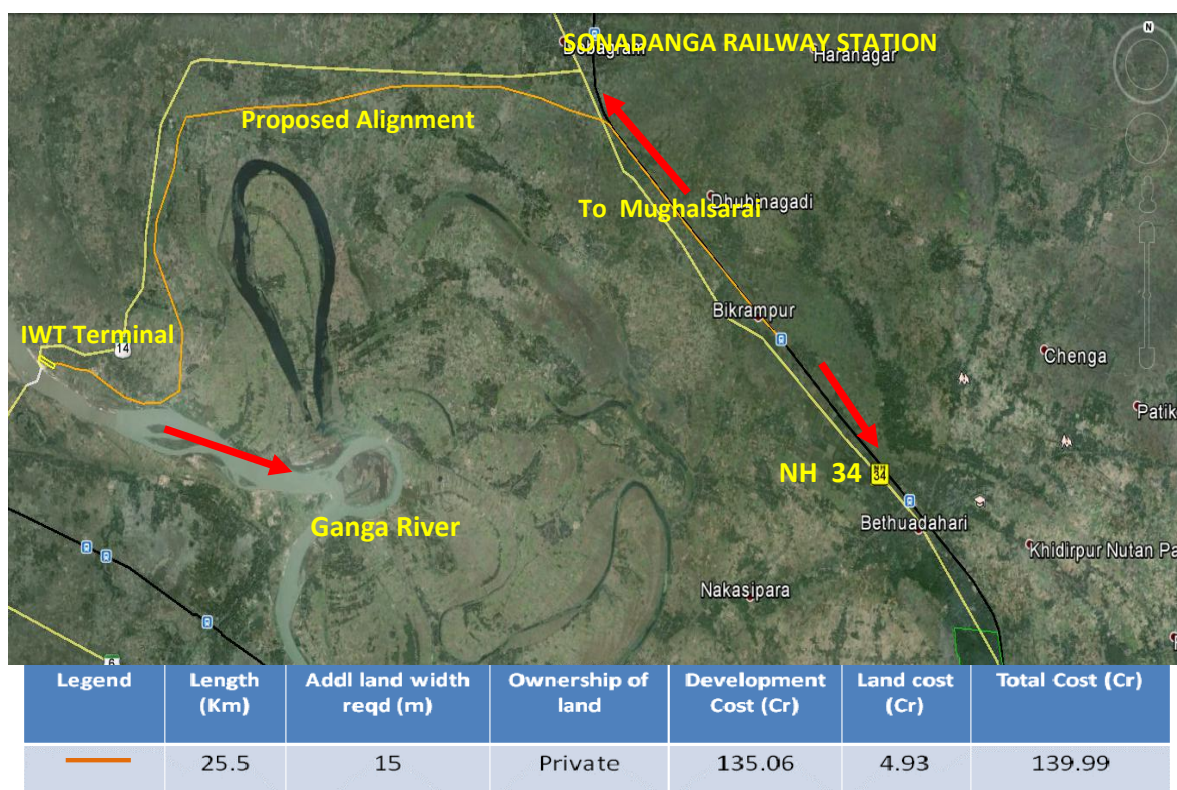


Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
—	0.50	3/3	7	Private	3.80	0.05	3.85
—	1.50	3/3	7	Private	6.00	0.14	6.14



Rail Connectivity:

Katwa terminal is nearer to Sonadanga Railway Station under Sealdah Division of Eastern Railway Zone. The feasibility to connect the existing terminal with rail network is examined based on the terrain and found not possible within the city limit where the line has to pass through the congested city conglomerate. Construction of new line including acquisition of land for connectivity within city is not possible. However, to overcome these hurdles, it is proposed to have a new terminal outside the city limits to serve the huge IWT traffic anticipated in the form of coal from the region. Being bulk commodity, transfer of coal from mine to IWT terminal through rail network is expected to increase over a period of time. The rail connectivity to the existing terminal location from Sonadanga railway station is of 25.50km in length and if considered, it requires a 15m wide land corridor for such connectivity. It is found that the land belongs to private parties along the corridor. The cost for rail connectivity is worked out as Rs.140crores, which includes Rs.4.93 crores towards land acquisition cost.



Rail connectivity for the existing terminal location:

Outside boundary of existing IWA land: Not feasible

Inside boundary: Not Feasible

Traffic Demand: Adequate traffic available to establish rail link (outgoing coal and Iron & Steel)

Rail connectivity is therefore recommended. However, considering the bottlenecks in acquiring land in urban area for rail connectivity, a new location outside the city limit is suggested to handle projected traffic with four lane road connectivity and rail connectivity. The location identification and other related studies may be taken up while preparing the Detailed Project report for the terminal.

Total Development Cost:

It is envisage that a sum of Rs.255 crores is required for the development of IWT Terminal at Katwa in present location. It is presumed that there won't be significant change in estimate cost for the new location, which can be determined after preparation of DPR. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 5 crores
Road Connectivity	: Rs. 10 crores
Rail Connectivity	: Rs. 140 crores
Terminal Development Cost	: Rs. 100 crores
Total Investment	: Rs. 255Crores

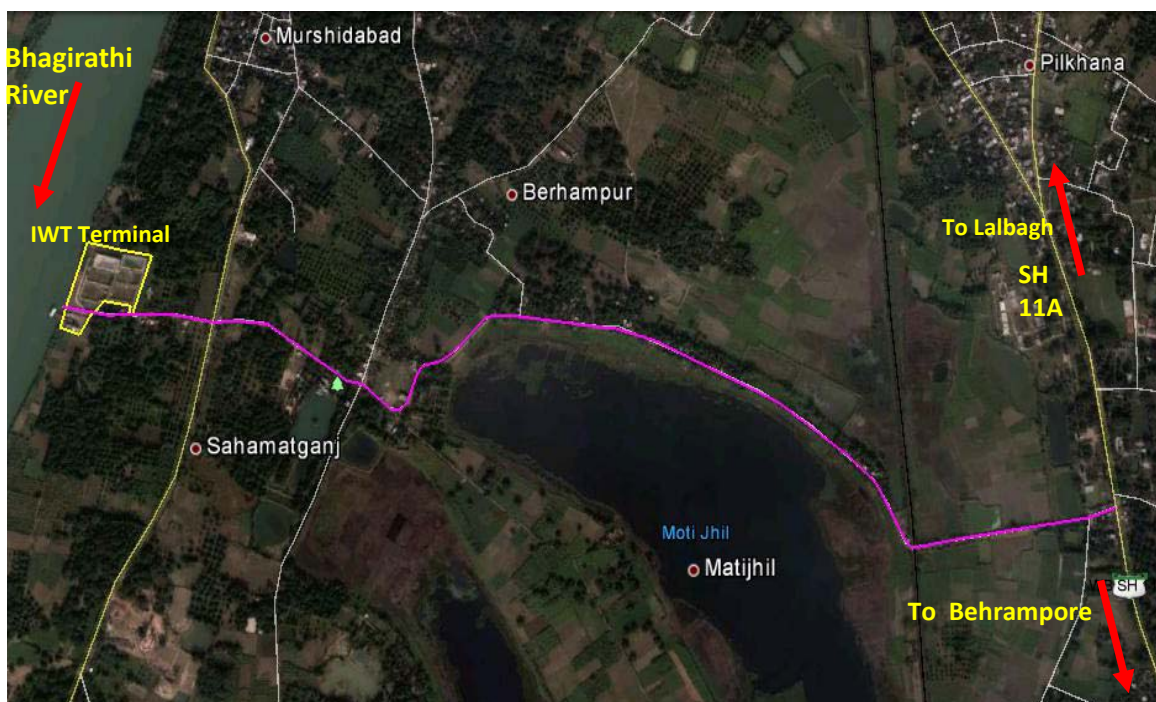
4.3.4 TERMINAL AT HAZARDWARI

The terminal proposed at Hazardwari in Murshidabad district of West Bengal state. The nearest industrial hub is Behrampur. It is to mention that a terminal at Behrampur is also planned.



DISTRICT MAP INDICATING LOCATION OF PROPOSED HAZARDWARI TERMINAL

The location of the terminal is close to the Iron and steel industry of the State as well as the coal belt in Bihar. Bell-metal and brass utensils are manufactured in large quantities at Khagra, Berhampore, Kandi, Baranagar and Jangipur. They are exported as well as sold in the local markets. Locks and betel nut cutters of a superior kind are made at Dhulian and iron chests at Jangipur. The District is having the largest Power Plant at Sagardighi 12 km from Raghunathganj, It also having a Central power plant at Farraka NTPC Generating 1600MW power. A hydropower project is being planned in the district. The District has it largest manufacturer of Bidi. The district is also having a Iron & Steel Manufacturing Company, in the city of Jangipur, which is also the landmark in the district. The Town of Omarpur is the hub for manufacturing Plastic house hold goods. To connect the existing pontoon jetty to nearest State Highway and railhead, following line of action is considered:



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	2.50	3.5/3.5	8.5	Private	10.60	0.27	10.87

Traffic:

Projected divertible traffic through Hazardwari Terminal

Hazardwari Total Traffic (MT)	
Year	Total
2011-12	6.63
2021-22	7.73
2031-32	16.16
Important Commodity: Iron & Steel, Coal	

Presently a floating pontoon jetty of 30m length is being used to handle boats. The area in the vicinity of river front is congested and the connectivity to the terminal is planned as follows:

Road Connectivity: The nearest State Highway (SH 11A) connecting Lalbagh and Behrampur is of 2.50km length. The existing road/land width available for this 2.5km stretch of road is 3.50m only. To augment and strengthen the road with two lane is estimated to cost Rs.10.87 crores. The additional land width along this existing road corridor is required to be acquired from private parties on either side so as to make it as 12m wide on base of the road.

Rail Connectivity: The nearest station is Cossim Bazar Railway Station. The length of connectivity is 6.8km. However, since rail alignment is likely to pass through congested city limits and inadequate traffic to make it economically viable, Rail Connectivity is not considered for this terminal.

Total Development Cost:

It is envisaged that a sum of Rs.41crore is required for the development of IWT Terminal at Hazardwari. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 5 crores
Road Connectivity	: Rs. 11 crores
Terminal Development Cost	: Rs. 25 crores
Total Investment	: Rs. 41Crores

4.3.5 TERMINAL AT BEHRAMPUR

The terminal proposed at Behrampur is the capital of Murshidabad district in West Bengal state. The district map of Murshidabad is given below:



The important commodities expected to be handled through the proposed terminal is Building materials, coal and food grains.

Traffic:

Projected divertible traffic through Behrampur Terminal

Behrampur Total Traffic (MT)	
Year	Total
2011-12	2.12
2021-22	2.38
2031-32	4.97
Important Commodities: Coal, Building Materials, Food grains, etc.	

Road Connectivity:

The nearest National Highway (NH 34) connecting Chatia and Behrampur is 3.00km length. The existing road/land width available for this 2.5km stretch of road is 10m which is sufficient

to lay a two lane road and it is envisaged to strengthen this road to cater heavy vehicle movement. The normative cost of Rs.3.00 crore is provided in the estimate for this purpose.



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	3.0	10/10	Nil		3.0	0	3.0

Rail Connectivity:

The nearest station is Baharampur Railway Station and the distance from terminal to this rail head is 2.5km. However, since rail alignment is passing through congested city limits and inadequate traffic, Rail Connectivity is not considered for this terminal.

Total Development Cost:

It is envisage that a sum of Rs.58 crore is required for the development of IWT Terminal at Baharampur. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 5 crores
Road Connectivity	: Rs. 3 crores
Terminal Development Cost	: Rs. 50 crores
Total Investment	: Rs. 58Crores

4.3.6 TERMINAL AT FARAKKA

There is an important IWT terminal at Farakka which mainly caters to coal and other bulk commodities. Currently floating type IWT terminal is provided to handle traffic which is spread over an area of about 4800 Sq.m having approx 80 m of berthing space.

Recently NTPC has entered into a MoU with IWA for development and implementation of a project involving transportation of 2-3 million tons of imported coal per annum from Haldia to Farakka Super Thermal Power Station (STPS). A Tripartite agreement has been executed between NTPC, M/s Jindal ITF Ltd. and IWA to carry out the development and operation of the project. As per the agreement M/s Jindal ITF Ltd has been granted up to 24 months to undertake construction of entire facilities and therefore operation and maintenance for seven years. NTPC has provided a long term cargo commitment for a period of seven years. IWA has guaranteed Least Available Depth (LAD) of 2.5 m in the entire fairway up to Farakka for a period of 330 days and other navigational aids to ensure safe round the clock navigation. M/s Jindal ITF Ltd. has promised to transport up to 3 MMT of imported coal per annum received at the trans-shipper from the Panamax vessel of NTPC's coal importer to the coal stack yard at Farakka STPS. It is proposed utilise the terminal facility for handling other cargo projected for the terminal.

Traffic:

Projected divertible traffic through Farakka Terminal

Farakka Total Traffic (MT)			
Year	Originating	Terminating	Total
2011-12	0.04	2.80	2.84
2021-22	0.07	3.39	3.46
2031-32	0.52	6.71	7.23
Important Commodity:		Coal	

Road Connectivity: (U/S of Farakka): The nearest National Highway (NH 34) is at 1.00km length. The existing road/land width available for this 1 km stretch of road is 3.50m which is required to be widened with additional land acquired for 6.5m to lay a two lane road. To strengthen and widen this road to cater heavy vehicle movement, the normative cost of Rs.4.10 crore is provided in the estimate for this purpose.

Road Connectivity: (D/S of Farakka): To connect the downstream of Farakka with National Highway, a 3.80km stretch of existing road with a width of 3.5m is already exist. To widen this road to 10m and strengthen the same, the cost on normative basis is arrived at Rs.28.41 Crores.

Rail Connectivity: The nearest station is New Farakka Railway Station under Malda Division. The length of connectivity is 6.0km. However, since bulk commodities are planned to move through conveyor system to the industries on the river front, Rail Connectivity is not considered for this terminal.

Total Development Cost:

It is envisage that a sum of Rs.48crore is required for the development of IWT Terminal at Farakka. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 5 crores
Road Connectivity	: Rs. 33 crores
Terminal Development Cost	: Rs. 10 crores
Total Investment	: Rs. 48Crores



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	1.00	3.5/3.5	6.5	Private	4.0	0.1	4.1



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	3.80	3.5/3.5	6.5	Private	28.04	0.37	28.41

4.3.7 TERMINAL AT SAHEBGANJ

There is an existing pontoon jetty available at Sahebganj. During the meeting convened by Secretary(Shipping) at Transport Bhavan, New Delhi on 15.07.2013 for the National Integrated Waterways Transportation Grid Study, Chief Secretary of Govt. of Jharkhand while appreciating the idea of making grid connectivity, requested that due importance be given to Sahebganj Terminal which will act as the ore/ mineral loading point for the State of Jharkhand. He also appraised the on-going development of NH-80 under ADB assistance and rail connectivity at Sahebganj. The topography of Jharkhand is rich in minerals. The abundance in minerals also enhances the prospects of the industries in Jharkhand. Some of the important minerals found in Jharkhand are:

• Chromite	• Copper	• Uranium
• Mica	• Limestone	• Illmenite
• Iron	• Asbestos	• Gold
• Manganese	• Silver	• Bauxite
• Coal, etc		



Traffic:

Projected divertible traffic through Sahebganj Terminal

Sahebganj Total Traffic (MT)			
Year	Originating	Terminating	Total
2011-12	1.23	0.56	1.79
2021-22	1.36	0.03	1.39
2031-32	2.70	0.21	2.91
Important Commodity:		Coal, ore and minerals	

Road Connectivity:

The nearest National Highway (NH 80) is at a distance of 3.50km. The existing road/land width available for a 3.0 km stretch of road is 3.50m which is required to be widened with additional land acquired for 6.5m to lay a two lane road. To strengthen and widen this road to cater heavy vehicle movement and to lay a new road for 500m, the normative cost of Rs.15.41crore is provided in the estimate for this purpose.



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
—	0.5	0/0	20	Private	3.05	0.12	3.17
—	3.0	3.5/3.5	6.5	Private	12.00	0.24	12.24

Rail Connectivity: The nearest railway station is Sahebganj Railway Station under Malda Division of Eastern Railway. The length of connectivity is 8.16km. However, since bulk commodities are planned to move through this terminal, since adequate land inside the existing terminal is not available, it is suggested to identify a new location to handle the projected traffic with four lane road and rail connectivity in Jharkhand in the region. However, rail connectivity upto the boundary of existing terminal is found feasible. The cost for connectivity to this terminal is estimated as Rs. 44.47crores, which includes cost for land to be acquired amounting to Rs.1.09crores.

Feasibility of Rail connectivity for the existing terminal location:

Outside boundary of existing IWAI land: Feasible

Inside boundary: Not Feasible

Traffic Demand: Adequate traffic available to establish rail link (for handling bulk coal to thermal power plants)

Based on traffic demand, establishing rail connectivity is recommended. However, considering the limited land available inside the existing IWAI boundary for laying rail lines and rail yards, a new terminal location outside the city limit is suggested to handle projected traffic with four lane road connectivity and rail connectivity. The identification of new location and other related studies may be taken up while preparing the Detailed Project report for the terminal.



Legend	Length (Km)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	8.16	15	Private	43.38	1.09	44.47

Total Development Cost:

It is envisaged that a sum of Rs.171crore is required for the development of IWT Terminal at Sahibganj. It is presumed that there won't be significant change in estimate cost for the new location, which can be determined after preparation of DPR. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 10crores
Road Connectivity	: Rs. 16crores
Rail Connectivity	: Rs. 45crores
Terminal Development Cost	: Rs. 100 crores
Total Investment	: Rs. 171Crores

4.3.8 TERMINAL AT BHAGALPUR

Bhagalpur situated in the plains of the Ganga river basin is the third largest city of Bihar, and covers an area of 2569sqkm. It is also known as the Silk City of Bihar and is famous for its sericulture, manufacture of silk yarn, and weaving of Tussar silk. The Bhagalpur cluster ranks second highest in silk fabric production and exports after the silk cluster in Karnataka.

The NTPC, Kahalgaon is located in Bhagalpur is also under close consideration for extending IWT services like NTPC Farakka in near future. NTPC Kahalgaon has installed capacity of 2340

MW. The district also covers largest industrial belt of the district in Barari industrial Area (where 110 industrial units are operated) and Kahalgaon industrial Area. The Government of India established Handloom park and Food park in Bhagalpur. Above 200 small industrial unit of silk are established in Bhagalpur. Many big industries are under construction like Star Cement, Nalanda Paper Mill, Coca cola, Mineral Water, etc.

Bhagalpur is well connected with rest of the country with roads through NH-106 and NH-80. It is also well connected with a railway which runs parallel with the river Ganga. The district is also provided with an IWT terminal at Kehalgaon which covers approx 1000 Sq. m area and has approx 35m berth space. It is mainly a floating terminal.

As per current traffic estimates, in base year Bhagalpur handled around 3.71 million tonnes comprising 1.09 million tonnes of originating and



2.62 million tonnes as terminating traffic. Out of this, traffic likely to get shifted to proposed IWT services is to the tune of 2.28 million tonnes comprising 0.68 million tonnes of originating and 1.6 million tonnes of terminating traffic. The NTPC thermal plant located in the city is expected to be biggest beneficiary, which is expected to get coal through this terminal. In addition a sizable portion of other bulk commodities is expected to be handled at this IWT terminal

Presently a floating jetty of 35m water front is available at this terminal and a land area of about 1000sqm is with IWAI. A total land area of 3.86 acres is available for DGPS Terminal.

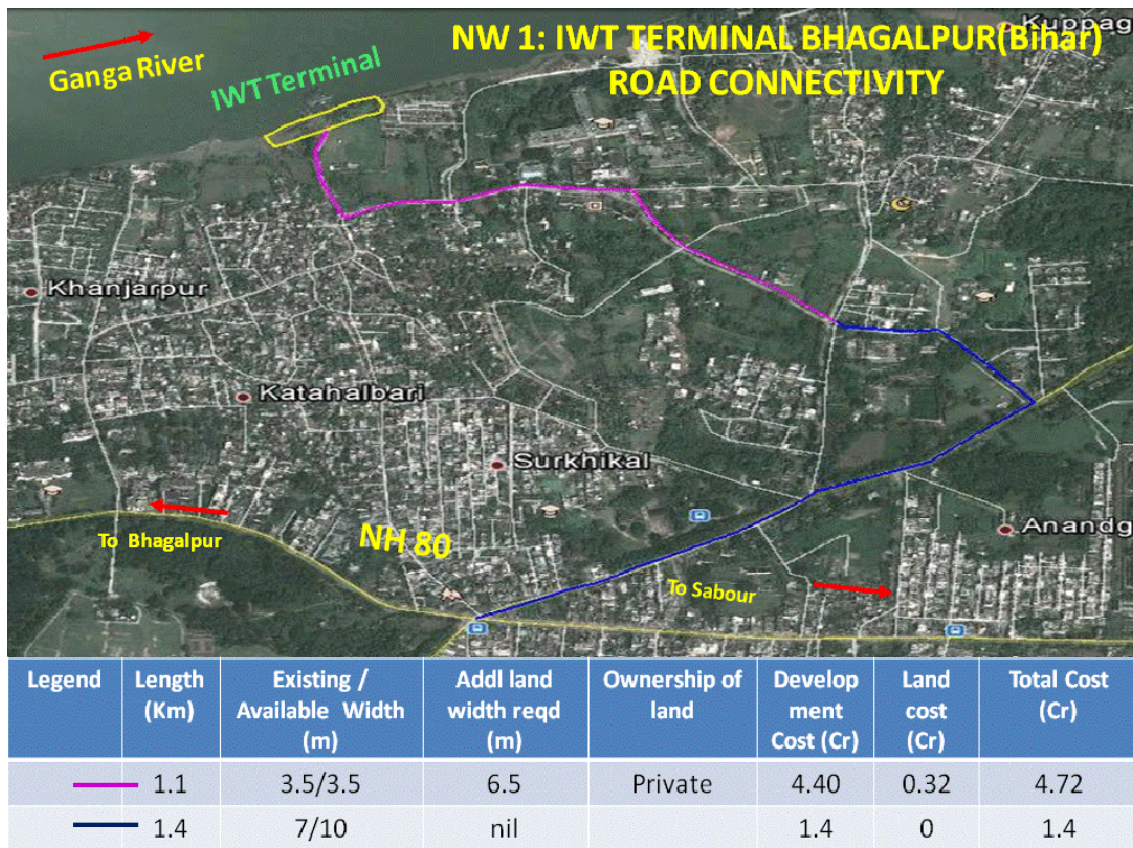
Traffic:

Projected divertible traffic through Bhagalpur Terminal

Bhagalpur Total Traffic (MT)			
Year	Originating	Terminating	Total
2011-12	0.68	1.59	2.28
2021-22	1.00	2.34	3.34
2031-32	2.00	4.98	6.98
Important Commodity:		Coal	

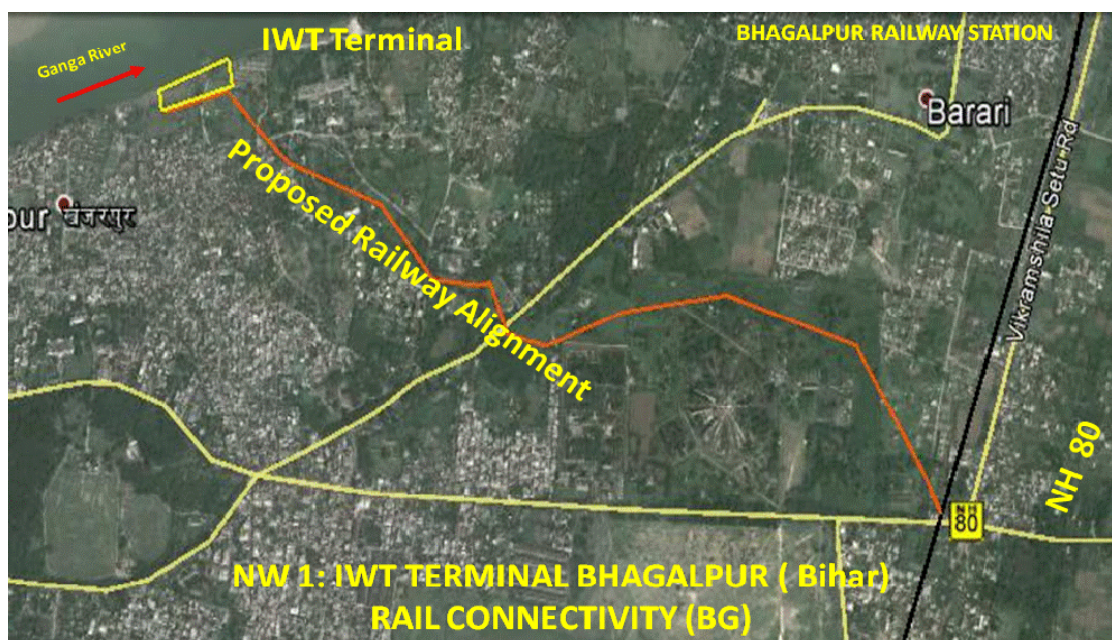
Road Connectivity: The nearest National Highway (NH 80) is at 2.50km length. The existing road/land width available on this 1.1 km stretch of road is 3.50m which is required to be widened with additional land acquired for 6.5m to lay a two lane road. To strengthen and widen this 1.1km road along with only strengthening of 1.40km road (7m wide) to cater heavy

vehicle movement, the normative cost of Rs.6.12crore is provided in the estimate. The road connectivity proposed for this terminal is depicted in the figure below:



Rail Connectivity: The nearest station is Bhagalpur Railway Station under Malda Division. The length of connectivity is 3.30km. However, since incoming bulk commodities are planned to move through rail network to hinterland, rail connectivity to IWT Terminal is proposed. It is observed that upto the boundary of terminal, connectivity is feasible. However, inside terminal, additional land needs to be acquired for setting up rail siding/ connectivity. Traffic demand is adequate for rail connectivity. Further, new captive IWT Terminals are to be identified by the respective thermal plants to handle projected traffic. The proposed rail connectivity is given in the imagery above.

Outside Connectivity: Not Feasible
 Inside - Rail Siding Facility: Not Feasible
 Traffic Demand: Adequate (*incoming coal*)
 Rail Connectivity Recommended: No
New captive IWT terminal (like Farakka) to be identified to handle projected traffic to be developed by respective thermal plants



Legend	Length (Km)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	3.3	15	Private	22.56	2.20	24.76

The cost of rail connectivity for a length of 3.3km is worked out as Rs.24.76 crores on normative basis, which includes land cost of about Rs.2.20 crores.

Total Development Cost:

It is envisage that a sum of Rs.91crore is required for the development of IWT Terminal at Bhagalpur. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 10crores
Road Connectivity	: Rs. 6crores
Rail Connectivity	: Rs. 25 crores
Terminal Development Cost	: Rs. 50crores
Total Investment	: Rs. 91Crores

4.3.9 TERMINAL AT BARH

Barh is a floating type captive terminal having 27m of berthing space and is established mainly for handling coal traffic for NTPC. NTPC is developing a Super Thermal power Plant with a total capacity of 3300MW [(3x 660 MW) + (2x 660 MW)] at Barh. The power plant is under construction and first unit is expected to be commenced soon. For this plant, it planned to move 3 MMT of imported coal per annum through NW-1 waterway to its Barh plant in Bihar from Sandheda/Haldia. In this direction, it had already floated enquiries from fleet operators.

IWAI is also co-ordinating this activity with NTPC. The mode of transfer from IWT Terminal to the plant stack yard is by a 3.5 km long conveyor system. It is estimated that about 80 barges, each with capacity of 1,500 tonnes are required. When loaded, a draft not less than 2.1 metres, will be needed to undertake transportation of coal. The turnaround time is estimated at 11 days.

Traffic:


Projected divertible traffic through Barh Terminal

Barh Total Traffic (MT)			
Year	Originating	Terminating	Total
2011-12	0.10	0.10	0.20
2021-22	0.10	2.90	3.00
2031-32	1.0	5.27	6.27
Important Commodity:		Coal	

Road Connectivity:

The nearest National Highway (NH 31) is at 1.50km length. The existing road/land width available for this stretch of road is 3.70m/6.70m which is required to be widened with additional land acquired for 3.3m to lay a two lane road. To strengthen and widen this road to cater heavy vehicle movement, the normative cost of Rs.6.25 crore is provided in the estimate for this purpose.



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	1.50	3.7/6.7	3.3	NTPC	6.0	0.25	6.25

Rail Connectivity:

The nearest railway station is Barh, on the Patna –Howrah section of main trunk route and is approximately 11.67 kms from the Terminal site. However, since bulk commodities are planned to move through conveyor system to the power plants/ end user/ industries on the river front, Rail Connectivity is not considered for this terminal.

Bulk incoming coal traffic (domestic and import) for NTPC power plant using IWT facility
New captive IWT terminal (like Farakka) to handle projected traffic to be developed by respective thermal plants
Rail Connectivity Recommended: No

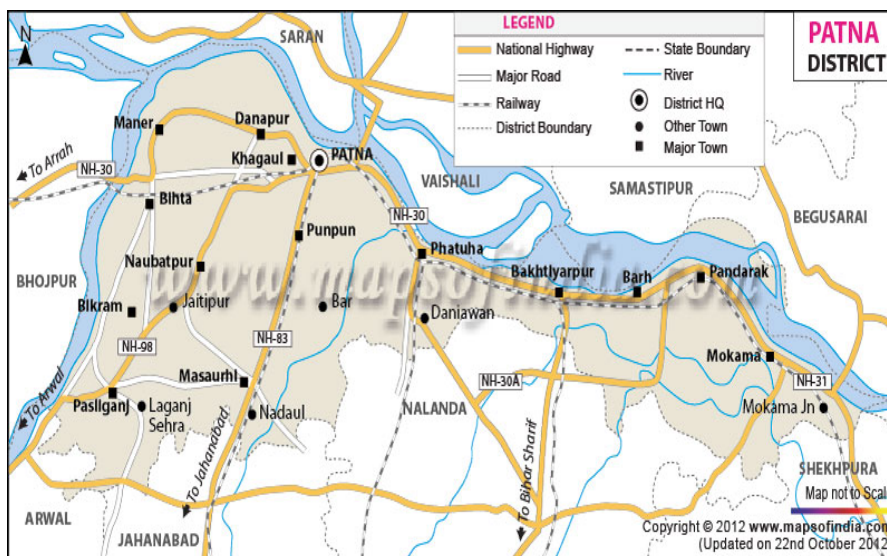
Total Development Cost:

It is envisaged that a sum of Rs.36 crore is required for the development of IWT Terminal at Barh. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 20 crores
Road Connectivity	: Rs. 6 crores
Terminal Development Cost	: Rs. 10 crores
Total Investment	: Rs. 36 Crores

4.3.10 TERMINAL AT PATNA (GAIGHAT)

Patna, the capital of Bihar occupies an area of 3,202 square kilometers having the total population of around 5,772,804. It is located on the southern bank of river Ganga. Patna is well connected with road through NH-30, NH-30A, NH-31, NH-83, NH-98 with the rest of the country. In addition the district is well connected with railways and air ways. To handle IWT traffic, two IWT terminals at Gai Ghat and Barh have been provided.



Based on current traffic estimates, Patna region handled around 4.34 million tonnes of cargo, comprising 2.56 million tonnes outgoing and 1.77 million tonnes incoming in 2011-12. Out of this, estimated traffic likely to get shifted to proposed IWT services is 1.3 million tonnes comprising 0.73 million tonnes originating and 0.57 million tonnes terminating goods traffic.

It is important to mention that Nepal, being a land locked country is always trying to have direct access to the sea route. In this connection a number of IWT feasibility studies have been carried out to assess the viability of introducing IWT services in river Narayani and Sapta Kosi using NW1 corridor. Although, no progress have been observed towards development of said waterway connectivity, in the light of current exercise, it is assumed that IWT traffic estimated for River Sapta Kosi (DPR conducted by RITES Ltd.in 2011-12) can be handled up to Patna. Accordingly, while estimating IWT terminal demand at Patna, the same has been considered. As indicated in Spata Kosi IWT Report, in the year 2011-12, 1.96 million tonnes of Nepal bound incoming traffic has been added to Patna traffic demand. Similarly, as per traffic projections given in RITES Report 4.62 million tonnes of Nepal incoming traffic have been considered in the terminal year of the current study.

Traffic:

Projected divertible traffic through Patna Terminal

Patna Total Traffic (MT)			
Year	Originating	Terminating	Total
2011-12	0.95	2.86	3.81
2021-22	1.09	4.84	5.93
2031-32	2.16	10.23	12.39
Important Commodity: General goods, Containers			

Road Connectivity: The nearest National Highway (NH 19) is at 2.50km length. The existing road/land width available for this 2.50km stretch of road is 7.0/10.0m which is required to strengthen to cater heavy vehicle movement, the normative cost of Rs.2.50 crore is provided in the estimate for this purpose.

Rail Connectivity: The nearest station is Rajendra Nagar Railway Station under Danapur Division of East Central Railway. The length of connectivity is 6.0km. Due to the alignment passes densely populous city and congested buildings en-route, it is found not feasible upto the boundary of terminal as well as inside the terminal location due to non-availability of land. However, the quantum of traffic is strongly in favour of need of a rail link. It is suggested that to avoid the congested city limits, a new terminal outside the city limits where rail connectivity can be provided may be considered, while detailed study for individual terminal is taken up.

Outside Connectivity: Not Feasible
 Inside - Rail Siding Facility: Not Feasible
 Traffic Demand: Adequate (Container, food grains, general cargo)
(can be developed as a hub for Nepal Cargo)
 Rail Connectivity Recommended: Yes
New location identified near Digha (IWAI acquiring 16 acres of land) to handle projected traffic with 4 lane road and rail connectivity to be developed by IWAI



Legend	Length (Km)	Existing / Available Width (m)	Addl land width reqd (m)	Ownership of land	Development Cost (Cr)	Land cost (Cr)	Total Cost (Cr)
	2.5	7/10	0		2.5	0	2.5

Total Development Cost:

It is envisaged that a sum of Rs.128crore is required for the development of IWT Terminal at Patna. The breakup cost of investment required is detailed as follows:

Waterway development	: Rs. 25 crores
Road Connectivity	: Rs. 3 crores
Terminal Development Cost	: Rs. 100 crores
Total Investment	: Rs. 128Crores